

16-F-0062 - Eight Point Wind - 3-11-19

NEW YORK STATE

DEPARTMENT OF PUBLIC SERVICE

16-F-0062 APPLICATION OF EIGHT POINT  
WIND, LLC FOR A CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED PURSUANT TO ARTICLE 10  
TO CONSTRUCT A WIND ENERGY PROJECT

EVIDENTIARY HEARING

MONDAY, March 11, 2019, 1:00 p.m.

Alfred University

Susan Howell Hall

One Saxon Drive

Alfred, New York 14802

A.L.J. MICHELLE L. PHILLIPS

A.L.J. SEAN MULLANY

DEC A.L.J. JAMES T. MCCLYMONDS

1 16-F-0062 - Eight Point Wind - 3-11-19

2 A.L.J. MULLANY: I call to order Case  
3 16-F-0062, Application of Eight Point Wind, L.L.C.,  
4 for a Certificate of Environmental Compatibility and  
5 Public Need, Pursuant to Article 10 to Construct a  
6 Wind Energy Project.

7 My name is Sean Mullany. I'm the  
8 presiding examiner in this proceeding. Sitting to my  
9 immediate right is James McClymonds. Mr. McClymonds  
10 -- or, I should say Judge McClymonds is an A.L.J.  
11 with the New York State Department of Environmental  
12 Conservation and he is serving as an associate  
13 examiner in this case. Sitting to Judge McClymonds'  
14 right is Judge Michelle Phillips. She is also a  
15 presiding examiner in this case. She's an A.L.J.  
16 with the New York State Department of Public Service.

17 Today we're conducting an evidentiary  
18 hearing, pursuant to a notice that was issued on  
19 February 19th, 2019 and modified and corrected on  
20 February 25th, 2019. The purpose of today's  
21 proceeding -- the primary purpose of today's hearing  
22 is to provide an opportunity for parties to cross  
23 examine witnesses on the pre-filed and rebuttal  
24 testimony that has been submitted in this case.

25 I would like to begin by taking

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2                   appearances for the record, beginning with counsel  
3                   for Eight Point Wind.

4                   MR. LANIADO: Your Honor, on behalf of  
5                   the Applicant, Eight Point Wind, L.L.C., the law firm  
6                   of Reed and Laniado by Tyler Wolcott and Sam Laniado.

7                   MR. JESMER: On behalf of the  
8                   Department of Public Service, Graham Jesmer.

9                   MR. WEINTRAUB: On behalf of the  
10                  Department of Environmental Conservation, Lawrence  
11                  Weintraub.

12                  MS. WELLS: On behalf of the  
13                  Department of Agriculture and Markets, Tara Wells.

14                  MS. MEAGHER: On behalf of CMRE, Manna  
15                  Meagher, Tim Brown and Don Lewis.

16                  A.L.J. MULLANY: And, for the benefit  
17                  of the record, could you just please articulate the  
18                  full name of the group you represent?

19                  MS. MEAGHER: Citizens for Maintaining  
20                  our Rural Environment.

21                  A.L.J. MULLANY: Thank you. Do we  
22                  have any other appearances for the record? Okay. To  
23                  begin with, I understand that there aren't -- there  
24                  is no intention on the part of any of the active  
25                  parties for the case to conduct cross examination, is

1 16-F-0062 - Eight Point Wind - 3-11-19

2 that correct?

3 MR. LANIADO: That's my understanding,  
4 Your Honor.

5 A.L.J. MULLANY: I see heads nodding,  
6 if you could reply for the record in the microphone?

7 MS. MEAGHER: For CMRE, that is  
8 correct.

9 MR. JESMER: That's correct, as far as  
10 the Department of Public Service is concerned.

11 MR. WEINTRAUB: That's correct, as far  
12 as the Department of Environmental Conservation is  
13 concerned.

14 MS. WELLS: That's correct, as far as  
15 the Department of Ag and Markets is concerned.

16 A.L.J. MULLANY: Thank you. Now, I  
17 have before me, a -- a number of proposed exhibit  
18 lists that were submitted by the parties in response  
19 to a request by Judge Phillips, via email. My  
20 intention, at this point in time, is to -- to go  
21 through those lists and just confirm that these are  
22 the exhibits that the -- the parties will be offering  
23 for entry into the record.

24 So, I've got a list prepared by Eight  
25 Point Wind, dated March 7th, 2019. It's a 2 page

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2           document and it lists various documents for entry  
3           into the record in this case. Have all the parties  
4           had a chance to look at this?

5                   MS. MEAGHER: Yes.

6                   A.L.J. MULLANY: Well, let me just  
7           clarify. Mr. Laniado, was this list circulated to  
8           all the parties in advance of today's hearing?

9                   MR. LANIADO: Yes.

10                  A.L.J. MULLANY: It was?

11                  MR. LANIADO: In pursuant to the  
12       ruling from Your Honors.

13                  A.L.J. MULLANY: And, so I just want  
14       to confirm whether any of the parties have any  
15       objections to this proposed list of exhibits offered  
16       by Eight Point Wind? And, this is -- this is -- this  
17       is merely for offering into the record. It does not  
18       in any way signify agreement with any conclusions  
19       that might be drawn with respect to the contents of  
20       these documents, right?

21                  MR. LANIADO: Correct.

22                  A.L.J. MULLANY: Okay. All right.  
23       Hearing none, the next proposed exhibit list I have,  
24       is offered by DPS Staff. It's a 2 page list in the  
25       form of a -- a chart. It looks like a word -- a word

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2                   chart and similarly this has been circulated to the  
3                   parties in the case.

4                   Does anyone have any objection to the  
5                   proposed exhibit list from Department Staff? Okay.  
6                   Hearing none, I'm proceeding next to a proposed  
7                   exhibit list from D.E. Staff -- DEC Staff. This is a  
8                   1 page document. It looks like 4 exhibits. I'm  
9                   sorry, it's a 2 page document. It has 1, 2, 3, 4, 5  
10                  -- let's see --

11                  MR. WEINTRAUB: Your Honor, the  
12                  exhibit list should just be one page.

13                  A.L.J. MULLANY: It should just be one  
14                  page?

15                  MR. WEINTRAUB: With -- I think  
16                  there's --

17                  A.L.J. MCCLYMONDS: It's just repeated  
18                  on the second side.

19                  A.L.J. MULLANY: It just repeats.  
20                  Okay. So, for DEC, there are 4 exhibits, the resume  
21                  of Briana Denancor, the resume of Carl Herzod, list  
22                  of references and list of post-construction studies  
23                  and the resume of W. Scott Jones.

24                  MR. WEINTRAUB: That's correct, Your  
25                  Honor.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 A.L.J. MULLANY: That's correct?

3 Thank you, sir. And, again, does anyone have any  
4 objection to that proposed exhibit list? Okay.

5 The next up is a proposed exhibit list  
6 that was submitted by the New York State Department  
7 of Agriculture and Markets. It lists 3 different  
8 exhibits. It's not dated. The first listed document  
9 is an interrogatory document request I.R. made by DAM  
10 -- DAM on November 2nd, 2018 to the Applicant,  
11 regarding Golden Nemotoad quarantine restrictions  
12 with Applicant's response. Does -- let me just ask  
13 this, have -- have all the active parties gotten a  
14 copy of the DAM exhibit list? Okay.

15 People are nodding in the affirmative.  
16 Then I'll spare you the need to go through it in  
17 detail. Are there any exhibits -- or, any  
18 objections, at all, to the proposed DAM exhibit list?  
19 None? Okay.

20 A.L.J. MCCLYMONDS: I have a question  
21 about it, if it's all right? I tried to locate the  
22 -- the 2 documents -- the first 2 documents that are  
23 on the DAM exhibit list on the -- on the electronic  
24 data base at DPS and I couldn't find them. Are they  
25 -- were they -- are they are or --

1 16-F-0062 - Eight Point Wind - 3-11-19

2 MS. WELLS: They should have been.

3 What happened with that case and what may have  
4 created an issue, is that it was submitted with the  
5 -- with the testimony of Michael Saviola. I do have  
6 them and a copy, if you'd like them.

7 A.L.J. MCCLYMONDS: That's all right.

8 I mean, if -- if I can't find it, I'll -- I'll let  
9 you know and --.

10 MS. WELLS: Okay.

11 A.L.J. MCCLYMONDS: But, you -- you  
12 say it was attached to the third document then  
13 basically, right? No. No.

14 MS. WELLS: It -- well, no it was  
15 attached to the testimony of Mr. Saviola.

16 A.L.J. MCCLYMONDS: To the -- to the  
17 testimony. Okay. All right. Thank you. I'll check  
18 there.

19 A.L.J. MULLANY: So, then am I correct  
20 in understanding, that Department of Agriculture and  
21 Markets, in addition to these 3 document listed on  
22 this exhibit list, is also going to offer into the  
23 record, testimonies of Mr. Saviola?

24 MS. WELLS: The testimony is already  
25 -- was already on the DMM, Judge.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 A.L.J. MULLANY: Yes. The purpose of  
3 today's proceeding is to take documents that have  
4 been pre-filed --

5 MS. WELLS: Correct.

6 A.L.J. MULLANY: -- and move them into  
7 the hearing record.

8 MS. WELLS: Correct.

9 A.L.J. MULLANY: So, what I want to  
10 make sure is that in addition to anything on this  
11 list --

12 MS. WELLS: Yes.

13 A.L.J. MULLANY: -- if there's  
14 something else that you'd like to move into the  
15 record, now would be the time to specify what that is  
16 and clarify what you'd like to move in.

17 MS. WELLS: It -- yes, it would be Mr.  
18 Saviola's testimony.

19 A.L.J. MULLANY: Okay.

20 A.L.J. PHILLIPS: So, I -- I have a  
21 quick clarification question, I guess, based on that.  
22 We're moving the testimony still into the transcript  
23 that's being created, correct?

24 A.L.J. MULLANY: Yes.

25 A.L.J. PHILLIPS: Okay. But, you just

1 16-F-0062 - Eight Point Wind - 3-11-19

2 wanted to know what testimony they have?

3 A.L.J. MULLANY: Yes.

4 A.L.J. PHILLIPS: Okay.

5 A.L.J. MULLANY: So, that when we get  
6 to the point where we're going to instruct the court  
7 reporter what testimony to input, I understand it  
8 would include Mr. Saviola's testimony that was pre-  
9 filed on a certain date.

10 MS. WELLS: Cor -- correct, yes. And  
11 --

12 A.L.J. MULLANY: Are there any  
13 multiple filings in DMM that might cause us  
14 confusion?

15 MS. WELLS: No.

16 A.L.J. MULLANY: Okay.

17 A.L.J. PHILLIPS: So, I -- I actually  
18 have a clarification, based just on what your answer  
19 was. Is -- are the testimony and exhibits together  
20 as one document then, though? So, that might be an  
21 issue. I apologize.

22 MS. WELLS: Well, see that's where I  
23 think there might be some confusion. I -- with this  
24 case, I did do it that way and then with Barron  
25 Winds, I did it that way and then I was instructed to

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2           refile it separately. I don't -- I never got the  
3           instruction from this case, so I don't know -- I  
4           don't know, at this point, where we are on the DMM  
5           with that, if it was still together.

6                   A.L.J. MULLANY: Okay.

7                   A.L.J. PHILLIPS: So --.

8                   MS. WELLS: I don't know if they --  
9           when they uploaded it, if they took them off --

10                  A.L.J. PHILLIPS: Okay.

11                  MS. WELLS: -- and then never  
12           instructed me to file it separately. I know --  
13           because Barron Winds was after this.

14                  A.L.J. PHILLIPS: Right.

15                  MS. WELLS: And, then Judge Costello  
16           had contacted me and basically said, you know, I'm  
17           sorry. This was done incorrectly, which I didn't  
18           realize and then he had me redo it.

19                  A.L.J. PHILLIPS: So, we -- we should  
20           probably just note then, if it's the case that  
21           they're both together, we may need to request a  
22           separate copy of the testimony only, so that we can  
23           send that to the court reporter and that -- that way  
24           it would not also contain the exhibits. So, we may  
25           have to request that you break those apart.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 MS. WELLS: Yeah, I can -- I can look  
3 --.

4 A.L.J. PHILLIPS: Does that make  
5 sense?

6 A.L.J. MULLANY: Yes.

7 MS. WELLS: I don't have my computer  
8 here.

9 A.L.J. PHILLIPS: No, there -- we --  
10 there's no WiFi, so don't --

11 MS. WELLS: Okay. Well, I was going  
12 to say I can look --

13 A.L.J. PHILLIPS: -- we'll check when  
14 we get back.

15 MS. WELLS: -- when I get back to the  
16 office and I can -- if it's not, I can file  
17 everything separately, if that doesn't create too  
18 much of an issue.

19 MR. JESMER: It's one document.

20 A.L.J. PHILLIPS: I'm wondering at  
21 this point, though, if it just --

22 MS. WELLS: Okay. You did check?  
23 Okay.

24 A.L.J. PHILLIPS: -- sorry.

25 MS. WELLS: It was one document.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 Graham just checked for me.

3 A.L.J. PHILLIPS: Okay. So, I guess  
4 my -- my suggestion and we can think about it, is  
5 whether we can just get a copy of the testimony that  
6 is -- that it is online already. Instead of having  
7 her file it again, just have her send it to us, so we  
8 can send it to the court reporter; like, maybe we  
9 should discuss that more offline, just a suggestion.

10 A.L.J. MULLANY: Yeah. I -- I suspect  
11 that that's something we could correct after the  
12 fact.

13 A.L.J. PHILLIPS: Uh-huh.

14 A.L.J. MULLANY: And, I think it's  
15 just a minis -- ministerial step of segregating out  
16 the exhibits from the -- the sworn -- the verbatim  
17 testimony and filing that, so that that alone could  
18 be inserted into the transcript of this proceeding  
19 today.

20 MS. WELLS: Yes. I apologize. This  
21 was the first time I had -- I did it and I didn't  
22 realize it was a mistake until Judge Costello brought  
23 it to my attention in the next case.

24 A.L.J. MULLANY: No problem.

25 A.L.J. MCCLYMONDS: I have another

1 16-F-0062 - Eight Point Wind - 3-11-19

2 question, sorry.

3 A.L.J. MULLANY: I think you've used  
4 up your allotment.

5 A.L.J. MCCLYMONDS: Have I? Can  
6 somebody lend me a question?

7 UNIDENTIFIED SPEAKER: I will.

8 A.L.J. MCCLYMONDS: Thank you. So, we  
9 were just saying that we were going to be entering  
10 the Saviola testimony, as an exhibit but I note that  
11 --

12 A.L.J. MULLANY: No. No. No.

13 A.L.J. MCCLYMONDS: We're not?

14 A.L.J. PHILLIPS: No. No. Not.

15 A.L.J. MCCLYMONDS: Okay. That's what  
16 I thought.

17 A.L.J. PHILLIPS: That's what I was  
18 trying to clarify.

19 A.L.J. MCCLYMONDS: Okay. Got it.  
20 Because the other parties don't have their testimony  
21 being offered as exhibits either, correct.

22 A.L.J. PHILLIPS: Correct. So, the  
23 desire is to have the testimony in the transcript  
24 that's being created.

25 A.L.J. MCCLYMONDS: Right.

16-F-0062 - Eight Point Wind - 3-11-19

2 A.L.J. PHILLIPS: But, the exhibits,  
3 we will just give them a hearing number. Judge  
4 Mullany was just confirming what those exhibits are.

5 A.L.J. MCCLYMONDS: Right.

6 A.L.J. MULLANY: And, I just want to  
7 point out that was a good question, Judge McClymonds.

8 A.L.J. MCCLYMONDS: Thank you, very  
9 much.

10 MS. WELLS: It's a good thing you  
11 borrowed it.

12 A.L.J. MCCLYMONDS: So, does that mean  
13 I get two new ones?

14 A.L.J. MULLANY: You do, actually,  
15 yes. And, they accrue if you --

16 A.L.J. MCCLYMONDS: So, I give you  
17 back my question, thank you.

18 A.L.J. MULLANY: Okay. Thank you, Ms.  
19 Wells. Okay. And, the last exhibit list that was --  
20 has been proffered was from CMRE, the Citizens Group.  
21 Ms. Meagher, I have a -- a one page document. It has  
22 it looks like 17 different exhibits. This is dated  
23 March 7th, 2019. Is this -- is this the current  
24 list?

25 MS. MEAGHER: Yes.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 A.L.J. MULLANY: It is? Okay. Very  
3 good. And, are there any objections or questions  
4 about that?

5 MR. LANIADO: Your Honor, if -- if you  
6 notice there, the direct testimony's included on the  
7 exhibit list.

8 A.L.J. MULLANY: Right. Okay.

9 MR. LANIADO: So, that has to be  
10 deleted and copied into the record.

11 A.L.J. MULLANY: Okay. So, do you  
12 understand that Ms. Meagher?

13 MS. MEAGHER: Uh-huh.

14 A.L.J. MULLANY: Okay. The way this  
15 working is -- and I would note for everyone's  
16 benefit, that the representative for CMRE is not an  
17 attorney and lacks experience in these types of  
18 proceedings. So, it's not unusual that you might be  
19 a little confused by this, Ms. Meagher. The way this  
20 is going to work, is that the direct testimony is  
21 going to be inserted into the transcript of the  
22 record and then the exhibits, which are discussed in  
23 the testimony and are used in relation to what's  
24 offered in the testimony, the exhibits are treated  
25 separately and they're treated separately as part of

16-F-0062 - Eight Point Wind - 3-11-19

2 the record, as well. So -- so, what we'll do is --  
3 it looks like they're ten of the entries on the CMRE  
4 list constitute direct and rebuttal testimony. We  
5 will -- and, those -- those are the testimonies that  
6 have been electronically filed in the document in  
7 Matter Management System, Ms. Meagher?

8 MS. MEAGHER: Yes.

9 A.L.J. MULLANY: Okay. And, you don't  
10 have any corrections or changes to that testimony?

11 MS. MEAGHER: As far as my experience  
12 goes, no.

13 A.L.J. MULLANY: Okay. And, I believe  
14 we talked informally before we went on the record,  
15 that the process for getting the direct and rebuttal  
16 testimony into the record, would be by means of an  
17 affidavit. We don't have any cross, so we're not  
18 physically producing witnesses today to be cross  
19 examined. Instead, it's going to be an affidavit of  
20 the witness, proffering the testimony for the record  
21 that says, this is a true, complete and accurate copy  
22 of my testimony. I have no corrections and if I were  
23 to be asked these questions today, I would answer in  
24 the same way.

25 MS. MEAGHER: And, that all needs to

1 16-F-0062 - Eight Point Wind - 3-11-19

2 be done in writing?

3 A.L.J. MULLANY: That would be done by  
4 means of affidavits of each of the individuals  
5 offering testimony for the record.

6 MS. MEAGHER: Okay. So, you can't --  
7 you can't take sworn statements from people that are  
8 here today, that did file testimony?

9 A.L.J. MULLANY: We could do that.

10 A.L.J. MCCLYMONDS: Yeah, we can swear  
11 them in.

12 MS. MEAGHER: Because there are  
13 several that are here, so that would eliminate us  
14 having to do quite so many.

15 A.L.J. MULLANY: Do affidavits.

16 MS. MEAGHER: Yeah.

17 A.L.J. MULLANY: Okay. So, who do we  
18 have here today?

19 MS. MEAGHER: Don Lewis, Julia Lewis,  
20 Mike Lewis, Carl Schneider, myself. Tim didn't file  
21 one.

22 A.L.J. MULLANY: Okay.

23 A.L.J. PHILLIPS: Is there a T Holden  
24 (phonetic spelling) --?

25 MS. MEAGHER: Not here. And, the Pick

1 16-F-0062 - Eight Point Wind - 3-11-19

2 --

3 A.L.J. PHILLIPS: And, E. Pickering?

4 MS. MEAGHER: -- not here. We have  
5 Julia Lewis, Carl Schneider, Mike Lewis, myself.

6 A.L.J. PHILLIPS: And, what about  
7 Lawrence?

8 MS. MEAGHER: He was our visual impact  
9 expert, so no, he is not here.

10 A.L.J. MULLANY: Okay. Okay. So,  
11 what we'll do is, we'll -- we'll swear all the people  
12 who are present and have then adopt their testimony  
13 on the record. All right. So, could we have --  
14 well, let's have the people who are present come  
15 forward and state their name for the record please.

16 MS. MEAGHER: Just state my name?

17 A.L.J. MULLANY: Yeah, let's have  
18 these people come up so the microphone is going to  
19 catch your voices.

20 MS. MEAGHER: Okay.

21 A.L.J. MULLANY: And, I appreciate  
22 your understanding.

23 Ms. Meagher, if you could begin. Just  
24 state your name and address.

25 MS. MEAGHER: My name is Monna

1 16-F-0062 - Eight Point Wind - 3-11-19

2 Meagher, M-E-A-G-H-E-R, 17 Elm Street, Andover, New  
3 York, A-N-D-O-V-E-R 14806.

4 A.L.J. MULLANY: Sir.

5 MR. LEWIS: Michael Lewis, 605 County  
6 Route 67, Arkport, New York.

7 MR. LEWIS: Donald J. Lewis, 1268  
8 County Route 84, Rexville, New York.

9 MS. LEWIS: Hopefully I'll remember my  
10 address this time. Julia Lewis, 1268 County Route  
11 84, Rexville, New York.

12 MR. SCHNEIDER: Good afternoon. My  
13 name is Carl Schneider, 1611 Keenan Road, Rexville,  
14 New York. But, I do have a questions, if it's  
15 possible?

16 A.L.J. MULLANY: Can we go off the  
17 record for a moment.

18 THE REPORTER: Yup.

19 (Off the record)

20 THE REPORTER: We're back on.

21 A.L.J. MULLANY: Okay. So, if you --  
22 each of you could raise your right hand. Do each of  
23 and every one of you swear and affirm that the  
24 testimony that you shall be giving here today is the  
25 truth, the whole truth and nothing but the truth?

1 16-F-0062 - Eight Point Wind - 3-11-19

2 PANEL: I do.

3 A.L.J. MULLANY: Let the record  
4 reflect that each of the witnesses has responded in  
5 the affirmative. Okay. So, you're sworn.

6 EXAMINATION

7 BY A.L.J. MULLANY:

8 Q. Ms. Meagher, you have offered pre-  
9 filed testimony in this proceeding that's been filed  
10 in the Document Matter Management System.

11 A. (Monna Meagher) Yes.

12 Q. Is it your testimony that if you  
13 were to be asked those questions today -- well, first  
14 let me ask, do you have any corrections,  
15 modifications or additions to your testimony?

16 A. No.

17 Q. Speak loudly please.

18 A. No.

19 Q. If you were to be asked the same  
20 questions today, would your answers be the same?

21 A. Yes.

22 Q. Mr. Lewis -- I'm sorry, what's  
23 your first name sir?

24 A. (Donald Lewis) Don.

25 Q. Donald Lewis. Mr. Lewis, you've

1 16-F-0062 - Eight Point Wind - 3-11-19

2 offered pre-filed testimony in this proceeding, is  
3 that correct?

4 A. Yes.

5 Q. And, you're offering that into the  
6 record today?

7 A. Yes.

8 Q. Is it --

9 A. What I had in but I have more to  
10 add.

11 Q. Well, let's first deal with what  
12 you added -- what you offered previously, the pre-  
13 filed testimony.

14 A. Yes.

15 Q. Do you swear and affirm that -- do  
16 you have any corrections to that testimony?

17 A. I do have corrections to that.

18 Q. You do?

19 A. Yes.

20 Q. Okay. Can you please clarify what  
21 your corrections are?

22 A. I've got a paper written with a  
23 notary, if I could give that to you?

24 Q. Have the other parties seen the  
25 corrections that you --

1 16-F-0062 - Eight Point Wind - 3-11-19

2 A. No. I just -- I just brought it  
3 today.

4 Q. Okay. Yeah, I can't entertain  
5 that --.

6 A. It's on -- it's on my son's  
7 residence.

8 Q. Yeah, if -- if you want to give  
9 copies to everyone but this is something that we  
10 discussed previously off the record.

11 A. Yes.

12 Q. Yeah. And, you've asked --?

13 A. But, everything I had on that was  
14 -- I -- I'll agree with today.

15 Q. All right. Just for the benefit  
16 of the record, I'm going to recite what I understood  
17 took place.

18 A. Yup.

19 Q. You -- during the off the record  
20 discussion, you brought up the fact that you had  
21 modifications to your pre-filed testimony, based on  
22 some confusion as to -- as regards to the location of  
23 your son's residence.

24 A. Yes.

25 Q. And, you asked whether you could

16-F-0062 - Eight Point Wind - 3-11-19

add that testimony today. I then entertained an objection from counsel for the Company that expressed concerns that doing so would prejudice the Company because they had not had an opportunity to analyze your testimony based on confusion in -- in your testimony as to which person you were referring to. I sustained that objection and ruled that you can't admit that testimony today, in the interest of fairness to all the parties.

A. Okay.

Q. So, given that ruling, do you have any other changes or modifications to your pre-filed testimony?

A. No.

Q. Okay. And, if you were asked those same questions today, would you respond in the same way?

A. Yes.

Q. Okay. Thank you. Ms. Lewis --

A. (Julia Lewis) I'm going to go through it again.

Q. -- you want to go through it individually?

A. Well, I -- I have this -- the same

1 16-F-0062 - Eight Point Wind - 3-11-19

2 issue. We -- the --.

3 Q. Is it the same issue we discussed?

4 A. (Donald Lewis) Yes.

5 A. (Julia Lewis) That is correct.

6 Q. Okay. You've heard my ruling on  
7 that. So, we don't need to go through that again.

8 A. Okay. May I ask one question? By  
9 agreeing today, it's not saying that -- it's -- it's  
10 just saying what I stated in the testimony to date,  
11 is correct and accurate and true, correct?

12 Q. Yeah.

13 A. To date?

14 Q. Yes, to date. In other words,  
15 you're not seeking to modify your testimony, at all.  
16 I mean, the long and the short of it is, you'd like  
17 to modify it but I've told you can't modify it in  
18 that way.

19 A. Today?

20 Q. Today.

21 A. At some point, I will have an  
22 opportunity to do so any other way? This doesn't  
23 lock everything in? This is just stating to date,  
24 the testimony I placed here on record today stating  
25 what I did submit, is accurate and true, is that --

1 16-F-0062 - Eight Point Wind - 3-11-19

2 Q. Today's the evidentiary hearing.

3 A. Uh-huh.

4 Q. Today's the opportunity to offer  
5 your testimony into the record. There is not going  
6 to be another opportunity to modify your testimony.

7 A. (Donald Lewis) And, we can't use  
8 the --?

9 A. (Julia Lewis) Okay. If I deny my  
10 testimony, do I have time to submit one at a later  
11 date --

12 Q. No, ma'am.

13 A. -- revised?

14 Q. No.

15 A. So, this is it? Okay. So, then I  
16 will need to agree to the accepting of the testimony.  
17 It was true and correct.

18 Q. Okay. All right. Sir --

19 A. (Michael Lewis) Yes.

20 Q. -- you -- I'm -- I'm sorry.

21 A. (Julia Lewis) Michael Lewis.

22 A. (Michael Lewis) Michael.

23 Q. Michael Lawrence?

24 A. Lewis.

25 Q. Lewis; Michael Lewis. Mr. Lewis,

1 16-F-0062 - Eight Point Wind - 3-11-19

2 you pre-filed testimony in this case and you're  
3 offering it now into the record?

4 A. Yes.

5 Q. Do you have any modifications or  
6 corrections to your testimony?

7 A. Not that I can think of, at this  
8 time.

9 Q. And, if you were asked those same  
10 questions today, would your answers be the same as  
11 they were in your pre-filed testimony?

12 A. Yes.

13 Q. Okay. Thank you. Sir.

14 A. (Schneider) Carl Schneider.

15 Q. Carl Schneider --

16 A. Yes.

17 Q. -- my apologies.

18 A. That's okay.

19 Q. Mr. Schneider, you offered pre-  
20 filed testimony in this case?

21 A. Yes, I did, sir.

22 Q. And, you're offering it now into  
23 the record. Do you have any corrections or  
24 clarifications or modifications to your testimony?

25 A. Absolutely not. Everything I said

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2                   is correct, so I have no modifications; no additions.

3                   Q. And, if you were asked those same  
4                   questions today, would your answers differ in any  
5                   way?

6                   A. No, sir.

7                   Q. Okay. Thank you very much.

8                   A.L.J. MULLANY: Any other questions  
9                   or concerns or objections? Okay. You can all be  
10                  seated.

11                  A.L.J. MCCLYMONDS: Go off the record?

12                  THE REPORTER: Off the record.

13                  (Off the record)

14                  THE REPORTER: Back on.

15                  A.L.J. MULLANY: Okay. So -- so,  
16                  based on what we just went through, it's our  
17                  understanding that CMRE has six different exhibits  
18                  remaining on this list that they'd like to include in  
19                  the record. It's Schneider Exhibit 1, Monna Meagher  
20                  Exhibits 1, 2 and 3, it looks like Michael Lawrence  
21                  Exhibit M.L. dash 02 Part 1 of 2 and Exhibit Michael  
22                  Lawrence 02 Part 2 of 2. I believe that's all of  
23                  them. Okay.

24                  A.L.J. PHILLIPS: May I just ask a  
25                  clarification on the last Michael Lawrence exhibits?

1 16-F-0062 - Eight Point Wind - 3-11-19

2 Are those -- is that one exhibit with two parts or is  
3 it two separate exhibits?

4 MR. LEWIS: That's -- my name's  
5 Michael Lewis.

6 A.L.J. PHILLIPS: Sorry.

7 MS. MEAGHER: No, there's -- Michael  
8 Lawrence was our visual expert.

9 A.L.J. MULLANY: I'm sorry, but you're  
10 going to have to bellow if you're in the back of the  
11 room.

12 MS. MEAGHER: Okay.

13 UNIDENTIFIED SPEAKER: Yeah, she was  
14 talking --

15 A.L.J. MULLANY: Yeah, just pretend  
16 you're, you know, at a carnival and these microphones  
17 are hard of hearing.

18 MS. MEAGHER: Could you ask that  
19 question again?

20 A.L.J. PHILLIPS: I'm just trying to  
21 confirm the M.L. 02, which we were treating as two  
22 exhibits, is that the correct treatment? Is it one  
23 exhibit with two parts or two separate exhibits?

24 MS. MEAGHER: Well, it's listed on DMM  
25 as two separate pieces. I believe it's all one

1 16-F-0062 - Eight Point Wind - 3-11-19

2 exhibit -- I believe it's all one exhibit.

3 A.L.J. MULLANY: That's my  
4 understanding. It's one exhibit --

5 MS. MEAGHER: It's all one exhibit but  
6 it needed to be split --

7 A.L.J. MCCLYMONDS: But, it was split  
8 into two.

9 MS. MEAGHER: -- yes.

10 A.L.J. MCCLYMONDS: There's 2 PDF --  
11 PDF's on --

12 MS. MEAGHER: Yes. Yes.

13 A.L.J. MULLANY: Yeah.

14 A.L.J. PHILLIPS: Okay.

15 A.L.J. MULLANY: That may have been a  
16 function of the volume of the -- the files.

17 MS. MEAGHER: Exactly. Exactly.

18 A.L.J. MCCLYMONDS: The pictures.

19 A.L.J. PHILLIPS: Okay. I -- I only  
20 ask that clarification because I indicated that I  
21 counted six but I was counting them as separate  
22 exhibits and I didn't know if we should, instead,  
23 clarify that it's five --

24 MS. MEAGHER: Five.

25 A.L.J. PHILLIPS: -- exhibits or do we

1 16-F-0062 - Eight Point Wind - 3-11-19

2 leave it at six?

3 A.L.J. MULLANY: I think it's more  
4 clear to say that there are five exhibits, one of  
5 which consists of two parts.

6 A.L.J. PHILLIPS: Okay.

7 A.L.J. MULLANY: Thank you Judge  
8 Phillips. Okay. Can we go off for a second?

9 THE REPORTER: Uh-huh.

10 (Off the record)

11 A.L.J. MULLANY: Okay. Okay. We're  
12 back on. Okay. So, it's our intention to insert  
13 into the record, the testimonies in the following  
14 sequence. It would be the Company's testimonies and  
15 that would include direct -- the testimonies that  
16 were filed as part of the App -- are they already in?  
17 They're already in as part of the applications?

18 MR. LANIADO: No, they were filed --  
19 there's a -- there's an -- I sent it in my email to  
20 Your Honors. There's a -- there was a filing on the  
21 same day and it's listed on DMM. Yes, that's it.

22 A.L.J. MULLANY: Okay.

23 MR. LANIADO: Yes.

24 A.L.J. MULLANY: Got you. All right.  
25 So -- so, that would be the testimonies that were

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2                   filed on November 28th, 2017.

3                   A.L.J. MCCLYMONDS: Can you repeat  
4                   that date again please?

5                   A.L.J. MULLANY: November 28th, 2017.

6                   MR. LANIADO: Actually, I think it was  
7                   November 29th. The letter is dated the 28th.

8                   A.L.J. MULLANY: It was entered into  
9                   DMM on the 29th.

10                  MR. LANIADO: Yeah. Yes.

11                  A.L.J. MULLANY: Thank you, Mr.  
12                  Laniado. And, I don't know if we've got a table of  
13                  contents here.

14                  MR. LANIADO: I don't think there is  
15                  one.

16                  A.L.J. MULLANY: Okay. So, we've got  
17                  the -- so, first would be the pre-filed testimony of  
18                  Allen M. Wironen, W-I-R-O-N-E-N, file -- followed by  
19                  the testimony -- pre-filed testimony of Benjamin M.  
20                  Doyle, D-O-Y-L-E, followed by the pre-filed testimony  
21                  of Brian J. Schwabenbauer.

22                  A.L.J. MCCLYMONDS: Can you spell  
23                  that?

24                  A.L.J. MULLANY: S-C-H-W-A-B-E-N-B-A-  
25                  U-E-R. And, thank you for that clarification Judge

1 16-F-0062 - Eight Point Wind - 3-11-19

2 McClymonds. Then it would be the pre-filed testimony  
3 of Christopher Nunalee, N-U-N-A-L-E-E. Next is the  
4 pre-filed testimony of Khristopher Ollson, O-L-L-S-O-  
5 N, PhD. Now, in this filing next would be the pre-  
6 filed testimony of Mr. Gill but I understand we have  
7 substitution testimony.

8 MR. LANIADO: Yes, by Ms. Scornavacca.

9 A.L.J. MULLANY: And --

10 THE REPORTER: Can you spell that?

11 MR. LANIADO: S --

12 A.L.J. MULLANY: It is S-C

13 MR. LANIADO: -- C --

14 A.L.J. MULLANY: I got it. S-C-O-R-N-  
15 A-V-A-C-C-A and that's Kris, K-R-I-S.

16 THE REPORTER: Thank you.

17 A.L.J. MULLANY: And, that's sub --  
18 actually, you don't need to know what it was  
19 substituting for.

20 Next is the pre-filed testimony of  
21 Dennis Jimeno, J-I-M-E-N-O.

22 Next is the testimony of Diane E.  
23 Reilly, R-E-I-L-L-Y.

24 Next is the pre-filed testimony of  
25 Francis Wang, W-A-N-G, followed by the pre-filed

16-F-0062 - Eight Point Wind - 3-11-19

testimony of Jim, that's J-I-M T as in Thomas, Shea,  
S-H-E-A, followed by the pre-filed testimony of  
Joshua S. Brown, B-R-O-W-N, followed by the pre-filed  
testimony of Judah, J-U-D-A-H Rose, followed by the  
pre-filed testimony of Judith A. Bartos, B-A-R-T-O-S,  
followed by the pre-filed testimony of Kunhal, that's  
K-U-N-H-A-L, V as in Victor, Parikh, P as in Peter A-  
R-I-K-H, followed by the pre-filed testimony of Lewis  
Coakley, that's C as in Charlie O-A-K-L-E-Y, whose  
resume notes that his nickname is "Coke Coakley",  
followed by the pre-filed testimony of Mark Thompson.  
I'm sorry, correction, the testimony of Mark Thompson  
is being substituted by the testimony of Jeromy  
Miceli, that's J-E-R-O-M-Y first name Jeromy, last  
name Miceli, M-I-C-E-L-I, followed by the pre-filed  
testimony of Patrick J. Fennell, F-E-N-N-E-L-L,  
followed by the pre-filed testimony of Petro, P-E-T-  
R-O W. Kazaniwsky, K-A-Z as in zebra A-N-I-W-S-K-Y,  
followed by the pre-filed testimony of Richard, M as  
in Mark, Lampeter, L-A-M-P-E-T-E-R, followed by the  
pre-filed testimony of Robert D. O'Neal, O'N-E-A-L,  
followed by the pre-filed testimony of Samantha W.  
Kranes, K-R-A-N-E-S, followed by the pre-filed  
testimony of Steven D. Wilkinson, W-I-L-K-I-N-S-O-N,

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2 followed by the pre-filed testimony of Timothy R.  
3 Sara, S-A-R-A, followed by the pre-filed testimony of  
4 Trevor, T-R-E-V as in Victor O-R S. Peterson, P-E-T-  
5 E-R-S-O-N. And, by my reckoning, that's it for the  
6 testimony -- the pre-filed direct testimony.

7                   MR. LANIADO: Direct, yes.

8                   A.L.J. MULLANY: Okay. And, I  
9 apologize Mr. Laniado but I do not have a listing. I  
10 guess it would be the rebuttal testimony --

11                  MR. LANIDAO: Yeah.

12                  A.L.J. MULLANY: -- that's the only  
13 other piece of this piece, right?

14                  MR. LANIADO: That's right, the  
15 rebuttal panel.

16                  A.L.J. MULLANY: Yup. Okay. And, for  
17 that, I'm just going to make reference to what was  
18 filed in DMM. Do you have a filing date for that  
19 rebuttal testimony per chance --

20                  A.L.J. PHILLIPS: Hold on a minute.

21                  A.L.J. MULLANY: -- 2/11.

22                  A.L.J. PHILLIPS: February 11.

23                  A.L.J. MULLANY: February 11th, 2019.

24                  MR. LANIADO: Yes.

25                  A.L.J. MULLANY: Okay. Thank you.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 Thanks Judge Phillips. Okay. Now we move to Staff's  
3 testimony.

4 If you would be so kind, Mr. Jesmer,  
5 could you recite for me the Staff testimonies that  
6 you are offering into the record?

7 MR. JESMER: Absolutely, Your Honor.  
8 There are in total eight pieces of testimony,  
9 beginning with the testimony of Andrew Davis, the  
10 testimony of Jeremy Flaum, F-L-A-U-M, the testimony  
11 of Jeremy Rosenthal, R-O-S-E-N-T-H-A-L, the testimony  
12 of Daniel Dagomski, D-A-G-O-M-S-K-I, the testimony of  
13 Miguel Marino Caballero, that's C-A-B-A-L-L-E-R-O,  
14 the testimony of the Staff Policy Panel, the  
15 testimony of the Staff Engineering Panel and the  
16 testimony of the Staff Consumer Services Panel.

17 A.L.J. MULLANY: And, just to clarify  
18 for the record, the testimony of Mr. Marino Caballero  
19 is corrected?

20 MR. JESMER: That's correct, Your  
21 Honor. The corrections were circulated, I believe,  
22 on March 5th and officially submitted in complete  
23 form to Your Honors and the other parties on March  
24 7th.

25 A.L.J. MULLANY: Okay. And, we're

1 16-F-0062 - Eight Point Wind - 3-11-19

2 going to go off the record for a second.

3 THE REPORTER: Uh-huh.

4 (Off the record)

5 A.L.J. MULLANY: So, we finished with  
6 Staff. Can we hear from DEC, as to the testimonies  
7 that you're offering for the record?

8 MR. WEINTRAUB: Yes, Your Honor. We  
9 have W. Scott Jones, Briana Denoncore, with filing  
10 jointly with Carl J. Herzog; no corrections; no  
11 rebuttal testimony.

12 A.L.J. MULLANY: Thank you Mr.  
13 Weintraub.

14 MR. WEINTRAUB: I have one little  
15 housekeeping question.

16 A.L.J. MULLANY: Sir.

17 MR. WEINTRAUB: When I filed the  
18 exhibit list, I accidentally created a second page and  
19 I -- I had pasted the -- the names of the -- the  
20 persons giving the exhibits on the second page and  
21 then I was pasting it into the table and I didn't  
22 delete the second page. Is it -- should I bother  
23 resubmitting --

24 A.L.J. PHILLIPS: No.

25 A.L.J. MULLANY: No.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 A.L.J. PHILLIPS: That was not filed.

3 That was for --

4 MR. WEINTRAUB: That was just for --

5 okay.

6 A.L.J. PHILLIPS: -- ourselves and the

7 parties.

8 A.L.J. MULLANY: Yeah.

9 MR. WEINTRAUB: Okay.

10 A.L.J. PHILLIPS: So, don't worry

11 about it.

12 MR. WEINTRAUB: Okay.

13 A.L.J. MULLANY: We've already marked

14 that as delete.

15 MR. WEINTRAUB: Right.

16 A.L.J. MULLANY: And, we'll

17 incorporate the remainder of what you offered --

18 MR. WEINTRAUB: Thank you.

19 A.L.J. MULLANY: -- into the

20 consolidated exhibit list. Ms. Wells?

21 MS. WELLS: The only testimony that we

22 have is the direct testimony of Michael Saviola.

23 There was no corrections and no rebuttal.

24 A.L.J. MULLANY: Okay. Okay. Last

25 but not least would be CMRE. Ms. Meagher, I've

1 16-F-0062 - Eight Point Wind - 3-11-19

2 printed out the DMM list, which includes the  
3 testimonies that have been proffered or I should say  
4 pre-filed in DMM. So, let me just read those off.  
5 Direct testimony of M. Lawrence, direct testimony of  
6 T. Pickering, direct testimony of T. Bauman, direct  
7 testimony of M. Meagher or Meagher, direct testimony  
8 of M. Lewis, direct testimony of M. Bauman, direct  
9 testimony of K. Schneider, S-C-H-N-E-I-D-E-R, direct  
10 testimony of J. Lewis, direct testimony of D.  
11 Pickering, direct testimony of D as in David Lewis  
12 and that -- that's all I have.

13 A.L.J. MCCLYMONDS: Rebuttal testimony  
14 of M. Lawrence?

15 MS. MEAGHER: Correct.

16 A.L.J. MULLANY: Okay. Thank you.

17 A.L.J. PHILLIPS: So, off the record.

18 (Off the record)

19 (On the record)

20 A.L.J. MULLANY: Okay. Oh, wait, go  
21 off again. I'm sorry. We have --

22 (Off the record)

23 (On the record)

24 A.L.J. MULLANY: Okay. And, I -- I  
25 want to note for the record, we had a brief

1 16-F-0062 - Eight Point Wind - 3-11-19

2 discussion about the affidavits to be submitted by  
3 CMRE and it is CMRE's intention to submit affidavits  
4 for the following individuals, D. Pickering, also T.  
5 Pickering, M. Bauman, B-A-U-M-A-N and T. Bauman, same  
6 B-A-U-M-A-N and finally affidavits for M. Lawrence,  
7 both the direct and rebuttal testimony. So, it'd be  
8 2 different affidavits for Mr. Lawrence.

9 MS. MEAGHER: Okay. Thank you.

10 A.L.J. MULLANY: Okay?

11 MS. MEAGHER: Uh-huh. Yes, thank you.

12 A.L.J. MULLANY: Okay. Let the record  
13 reflect Ms. Meagher has responded in the affirmative.  
14 Okay. I -- I believe by my reckoning, I've -- we've  
15 all patiently gotten through one of the more tedious  
16 aspects of today's proceeding and I thank you for  
17 your patience and understanding.

18 Next, I want to talk about the -- the  
19 issues ruling, that is the statute, on its face,  
20 purports or requires an issues ruling. However, in  
21 light of the fact that there's no cross examination  
22 here, I'm going to take today's proceedings as  
23 satisfying the requirement for an issues ruling. I  
24 think it's moot, at this point but I wanted to state  
25 that intention in front of all the parties as on the

1 16-F-0062 - Eight Point Wind - 3-11-19

2 record; make sure nobody has any objection to the  
3 absence of a formal issues ruling in this case. Are  
4 there any objections?

5 PANEL: No, Your Honor.

6 A.L.J. MULLANY: Okay. Let the --

7 A.L.J. MCCLYMONDS: Can I do a quick  
8 clarification. The evidentiary hearing has been  
9 mooted because there's no cross examination but to  
10 the extent that there are legal issues raised by the  
11 parties, they would still be raised in the briefing?

12 A.L.J. MULLANY: That is correct.  
13 Okay. So, hearing no objections, we will then move  
14 on to the proposed joint table of contents for the  
15 briefs. I -- and, I have -- I believe this was  
16 circulated by the Company?

17 MR. LANIADO: Yes.

18 A.L.J. MULLANY: A two page document,  
19 entitled Table of Contents I through IV -- I through  
20 V rather, with a -- a series of subsections, as well.

21 MR. LANIADO: Yes.

22 A.L.J. MULLANY: Have -- and -- have  
23 the parties had a chance to see that? Do the parties  
24 have any question about the rationale for a joint  
25 table of contents or the proposed structure of the

1 16-F-0062 - Eight Point Wind - 3-11-19

2 table of contents put forth by the Company?

3 PANEL: No, Your Honor.

4 A.L.J. MULLANY: No. Okay. Let the  
5 record reflect that no one has offered any objections  
6 or questions regarding the table of contents proposed  
7 by the Company. And, I -- I apologize but I haven't  
8 had a chance to carefully review this. I would like  
9 to reserve on this. I just want to be able to get  
10 back to the office and look at this and compare it to  
11 the structure of the filings in the case and make  
12 sure that there aren't any proposed modifications or  
13 changes that the --

14 MR. LANIADO: Sure.

15 A.L.J. MULLANY: -- the examiners  
16 would like to make.

17 MR. LANIADO: Just -- just for Your  
18 Honors, the -- the comments I received are  
19 incorporated into the table of contents. They were  
20 received from DPS Staff, as well as CMRE.

21 MS. MEAGHER: Uh-huh.

22 A.L.J. MULLANY: Okay. Thank you for  
23 that correction or clarification, Mr. Laniado. Okay.  
24 So -- and I will -- we will get back to you probably  
25 on -- on whether we have any changes to this. Do we

1 16-F-0062 - Eight Point Wind - 3-11-19

2 have anything else? Does anyone have anything else?

3 MR. LANIADO: We need to move the --

4 A.L.J. PHILLIPS: Yes.

5 MR. LANIADO: -- testimony and  
6 exhibits into the record.

7 A.L.J. MULLANY: Okay.

8 A.L.J. PHILLIPS: Yes.

9 A.L.J. MULLANY: So, on motion of the  
10 parties for moving the testimony and exhibits into  
11 the record, are there any objections? Okay. So,  
12 moved. We need to talk about the site visit tomorrow  
13 but we don't need to do that on the record.

14 MR. LANIADO: Can we do it on the  
15 record?

16 A.L.J. MULLANY: We can.

17 A.L.J. PHILLIPS: Okay. So, let's go  
18 off the record.

19 (Off the record)

20 A.L.J. MULLANY: Okay. So, we're back  
21 on the record and this is straight from the  
22 Department of Redundancy Department, I am going to  
23 clarify for the interest of the record, that we have  
24 moved all testimony and exhibits into the record,  
25 having observed that there are no objections to doing

1 16-F-0062 - Eight Point Wind - 3-11-19

2 that. All right. Okay.

3 So, the last agenda item that I have,  
4 is a -- a request by the Company counsel, Mr.  
5 Laniado, to discuss tomorrow's proceedings, which is  
6 going to be a site visit. And, I am -- and I -- my  
7 apologies Mr. Laniado, other things that kept me  
8 busy, I haven't had a chance to look at the proposed  
9 agenda. But, overall so everyone knows what the site  
10 visit is for, it is intended to inform the examiners,  
11 by giving them an opportunity to see the area within  
12 which the proposed facility would, if approved, be  
13 constructed; to give us kind of an on the ground  
14 perspective on what it -- what the visual impacts and  
15 what the setting of the project will be. It's going  
16 to involve a -- a little bit of imagination. We're  
17 going to have to actually imagine where the turbines  
18 or proposed to be constructed.

19 But, we're going to have all -- I  
20 believe, all the parties are going to be present and  
21 we're going to have a caravan but I'll let you, Mr.  
22 Laniado, explain in greater detail, if you would?

23 MR. LANIADO: Your Honor, based on the  
24 -- the what I had circulated, pursuant to Your  
25 Honor's ruling, I included two that seemed more

1                   16-F-0062 - Eight Point Wind - 3-11-19  
2           suggestive. I believe those were all the comments  
3           that I received.

4                   A.L.J. MULLANY: So, you have had  
5           active input from the Citizens Group and you've --

6                   MR. LANIADO: Yes.

7                   A.L.J. MULLANY: -- modified the  
8           schedule in response to that input?

9                   MR. LANIADO: Yes. I -- I  
10          incorporated what was requested.

11                  A.L.J. MULLANY: And, I see Ms.  
12          Meagher --

13                  MS. MEAGHER: Yes.

14                  A.L.J. MULLANY: -- nodding in -- with  
15          agreement.

16                  MS. MEAGHER: Correct. Yes.

17                  A.L.J. MULLANY: Okay. Thank you.

18                  MR. LANIADO: So, it is my assumption  
19          that we would do it right after the hearing and we  
20          would leave from here but we can still leave from  
21          here. Maybe we can meet at the Saxon Inn because  
22          that seems to be close to the road. And, we would --  
23          Eight Point is going to have, you know, its own  
24          vehicle, obviously and we'll have two of their -- its  
25          expert witnesses, who are familiar with the view

1 16-F-0062 - Eight Point Wind - 3-11-19

2 points and the land. If you have -- basically  
3 guiding the tour but only identifying where we are  
4 and where the proposed turbine might be and I'm  
5 hoping we're going to bring the simulations that are  
6 in the application, the with and without. So, it'll  
7 give you an idea of what could be seen. And, then  
8 we're just going to shut up, basically because it  
9 would be very helpful if Judge Phillips or Your Honor  
10 could repeat what was in the ruling, when you talked  
11 about the site visit. There is -- there is a -- you  
12 know, parties shouldn't be lobbying for their  
13 positions, should not be arguing for their positions.

14 A.L.J. MULLANY: And, I'm happy to  
15 clarify that for all assembled on the record.

16 MR. LANIADO: Right.

17 A.L.J. MULLANY: And, let me know,  
18 Judge Phillips, if I omit something material. But,  
19 my understanding and my expectation, is that this is  
20 going to be simply for the benefit of the examiners,  
21 to be able to look out and see as a matter of  
22 reciting what's been proposed by the Company where  
23 facilities are proposed to be located. So, it's  
24 really very limited in its purpose. The other people  
25 who are attending the site visit, are certainly

1 16-F-0062 - Eight Point Wind - 3-11-19

2 welcome and -- and indeed expected to listen to what  
3 the Company's -- what representations the Company  
4 makes to the examiners. And -- but, it should be  
5 limited as counsel for the Company said, simply to  
6 factual recitations. This is where we -- we plan to  
7 locate a facility if it were -- if the project is  
8 approved as proposed.

9 It is not an opportunity for people to  
10 make what I refer to as positional statement, as in  
11 this should or shouldn't be, you know, or this is  
12 going to have the following impacts. It's just where  
13 are things going to be as a matter of fact. You'll  
14 get to -- to present your views on potential impacts  
15 in the brief and this is a -- a requirement or a  
16 stricture that applies to all parties. You'll get to  
17 argue what you think the facts mean in the brief but  
18 right now, we're just trying to get a sense of a  
19 matter of fact, where things are going to be located.

20 So, if there's some point of  
21 misunderstanding or lack of understanding by somebody  
22 who says, well I -- I'm sorry, but based on the  
23 simulation in the application, I thought it was going  
24 to be here, you know, okay, we can talk about that  
25 and the Company will have an opportunity to clarify

1 16-F-0062 - Eight Point Wind - 3-11-19

2 what it's proposing. But, it's not an opportunity to  
3 argue about the visual impacts of the case.

4 I see some folks in the audience  
5 nodding their heads in understanding. Does anyone  
6 else present here, not understand or have any  
7 questions about what I've just described? Okay. Let  
8 the record reflect that nobody has voiced any  
9 questions or concerns, at this point in time.

10 MR. LANIADO: Just, I would like to  
11 offer one clarification. When Eight Point was  
12 requested to put together the site tour, we were  
13 requested to try and limit the viewpoints to  
14 viewpoints that might have been in dispute or  
15 contested in the case.

16 A.L.J. MULLANY: Can I ask who -- who  
17 made that request?

18 MR. LANIADO: The -- the Honorable  
19 Judge Mullany.

20 A.L.J. MULLANY: I did?

21 MR. LANIADO: You did.

22 A.L.J. MULLANY: Okay.

23 MR. LANIADO: So, we're not going to  
24 be stopping at every viewpoint. We could but I think  
25 it might take a lot of time. But, we -- we -- we

1 16-F-0062 - Eight Point Wind - 3-11-19

2 brought in viewpoints that were within a short  
3 distance because that's where CMRE's witness,  
4 Lawrence, focused a lot of his testimony and we  
5 brought in some viewpoints set further away, just to  
6 provide some perspective for the -- I was using the  
7 visual impact assessment.

8 And, the second point was that rest  
9 stops are difficult to find there, so -- but we've  
10 figured out that we can use the local office that the  
11 Eight Point opened up. Is it in Greenwood or --?

12 MR. COAKLEY: Greenwood.

13 MR. LANIADO: Greenwood. And, so we  
14 can stop there. No refreshments will be offered.

15 A.L.J. MULLANY: Okay. Very good.  
16 The -- I know that the local citizenry is familiar  
17 with the weather in Upstate New York but I'll just  
18 say it for everyone's benefit, dress warmly. It's  
19 going to be a cold day and I don't want people  
20 distracted by discomfort.

21 A.L.J. PHILLIPS: Right, comfortably  
22 and warmly.

23 MR. BROWN: If we'd like to meet up  
24 with the caravan and not start at the Saxon Inn, are  
25 they going to start at the first location on their

1 16-F-0062 - Eight Point Wind - 3-11-19

2 list? Is that how that's going to work?

3 MR. LANIADO: Yup.

4 MR. BROWN: Okay. So, we could meet  
5 you there at viewpoint 20?

6 MS. MEAGHER: Yeah but how do we get -  
7 - how do know exactly where that is on Route 22?

8 A.L.J. PHILLIPS: Did you say -- yeah.  
9 I have a question. Did -- did you prepare a more  
10 formal sort of estimate of time as to when we would  
11 --

12 MR. LANIADO: Three hours.

13 A.L.J. PHILLIPS: Right, but sometimes  
14 we get -- the chart that you started with --

15 MR. LANIADO: Right.

16 A.L.J. PHILLIPS: -- if we start from  
17 here, for example, at 9 o'clock, will it indicate  
18 that they expect us to get to the first at 9:10,  
19 second stop at 9:30, is there anything --

20 MR. LANIADO: I didn't do that.

21 A.L.J. PHILLIPS: Okay. Okay.

22 MR. LANIADO: I did not. I -- I only  
23 asked the person putting together the -- the  
24 itinerary, just to keep it from 2 to 3 hours.

25 MR. BROWN: You're going to start here

1 16-F-0062 - Eight Point Wind - 3-11-19

2 at 9 o'clock, is that what I understand?

3 A.L.J. MCCLYMONDS: We actually didn't  
4 decide that yet.

5 A.L.J. PHILLIPS: We -- we didn't  
6 decide that but --

7 MR. BROWN: Oh, okay. Okay. I just  
8 --

9 MS. MEAGHER: Did I understand you to  
10 say, Sam, that you're not going to go to all of these  
11 on this list?

12 MR. LANIADO: No. No. No. Every  
13 viewpoint in the application, we're not going to.

14 MS. MEAGHER: But on these -- okay.  
15 Okay. All right.

16 A.L.J. MULLANY: And, so just for  
17 clarification and for the record, this list is a one  
18 page document that says, K16-F-0062 Eight Point Wind,  
19 L.L.C. Consensus Proposed Site and it lists 9  
20 separate viewpoints to be seen, viewpoint 20,  
21 viewpoint 22, viewpoints 6, 19 and 8, viewpoint 12,  
22 455 Saunders Road, 1258 County Route 84, viewpoint 9,  
23 viewpoint 15 and viewpoint 3. Is that correct?

24 MR. LANIADO: Yes.

25 A.L.J. MULLANY: Okay. So, again, any

1 16-F-0062 - Eight Point Wind - 3-11-19

2 other questions or concerns about the proposed site  
3 visit? Sir?

4 MR. LEWIS: It's just -- this is just  
5 to get a visual? I mean, there's no simulation of  
6 noise?

7 A.L.J. MULLANY: The -- the question  
8 posed is this is just to get a visual. There's --  
9 there's no assessment of noise. That's my  
10 understanding, sir. This is strictly for the  
11 opportunity to assess potential visual impacts.

12 MR. LEWIS: Then there's -- I  
13 understand there's simulation to this look, like  
14 where these towers will be, is that simulated in  
15 pictures?

16 A.L.J. MULLANY: So, the follow up  
17 question because he doesn't -- he doesn't -- this  
18 gentleman doesn't have a microphone in front of him,  
19 this is going to involve -- he asked are there  
20 simulations that have been prepared that relate to  
21 the various viewpoints that would be visited, is that  
22 accurate?

23 MR. LEWIS: Yes.

24 A.L.J. MULLANY: And, the answer is  
25 yes, that's my understanding there are.

1 16-F-0062 - Eight Point Wind - 3-11-19

2 MR. LEWIS: Can the general public see  
3 these or -- on the website or --

4 A.L.J. PHILLIPS: Can the Applicant --  
5 do you know the exhibit number.

6 MR. LANIADO: I'll get the exhibit.

7 MS. MEAGHER: Right.

8 A.L.J. PHILLIPS: It should be on the  
9 amend -- I don't remember the exhibit number.

10 MR. LANIADO: Well, it was filed  
11 around November 29th, 2017 and look for Exhibit 24.

12 A.L.J. MULLANY: Twenty-two.

13 A.L.J. MCCLYMONDS: Twenty-four.

14 A.L.J. MULLANY: Twenty-four.

15 MR. LANIADO: Twenty-four. And, there  
16 should be what's called a -- because that exhibit --  
17 then there should be an appendix to that called the  
18 Visual Impact Assessment or Visual Impact Assessment  
19 Study.

20 MS. MEAGHER: On the two sites that  
21 CMRE asked to be added, I do not believe there's  
22 probably visual.

23 MR. LANIADO: You're probably right.

24 MS. MEAGHER: On that account, being  
25 that Mr. Lewis is the most familiar with that, would

1 16-F-0062 - Eight Point Wind - 3-11-19

2 he be able to express with you, as to where he  
3 understands the turbine will be placed?

4 MR. LANIADO: Well, I'm hoping that  
5 our representative, who's going to be there who did  
6 the visual impact assessment, could give an idea of  
7 where it's going to be, yeah.

8 MS. MEAGHER: Okay. All right. Okay.  
9 In -- in lieu of --

10 A.L.J. PHILLIPS: Can you just --  
11 sorry.

12 MS. MEAGHER: -- in lieu of actual  
13 photographic simulations?

14 MR. LANIADO: Right.

15 MS. MEAGHER: Okay.

16 A.L.J. PHILLIPS: So, what happened on  
17 a visit that I did recently, that was helpful and I  
18 won't necessarily require this but there was an  
19 individual who worked for the Company that had an --  
20 an app that allowed him to figure out sort of where  
21 -- and, the other case was a transmission proposal.  
22 So, he actually showed us where in the field or  
23 where, you know, relative to where we were standing,  
24 the certain pole might be located. Just to help and  
25 I'm not suggesting that would necessarily be done

1 16-F-0062 - Eight Point Wind - 3-11-19

2 because I don't know the -- the terrain where we're  
3 going. But, where they were able to, the kind of  
4 gave us a sense of so, this is -- you know, if you're  
5 standing at this person's front door, I ran out and  
6 said I would be the pole, just to give us a sense of  
7 that.

8 MR. LANIADO: I see.

9 A.L.J. PHILLIPS: We might not be able  
10 to do that. I -- I have no idea of what terrain  
11 we're going to be looking at. I didn't look each of  
12 the stops up on Google Maps but that's kind of the  
13 idea, in terms of getting a feel for what people in  
14 the area would be experiencing visually, getting a  
15 sense of the physical characteristics of a particular  
16 location, vis a vis, the proposed facilities that  
17 will be going there. So, that's the objective. In  
18 that -- usually we like to have the Applicant explain  
19 it, so that there's no confusion because that was  
20 another thing I noticed. On the last one I did,  
21 certain people had an expectation of what was going  
22 to be done, that was not consistent with the proposal  
23 for what was going to be done. So, it kind of helps  
24 to clarify where there are maybe misunderstandings  
25 and it just gives us a -- a reference point. You

16-F-0062 - Eight Point Wind - 3-11-19

2 know, because things can be experienced very  
3 differently depending on where you are or what the  
4 topography looks like, the number of trees and so we  
5 get a better sense for those things. But, as was  
6 already alluded to, it's not an opportunity for  
7 people to argue those points. Again, we're just  
8 trying to put those arguments or comments that have  
9 already been expressed, sort of in per --  
10 perspective, given the -- the -- the actual physical  
11 characteristics. Does that help?

12 MS. MEAGHER: Yes. Thank you.

13 A.L.J. PHILLIPS: Are there any other  
14 questions? Do we -- do -- do we know when we want to  
15 start?

16 A.L.J. MULLANY: I think we need --

17 A.L.J. PHILLIPS: I don't want to  
18 start before 9.

19 A.L.J. MULLANY: -- I think we -- I  
20 think we need to discuss that.

21 A.L.J. PHILLIPS: Do you want to go  
22 off the record?

23 A.L.J. MULLANY: Can we go off the  
24 record for a second?

25 (Off the record)

1 16-F-0062 - Eight Point Wind - 3-11-19

2 (On the record)

3 A.L.J. MULLANY: So, we are going to  
4 meet tomorrow at 9 a.m. outside the Saxon Inn and if  
5 nobody has any other questions or comments or  
6 concerns -- sir?

7 MR. BROWN: I just had one and that --  
8 how many representatives with CMRE allowed on this  
9 trip? I think we had discussed it earlier but I'm  
10 not sure I remember the answer.

11 A.L.J. MULLANY: I don't know that I  
12 had discussed that question previously.

13 MR. BROWN: Okay.

14 A.L.J. MULLANY: I can tell you --

15 MR. BROWN: I know I had volunteered,  
16 at one point but I wasn't sure if other people were  
17 on that list or not or if there even was a list.

18 MS. MEAGHER: I guess the question is,  
19 do you have a problem with the three Board members  
20 participating?

21 A.L.J. MULLANY: I have no problem  
22 with it. I'm -- I'm balancing 2 concerns, one that  
23 parties have a fair and -- fair and even and full  
24 opportunity to participate in this, balanced against  
25 the need to make sure it's not too cumbersome or

1 16-F-0062 - Eight Point Wind - 3-11-19

2 burdensome for all the other involved.

3 MS. MEAGHER: Correct.

4 A.L.J. MULLANY: I don't see a problem  
5 with 3 members of CMRE attending the site visit or  
6 participate in the site visit but I will -- I -- the  
7 other parties are -- their rights are potentially  
8 affected by this, so I'm going to put that question  
9 to the other parties. Does anyone have any  
10 objections or concerns if --

11 A.L.J. PHILLIPS: Can I just jump in  
12 before they respond, though. I guess my thinking  
13 was, if you are participating, you're providing your  
14 own transportation.

15 MS. MEAGHER: Yes.

16 MR. BROWN: Correct.

17 A.L.J. PHILLIPS: So, knowing that,  
18 does anyone want to respond to Judge Mullany's --

19 A.L.J. MULLANY: Yeah.

20 MR. LANIADO: For safety  
21 considerations, we think if you're coming as one  
22 group, if you can take one vehicle because we're  
23 going to be pulling off to the sides of roads.

24 MS. MEAGHER: We can do that, right?

25 MR. LANIADO: So, what -- so, the

1 16-F-0062 - Eight Point Wind - 3-11-19

2 Eight Point group will be in 1 vehicle.

3 A.L.J. MULLANY: Okay. Okay. And,  
4 I'm seeing folks in the room nodding their head in  
5 agreement to that proposal.

6 MS. MEAGHER: We can do that, yes?  
7 Yes, that's fine with CMRE. Thank you.

8 A.L.J. MULLANY: Okay. All right.  
9 Very good.

10 A.L.J. MCCLYMONDS: Can I bum a ride  
11 with you guys?

12 A.L.J. PHILLIPS: Yes. That's on the  
13 record.

14 A.L.J. MCCLYMONDS: Good.

15 A.L.J. MULLANY: Okay. Again, I want  
16 to thank everyone for your patience this afternoon.  
17 I appreciate your cooperation and help in getting  
18 through this. And, I know people have busy lives, so  
19 thanks for coming down to attend. Hearing nothing  
20 else, we are adjourned.

21  
22  
23  
24  
25

EXHIBIT 1

Case No. 16-F-0062

Wironen

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Alan M. Wironen, PE

TRC Engineers

249 Western Avenue

Augusta, ME 04330

1 **Q: Please state your name, employer, and business address.**

2 A: Alan M. Wironen PE, TRC Engineers (TRC), 249 Western Ave, Augusta, ME 04330

3 **Q: What is your position at TRC Engineers?**

4 A: Principal Civil Engineer.

5 **Q: How long have you been employed with TRC Engineers?**

6 A: I have employed at TRC since February 2007.

7 **Q: Please describe your educational background and professional experience.**

8 A: I have a BSCE degree from Lowell University and an MSCE from Georgia Tech. I am a  
9 retired Navy Civil Engineer Corps Officer. My experience includes construction  
10 management, contract administration, public works management, design engineering  
11 and consulting. Design engineering includes all aspects of design and construction  
12 management for roads, sewers, water systems, airports, aircraft fueling, substations,  
13 high voltage transmission, building repair and various other projects. In addition I have  
14 worked as a private contractor.

15 **Q: Please describe your current responsibilities with TRC Engineers.**

16 A: I am the lead engineer for multiple projects. This position requires me to coordinate the  
17 effort for other assigned engineers and designers, communicate with clients, perform  
18 design reviews, develop estimates and provide quality control for on-going design and  
19 consulting work.

20 **Q: Have you previously testified before the New York State Public Service  
21 Commission or Siting Board on Electric Generation?**

22 A: I provided testimony for the Champlain-Hudson Power Express Transmission system.

23 **Q: Have you previously served as an expert witness before any other court, agency,  
24 or other body on the subject you plan to offer testimony on today?**

25 A: Yes, for the Champlain-Hudson Power Express Transmission project and a similar  
26 project in Vermont.

27 **Q: What is the purpose and scope of your testimony in this proceeding?**

28 A: I am the Engineer of Record for the Civil Design included as part of the Article 10 permit  
29 submission.

30 **Q: What portion(s) of the Application is your testimony sponsoring?**

31 A: Primarily Exhibit 11, Preliminary Design Drawings.

32 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
33 **your direction and supervision?**

34 A: The drawings of Exhibit 11 were prepared under my supervision and direction.

35 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
36 **publications, data or documents produced by persons other than yourself/your**  
37 **company? If so, please cite these sources. [These are independent studies, etc.]**

38 A: My testimony relies upon information prepared by S. E Sargent (Substation,  
39 Transmission, and Collector System design); Survey data collected and topographic  
40 information supplied by Bergman; General Electric (Wind tower and wind tower  
41 foundations)

## **ALAN M. WIRONEN, PE**

### **EDUCATION**

M.S., Civil Engineering, Georgia Institute of Technology, 1988

B.S., Civil Engineering, University of Lowell, 1981

Transmission Engineering Certificate, Gonzaga University, (December 2012)

### **PROFESSIONAL REGISTRATIONS/CERTIFICATIONS**

Professional Engineer, Maine, (#8817), 2001

Professional Engineer, Massachusetts, (#33067 C), 1985

Professional Engineer, Connecticut, (#25655), 2004

Professional Engineer, New York, (# 090671)

### **AREAS OF EXPERTISE**

Mr. Alan M. Wironen, PE, has management and technical experience in the following general areas:

- Engineering Management
- Project Management and Project Scheduling
- Construction Management
- Preliminary & Conceptual Design
- Engineering Studies
- Construction Specifications
- Construction Cost Estimating
- Detailed Engineering Design
- Coating Inspection and Forensic Evaluation
- Tank and Piping Inspection
- Underground Electric Transmission Design

### **REPRESENTATIVE EXPERIENCE**

Mr. Wironen has over 37 years of experience and progressive responsibility in construction management and engineering consulting. His qualifications include extensive hands-on planning, field investigation and construction management, design, permitting, cost estimating, and project management. Mr. Wironen's background includes extensive service to public and private-sector clientele including the U.S. Department of Defense, Exxon-Mobil Oil Company, State of Maine, Public Service of New Hampshire, Northeast Utility Services Company, National Grid, New York Power Authority, and various small private and municipal clients. He currently serves in the capacity of Principal Civil Engineer in the Augusta, Maine office.

#### **New York Power Authority, 765 kV Transformer Replacement and Upgrades (Project Engineer 2011-2014)**

Mr. Wironen was the lead engineer for the project to replace the seven single phase 765 kV transformers. The work was accomplished in phases coordinated to permit the 765 kV yard to remain in operation during the transformer replacement

and facility upgrades. The project scope included the replacement of the existing transformers, transformer containment upgrades, foundation modifications, replacement of underground tertiary cable and conduit, replace protection and control cabling with a new system housed within a new underground cable trench. The protection and control system was designed to duplicate the current control sequence, using modern relays, fiber optics and controls, including new local control cabinets. All of the new system controls and cabling were designed to meet very demanding control system separation criteria.

**Confidential Client, DC Transmission Feasibility Study (Transmission Engineer 2010)**

Mr. Wironen provided technical support and cost estimating services for the project feasibility study. The project evaluated multiple routes and scenarios for construction of a 1000 MW High Voltage Direct Current transmission cable originating in Northern Maine and terminating in the metro-Boston area. The study included evaluation of marine routes, new transmission corridors, parallel to existing high pressure gas lines, along railroad right-of-way, and parallel to existing interstate highways. Key to the feasibility study was the project cost estimates which Mr. Wironen developed from commercial cost estimating databases and historical project information.

**Transmission Developers Inc. TDI, Champlain-Hudson Power Express (Transmission Engineer 2010-2013)**

This project conducted a feasibility study to construct a 1000 MW High Voltage Direct Current Transmission line from the U.S. Canadian border into New York City and southern Connecticut. The project was found to be feasible and has continued through preliminary design and is currently nearing completion of the permitting process. The current scope has been reduced to just the 330 miles of transmission system from Canada to New York City, including 101 miles through Lake Champlain, 134 miles of underground cable installation along railroad right-of-way, state roads and parklands, and 98 miles along the Hudson River.

Mr. Wironen's role during this process was to serve as technical consultant to the system developer, assist with preliminary design and permitting. Mr. Wironen has provided permitting narratives used in the permit applications, developed typical design exhibits and provided testimony in the permitting hearings.

Mr. Wironen developed various route alternatives, preliminary designs and associated cost estimates for alternative evaluation and selection. He also participated in Engineer-Procure-Construct (EPC) bid evaluations and developed an independent detailed cost estimate for the terrestrial portion of the project construction.

**Transmission Developers Inc. TDI, New England Clean Power/Champlain-VT Power Express (Transmission Engineer 2013-Present)**

This project conducted a feasibility study to construct a 1000 MW High Voltage Direct Current Transmission line from the U.S. Canadian border to various substations in South Central Vermont. The feasibility study eventually resulted in the current project scope; approximately 100 miles of transmission system within Lake Champlain and an additional 55 miles along local and state roads from Benson, VT to a HVDC - AC converter station located in Ludlow, VT. In Ludlow, a 345 kV underground transmission line will connect the converter station to the existing Coolidge Substation where the power will be available to all of southern New England via the existing transmission grid. The project is currently in the permitting phase. Mr. Wironen's is the technical consultant to the system developer during the system feasibility study, project siting, preliminary design, and permitting. Mr. Wironen has worked directly with the Vermont regulators and Vermont Transportation to develop the project route and associated details. Early, direct involvement by the regulators and Vermont Transportation has assured support of the project at the state level. He has also participated in public outreach meetings, met with local land owners and provided testimony in support of the project. Mr. Wironen and his team have developed all of the project permit drawings and associated details including those for the converter station site. He has also participated in the permitting process by assisting with environmental impact estimates, impact mitigation measures, exhibit review and various other tasks.

**Public Service of New Hampshire, White Mountain Projects-Manchester, NH (Project Manager 2007-2010)**

Upon joining TRC in January, Mr. Wironen was assigned as the Project Manager for the White Mountain Projects, a group of 5 large high voltage substation construction, repair, upgrades and modification projects. The project includes Protection and Control Relay upgrades at the Littleton and Whitefield, NH substations; separation of the distribution and transmission systems at the Beebe River Substation; Construction of a new substation at White Lake, NH; and modification of the Saco Valley substation to include additional capacitor banks and a 290 MVA phase shifting transformer.

**Enterprise Engineering Inc, Principal- Freeport Maine (Chief Engineer: 1997-2007)**

As the Principal-in-Charge of Enterprise Engineering's Freeport, Maine office, Mr. Wironen supervised a consulting engineering staff of 43 individuals including 12 engineers of various disciplines. Personally developed, reviewed, supervised, and acted on all management initiatives including budgeting, contributing to the office's annual business, marketing, and operations plans, reviewed contract terms and conditions, established standard billing rates and monitored business benchmarks. Other duties included establishing project management guidelines, review of engineering proposals, approval of negotiated agreements, management of the office safety program, and direct design of both mechanical and civil engineering projects.

**Naval Air Station, Resident Officer in Charge of Construction- Brunswick, ME (Contract Manager: 1988-1993)**

As the senior contract manager and Warranted Contracting Officer for the Brunswick, Naval Air Station, Mr. Wironen managed the contracts office and its 14 personnel. Responsibilities included budgeting, staffing, office workload planning and project assignments. Project responsibilities included project planning, contract negotiations, and management of an average of ten design contracts and \$30 million in construction contracts per year.

**Trust Territory of the Pacific Islands, Resident Officer in Charge of Construction- Colonia, Yap, Federated States of Micronesia (Contract Manager: 1984-1985)**

While on active duty, Mr. Wironen was assigned to manage and administer infrastructure construction contracts for the United Nation's Trust Territory Government and served as the US Government's local envoy. Specific work requirements included running the construction administration office and managing its six employees. Contract workload included more than \$24 million in construction including the new airport, roadways, sewer, water and electric systems. Personal responsibilities included performing material testing, evaluating proposed materials, reviewing submittals, and detailed design, estimating and negotiating changes, inspecting the construction and resolving conflicts.

**U. S. Navy, Naval Mobile Construction Battalion 74- Gulfport, MS (1981-1983)**

Mr. Wironen served as the Engineering Officer for the deployments to Puerto Rico and Okinawa. This position required management of the Battalion's material testing laboratory, its engineering and surveying staff. Following the Okinawa deployment was assigned as the Detachment Guantanamo Bay, Cuba Assistant Officer In Charge. This position required overseeing the technical and military training of the 89 assigned personnel, managing the construction projects and the detachment's construction equipment maintenance.

**NY Air National Guard, Aircraft Fueling Facility**

Construction Administrator on a government project at the International Airport in Niagara Falls, NY. The project included design and construction of the ready-issue fuel tanks, containment system, truck receipt and issue system, Philips Type II fuel hydrant system, fuel laboratory and de-icing fluid storage. The projects also included repairs to the existing bulk fuel storage system and a two-mile underground fuel transfer pipeline. Specific project responsibilities included coordination of construction inspection, submittal review, payment request approval, civil inspection, tank construction inspection, pipeline construction inspection, change order negotiation, and owner liaison.

**NAVFAC Southern Division, Repair Tanks and Dikes - South Carolina**

Construction Administrator for the construction of a drainage system and 4500 gpm oil/water separator to handle and treat storm water from a 50 acre government fuel

facility. The work included construction of shotcrete containment dike liners, cast-in-place containment floors and rebuilding of nine 150,000 Bbl bulk fuel storage tanks, including new foundations and under-floor liners.

#### **NAVFAC Southern Division, Replace Bulk Fuel Storage Facility – Mayport, FL**

Project Manager for the design and construction of a new bulk fuel storage facility to be built on the same site as the existing, while the existing facility remains in operation. The work included phased demolition of the existing seven cut-and-cover bulk fuel tanks, temporary piping for temporary operation of the facility during construction, four new 80,000 Bbl bulk above ground tanks and concrete containment dikes, refueler vehicle parking, one-half mile ship refueling pipeline, three mile perimeter road and related tasks.

#### **NAVFAC Southern Division, API 653 Tank Inspection – Jacksonville, FL**

Project Manager and API 653 inspector for API 653 in-service, and out-of-service inspection of eleven 188,000 Bbl bulk fuel storage tanks. The project included design of repairs to the out-of-service tanks so they could be placed back in service for 5 years, until replacement tanks could be constructed.

#### **Other Fuel System and Tank Projects**

- Repair Tanks 1-4 (DFSP Verona, New York): Construction contract administrator and inspector for tank repairs, new concrete ring wall foundations, oil-water separator, and dike modifications for the fuel farm facility.
- Repair Tanks, Dikes, & Dike Drain System (DFSP Searsport, Maine): Project Manager and Construction Administrator for the design and construction of a project that included: dike lining with 650,000 square feet of geosynthetic clay liner, jacking and repair of four storage tanks, secondary containment, environmental permitting, a direct-buried 2,500 GPM oil/water separator, site drainage improvements, design of fire suppression system modifications and related work.
- Replace Fuel Tankage (DFM, FISC Jacksonville, Florida): Construction Administrator for a MILCON facility replacement to receive, store and issue marine diesel (DFM) at FISC Jacksonville. The design provided three new aboveground storage tanks, new secondary containments, and a new pump house as well as a co-located truck loading and receiving station. The design also maintained the existing system in full operation, while construction of the new facility was ongoing.
- Inspect Storage Tanks (Various Locations, ExxonMobil, Motiva Enterprises LLC, Irving Oil, Gulf Oil, J M Huber, Webber Energy, Kahler Oil): Participant and/or lead inspector for API 653 tank inspections, tank evaluations, and report preparation. Various locations in Eastern United States, 1998 – 2007.
- Repair POL Facilities (DFSP Tampa, Florida): Project Manager for the design and construction administration of the complete re-build of three 188,000 bulk fuel tanks, including foundation construction, a dike lining system, a drainage system, and an oil/water separator for the seven-acre

fuel facility. The project included the design of a 750,000 square foot geomembrane liner system, a 2,000-foot drainage system, and twin 1,250 GPM precast concrete aboveground oil/water separators. The work also included design of a new pump facility, pipeline repairs, new ready-issue filtration system, truck rack and related controls.

- Jet Fuel Off-Load Facility (Barksdale AFB, Louisiana): Construction Administrator and inspector for the construction of a five acre JP-8 petroleum logistics facility to support jet fuel receipt requirements at Barksdale Air Force Base (AFB), Louisiana. The design provided the capability to receive 100% of the Base's daily jet fuel requirement by tank truck, operating storage for receipt/issue of JP-8, aircraft refueler fillstands, and connection into the existing petroleum logistics infrastructure. Ancillary facilities include a system pumphouse, operations facility, secondary containment systems, and a 2,000 GPM oil/water separator capable of treating contained stormwater during the sites "first flush."

Case No. 16-F-0062

Doyle

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Benjamin M. Doyle

Capitol Airspace Group

5400 Shawnee Road, Suite 304

Alexandria, VA 22312

1 **Q: Please state your name, employer, and business address.**

2 A: Benjamin M. Doyle

3 Capitol Airspace Group

4 5400 Shawnee Road Suite 304

5 Alexandria, Virginia 22312

6 **Q: What is your position at Capitol Airspace Group?**

7 A: President and Owner.

8 **Q: How long have you been employed with Capitol Airspace Group?**

9 A: I established the company in March, 2010.

10 **Q: Please describe your educational background and professional experience.**

11 I hold an Associate's Degree in History from Cochise College, Sierra Vista, Arizona. I am  
12 a graduate of the US Army Air Traffic Control Specialist Course and held a Control Tower  
13 Operator Certificate. As an air traffic controller, I was responsible for providing air traffic  
14 control services to VFR and IFR flight operations in controlled airspace. As a shift  
15 supervisor, I was responsible for all air traffic control tower operations and the training of  
16 developmental controllers on my shift. As a training supervisor, I was responsible for initial  
17 and recurring training for all air traffic control tower personnel. As tower chief, I was  
18 responsible for all aspects of air traffic control associated with the tower. This included  
19 coordination with airfield management and the establishment and maintenance of air  
20 traffic procedures. I held ratings and positions at Libby Army Airfield, Ft. Huachuca, AZ,  
21 Wiesbaden Air Base, Wiesbaden, Germany and Camp Colt, Bosnia-Herzegovina.

22

23 Over the last 18 years I have worked in Obstacle Evaluation and Terminal Instrument  
24 Procedures (TERPS). In that time, I have been responsible for the development of  
25 obstacle evaluation studies conducted for companies in the energy, communications and

26 real estate industries. I developed a set of processes through which I could predict FAA  
27 decision making in airspace cases. This led to the creation of Capitol Airspace Group,  
28 LLC. Capitol Airspace and its staff provide Obstacle Evaluation studies and advocacy to  
29 hundreds of clients on thousands of projects.

30 **Q: Please describe your current responsibilities with Capitol Airspace Group.**

31 As President and Owner, I have direct responsibility for the overall management of Capitol  
32 Airspace Group. I manage a group of technicians and project managers that provide  
33 technical and advocacy services to our clients.

34 **Q: Have you previously testified before the New York State Public Service Commission**  
35 **or Siting Board on Electric Generation?**

36 A: No.

37 **Q: Have you previously served as an expert witness before any other court, agency,**  
38 **or other body on the subject you plan to offer testimony on today?**

39 A: Yes, I have provided testimony in front of the Oregon Energy Commission regarding the  
40 impact of a proposed wind farm in relation to military training flight routes. I have also  
41 provided expert testimony at an administrative hearing convened by the Ohio Department  
42 of Transportation regarding the impact of a wind energy facility on airport air traffic  
43 operations. Lastly, I provided expert testimony regarding federal safety standards  
44 associated with tall structures for a litigation case in Louisiana.

45 **Q: What is the purpose and scope of your testimony in this proceeding?**

46 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
47 or the Exhibits thereto.

48 **Q: What portion(s) of the Application is your testimony sponsoring?**

49 A: Exhibit 25 and Exhibit 26.

50 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
51 **direction and supervision?**

52 A: Yes, they were prepared by my staff and under my supervision.

53 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
54 **publications, data or documents produced by persons other than yourself/your**  
55 **company? If so, please cite these sources. [These are independent studies, etc.]**

56 A: I may site regulatory guidelines established by the Federal Aviation Administration and  
57 the United States Congress. These may include excerpts from United States Code, Code  
58 of Federal Regulations, FAA Orders, Handbooks and Advisory Circulars.

**Benjamin M. Doyle**  
**President**  
**Capitol Airspace Group**

**Capabilities Summary**

Twenty-three years of Aviation Experience includes eighteen years of airspace analysis focused on obstruction analysis and terminal instrument procedures. Five years experience supervising and conducting aircraft operations in fixed and tactical military air traffic control facilities in the United States, Germany and Bosnia-Herzegovina. Experience includes tower operations as an active tower controller, training supervisor and Tower Chief at the Wiesbaden Army Airfield Air Traffic Control Tower. Certified as FAA Control Tower Operator (certificate last awarded in 1997).

**Experience**

***2010 to Present***

***President and Owner, Capitol Airspace Group***

Responsible for the overall management of Capitol Airspace Group, an aviation consulting firm focused on providing airspace, obstacle evaluation and instrument procedures design services to airports and private companies.

***2009 to 2010***

***Vice President, Airspace and Obstacle Evaluation***

Responsible for JDA Aviation's Airspace and Obstacle Evaluation line of business. Responsibilities included the management of all client projects, technical analysis and airspace mitigation development. Duties included the overall business and fiscal management of the Airspace and Obstacle Evaluation line of business, supporting staff and contractors.

***1999 to 2009, Aviation Management Associates, Inc., Alexandria, VA***

***Director, Airspace Analysis***

Responsible for supervising the completion of airspace obstruction studies for client developers, attorneys and architects. Responsibilities include managing all technical and programmatic aspects of Aviation Management's airspace business. These duties require an in-depth knowledge of and experience in air traffic control procedures and air traffic and airspace management.

***Airspace***

In accordance with Federal Aviation Regulations, provide extensive obstruction analysis of proposed construction throughout the United States. Based on analyses, advise clients on federal filing requirements and file proposed structures which are deemed "obstructions to navigable airspace". Conduct analyses using a host of FAA databases and proprietary airspace models. Responsible for representing client interests during airspace negotiations and appeals with FAA, state and local aviation authorities.

***Airspace Models***

Responsible for the development and maintenance of all airspace models and tools to support obstacle evaluation and procedure design.

***1996 to 1999, 3-58<sup>th</sup> Aviation Battalion (ATS), U.S. Army, Wiesbaden, Germany***

***Tower Chief***

Responsible for supervising facility operations to ensure compliance with military and FAA rules and regulations. Responsibilities included supervision of shift supervisors and subordinate controllers while ensuring that all controllers remained at a safe and proficient operational level. Additional responsibilities included setting and enforcing policy dealing with air traffic control operations specific to the airfield and coordinating with associated facilities for standard and non-standard operations.

***Training Supervisor***

Responsible for planning, scheduling, directing, and supervising facility training for all assigned ATC personnel. Responsibilities included developing local course material, training aids and control scenarios to supplement U.S. Army and FAA training programs. Supervised and conducted classroom and self-study training while ensuring trainee position qualification and recommending trainees for facility rating.

***Air Traffic Controller***

Provided terminal air traffic control services for U.S., German and military operations. Provided IFR, SVFR and VFR control for local and international, fixed and rotary wing flights in class D airspace. Coordinated with Frankfurt approach Control for IFR arrivals, departures and over-flights. Deployed as Air Traffic Controller during operations in Bosnia-Herzegovina.

***1994 to 1996, 304<sup>th</sup> Military Intelligence Battalion, U.S. Army, Fort Huachuca, AZ***

***Air Traffic Controller***

Provided terminal air traffic control services at Libby Army Airfield in support of U.S. Army, Air Force, commercial air carrier and general aviation aircraft. Controlled Air Force and Army pilot training flights consisting of precision and non-precision approaches as well as closed traffic on crossed runways. Controlled a mixture of manned and unmanned aircraft within Class D and Class E airspace. Provided IFR, SVFR and VFR control of local and transient aircraft.

**Education**

Associates Degree, History, Cochise College, Sierra Vista, AZ, 1996

Air Traffic Control Course, U.S. Army Air Traffic Control School, Fort Rucker, AL, 1994

Air load Planning Course, U.S. Air Force, Munich, Germany, 1997

Primary Leadership Development Course, Non-Commissioned Officer Academy, Grafenwoehr, Germany, 1997

Case No. 16-F-0062

Schwabenbauer

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Brian J. Schwabenbauer

TRC Environmental Corporation

225 Greenfield Parkway, Suite 115

Liverpool, NY 13088

1 **Q: Please state your name, employer, and business address.**

2 A: Brian J. Schwabenbauer, TRC Environmental Corporation (TRC), 225 Greenfield  
3 Parkway, Suite 115, Liverpool, NY 13088.

4 **Q: What is your position at TRC?**

5 A: I am the Permitting Program Manager and a Senior Project Manager.

6 **Q: How long have you been employed with TRC?**

7 A: I have been employed with TRC since 2015.

8 **Q: Please describe your educational background and professional experience.**

9 A: I hold a Masters of Professional Studies with a focus in Environmental Policy from the  
10 State University of New York College of Environmental Science and Forestry (SUNY  
11 ESF), and a Bachelor of Arts in Environmental Studies from Hobart College. I have  
12 served as a Project Manager or technical resource specialist for dozens of energy  
13 infrastructure and renewable energy projects, as well as other development projects. In  
14 addition to this, my professional expertise includes environmental compliance monitoring  
15 during construction, ecological survey, wetland delineation, wetland permitting, wetland  
16 mitigation design and monitoring, environmental impact avoidance and minimization  
17 during the siting of project components, global positioning system (GPS) survey and  
18 mapping, and geographic information system (GIS) data analysis. Additional information  
19 on my experience is presented in my curriculum vitae, a copy of which is attached.

20 **Q: Please describe your current responsibilities with TRC.**

21 A: As the Permitting Program Manager and a Senior Project Manager, I am responsible for  
22 overseeing TRC's environmental permitting and compliance projects being worked on by  
23 staff in multiple offices across New York State. My responsibilities include staffing, staff  
24 development, quality control, project management, and providing technical expertise on  
25 complex energy projects.

26 **Q: Have you previously testified before the New York State Public Service**  
27 **Commission or Siting Board on Electric Generation?**

28 A: No.

29 **Q: Have you previously served as an expert witness before any other court, agency,**  
30 **or other body on the subject you plan to offer testimony on today?**

31 A: I have provided expert witness testimony before several municipal Planning Boards,  
32 Town Boards, and Zoning Boards of Appeal in New York State regarding multiple energy  
33 projects, with a focus on environmental impact assessment, impact avoidance, and  
34 impact minimization.

35 **Q: What is the purpose and scope of your testimony in this proceeding?**

36 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
37 or the Exhibits thereto.

38 **Q: What portion(s) of the Application is your testimony sponsoring?**

39 A: Exhibit 2, Overview and Public Involvement; Exhibit 3, Location of Facilities; Exhibit 6,  
40 Wind Power Facilities; Exhibit 9, Alternatives; Exhibit 10, Consistency with Energy  
41 Planning; Exhibit 13, Real Property; Exhibit 14, Cost of Facilities; Exhibit 18, Safety and  
42 Security; Exhibit 22, Terrestrial Ecology and Wetlands (primarily wetland and streams);  
43 Exhibit 23, Water Resources and Aquatic Ecology; Exhibit 28, Environmental Justice;  
44 Exhibit 31, Local Laws and Ordinances; Exhibit 32, State Laws and Regulation.

45 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
46 **your direction and supervision?**

47 A: Yes.

48 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
49 **publications, data or documents produced by persons other than yourself/your**  
50 **company? If so, please cite these sources. [These are independent studies, etc.]**

51 A: See Exhibits listed above for references.

52    **Q:**     **Does this conclude your testimony?**

53    **A:**     Yes.

## **BRIAN J. SCHWABENBAUER**

### **EDUCATION**

M.P.S., Environmental Policy, State University of New York College of Environmental Science and Forestry, *Magna Cum Laude*, 2009

B.A., Environmental Studies, Hobart College, 2001

### **PROFESSIONAL REGISTRATIONS/CERTIFICATIONS**

2015: 40-Hour OSHA Hazardous Waste Operations Training (29 CFR 1910.120)

2015: National Safety Council CPR and First Aid Courses

2013: NYSDEC Qualified Erosion and Sediment Control/SWPPP Inspector

2007: ASTM Phase I Environmental Site Assessment

2006: IWEER Certified in Wetland Delineation

### **AREAS OF EXPERTISE**

Mr. Brian Schwabenbauer has project management and technical experience in the following general areas:

- Project Management
- Environmental Permitting / Regulations (Federal, State, and Local)
- Environmental Inspection and Compliance During Construction
- Agency Consultations
- Ecological Risk Assessments
- Wetland Delineation, Permitting and Mitigation
- Environmental Impact Avoidance and Minimization
- Environmental Impact Statements
- Geographic Information Systems (GIS)
- Erosion and Sediment Control
- Stormwater Inspections

### **REPRESENTATIVE EXPERIENCE**

Brian Schwabenbauer is a Permitting Program Manager for TRC's New York offices and a Senior Project Manager with 15 years of experience in environmental consulting. His professional expertise includes project management, environmental compliance monitoring during construction, ecological survey, wetland delineation, wetland permitting, wetland mitigation design and monitoring, environmental impact avoidance and minimization during the siting of project components, global positioning system survey and mapping, and geographic information system data analysis. He is a New York State Qualified Inspector for erosion and sediment control and an IWEER Certified Wetland Delineator.

### **NextEra Energy Resources, Eight Point Wind Energy Center – Steuben County, NY (2015 - Present)**

TRC is providing Article 10 support services for a 101.8MW Wind Energy Project in Southwestern NY. Mr. Schwabenbauer is serving as a Senior Technical Specialist for this effort and is in charge of assisting the Project Manager, agency consultations, permitting strategy and support study oversight. TRC's scope includes preparation of the PIP, PSS and Article 10 Application as well as other federal permitting requirements and support studies.

**Calpine, Multiple Projects in New York State, Local Permitting Support (2015 – Present)**

TRC is providing local permitting support on multiple wind energy projects in New York for the installation of meteorological (met) towers. Approval for the met tower projects has been achieved through the State Environmental Quality Review Act (SEQRA). Mr. Schwabenbauer is overseeing completion of the applicable permit application (as dictated by the town and county regulations), attending local meetings/hearings, and conducting site visits/associated studies.

**Confidential Client, ~150 projects (350+ MW) in New York, State Environmental Quality Review Act and Environmental Due Diligence (2015 – Present)**

Oversaw preparation of State Environmental Quality Review Act (SEQRA) Full Environmental Assessment Form (FEAF) and supplemental information attachments to address SEQRA and concerns of town, county and state agencies as part of the siting, permitting and development of proposed solar projects (mostly 2-3 MW). Performed early environmental due diligence of project site to evaluate potential permitting concerns and required approvals.

**SolarCity, Multiple Projects, Local Permitting Review (2015 – Present)**

Evaluated local, state and county regulations for the development of multiple solar sites throughout New York State. Review included coordination with multiple local, state and county offices and evaluation of codes and regulations pertaining to solar development, as well as desktop review of mapped natural and historic resources.

**SolarCity, Multiple Projects, Wetland Delineation Reporting (2015 – Present)**

Coordinated field teams for completion of wetland delineations on multiple potential solar development sites throughout New York State. Oversaw completion of wetland delineation reports according to the US Army Corps of Engineers (USACE) the Northcentral and Northeast Regional Supplement to the Wetland Delineation Manual (2012) for use in permitting.

**New York Power Authority, SMART Path Moses-Adirondack – St. Lawrence and Lewis Counties, NY (Sr. Environmental Scientist: 2015)**

Mr. Schwabenbauer served as the Field Manager for the ecological surveys and wetland/stream delineations for this Project associated with permitting and planning for the replacement of transmission poles along an 85-mile corridor, from the St. Lawrence-FDR hydroelectric plant to a substation in Croghan, NY. The ecological surveys conducted will ultimately support a wetland application pursuant to Article VII and Section 68 of the Public Service Law.

**Competitive Power Ventures (CPV), CPV Fairview Energy Center – Cambria County, PA (Sr. Environmental Scientist: 2014 – 2015)**

Mr. Schwabenbauer led the ecological review and assisted with the environmental permitting for the construction of a natural gas fired power plant located in Jackson Township, PA. The project comprises two natural gas-fired combustion turbine electric generators to generate approximately 1,000 MW of power. Environmental studies conducted to support federal, state and local permitting included wetland and stream delineations, cultural resource investigations, sound analysis and modelling and geo-technical investigations for Project generation site and the lateral lines needed for natural gas and cooling water supply.

**EnSite USA, Vector Pipeline Expansion Project – Oakland, Macomb and St. Clair Counties, MI (Sr.**

**Environmental Scientist: 2014 – 2015)**

Conducted the ecological reviews for federal, state and local permitting of a proposed 48 mile expansion of the existing Vector Pipeline including compressor station expansion. Responsibilities included conducting the wetland and stream delineations for the entirety of the proposed route during project development and contributing to the initial preparation of a FERC Application for Certificate of Public Convenience and Necessity.

**National Fuel Gas, Dunkirk Natural Gas Transmission Line – Chautauqua County, NY (Sr. Environmental Scientist: 2014 – 2015)**

Mr. Schwabenbauer assisted in the preparation of an application pursuant to Article VII and Section 68 of the Public Service Law, for a 9.7-mile natural gas transmission line. Primary responsibility was leading multiple site walkovers/reviews with New York State Department of Public Service (NYS DPS) and Agriculture & markets (NYSDAM) staff and coordinating the on-site ecological, wetland/stream, and land use studies. Contributed to the completion of the Environmental Management and Construction Standards and Practices, Agricultural Management Plan, Invasive Species Control Plan, and all federal wetland and stream permitting pursuant to Section 404 of the Clean Water Act.

**National Fuel Gas Supply Company, RM32, C45, and C49 Pipeline Replacement Projects – Erie County, NY (Sr. Environmental Scientist: 2014 – 2015)**

Oversaw the environmental compliance monitoring during construction for three natural gas transmission line replacement projects. Coordinated resolution of SWPPP compliance issues with Construction Site Manager and contractors, and assured compliance with local, state, and federal permits. Prior to the start of construction, provided compliance training to project contractors.

**National Grid, 115kV Maintenance and Rebuild Projects – Multiple Counties, NY (Manager, Environmental Inspection: 2011 – 2013)**

Managed role as the Environmental Compliance Monitor for all phases of four separate major electric transmission line maintenance/re-build projects in Jefferson, Onondaga, Oswego, Essex, and Washington Counties, New York. Primary responsibility was to assure SWPPP compliance and also monitoring compliance with various environmental protection commitments, including wetland and stream crossings. Prior to the start of construction, provided compliance training to project contractors. During permitting efforts coordinated wetland/stream delineations on over 100 miles of existing right-of-way and assisted with surveys of ecological resources and land use within transmission line easement/right-of-way corridors to support preparation and submittal of Part 102 Reports to the NYS DPS. Assisted with preparation of the Part 102 Reports and associated permit applications submitted to federal, state, and local regulatory agencies.

**St. Lawrence Gas Company, Norfolk to Chateaugay Natural Gas Transmission – Franklin & St. Lawrence Counties, NY (Project Manager: 2011 – 2014)**

Served as the project manager of a 48-mile natural gas transmission line and 50-miles of gas distribution, and oversaw the project's environmental compliance monitoring during construction. Coordinated resolution of SWPPP compliance issues with Construction Site Manager and contractors, and assured compliance with local, state, and federal permits. Managed internal staff working on the project and conducted billing reviews/budget administration. Assisted with preparation of Article VII application submitted to the New York State Department of Public Service (NYS DPS).

**OWNEnergy, Copenhagen Wind Farm – Lewis and Jefferson Counties, NY (Project Manager: 2012 – 2013)**

Project manager for the agency coordination, sub-consultant coordination, site planning, environmental impact analysis, and State Environmental Quality Review Act (SEQRA) compliance for a proposed forty-nine turbine, ~ 80 MW electric generating facility in Lewis and Jefferson Counties, NY. Managed and conducted the on-site ecological investigations, wetland delineations, and layout of various project components (including turbines, substations, laydown yards, and a 9-mile transmission line) for this proposed project located in the Towns of Denmark, Champion and Rutland, New York.

**Iberdrola Renewables, Hoosac Wind Power Project – Towns of Florida and Monroe, MA (Manager, Environmental Compliance: 2012 – 2013)**

Managed role as the environmental/construction compliance monitor for a 19-turbine commercial-scale wind power project in the Towns of Florida and Monroe, Massachusetts. Prepared the Environmental Compliance Manual and provided compliance training to the project contractors. Assisted the project owner (client) in the interpretation of (and adherence to) numerous permit conditions (local, state, and federal). Conducted site reviews with agencies with jurisdiction over the site. Managed internal staff working on the project and conduct billing reviews/budget administration. This project began commercial operation in early 2013, and continued involvement following construction included restoration and SWPPP compliance monitoring/reporting.

**Iberdrola Renewables, Hardscrabble Wind Farm – Herkimer County, NY (Environmental Scientist, Permitting: 2005 – 2010)**

Assisted in SEQRA review for this 37-turbine, 74 MW project, located in the Towns of Fairfield, Norway, and Little Falls, Herkimer County, NY. Helped prepare a Draft, Supplemental, and Final EIS, and worked closely with the Lead Agency's Special Counsel and consultant through the preparation of SEQRA Findings and local Special Use Permits. Also obtained regulatory authorization from the Corps of Engineers and NYSDEC, designed the compensatory wetland mitigation area, obtained permit amendments necessitated by construction-driven project changes.

**Iberdrola Renewables, Hardscrabble Wind Farm – Herkimer County, NY (Manager, Environmental Compliance: 2010 – 2012)**

Lead on-site environmental monitor for the construction of a 37-turbine commercial wind power project in the Towns of Fairfield, Norway, and Little Falls, New York. Prepared an Environmental Compliance Manual and provided compliance training to the project contractors. Helped client maintain compliance with environmental, agricultural, and archeological protection commitments and environmental permit conditions (including federal, state, and local permits and approvals).

**Vermont Electric Power Company (VELCO), Cell Tower Collocations – Multiple Sites In Vermont (Environmental Scientist: 2009)**

Served as the primary individual responsible for the completion of NEPA reviews and Phase I ESA's for the collocation of VELCO communications equipment on existing cell towers (13) throughout the state of Vermont. Conducted field investigations and prepared necessary reports.

**Airtricity, Munnsville Wind Farm – Madison County, NY (Environmental Monitor: 2007)**

Primary environmental and agricultural monitor during the construction of a 24-turbine project, located in Madison County, NY. Efforts included monitoring and reporting on compliance with wetland/stream

avoidance, erosion and sediment control, and agricultural land impact minimization measures. Conducted site visits with agency representatives, and provided consultation/training to contractors aimed toward maintaining compliance with federal, state, and local permit conditions.

**Everpower Wind Holdings, Buckeye Wind Farm – Champaign County, NY (Sr. Environmental Scientist: 2011)**

Assisted the developer in layout of components (including turbines, access roads, electrical interconnect, substations, and laydown yards) for this project in Champaign County, Ohio so as to avoid and minimize impacts to wetland/stream communities, forestland, and agricultural land. Also assisted with production and submittal of the certification application to the Ohio Power Siting Board. In accordance with the Ohio Administrative Code, the certification application addressed potential project-related impacts to ecological resources, soils and geology, groundwater, air quality, aesthetics, agricultural land use, cultural resources, and socioeconomics.

**Everpower Wind Holdings, Howard Wind Farm – Steuben County, NY (Sr. Environmental Scientist: 2009 – 2011)**

Conducted SEQRA review for this 25-turbine, 62 MW project, located in the Town of Howard, NY. Prepared a Draft and Final EIS, and worked closely with the Lead Agency (SCIDA) Special Counsel and consultant throughout the SEQRA review process. Also obtained NYSDEC authorization under Section 401 of the Clean Water Act, and Corps authorization under Section 404 of the Clean Water Act.

**Black Oak Wind Farm, LLC, Black Oak Wind Farm – Tompkins County, NY (Sr. Environmental Scientist: 2011 – 2013)**

Assisted Project Manager with the agency coordination, sub-consultant coordination, site planning, environmental impact analysis, and SEQRA compliance for a proposed seven turbine, ~ 14 MW electric generating facility in Tompkins County. Managed and conducted the on-site ecological investigations, wetland delineations, and layout of various project components (including turbines, substation, laydown yard, and buried electrical interconnect). Assisted with production of a DEIS and FEIS. Fieldwork included wetland delineations and an ecological assessment, and transportation assessment.

**Iberdrola Renewables, Roaring Brook Wind Power Project – Lewis County, NY (Environmental Analyst: 2007 – 2009)**

Conducted the wetland delineation and prepared the wetland report for a 39 turbine, 78 MW project. Assisted the developer in layout of components (including turbines, access roads, electrical interconnect, substation, and laydown yards) to avoid impacts to wetland/stream communities, forestland, and agricultural land. Assisted in successfully navigating the Project through the SEQRA review process with DEIS and FEIS submittals.

**Horizon Wind Energy, Dairy Hills Wind Farm – Wyoming County, NY (Environmental Analyst: 2006 – 2008)**

Conducted the wetland delineation and wetland report preparation for a 60-turbine, 120 MW project in the Towns of Perry, Warsaw and Covington Wyoming County, New York. Assisted in successfully navigating the Dairy Hills Wind Project through the SEQRA review process with a DEIS and FEIS submittals.

**PG&E National Energy Group, Athens Generation Project – Greene County, NY (Environmental Scientist: 2005)**

Conducted the ecological review and post-construction monitoring for a 1,080 MW natural gas-fired power plant proposed by PG&E National Energy Group. Assisted with field data collection, agency liaison, and preparation of a wetland delineation report and functional analysis. Project was the first permitted under New York's Article X power plant siting regulations.

**SPECIALIZED TRAINING**

- 2014: Federal Energy Regulatory Commission (FERC) Environmental Review and Compliance for Natural Gas Facilities
- 2014: USFWS Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act Training
- 2014: Southern Gas Association (SGA) Environmental Compliance During Pipeline Construction

**PROFESSIONAL AFFILIATIONS**

- Society of Wetland Scientists
- New York State Wetlands Forum

**SELECTED PUBLICATIONS AND PRESENTATIONS**

- NYS Wetlands Forum, March 2012 - *An Overview of the Relationship Between Permit Commitments and Construction Realities.*
- SUNY ESF, Renewable Energy class (undergraduate and graduate levels), March 2009 – 2015. *Modern Wind Industry and Associated Permitting Requirements.*
- SUNY ESF, Natural Resources Policy class (undergraduate and graduate levels), April 2016. *Environmental Consulting and Example Projects.*
- SUNY ESF, Environmental Law class (undergraduate and graduate levels), April 2016. *State Environmental Quality Review Act (SEQRA) and Example Projects.*

Case No. 16-F-0062

Nunalee

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Christopher Nunalee

WindLogics

700 Universe Blvd.

Juno Beach, FL 33408

1 **Q: Please state your name, employer, and business address.**

2 A: Christopher Nunalee

3 WindLogics

4 700 Universe Blvd

5 Juno Beach, FL 33408

6 **Q: What is your position at WindLogics?**

7 A: Wind Energy Resource Assessment Supervisor.

8 **Q: How long have you been employed with WindLogics?**

9 A: I have been employed since January 2015.

10 **Q: Please describe your educational background and professional experience.**

11 A: I received a Bachelor's of Science degree in Meteorology and a Doctor of Philosophy  
12 degree in Atmospheric Science both from North Carolina State University in Raleigh,  
13 NC. My research has been published in seven peer-reviewed journals and I have  
14 presented at dozens of professional conferences in the fields of wind flow modeling,  
15 wind energy, and turbulence. I have served as a fellow at the National Center for  
16 Atmospheric Research in Boulder Colorado where I studied atmospheric dispersion in  
17 areas of complex terrain. I have also worked with multiple consulting firms (e.g., MESO  
18 Inc and WindSim AS) on various renewable energy and numerical modeling projects.  
19 Since joining WindLogics, I have worked as a Senior Wind Resource Modeling Analyst  
20 and in my current role as Supervisor of Wind Energy Resource Assessment.

21 **Q: Please describe your current responsibilities with WindLogics.**

22 A: Currently I supervise at team of wind energy resource analysts in the energy  
23 assessment and layout design of wind farms across North America. My team supports  
24 all of NextEra Energy Resources in the end-to-end development of wind energy projects  
25 in the following capacities: wind farm site prospecting, design of measurement  
26 campaigns, analysis of on-site meteorological data, wind resource numerical modeling,

27 wind turbine technology selection, wind farm layout design, long-term energy  
28 assessment, investment-grade risk assessment, site suitability, setback assessment,  
29 and project financing support.

30 **Q: Have you previously testified before the New York State Public Service**  
31 **Commission or Siting Board on Electric Generation?**

32 A: No.

33 **Q: Have you previously served as an expert witness before any other court, agency,**  
34 **or other body on the subject you plan to offer testimony on today?**

35 A: No.

36 **Q: What is the purpose and scope of your testimony in this proceeding?**

37 A: To Sponsor certain portions of the Eight Point Wind Project Article 10 Application or the  
38 Exhibits thereto.

39 **Q: What portion(s) of the Application is your testimony sponsoring?**

40 A: Exhibit 6.

41 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
42 **your direction and supervision?**

43 A: Yes.

44 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
45 **publications, data or documents produced by persons other than yourself/your**  
46 **company? If so, please cite these sources. [These are independent studies, etc.]**

47 A: References are provided in corresponding Exhibits.

## Education

North Carolina State University, Raleigh, NC, U.S.A.

Doctor of Philosophy, **Atmospheric Science**

2015

Dissertation: *A Dynamical Characterization of Atmospheric von Kármán Vortex Streets Induced by Bluff Topography*

North Carolina State University, Raleigh, NC, U.S.A.

Bachelor of Science, **Meteorology**, magna cum laude

2011

## Experience

**WindLogics, NextEra Energy Inc. – Juno Beach, FL**

**Wind Energy Resource Assessment Supervisor**

Sept 2016 – Current

- Supervised a team of 11 analysts in the energy assessment and wind farm layout design of approximately 1 - 2 GW of installed wind energy plants per year across North America
- Supported the risk assessment and investment approval of entire NextEra Energy Resource wind portfolio as it pertains to energy production including greenfield development wind sites, repower opportunities, and acquisition opportunities
- Supported the end-to-end development cycle of new wind projects included RFP responses, permitting, and project financing

**WindLogics, NextEra Energy Inc. – Juno Beach, FL**

**Senior Resource Modeling Analyst**

Jan 2015 – Sept 2016

- Prepared wind resource assessment (WRA) reports and presentations for internal and external project stakeholders and in support of management investment review
- Designed optimal wind farm layouts to support various phases of project development
- Performed technical reviews of team deliverables to ensure quality control standards were met
- Independently designed and implemented novel processes to meet unique, time-sensitive customer requests and disseminated processes to peers
- Led a cross-functional project team to achieve a ~60% time savings in standard WRA cycle time

**North Carolina State University – Raleigh, NC**

**Doctoral Research Assistant – Boundary Layer Meteorology**

May 2011 – Dec 2014

- Conducted independent and collaborative technical research with a focus on numerical weather prediction, turbulence modeling, and computer programming (serial and parallel)
- Delivered professional presentations at domestic and international conferences (e.g., AMS, AWEA, EWEA, SPIE) and published multiple peer-reviewed publications
- Taught classes at the undergraduate and graduate level

**WindSim AS – Tønsberg, Norway**

**Intern – CFD Model Development Office**

May - August 2013

- Developed a streamlined methodology for creating synthetic wind climatology data using MERRA data and WindSim CFD software (currently offered as a consulting service)
- Validated and debugged a new wind park layout optimization module against a geographically diverse suite of existing turbine layouts
- Served as mesoscale modeling expert for RFP responses

**National Center for Atmospheric Research – Boulder, CO**

**Graduate Student Research Fellow – Research Applications Laboratory** May 2012 – Dec. 2013

- Simulated neutrally and stably stratified turbulent boundary layers over complex terrain using WRF-LES and validated results against observational data

- Assisted in debugging and implementing a new surface layer physics Fortran module for WRF
- Identified, documented, and corrected model instabilities induced by steep terrain

### **MESO Inc. – Atmospheric Research & Modeling – Raleigh, NC**

#### **Meteorological Contractor**

May – November 2010

- Identified/validated publicly available solar/wind data archives for energy resource assessment
- Analyzed multiple meteorological events and composed technical reports for management

### Teaching Experience

- MEA 582 Wind Power Meteorology (Invited Lecturer) (01/2014 – 01/2014)
- MEA 213 Introduction to Atmospheric Science I (Lab Instructor) (08/2011 – 12/2011)
- MEA 135 Weather & Climate (Undergraduate Tutor) (01/2011 – 05/2011)

### Technical Background

Operating Systems: Microsoft Windows, Unix/Linux  
 Scripting Languages: Fortran-95, HTML, IDV, Java, Matlab, NCL, R, UNIX shell-scripting  
 Software: ArcGIS, MS Office, OpenWind, WAsP, Windographer, WindSim, WRF  
 Familiar Major Datasets: CFSR, ERA-Interim, MADIS, MERRA, MODIS, NARR

### Leadership and Involvement

- **Peer Reviewer**  
Quarterly Journal of the Royal Meteorological Society
- **Member of IEC-61400-16 Mirror Committee**  
Wind Resource Assessment Standardization
- **Six Sigma Yellow Belt**  
NextEra Energy Inc. Corporate Operational Excellence
- **1<sup>st</sup> Annual Recipient of the Warner Internship for Scientific Enrichment**  
National Center for Atmospheric Research – Advanced Study Program

### Selected Publications

- He, P., Nunalee, C. G., Basu, S., Minet, J., Vorontsov, M. A., and Fiorino, S. T. (2015). [\*Influence of Heterogeneous Refractivity on Optical Wave Propagation in Coastal Environments\*](#), Meteorology and Atmospheric Physics, (DOI: 10.1007/s00703-015-0391-3).
- Nunalee, C. G.; Horváth, Á; and Basu, S. (2015). [\*High-Resolution Numerical Modeling of Mesoscale Island Wakes and Sensitivity to Static Topographic Relief Data\*](#), Geoscientific Model Development, DOI: 10.5194/gmd-8-2645-2015
- Nunalee, C. G.; He, P.; Basu, S.; Minet, J., Vorontsov, M. A. (2015). [\*Mapping Optical Ray Trajectories through Island Wake Vortices\*](#), Meteorology and Atmospheric Physics, DOI: 10.1007/s00703-015-0366-4.
- Nunalee, C. G.; Kosovic, B; and Bieringer, P. E. (2014). [\*Eulerian Dispersion Modeling with WRF-LES of Plume Impingement in Neutrally and Stably Stratified Turbulent Boundary Layers\*](#), Atmospheric Environment, DOI: 10.1016/j.atmosenv.2014.09.070
- Nunalee, C. G.; and Basu, S. (2014). [\*On the Periodicity of Atmospheric von Kármán Vortex Streets\*](#), Environmental Fluid Mechanics, DOI: 10.1007/s10652-014-9340-9.
- Nunalee, C. G.; and Basu, S. (2014). [\*Mesoscale Modeling of Low-Level Jets Over the North Sea\*](#). In: M. Hölling, J. Peinke, S. Ivanell (eds.) Wind Energy - Impact of Turbulence, pp. 197-202. Springer.
- Nunalee, C. G.; and Basu, S. (2013). [\*Mesoscale Modeling of Coastal Low-Level Jets: Implications for Offshore Wind Resource Estimation\*](#), Wind Energy, 17: 1199–1216. DOI: 10.1002/we.1628

### Selected Presentations

- Nunalee, C. G.; Kosovic, B. (2013). [\*Evaluation of WRF-LES for Transport & Dispersion Over Complex Terrain\*](#), AMS 21st Symposium on Boundary Layers and Turbulence, 11, June, Leeds, United Kingdom.

- Nunalee, C. G.; Basu, S. (2014). [Uncertainty of Numerically Simulated Surface Fluxes and Sensitivity to Atmospheric Boundary Layer Parameterization](#), 14th International Evapotranspiration Symposium, 7, April, Raleigh, NC.
- Nunalee, C. G.; Wu, X.; Meissner, C.; Vognaroli, A. (2014). [Downscaling MERRA Mesoscale Data for the Generation of Microscale Wind Fields Using CFD](#), AWEA Windpower Annual Conference and Exhibition, 7, May, Las Vegas, NV.
- Nunalee, C. G.; Wu, X.; Meissner, C.; Gravdahl, A. (2014). [From Reanalysis Data to Park Optimization](#), AWEA Windpower Annual Conference and Exhibition, 7, May, Las Vegas, NV.
- Nunalee, C. G.; Meissner, C.; Vognaroli, A. (2014). [Downscaling MERRA Mesoscale Data for the Generation of Microscale Wind Fields Using CFD](#), European Wind Energy Association Annual Event, 10, March, Barcelona, Spain.
- Nunalee, C. G.; Meissner, C.; Gravdahl, A. (2014). [From Reanalysis Data to Park Optimization](#), European Wind Energy Association Annual Event, 10, March, Barcelona, Spain.
- Nunalee, C. G.; Basu, S. (2013). [On the Periodicity of Atmospheric von Kármán Vortex Streets](#), 66<sup>th</sup> meeting of the American Physical Society-Division of Fluid Dynamics, 24-27, November, Pittsburgh, PA.
- Nunalee, C. G.; Basu, S.; Minet, J; and Vorontsov, M (2013). [Atmospheric Refractivity Anomalies Induced by Mesoscale von Kármán Vortex Streets](#), OSA, Imaging and Applied Optics: Propagation through and Characterization of Distributed Volume Turbulence, 24-26, June, Arlington, VA.
- He, P.; Nunalee, C. G.; Basu, S. (2013). [Influence of Turbulence Parameterizations on Atmospheric Refractivity Simulation and Forecasting](#), OSA, Imaging and Applied Optics: Propagation through and Characterization of Distributed Volume Turbulence, 24-26, June, Arlington, VA.
- Nunalee, C. G. (2013). [The Use of WindSim Express with MERRA Data](#), 8th Annual WindSim User's Meeting, 19-20, June, Tønsberg, Norway.
- Nunalee, C. G.; and Basu, S. (2012). [Estimating the Higher-Order Turbulence Statistics from LES-Generated Atmospheric Boundary Layer Flow Fields](#), AMS 20th Symposium on Boundary Layers and Turbulence, 9-13, July, Boston, MA.
- Nunalee, C. G.; Richardson, H.; and Basu, S. (2012). [Mesoscale Modeling of Atmospheric Flow Phenomena in the Coastal and Offshore Regions: Implications for Offshore Wind Resource Assessment](#), Euromech Colloquim 528, 22-24, February, Oldenburg, Germany

Case No. 16-F-0062

Ollson

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Christopher Ollson. PhD.

Ollson Environmental Health Management

37 Hepworth Crescent

Ancaster, Ontario, Canada L9K 0C4

1 **Q: Please state your name, employer, and business address.**

2 A: Christopher Ollson, PhD., Ollson Environmental Health Management (OEHM),  
3 37 Hepworth Cres, Ancaster, Ontario, Canada, L9K 0C4

4 **Q: What is your position at OEHM?**

5 A: Owner and Senior Environmental Health Scientist.

6 **Q: How long have you been employed with OEHM?**

7 A: Two years.

8 **Q: Please describe your educational background and professional experience.**

9 A: I hold a Bachelor's degree in Biology from Queen's University (1995). I completed a  
10 Masters (2000) and Doctoral (2003) degree from the Royal Military College of Canada. I  
11 have been an Environmental Health Scientist consultant for 20 years. My expertise is in  
12 environmental health issues related to the energy sector. I have led risk assessments  
13 and provided risk communication support for wind turbine, solar, hydroelectric, energy-  
14 from-waste / waste-to-energy facilities, wind turbine projects, natural gas fired stations,  
15 oil sands environmental assessments, refineries, pipelines, and coal power plants.

16

17 Over the past decade I have conducted extensive research in potential health and  
18 environmental issues surrounding wind turbine facilities. I have testified at more than a  
19 dozen environmental review tribunals, commissions, hearings and court proceedings  
20 with respect to potential health concerns in living in proximity to wind turbines. I have  
21 published six peer-reviewed scientific journal articles and given numerous invited  
22 conference presentations and invited university lectures on renewable energy health  
23 issues. In addition, I was engaged as an expert on behalf of the Vermont Public Service  
24 Board to aid them in setting siting rules for renewable energy projects and have  
25 appeared before Senate Committee hearings on wind turbine siting in North Dakota and  
26 Indiana.

In addition to my consulting practice, I maintain an active research program through my Adjunct Assistant Professor appointment at the University of Toronto. I teach graduate level courses in Environmental Risk Assessment and have co-supervised a number of graduate students and Post-Doctoral Fellows. My primary research interests are in potential health issues related to the renewable energy sector, waste-to-energy sector and the emerging field of Health Impact Assessment of major projects.

**Q: Please describe your current responsibilities with OEHM.**

A: I am the Owner and Senior Environmental Health Scientist at OEHM. Approximately two thirds of my consulting practice currently involves working with wind farm developers in ensuring projects are properly sited to avoid public health impacts.

**Q: Have you previously testified before the New York State Public Service Commission or Siting Board on Electric Generation?**

A: No.

**Q: Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?**

A: In the following proceedings I testified and formally qualified as an expert in wind turbines and human health:

Ontario Environmental Review Tribunals – Appeal of Renewable Energy Approvals for Wind Projects

Erickson v. Ministry of the Environment	2011	Suncor
Monture v. Ministry of the Environment	2012	Samsung
Moseley v. Ministry of the Environment	2014	Capstone
Lambton County v. Ministry of the Environment	2015	Suncor
EOCA v Ministry of the Environment	2015	ProWind

Queen's Bench of Saskatchewan in McKinnon v. Martin (2010 – also referred to as the Red Lily case)

Alberta Utilities Commission (AUC) Proceeding No. 3329, Grizzly Bear Creek Wind Project (March 2016)

Alberta Utilities Commission (AUC) Proceeding No. 1955, Bull Creek Wind Project (October 2013)

North Dakota Public Services Commission 2015

Brady Wind Energy Center	NextEra
--------------------------	---------

Brady II Wind Energy Center	NextEra
-----------------------------	---------

Oliver III Wind Energy Center	NextEra
-------------------------------	---------

Clinton County Planning and Zoning Commission, MO, County Ordinance Changes (2016) NextEra

Chowan County and Perquimins County Board of Commissioners hearings for the Timbermill Wind Project (2016) APEX

**Q: What is the purpose and scope of your testimony in this proceeding?**

A: To sponsor certain portions of the Eight Point Wind Energy Center Project Application or the Exhibits thereto.

**Q: What portion(s) of the Application is your testimony sponsoring?**

A: Exhibit 15: Public Health and Safety.

**Q: Were these Exhibits, Application sections, or studies prepared by you or under your direction and supervision?**

79 A: Yes.

80 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
81 **publications, data or documents produced by persons other than yourself/your**  
82 **company? If so, please cite these sources. [These are independent studies, etc.]**

83 A: References are provided in Exhibit 15 and full copies were provided as part of the  
84 application.

## Education

North Carolina State University, Raleigh, NC, U.S.A.

Doctor of Philosophy, **Atmospheric Science**

2015

Dissertation: *A Dynamical Characterization of Atmospheric von Kármán Vortex Streets Induced by Bluff Topography*

North Carolina State University, Raleigh, NC, U.S.A.

Bachelor of Science, **Meteorology**, magna cum laude

2011

## Experience

**WindLogics, NextEra Energy Inc. – Juno Beach, FL**

**Wind Energy Resource Assessment Supervisor**

Sept 2016 – Current

- Supervised a team of 11 analysts in the energy assessment and wind farm layout design of approximately 1 - 2 GW of installed wind energy plants per year across North America
- Supported the risk assessment and investment approval of entire NextEra Energy Resource wind portfolio as it pertains to energy production including greenfield development wind sites, repower opportunities, and acquisition opportunities
- Supported the end-to-end development cycle of new wind projects included RFP responses, permitting, and project financing

**WindLogics, NextEra Energy Inc. – Juno Beach, FL**

**Senior Resource Modeling Analyst**

Jan 2015 – Sept 2016

- Prepared wind resource assessment (WRA) reports and presentations for internal and external project stakeholders and in support of management investment review
- Designed optimal wind farm layouts to support various phases of project development
- Performed technical reviews of team deliverables to ensure quality control standards were met
- Independently designed and implemented novel processes to meet unique, time-sensitive customer requests and disseminated processes to peers
- Led a cross-functional project team to achieve a ~60% time savings in standard WRA cycle time

**North Carolina State University – Raleigh, NC**

**Doctoral Research Assistant – Boundary Layer Meteorology**

May 2011 – Dec 2014

- Conducted independent and collaborative technical research with a focus on numerical weather prediction, turbulence modeling, and computer programming (serial and parallel)
- Delivered professional presentations at domestic and international conferences (e.g., AMS, AWEA, EWEA, SPIE) and published multiple peer-reviewed publications
- Taught classes at the undergraduate and graduate level

**WindSim AS – Tønsberg, Norway**

**Intern – CFD Model Development Office**

May - August 2013

- Developed a streamlined methodology for creating synthetic wind climatology data using MERRA data and WindSim CFD software (currently offered as a consulting service)
- Validated and debugged a new wind park layout optimization module against a geographically diverse suite of existing turbine layouts
- Served as mesoscale modeling expert for RFP responses

**National Center for Atmospheric Research – Boulder, CO**

**Graduate Student Research Fellow – Research Applications Laboratory** May 2012 – Dec. 2013

- Simulated neutrally and stably stratified turbulent boundary layers over complex terrain using WRF-LES and validated results against observational data

- Assisted in debugging and implementing a new surface layer physics Fortran module for WRF
- Identified, documented, and corrected model instabilities induced by steep terrain

### **MESO Inc. – Atmospheric Research & Modeling – Raleigh, NC**

#### **Meteorological Contractor**

May – November 2010

- Identified/validated publicly available solar/wind data archives for energy resource assessment
- Analyzed multiple meteorological events and composed technical reports for management

### Teaching Experience

- MEA 582 Wind Power Meteorology (Invited Lecturer) (01/2014 – 01/2014)
- MEA 213 Introduction to Atmospheric Science I (Lab Instructor) (08/2011 – 12/2011)
- MEA 135 Weather & Climate (Undergraduate Tutor) (01/2011 – 05/2011)

### Technical Background

Operating Systems: Microsoft Windows, Unix/Linux  
 Scripting Languages: Fortran-95, HTML, IDV, Java, Matlab, NCL, R, UNIX shell-scripting  
 Software: ArcGIS, MS Office, OpenWind, WAsP, Windographer, WindSim, WRF  
 Familiar Major Datasets: CFSR, ERA-Interim, MADIS, MERRA, MODIS, NARR

### Leadership and Involvement

- **Peer Reviewer**  
Quarterly Journal of the Royal Meteorological Society
- **Member of IEC-61400-16 Mirror Committee**  
Wind Resource Assessment Standardization
- **Six Sigma Yellow Belt**  
NextEra Energy Inc. Corporate Operational Excellence
- **1<sup>st</sup> Annual Recipient of the Warner Internship for Scientific Enrichment**  
National Center for Atmospheric Research – Advanced Study Program

### Selected Publications

- He, P., Nunalee, C. G., Basu, S., Minet, J., Vorontsov, M. A., and Fiorino, S. T. (2015). [\*Influence of Heterogeneous Refractivity on Optical Wave Propagation in Coastal Environments\*](#), Meteorology and Atmospheric Physics, (DOI: 10.1007/s00703-015-0391-3).
- Nunalee, C. G.; Horváth, Á; and Basu, S. (2015). [\*High-Resolution Numerical Modeling of Mesoscale Island Wakes and Sensitivity to Static Topographic Relief Data\*](#), Geoscientific Model Development, DOI: 10.5194/gmd-8-2645-2015
- Nunalee, C. G.; He, P.; Basu, S.; Minet, J., Vorontsov, M. A. (2015). [\*Mapping Optical Ray Trajectories through Island Wake Vortices\*](#), Meteorology and Atmospheric Physics, DOI: 10.1007/s00703-015-0366-4.
- Nunalee, C. G.; Kosovic, B; and Bieringer, P. E. (2014). [\*Eulerian Dispersion Modeling with WRF-LES of Plume Impingement in Neutrally and Stably Stratified Turbulent Boundary Layers\*](#), Atmospheric Environment, DOI: 10.1016/j.atmosenv.2014.09.070
- Nunalee, C. G.; and Basu, S. (2014). [\*On the Periodicity of Atmospheric von Kármán Vortex Streets\*](#), Environmental Fluid Mechanics, DOI: 10.1007/s10652-014-9340-9.
- Nunalee, C. G.; and Basu, S. (2014). [\*Mesoscale Modeling of Low-Level Jets Over the North Sea\*](#). In: M. Hölling, J. Peinke, S. Ivanell (eds.) Wind Energy - Impact of Turbulence, pp. 197-202. Springer.
- Nunalee, C. G.; and Basu, S. (2013). [\*Mesoscale Modeling of Coastal Low-Level Jets: Implications for Offshore Wind Resource Estimation\*](#), Wind Energy, 17: 1199–1216. DOI: 10.1002/we.1628

### Selected Presentations

- Nunalee, C. G.; Kosovic, B. (2013). [\*Evaluation of WRF-LES for Transport & Dispersion Over Complex Terrain\*](#), AMS 21st Symposium on Boundary Layers and Turbulence, 11, June, Leeds, United Kingdom.

- Nunalee, C. G.; Basu, S. (2014). [Uncertainty of Numerically Simulated Surface Fluxes and Sensitivity to Atmospheric Boundary Layer Parameterization](#), 14th International Evapotranspiration Symposium, 7, April, Raleigh, NC.
- Nunalee, C. G.; Wu, X.; Meissner, C.; Vognaroli, A. (2014). [Downscaling MERRA Mesoscale Data for the Generation of Microscale Wind Fields Using CFD](#), AWEA Windpower Annual Conference and Exhibition, 7, May, Las Vegas, NV.
- Nunalee, C. G.; Wu, X.; Meissner, C.; Gravdahl, A. (2014). [From Reanalysis Data to Park Optimization](#), AWEA Windpower Annual Conference and Exhibition, 7, May, Las Vegas, NV.
- Nunalee, C. G.; Meissner, C.; Vognaroli, A. (2014). [Downscaling MERRA Mesoscale Data for the Generation of Microscale Wind Fields Using CFD](#), European Wind Energy Association Annual Event, 10, March, Barcelona, Spain.
- Nunalee, C. G.; Meissner, C.; Gravdahl, A. (2014). [From Reanalysis Data to Park Optimization](#), European Wind Energy Association Annual Event, 10, March, Barcelona, Spain.
- Nunalee, C. G.; Basu, S (2013). [On the Periodicity of Atmospheric von Kármán Vortex Streets](#), 66<sup>th</sup> meeting of the American Physical Society-Division of Fluid Dynamics, 24-27, November, Pittsburgh, PA.
- Nunalee, C. G.; Basu, S.; Minet, J; and Vorontsov, M (2013). [Atmospheric Refractivity Anomalies Induced by Mesoscale von Kármán Vortex Streets](#), OSA, Imaging and Applied Optics: Propagation through and Characterization of Distributed Volume Turbulence, 24-26, June, Arlington, VA.
- He, P.; Nunalee, C. G.; Basu, S. (2013). [Influence of Turbulence Parameterizations on Atmospheric Refractivity Simulation and Forecasting](#), OSA, Imaging and Applied Optics: Propagation through and Characterization of Distributed Volume Turbulence, 24-26, June, Arlington, VA.
- Nunalee, C. G. (2013). [The Use of WindSim Express with MERRA Data](#), 8th Annual WindSim User's Meeting, 19-20, June, Tønsberg, Norway.
- Nunalee, C. G.; and Basu, S. (2012). [Estimating the Higher-Order Turbulence Statistics from LES-Generated Atmospheric Boundary Layer Flow Fields](#), AMS 20th Symposium on Boundary Layers and Turbulence, 9-13, July, Boston, MA.
- Nunalee, C. G.; Richardson, H.; and Basu, S. (2012). [Mesoscale Modeling of Atmospheric Flow Phenomena in the Coastal and Offshore Regions: Implications for Offshore Wind Resource Assessment](#), Euromech Colloquim 528, 22-24, February, Oldenburg, Germany

Case No. 16-F-0062

Gil

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

David G. Gil

NextEra Energy Resources, LLC

700 Universe Blvd.

Juno Beach, FL 33408

1   **Q:     Please state your name, employer, and business address.**

2   A:     David G. Gil, NextEra Energy Resources, LLC, 700 Universe Boulevard, Juno Beach,  
3         FL, 33408.

4   **Q:     What is your position at NextEra Energy Resources?**

5   A:     My job title is Director. I lead the development of renewable energy projects.

6   **Q:     How long have you been employed with NextEra Energy Resources?**

7   A:     I have been employed with NextEra for eight years.

8   **Q:     Please describe your educational background and professional experience.**

9   A:     I have a Bachelor of Arts in Economics from the University of California at Berkeley.  
10         Prior to joining NextEra, I spent seven years doing mergers and acquisitions and  
11         investment banking, focused first on technology companies, then later on energy  
12         companies. Eight years ago, I joined NextEra and have held three primary roles with the  
13         company. I started as an analyst for the Chief Executive Officer of NextEra. After two  
14         years, I joined NextEra's regulatory and legislative affairs team, focusing on the New  
15         York and PJM energy markets. Four years ago I joined NextEra's wind project  
16         development team. During those four years I have played a lead role in developing and  
17         constructing 815 megawatts of new wind projects in Colorado and Kansas. I have also  
18         worked as the Chief Operating Officer for a health services start-up and as analyst for an  
19         economic consulting company.

20   **Q:     Please describe your current responsibilities with NextEra Energy Resources.**

21   A:     I am currently a Director in NextEra's renewables development group and am  
22         responsible for developing new projects from conception to completion of construction.  
23         That includes prospecting new potential sites for projects, acquiring leases for sites,  
24         finding energy customers for projects, permitting projects, and managing the  
25         development process until construction is complete at which time I handover  
26         responsibility to NextEra's business management team.

27 **Q: Have you previously testified before the New York State Public Service**  
28 **Commission or Siting Board on Electric Generation?**

29 A: No.

30 **Q: Have you previously served as an expert witness before any other court, agency,**  
31 **or other body on the subject you plan to offer testimony on today?**

32 A: Yes, I have appeared at several permit hearings for wind energy projects and have  
33 appeared at several agency meetings for wind energy projects in Colorado, Kansas,  
34 New York and Washington D. C.

35 **Q: What is the purpose and scope of your testimony in this proceeding?**

36 A: I am the lead developer of the Eight Point Wind Energy Center and as such am familiar  
37 with nearly all aspects of the Project. I plan to demonstrate that the Applicant has  
38 complied with the Article 10 regulations and the Stipulations agreed to by several New  
39 York State agencies and the Towns of Greenwood and West Union.

40 **Q: What portion(s) of the Application is your testimony sponsoring?**

41 A: I am sponsoring the entire Application.

42 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
43 **your direction and supervision?**

44 A: All the Exhibits were prepared under my direction and supervision.

45 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
46 **publications, data or documents produced by persons other than yourself/your**  
47 **company? If so, please cite these sources.**

48 A: Yes, several companies, people and subject matter experts contributed to this Project's  
49 Application. As the developer for this Project, I relied upon subject matter experts both  
50 from NextEra and from consulting companies to provide studies, data and documents in  
51 order to fulfill the requirements of the Article 10 process.

**David G. Gil**

<b>Experience</b>	<b>NextEra Energy Resources</b>	Juno Beach, FL
	<i>Director Development / Regulatory Affairs / Analyst</i>	12/09 – present
	<ul style="list-style-type: none"><li>• In current role, as a Director in renewables development, responsible for developing and constructing over 800 MW of new wind projects since 2013 in Colorado and Kansas. Currently developing over nearly 1,500 MW of new renewable projects in New York and Colorado.</li><li>• Manage all aspects of project development from customer acquisition, project siting, land lease acquisition and permitting, to construction oversight and project commissioning.</li><li>• Previously, as Manager of Regulatory Affairs, responsibilities included monitoring legislative and regulatory affairs in 16 states in addition to all matters in PJM and NYISO.</li><li>• In previous role, as Analyst to the CEO; responsibilities included drafting presentations to the Board of Directors, analyzing and drafting project approval presentations and various other research activities.</li><li>• Served as Chief of Staff for the CEO's role on the President's Council on Jobs and Competitiveness. Wrote recommendations and policy for the President's Council relating to national energy policy which was implemented by the President of the United States.</li></ul>	
	<b>Callisto Partners LLC</b>	West Palm Beach, FL
	<i>Mergers &amp; Acquisitions and investment Banking, Senior Associate</i>	6/03 - 8/06 and 3/09 – 12/09
	<ul style="list-style-type: none"><li>• Successfully closed over a dozen complex transactions (mergers, acquisitions, capital and debt offerings, and restructurings) for a combined value of approximately \$1 billion.</li><li>• Participated in all aspects of transaction execution including research, due diligence, production of information memoranda, financial modeling and contract negotiations.</li><li>• Constructed financial models to predict companies' results and valuation models and analyses, such as DCF models, leverage buy-out models, comparable company analyses and M&amp;A transactions analyses.</li><li>• Developed presentations for company executives and board members on strategic relationships, acquisition ideas and valuation strategies.</li></ul>	
	<b>Palm Beach Meditox, LLC</b>	West Palm Beach, FL
	<i>Chief Operating Officer</i>	8/06 - 1/09
	<ul style="list-style-type: none"><li>• National behavioral healthcare company focused on treating patients with substance abuse issues.</li><li>• Increased revenue by more than 200% to \$3.7 million and patient count by almost 300% to 757 patients.</li><li>• Opened four new offices and restructured existing offices throughout the United States. Expertise in restructuring and business development led to significant cost reductions throughout the organization.</li><li>• Additional responsibilities included analyzing financial oversight, regulatory and legal requirements, negotiating contracts, managing doctor relationships, and overseeing 5 offices and twelve employees.</li></ul>	
	<b>Prudential Securities</b>	San Francisco, CA
	<i>Mergers &amp; Acquisitions and investment Banking Analyst</i>	8/99 - 3/02
	<ul style="list-style-type: none"><li>• Research, analysis and preparation of deal materials directly contributed to the completion of M&amp;A and corporate finance transactions with a combined value of nearly \$1 billion.</li><li>• Researched technology companies across industries to provide value-added input to pitches and valuations that helped win deals and educated colleagues for meetings and conferences.</li><li>• Conducted due diligence, wrote fairness opinions, prepared SEC filings and created pitch books.</li></ul>	
	<b>Law &amp; Economics Consulting Group</b>	Emeryville, CA
	<i>Research Analyst</i>	4/98 - 8/99
	<ul style="list-style-type: none"><li>• Contributions to research, testimonies and reports led to positive outcomes that saved telecommunications companies over \$3 billion in nine regulatory proceedings.</li><li>• Researched and analyzed competition and regulation within the telecommunications industry.</li><li>• Modeled telecom companies network expenses utilizing cost models, statistical and econometric analyses.</li></ul>	
<b>Education</b>	<b>University of California, Berkeley</b>	
	Bachelor of Arts, Economics, May 1997	

Case No. 16-F-0062

Jimeno

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Dennis Jimeno

Comsearch

19700 Janelia Farm Boulevard

Ashburn, VA 20147

1 **Q: Please state your name, employer, and business address.**

2 A: Dennis Jimeno, Comsearch (A CommScope Company), 19700 Janelia Farm Boulevard,  
3 Ashburn, VA 20147.

4 **Q: What is your position at Comsearch?**

5 A: I am a Telecommunications Engineer III.

6 **Q: How long have you been employed with Comsearch?**

7 A: I have been employed with Comsearch for about 14 years.

8 **Q: Please describe your educational background and professional experience.**

9 A: I hold a Bachelor of Science degree in Electrical Engineering from Virginia Tech and a  
10 Master of Science degree in Electrical Engineering from George Washington University.  
11 My entire professional experience has been focused in the field of wireless network  
12 communications and microwave engineering. From 1995 to 1998, I was employed by  
13 MLJ, Inc. as a Design Engineer. From 1998 to 2000, I worked as an RF Engineering  
14 Consultant for Nextel. I was employed as an RF Planning Engineer for Winstar from 2000  
15 to 2001. From 2001 to 2004 I worked as an RF Engineering Contractor for AT&T /  
16 Cingular Wireless. Since then, I have been with Comsearch.

17 **Q: Please describe your current responsibilities with Comsearch.**

18 A: My current responsibilities include the planning, analysis, and optimization of wireless  
19 communication and microwave networks. I have also supervised countless studies to  
20 assess the impact of wind farm facilities on various communication systems including  
21 microwave links, broadcast radio, over-the-air television, mobile phone, land mobile radio,  
22 and radar. I am experienced in RF site planning of mobile and fixed wireless networks for  
23 ground and aerial coverage and in analyzing drive test data to validate RF signal  
24 propagation models and optimize network performance. I have post-graduate training in  
25 wireless networks, satellite communications, and signal propagation.

26 **Q: Have you previously testified before the New York State Public Service**  
27 **Commission or Siting Board on Electric Generation?**

28 A: Yes.

29 **Q: Have you previously served as an expert witness before any other court, agency,**  
30 **or other body on the subject you plan to offer testimony on today?**

31 A: Yes.

32 **Q: What is the purpose and scope of your testimony in this proceeding?**

33 A: To sponsor certain portions of Eight Point Wind's Article 10 Application or the Exhibits  
34 thereto.

35 **Q: What portion(s) of the Application is your testimony sponsoring?**

36 A: I am sponsoring various sections of Exhibit 26.

37 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
38 **your direction and supervision?**

39 A: Yes.

40 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
41 **publications, data or documents produced by persons other than yourself/your**  
42 **company? If so, please cite these sources. [These are independent studies, etc.]**

43 A: No.

**Dennis Jimeno**  
**Telecommunications Engineer III**

## **QUALIFICATIONS**

---

- Master of Science in Electrical Engineering
- Experienced in contract negotiations and managed multiple agreements between major wireless service provider and power utilities, municipalities and various communication companies in support of microwave relocation and wireless small-cell site deployment projects
- Experienced in Microwave Path Engineering
- Experienced in RF Planning of wireless networks for ground, maritime, and aerial applications
- Managed wind energy services group tasked with providing engineering studies to assess impact caused by wind energy facilities to surrounding communication systems including: microwave paths, mobile wireless, television, AM/FM radio, radar, and land mobile & emergency services
- Experienced in evaluating compliance with FCC guidelines for human exposure to RF emissions
- Experienced in Network Optimization of mobile wireless networks
- Experienced in analyzing drive test data to validate propagation model and optimize network performance
- Formally trained in wireless networks, satellite communications, and signal propagation
- Experienced in engineering software tools: Matlab, Atoll, CelPlan, Actix RPS, Mentum Planet, and MapInfo®
- U.S. Citizen

## **PROFESSIONAL EXPERIENCE**

---

**Telecommunications Engineer III, Comsearch**

*2004 - Present*

Ashburn, VA

- Performed RF Coverage and Frequency Planning for 900 MHz Point-to-Multipoint SCADA system
- Designed nationwide sensor network as part of spectrum access system (SAS) for sharing frequency band between commercial and naval radio communications while minimizing interference
- Engaged in discussions with various power utilities and municipalities to negotiate terms and conditions on behalf of AT&T to attach small cell equipment and antennas on utility poles nationwide
- Reviewed, edited, and approved impact assessment studies of wind turbines with respect to microwave, radar, TV broadcast, AM/FM radio, and land mobile & emergency services
- Designed ADS-B (Automatic Dependent Surveillance Broadcast) service volume coverage throughout U.S. airspace for FAA as part of NextGen program to modernize air transportation system using GPS satellite technology
- Generated ADS-B coverage predictions for ground-to-air and air-to-ground communications with primary objective of matching or exceeding Secondary Surveillance Radar (SSR) coverage from ground level up to 60,000 ft MSL
- Performed link budget analyses to verify coverage for at least 98% of a given service volume in various interference conditions and scenarios using 1090ES and UAT links
- Designed airport surface coverage using 3D ray-tracing model with task of covering 100% of surface movement area including glide approach path from five (5) nautical miles to touchdown threshold
- Identified potential site locations using commercial towers, oil platforms, and public-use airport facilities that satisfied coverage objectives while minimizing interference to active radars
- Performed power-flux density calculations from ADS-B stations to predict interference and satisfy conditional requirements to co-exist with surveillance radars and multi-lateration systems
- Designed coverage layout for Automated Weather Observing System (AWOS) in Gulf of Mexico using oil platform locations
- Reviewed and approved antenna configuration drawings prior to installation
- Attended zoning hearings to seek board approval of permit to construct new cell sites
- Performed RF hazard analysis per OET Bulletin 65 guidelines regarding safe RF exposure limits
- Evaluated and approved site candidates for implementation

- Designed E-911 networks for Tier I and Tier II Public Safety Access Points (PSAPs) using U-TDOA and AOA geo-location technology
- Analyzed PCS and cellular network performance data to evaluate location accuracy performance and verify compliance with E-911 requirements
- Defined drive-test routes for location accuracy testing and optimization

**RF Engineering Contractor, AT&T / Cingular Wireless**

2001 - 2004

Various locations

- Designed expansion sites for dual-band GSM network in NY/NJ market (Paramus, NJ)
  - Evaluated potential site candidates and performed site visits
  - Attended zoning hearings to seek board approval to install new antennas on existing towers
  - Tuned RF propagation model using drive test data
  - Analyzed drive test data to identify coverage-limited areas
- Generated RF design for GSM network in south Florida market consisting of 400 sites (Lake Mary, FL)
  - Implemented overlay/underlay site designs using micro-cell solutions
  - Predicted FER performance for BCCH and TCH channels using Monte Carlo simulations
  - Performed link budget analyses and verified design ERP levels
  - Performed HSN and MAIO planning for frequency hopping algorithm
  - Managed network parameters using Nokia OSS/CM Tools and checked daily alarm reports
  - Performed on-air cell verification tests
  - Planned MSC, BSC and LAC boundaries
- Generated GSM overlay design for existing TDMA network (Bothell, WA)
  - Optimized antenna configuration based on required number of TRXs per sector
  - Generated cell neighbor lists for optimized handoffs
  - Dimensioned BSCs according to current and projected traffic load
- Designed WCS Fixed Wireless Network in 2.3 GHz band using OFDM technology (Dublin, OH)
  - Generated coverage predictions based on tuned propagation models using dB Planner tool
  - Processed drive test data and validated propagation models for 50 planned hubs
  - Analyzed drive test data to optimize coverage and minimize interference across network
  - Managed drive test team and coordinated daily activities to meet project milestones

**RF Planning Engineer, Winstar**

2000 - 2001

Herndon, VA

- Designed Point-to-Multipoint (PMP) fixed broadband wireless networks in 39 and 28 GHz bands
- Predicted and analyzed interference between hub and subscriber locations
- Performed coverage and capacity design trade-offs for PMP hubs for 64QAM, 16QAM, and QPSK modulation schemes
- Performed link reliability and rain fade analyses using Crane model
- Performed frequency planning
- Evaluated RF software tools and recommended technical enhancements for site coverage planning
- Performed field surveys to evaluate proposed site locations and verify radio line-of-sight (RLOS) conditions

**RF Engineering Consultant, Nextel**

1998 - 2000

Reston, VA

- Managed RF Engineering group in local market to design and optimize iDEN network (Mexico City)
- Responsible for planning, roll-out optimization, and setting schedules milestones for project
- Supervised frequency planning, capacity planning, and interference analysis
- Approved search rings and site candidates
- Optimized network parameters to meet key performance objectives for interconnect and dispatch services
- Planned new cell sites to meet target expansion coverage and increase traffic capacity
- Provided basic training on iDEN network optimization, design, and frequency planning
- Led RF Engineering team to optimize iDEN network (White Plains, NY)
- Performed frequency planning and interference analysis for 500+ sites for NY/NJ market
- Optimized Interconnect Location Area (ILA) & Dispatch Location Area (DLA) boundaries

- Analyzed drive test data and tuned RF propagation models
- Performed capacity analysis to project required number of base radios (BRs) per site

**Design Engineer, MLJ Inc.**

1995 – 1998

Arlington, VA

- Provided spectrum sharing engineering services for PCS service providers and incumbent microwave systems in 1.9 GHz band in support of microwave relocation efforts across U.S.
- Performed interference analyses between PCS and microwave point-to-point systems to predict, rank, and mitigate co-channel and adjacent channel interference
- Generated Prior Coordination Notices (PCNs)
- Designed microwave point-to-point systems
- Conducted field test measurements to calibrate RF propagation models
- Performed CDMA optimization for cellular network (Phoenix, AZ)
- Adjusted pilot channel powers to force dominant servers in areas with pilot pollution
- Created neighbor lists for efficient handover
- Performed idle-mode coverage and origination test drives to verify synch and paging channel operation
- Adjusted and tuned search windows (e.g., active, candidate, neighbor, and remaining set) to utilize all good multipath components for optimal pilot selection
- Analyzed drive test and post-test data including FER, Ec/Io, and variable Rx/Tx Power
- Derived cell edge and area service reliability
- Adjusted hand-off parameters including T-Comp, T-Add, Tt-Drop, and T-Drop
- Performed troubleshooting test drives to analyze and resolve performance problems

## **EDUCATION**

---

**M.S., Electrical Engineering**

*The George Washington University, Washington, DC*

**B.S., Electrical Engineering**

*Virginia Polytechnic Institute & State University, Blacksburg, VA*

## **SOFTWARE**

---

- RF Engineering: *Atoll, Mentum Planet, Actix RPS, CelPlan, ATDI, Agilent Wizard*
- GIS Mapping: *MapInfo, Esri ArcView*
- Programming: *Matlab*
- Microwave Engineering: *Pathloss, iQlinkXG*

Case No. 16-F-0062

Reilly

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Diane E. Reilly

TRC Companies, Inc.

14 Gabriel Drive

Augusta, ME 04330

1 **Q: Please state your name, employer, and business address.**

2 A: Diane E. Reilly, TRC Companies, Inc. (TRC), 14 Gabriel Drive, Augusta, ME 04330

3 **Q: What is your position at TRC?**

4 A: Economist.

5 **Q: How long have you been employed with TRC?**

6 A: I have been directly employed with TRC since 2012. For several years prior to that time,  
7 I provided sub-consulting services to TRC.

8 **Q: Please describe your educational background and professional experience.**

9 A: I received a Bachelor of Arts degree in Economics and in Spanish from Furman  
10 University in Greenville, SC. I have a Master's of Arts degree in Economics from the  
11 University of Georgia in Athens, GA (1993) and completed additional studies specializing  
12 in Finance and Public Finance. I have over 20 years of experience in environmental  
13 consulting, evaluating socioeconomic and recreation issues. My resume is attached.

14 **Q: Please describe your current responsibilities with TRC.**

15 A: As an economist for TRC, I provide socioeconomic and recreation analysis for a variety  
16 of energy projects.

17 **Q: Have you previously testified before the New York State Public Service  
18 Commission or Siting Board on Electric Generation?**

19 A: No.

20 **Q: Have you previously served as an expert witness before any other court, agency,  
21 or other body on the subject you plan to offer testimony on today?**

22 A: No.

23 **Q: What is the purpose and scope of your testimony in this proceeding?**

24 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
25 or the Exhibits thereto.

26 **Q: What portion(s) of the Application is your testimony sponsoring?**

27 A: Exhibit 27: Socioeconomic Effects.

28 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
29 **your direction and supervision?**

30 A: Yes.

31 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
32 **publications, data or documents produced by persons other than yourself/your**  
33 **company? If so, please cite these sources. [These are independent studies, etc.]**

34 A: American Wind Energy Association (2017). Wind Energy Reduces Greenhouse Gas  
35 Emissions. Retrieved from: [www.awea.org/reducing-greenhouse-gas-emissions](http://www.awea.org/reducing-greenhouse-gas-emissions).  
36 Accessed August 9, 2017.

37 ICF (2017). *Draft Assessment of Proposed Eight Point Wind Energy Center in New York*.  
38 August 10, 2017.

39 National Renewable Energy Laboratory (NREL). (2016). Jobs and Economic  
40 Development Impact (JEDI) Models. <https://www.nrel.gov/analysis/jedi/> Accessed April  
41 13, 2017.

42 New York Department of Environmental Conservation (2017). Climate Smart  
43 Communities Guide to Local Action: Taking Steps to Combat Climate Change. Retrieved  
44 from: <http://www.dec.ny.gov/energy/50845.html>. Accessed April 13, 2017.

45 New York State Energy Planning Board (2015). New York State Energy Plan. Retrieved  
46 from: <https://energyplan.ny.gov/Plans/2015.aspx>. Accessed April 13, 2017.

## **Diane E. Reilly**

### **EDUCATION**

M.A., Economics, University of Georgia, 1993

B.A., Economics and Spanish, Furman University, 1991

### **AREAS OF EXPERTISE**

Ms. Diane Reilly has technical experience in the following general areas:

- Economic/Socioeconomic Studies
- Recreation Use Studies
- FERC Hydroelectric Licensing & Compliance
- National Renewable Energy Lab's Jobs and Economic Development Impact (JEDI) Modeling
- Environmental Impact Statements and Environmental Assessments

### **REPRESENTATIVE EXPERIENCE**

Ms. Reilly has over 20 years of environmental consulting. She has extensive experience evaluating socioeconomic and recreation issues for the Federal Energy Regulatory Commission (FERC) in the areas of hydropower licensing and license compliance. She is experienced in providing socioeconomic and recreation analyses for wind and solar power projects. Ms. Reilly provides analyses of socioeconomic, recreational, and land use impacts for Environmental Assessments (EAs) and Environmental Impact Statements (EISs).

#### **New York Power Authority, Blenheim-Gilboa Pumped Storage Project**

Technical lead for the socioeconomic issues related to the relicensing of NYPA's 1,160 MW Blenheim-Gilboa Pumped Storage Power Project. Authored the socioeconomic portion of the Pre-Application Document, the Socioeconomic Study, and portions of the Draft License Application. Managed the REMI analysis and participated in public meetings. Recreation efforts include analyzing recreation use, activity data, and recreation user survey data.

#### **NextEra Energy Resources, Eight Point Wind Energy Center—New York**

Evaluating the economic effects of a proposed wind energy center through the use of the National Renewable Energy Laboratory's Jobs and Economic Development Impact (JEDI) models. Calculating economic impacts in terms of jobs, earnings, and output for the construction phase and for the operation and maintenance phase. Providing demographic, housing, and employment analyses for the county and each of the municipalities in the project area.

#### **Apex Clean Energy Management, Inc., Great Heath Recreation Study/Downeast Wind Energy Project—Maine**

Developed annual recreational use, recreation use by activity type, and future demands. Use estimates also were developed that appropriately characterized

seasonal usage at each recreation site. Analyzed the capacity use at each recreation site.

**Consumers Energy, Ludington Pumped Storage Project—Michigan**

Developed annual recreational use, recreation use by activity type, and future demands. Use estimates also were developed that appropriately characterized seasonal usage at each recreation site. Analyzed the capacity use at each recreation site. Future recreation demands were also forecast.

**FirstLight, Turners Falls and Northfield Mountain Hydropower Projects—Massachusetts**

Developed annual recreational use, recreation use by activity type, and future demands. Use estimates also were developed that appropriately characterized seasonal usage at each recreation site. Future recreation demands were also forecast. Analyzed the capacity use at each recreation site. Supported the development of the license application and FERC Form 80s.

**Exelon Power, Conowingo Hydropower Project and Muddy Run Pumped Storage Project—Pennsylvania and Maryland**

Provided recreation analysis to support FERC Form 80 filings and the relicensing process for the 573 MW Conowingo Project and the 800 MW Muddy Run Pumped Storage Project, with a total of 21 formal recreation sites. Estimated specific use level, activity types, capacity, and future demands for each of the projects' recreation facilities included in the study.

**Kaukauna Utilities, Kimberly Hydropower Project—Wisconsin**

Authored the socioeconomic portion of the Pre-Application Document (PAD) for the relicensing of the 2.7 MW project on the Fox River in Wisconsin. Addressed land use, demographics, housing, and economic activity.

**TransCanada, Kibby Mountain Wind Power Project—Maine**

Determined recreational usage within the Kibby Wind Power Project Study Area for the proposed 132-megawatt wind power generating facility in the Boundary Mountains of Western Maine. The recreation study involved determining recreational usage levels, activity types, and user-perceived impacts of the proposed project on recreation. The Project, which has now been completed, is the largest wind power project in New England.

**Georgia Power, Morgan Falls Hydropower Project—Georgia**

Technical lead for recreation and socioeconomics during the FERC relicensing of Georgia Power's 16.8 MW Morgan Falls Project located in metropolitan Atlanta. This project was one of the first to use the Integrated Licensing Process (ILP). Developed the recreational use characterization for the project and the

population and recreation demand projections. Addressed future capacity issues, evaluating the need for additional facilities.

**New York Power Authority, Niagara Power Hydropower Project—New York**

Senior economic reviewer for the socioeconomic report, supporting the New York Power Authority (NYPA) in obtaining a new license for the Niagara Power Project from FERC. Assisted in the development of the Scope of Services, participated in stakeholder meetings, managed the REMI modeling, and authored sections of the socioeconomic report. The Niagara Power Plant is New York State's largest electric generating facility and one of the largest in the United States, generating, on average, 14.0 billion kWh per year. The project required the development of a new license application and a settlement structure to meet the needs of NYPA and the more than 100 interested parties.

Case No. 16-F-0062

Wang

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Francis Wang

NextEra Energy Resources, LLC

700 Universe Blvd.

Juno Beach, FL 33408

1 **Q: Please state your name, employer, and business address.**

2 A: My name is Hui Fung Francis Wang.

3 My employer is NextEra Energy Resources, LLC

4 My business address is 700 Universe Boulevard, Juno Beach, FL, 33408.

5 **Q: What is your position at NextEra Energy Resources?**

6 A: My job title is Executive Director. I lead the generation interconnection processes and

7 Transmission Analytics functions of renewable energy projects.

8 **Q: How long have you been employed with NextEra Energy Resources?**

9 A: I have been employed with NextEra for more three (3) years.

10 **Q: Please describe your educational background and professional experience.**

11 A: Francis graduated from University of New Orleans with Bachelor of Science in Civil

12 Engineering, Master of Science in Electrical Engineering, and Master of Science in

13 Mathematics in 1988. After his graduation, Francis was employed by Louisiana State

14 University Medical Center as a Program Analyst in Biometric Research in 1989 and

15 Litton Data System as an Engineer in naval fiber optics and free space laser

16 communication applications in 1990. Prior to NextEra, he joined Entergy Service

17 Incorporation in late 1990 starting as an Engineer in SCADA engineering, Transmission

18 Operation Planning, to Senior Staff Engineer in Transmission Planning. He became

19 Manager, Energy Management System, was responsible for the software system for

20 transmission and generation dispatch of Entergy's 22,000 MW system, Open Access

21 Same Time Information System, and energy accounting. In 2001, Francis became

22 Director, Commercial Analytics, and was responsible energy market and engineering

23 analyses for the investment decisions of Entergy's commercial activities in North East

24 markets and regulated electric services in the middle south region. Francis completed a

25 Master of Business Administration from University of New Orleans in 1996 and Ph.D.

26 degree in Electrical Engineering from Tulane University in 2004.

27 **Q: Please describe your current responsibilities with NextEra Energy Resources.**

28 A: Francis joined NextEra Energy Resources, LLC in 2014 as Director, Transmission  
29 Services. I am currently an Executive Director, Transmission Services, supporting new  
30 renewables development and optimizing existing renewable assets performance. As  
31 Executive Director, I am responsible for Generation Interconnection, Transmission  
32 Services, and Transmission Analytics activities for life cycle of a renewable asset: from  
33 project conception, to Generation Interconnection Agreement execution, to completion of  
34 construction, and to asset operations.

35 **Q: Have you previously testified before the New York State Public Service**  
36 **Commission or Siting Board on Electric Generation?**

37 A: No.

38 **Q: Have you previously served as an expert witness before any other court, agency,**  
39 **or other body on the subject you plan to offer testimony on today?**

40 A: No. But, I was the company witness and provided the technical transmission system loss  
41 testimonies on behalf of Entergy Texas Inc. in its Fuel Factor case and Base Rate Case  
42 in 1998.

43 **Q: What is the purpose and scope of your testimony in this proceeding?**

44 A: I am familiar with nearly all aspects of interconnection, generation tie-line, and project  
45 substation of the Eight Point Wind Energy Center. I plan to demonstrate that the  
46 Applicant has complied with the Article 10 regulations and reliability standards and utility  
47 practices for the Project.

48 **Q: What portion(s) of the Application is your testimony sponsoring?**

49 A: I am sponsoring Exhibit 5 and Exhibit 34.

Case No. 16-F-0062

Shea

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Jim T. Shea, PE, PTOE

TRC Engineers, Inc.

1382 West 9<sup>th</sup> Street, Suite 400

Cleveland, OH 44113

1   **Q:     Please state your name, employer, and business address.**

2   A:     Jim T. Shea, PE, PTOE; TRC Engineers, Inc.; 1382 West 9<sup>th</sup> Street, Suite 400,  
3         Cleveland, OH 44113

4   **Q:     What is your position at TRC?**

5   A:     Transportation Engineer.

6   **Q:     How long have you been employed with TRC?**

7   A:     Hire Date: March 1, 2016.

8   **Q:     Please describe your educational background and professional experience.**

9   A:     I graduated from Cleveland State University with a Bachelor of Science in Civil  
10         Engineering in 2007 and in 2013 earned a Master of Science in Civil Engineering. Since  
11         graduating in 2007, I have worked in the engineering consulting field where I bring  
12         experience in transportation planning, roadway design, and traffic operations and design  
13         on various transportation projects for county, state, and local government agencies.  
14         Throughout my career, I have provided design services on numerous urban roadway  
15         reconstruction, resurfacing, and reconfiguration projects where I bring extensive  
16         experience in pavement resurfacing and repair methodologies in urban areas. In addition  
17         to my design experience, I have experience in a variety of preliminary engineering  
18         studies, including traffic impact studies, corridor alternative studies, interchange  
19         modification studies and safety studies. I earned my Professional Engineer license in  
20         2011 and my Professional Traffic Operations Engineer certification in 2013.

21   **Q:     Please describe your current responsibilities with TRC.**

22   A:     I have led various traffic-related projects including traffic impact studies and corridor  
23         timing studies, traffic signal design, traffic signal system design, and signing and marking  
24         design. I have considerable experience in traffic analysis using HCS and corridor  
25         modeling and simulation using Synchro. In addition to my traffic study experience, I have  
26         served as project engineer on numerous roadway reconstruction, resurfacing, and

27 reconfiguration projects with design experience, including horizontal and vertical  
28 alignments, drainage, waterworks, traffic control, and signal design.

29 **Q: Have you previously testified before the New York State Public Service**  
30 **Commission or Siting Board on Electric Generation?**

31 A: No.

32 **Q: Have you previously served as an expert witness before any other court, agency,**  
33 **or other body on the subject you plan to offer testimony on today?**

34 A: No.

35 **Q: What is the purpose and scope of your testimony in this proceeding?**

36 A: To document expected traffic impacts due to the construction and maintenance of the  
37 proposed turbines. My scope included traffic analysis, safety analysis, trip generation  
38 and distribution, safety analysis, expected routing, mitigation recommendations.

39 **Q: What portion(s) of the Application is your testimony sponsoring?**

40 A: Exhibit 25 – Effects on Transportation.

41 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
42 **your direction and supervision?**

43 A: Yes.

44 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
45 **publications, data or documents produced by persons other than yourself/your**  
46 **company? If so, please cite these sources. [These are independent studies, etc.]**

47 A: Yes.

48 San Diego County Wind Energy Ordinance

49 (<http://www.sandiegocounty.gov/pds/advance/POD10007DEIR.html>)

50 LOGISTICUS Projects Group - Eight Point Wind Feasibility Assessment – Dated

51 12/1/2016

**Education**

- M.S., Civil Engineering, Cleveland State University, 2013
- B.S., Civil Engineering, Cleveland State University, 2007

**Professional Registrations/Certifications/Training**

- Professional Engineer, Ohio (#76165)
- Professional Traffic Operations Engineer (#3431)
- IMSA Traffic Signal Technician Level II
- NHI Designing for Pedestrian Safety
- NHI Bicycle Facility Design
- NHI Alternative Intersections and Interchanges
- NHI Intersection Safety
- ODOT Safety Studies Training
- ODOT Traffic Academy – Traffic Signals
- ODOT Traffic Academy – Signing and Pavement Markings
- ODOT Traffic Academy – Maintenance of Traffic
- ODOT Traffic Academy – Interchange Studies
- ODOT Traffic Academy – Highway Lighting
- ODOT Highway Safety Manual Focused Training

**Jim T. Shea, PE, PTOE** serves as Project Manager and Transportation Engineer and brings experience in planning, design, and traffic operations on various transportation projects for county, state, and local government agencies. Throughout his career, Jim has led various traffic-related projects including traffic impact studies and corridor timing studies, traffic signal design, traffic signal system design, and signing and marking design. He is a Professional Traffic Operations Engineer and has considerable experience in traffic analysis using HCS and corridor modeling and simulation using Synchro. In addition to his traffic study experience, Mr. Shea has served as project engineer on numerous roadway reconstruction, resurfacing, and reconfiguration projects with design experience, including horizontal and vertical alignments, drainage, waterworks, traffic control, and signal design.

**EXPERIENCE**

- Considerable urban corridor roadway design experience.
- Considerable traffic modeling and analysis experience.

**PROJECT REFERENCES**

**Brian Blayney, PE** – ODOT District 12 Traffic Planning Engineer

Phone: 216-584-2102 Email: [Brian.Blayney@dot.ohio.gov](mailto:Brian.Blayney@dot.ohio.gov)

Projects: Lakefront West – West 25<sup>th</sup> Street Analysis, CUY-77-13.80 CCG6B Analysis

**Mary Hoy, PE** – ODOT District 7 Traffic Planning Engineer

Phone: 937-497-6838 Email: [mary.hoy@dot.ohio.gov](mailto:mary.hoy@dot.ohio.gov)

Projects: CLA-72-6.70, SHE-75-8.53

**Andrew R. Cross, PE, PTOE** – City of Cleveland Division of Traffic Engineering

Phone: 216-664-3197 Email: [across@city.cleveland.oh.us](mailto:across@city.cleveland.oh.us)

Projects: East 22<sup>nd</sup> Street, Fleet Avenue, Scranton Road

**KEY PROJECT EXPERIENCE**

**Ohio Department of Transportation, CLA-72-6.70/SHE-75-8.53 – Clark and Shelby Counties, OH (Project Engineer: 2017)** – Provided traffic engineering and related services to ODOT District 7 for traffic control upgrades at two interstate interchanges. Located in Shelby County, the recently reconstructed IR 75/SR 29 interchange required the installation of traffic signals at both the northbound and southbound ramp intersections to accommodate additional turning lanes. Located in Clark County, the IR 70/SR 72 interchange was identified within ODOT's Safety Program for improvements to reduce crashes and improve mobility. Improvements included signal installation at the westbound exit ramp and pavement marking revisions along SR 72 to provide an add lane for the existing eastbound loop exit ramp.

**Ohio Department of Transportation, Lakefront West Corridor (West 25<sup>th</sup> Street Traffic Analysis) - Cleveland, OH (Project Engineer: 2016)** - Provided traffic engineering services to evaluate the existing and proposed traffic operations in the vicinity of the West 25th Street and Washington Avenue/Main Avenue intersection within the City of Cleveland. This task is in conjunction with the improvements associated with the CUY-6-12.20 (PID No. 86482) project. A total of six (6) intersections were included within the scope of work for various types of traffic analysis. The study focused on evaluating traffic operations under various types of control at the West 25th Street & Washington Avenue/Main Avenue intersection.

**Ohio Department of Transportation, CUY-77-13.80 Cleveland Innerbelt CCG6B Bridge Reconstruction and Interchange Improvements - Cleveland, OH (Project Engineer: 2014-2016)** - Performed preliminary engineering for modifications to I-77 southbound near the I-490, Broadway Avenue, and Pershing Avenue interchanges. Mr. Shea was responsible for the signal warrant and removal analysis along the Broadway Avenue corridor. Work tasks also included freeway operational analysis along I-77 to determine if the capacity of the I-490 eastbound system interchange ramp to I-77 southbound should be increased. Various No-build and Build certified traffic volumes were evaluated for discrepancies.

**Richland Engineering Limited, CUY-90-14.90 EB Owner Support (Project Engineer: 2013-2015)** - Provided owner support services to ODOT on various traffic engineering services through various task order agreements. Tasks included signal timing recommendations and modifications at the I-490 and East 55th Street intersection and the Broadway Avenue corridor at the I-490 interchange. Timing modifications were coordinated through the City of Cleveland.

**City of Independence, Rockside Road Corridor Study - Independence, OH (Traffic Engineer: 2012-2013)** - Responsible for the development and analysis of alternatives to alleviate congestion along the corridor consisting of 10 signalized intersections and the Rockside Road/I-77 Interchange with an ADT of approximately 30,000. The corridor study successfully developed and analyzed short, medium and long term solutions that were recommended for implementation along the corridor. Each of the alternatives along the corridor was analyzed and simulated using Synchro to determine optimal signal timing and offset. Recommended improvements included timing adjustments to the 10 signal closed loop traffic signal system which were made at the controllers and at the City's TMC, signal head upgrades and adjustments, signal pole design and coordination, and overhead sign adjustments.

**City of Independence, West Creek Road Traffic Study - Independence, OH (Traffic Engineer: 2012-2013)** - West Creek Road Traffic Study was developed in conjunction with the Rockside Road Alternatives Study to evaluate alternatives that could be implemented to help alleviate congestion along the Rockside Road Corridor. The study examined the feasibility of adjusting lane use at the West Creek Road/ Rockside Road intersection, evaluated access control to the Crown Centre site, analyzed the need for additional signalization at various drives access along West Creek and developed alternative routing of traffic flow from West Creek, using Patriots Way, to Oak Tree in order to balance traffic volumes between closely spaced intersections.

**City of Independence, Hillside Road Intersection Improvements - Independence, OH (Project Engineer: 2012-2013)** - Developed design and construction documents for the widening and signal replacement at the intersection of Hillside and Brecksville Road (SR-21). The project also included upgrading drainage, new pavement and curbs, driveways and parking lot grading, and the extension of sidewalks along Hillside to improve access to the nearby school. Construction documents also included the design and installation of wireless interconnect and updated signal timing coordination plans for 10 signals along Brecksville and Pleasant Valley Roads that create a closed loop traffic signal system. Existing signal equipment was evaluated and updated on an as-needed basis.

**City of Cleveland, East 22nd Street Rehabilitation - Cleveland, OH (Project Engineer: 2014)** - Assigned for the rehabilitation of 0.67 miles of East 22nd Street in the Campus District neighborhood of Cleveland. The project implemented recommendations from the East 22nd Street Corridor/Campus District Redevelopment Plan including the narrowing of the road from Orange Avenue to Central Avenue from three lanes in each direction to two lanes in each direction with bike lanes. Mr. Shea was responsible for the development and analysis of the traffic study to determine the feasibility of the lane reduction. Mr. Shea was also responsible for the design that included the reconstruction of 6 signals. Signal plans included mast arm design, loop detection, RRFB design, interconnect plans, and a corridor timing plan.

**City of Cleveland, Fleet Avenue Rehabilitation - Cleveland, OH (Project Engineer: 2012-2013)** - Roadway reconstruction project along Fleet Avenue from Independence Avenue (I-77) to Broadway Avenue in the Slavic Village neighborhood of Cleveland. The approximately 1.04-mile long project is broken into two sections, the westernmost 0.66 miles, through the central business district, entailed the total replacement and minor widening of the pavement, including profile adjustments, green infrastructure and streetscape enhancements. Mr. Shea was responsible for the design that included the complete reconstruction of 5 signals and interconnect plans for an additional 2 signals outside of the project limits. Design included signals, RRFB, interconnect and traffic control.

Case No. 16-F-0062

Brown

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Joshua S. Brown

TRC Environmental Corporation

10 Maxwell Drive, Suite 200

Clifton Park, NY 12065

1 **Q: Please state your name, employer, and business address.**

2 A: Joshua S. Brown, TRC Environmental Corporation (TRC), 10 Maxwell Drive, Suite  
3 200, Clifton Park, NY 12065

4 **Q: What is your position at TRC?**

5 A: I am the Permitting Planning and Licensing, Office Practice Leader for New York.

6 **Q: How long have you been employed with TRC?**

7 A: I have been employed with TRC since 2009.

8 **Q: Please describe your educational background and professional experience.**

9 A: I hold a Dual Bachelor's Degree in Environmental Forest Biology and Forest and Natural  
10 Resources Management from the State University of New York College of Environmental  
11 Science and Forestry (SUNY ESF). I have served as permitting manager for numerous  
12 energy infrastructure and renewable energy projects throughout NY and the northeast. My  
13 experience is managing multi-disciplinary teams through project development from site  
14 prospecting, through siting, permitting, construction and post construction compliance. I  
15 have served in this role both as a consultant and wind project developer. Additional  
16 information on my experience is presented in my curriculum vitae, a copy of which is  
17 attached.

18 **Q: Please describe your current responsibilities with TRC.**

19 A: As the Office Practice Leader, I am responsible for overseeing TRC's Permitting Planning  
20 and Licensing staff across NYS. I oversee staff development, quality control and project  
21 staffing across the region. In addition I serve as a technical expert for complex permitting  
22 and compliance projects.

23 **Q: Have you previously testified before the New York State Public Service Commission  
24 or Siting Board on Electric Generation?**

25 A: No.

26 **Q: Have you previously served as an expert witness before any other court, agency,**  
27 **or other body on the subject you plan to offer testimony on today?**

28 A: No.

29 **Q: What is the purpose and scope of your testimony in this proceeding?**

30 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
31 or the Exhibits thereto.

32 **Q: What portion(s) of the Application is your testimony sponsoring?**

33 A: Exhibit 1, General Information; Exhibit 3, Location of Facilities; Exhibit 4, Land Use; Exhibit  
34 9, Alternatives; Exhibit 10, Consistency with Energy Planning; Exhibit 13, Real Property;  
35 Exhibit 14, Cost of Facilities; Exhibit 18, Safety and Security; Exhibit 22, Terrestrial  
36 Ecology and Wetlands (primarily wetland and streams); Exhibit 23, Water Resources and  
37 Aquatic Ecology; Exhibit 28, Environmental Justice; Exhibit 31, Local Laws and  
38 Ordinances; Exhibit 32, State Laws and Regulations.

39 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
40 **direction and supervision?**

41 A: Yes.

42 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
43 **publications, data or documents produced by persons other than yourself/your**  
44 **company? If so, please cite these sources. [These are independent studies, etc.]**

45 A: See Exhibits listed above for references.

46 **Q: Does this conclude your testimony?**

47 A: Yes.

## **JOSHUA S. BROWN**

### **EDUCATION**

B.S., Environmental Forest Biology and Forest and Natural Resources Management, SUNY College of Environmental Science and Forestry, 2003

### **REPRESENTATIVE EXPERIENCE**

Mr. Brown is an Environmental Program/Project Manager with over 12 years of experience in renewable energy and transmission permitting. As a Project Manager at TRC, Mr. Brown has been involved with and managed the permitting of numerous wind energy, solar and transmission line projects with a focus on identification and management of critical issues and strategic planning. Mr. Brown manages multi-disciplinary teams through all stages of project development and construction, including site identification, fatal flaw analysis, pre-construction environmental studies, permit applications at local, state and federal levels, regulatory and interested agency involvement, construction monitoring and post construction compliance.

#### **National Grid, Spier Falls – Rotterdam New 115kV Line Project – NY (Project Manager)**

TRC is providing environmental permitting and compliance services for Spier Falls/Rotterdam New 115kV Transmission Line Article VII project in upstate NY. Mr. Brown managed overall environmental support for the Project, including permitting and environmental compliance. He was involved in the Article VII Certificate process and led the production of the Environmental Management & Construction Plan (EM&CP). Mr. Brown was involved in settlement negotiations that led to a Joint Proposal of Settlement and an Article VII Certificate hearing to address outstanding landowner concerns.

#### **Transmission Developers, Inc., Champlain Hudson Power Express – NY (Deputy Project Manager)**

TRC provided permitting and engineering services for an HVdc transmission line project involving approximately 333 miles of underground and submarine cable with a total transmission capacity of 1,000 MW. The project is designed to deliver energy from Canada into metropolitan New York City. Mr. Brown served as the Deputy Project Manager, managing portions of the Article VII including construction methods and constraints, project layout and compilation of existing utility crossings. Mr. Brown was involved in settlement negotiations with the state agencies and other settlement parties and been involved in developing the Environmental Best Management Practices for the Project.

#### **National Grid, Brown Falls, Taylorville Part 102 Projects – (Project Manager)**

TRC supported two-part 102 project involving the Brown Falls – Taylorville #3 and #4 Lines. Mr. Brown is serving as the Project Manager for both of these projects. The first project is part of National Grid's conductor clearance refurbishment program and included the replacement of numerous structures along the 26 mile

line. TRC's scope of work included preparation of a Part 102 Report to the Public Service Commission, APA Major Permit Application, Stormwater Permitting, and construction planning and construction oversight.

**National Grid, Various Sub-Transmission and Substation Maintenance Projects – NY (Program Manager)**

Mr. Brown is the Program Manager for multiple transmission, sub-transmission and substation maintenance projects. He managed a multi-disciplinary team responsible for preparing and obtaining project required permits including Stormwater Pollution Prevention Plans (SWPPPs), New York Department of Environmental Conservation General Permit Notifications, Public Service Commission Part 102 Applications, Adirondack Park Agency Permitting and Army Corp of Engineer required Permitting. Mr. Brown also manages the agency review and consultation for these projects.

**Confidential Solar Client, ~150 projects (350+ MW) in New York, State Environmental Quality Review Act and Environmental Due Diligence**

Mr. Brown is the Program Manager coordinating support of over 150 solar project in NY. Support includes initial critical issues analysis, preliminary site due diligence, agency coordination and permitting support.

**Noble Clinton Windpark, Noble Ellenburg Windpark, Noble Altona Windpark –Clinton County, NY (Environmental Field Engineer)**

Mr. Brown was responsible for coordinating the windparks layout, site specific wetland and cultural resources studies, production of town applications and was involved in the local, state, and federal permitting. Mr. Brown was also involved with the financing, construction monitoring and negotiations of post construction study protocol. The Clinton County Windparks were among the first in New York State and helped form the permitting process for future windparks in the state.

**Noble Chateaugay Windpark, Noble Bellmont Windpark and Other Early Development Projects – Franklin County, NY (Environmental Project Manager)**

Mr. Brown was the Environmental Project Manager responsible for all permitting efforts and agency contact for Noble Environmental Power's development work in Franklin County, New York. This effort included assisting in development of town laws regulating wind turbines, oversight of all environmental consultants, and compilation of permitting documents for the town, state, and federal agencies.

**Western NY Windparks (Environmental Project Manager)**

Mr. Brown assisted in the development of the Noble Environmental Power Windparks and was primarily involved in initial windpark layout and coordinating with civil engineers, wetland delineation teams, and wind resource assessment teams to develop optimal layouts for permitting.

**Eolian Renewable Energy, Antrim Wind Energy Project – Antrim, NH (Project Manager)**

TRC is providing environmental permitting and engineering services for the Antrim Wind Energy Project. Mr. Brown managed the coordinating permitting studies and engineering required for permitting of the Project. TRC performed a Critical Issues Analysis (CIA) early in the development process that identified the likely permitting and development hurdles that required more significant attention during the permitting process. TRC has also been involved in high level project screening of other potential wind sites for Eolian Renewable Energy.

**Confidential Client, Wind Energy Project Early Development Support – PA (Project Manager)**

TRC is providing feasibility project review and project planning for wind energy projects in Pennsylvania. Mr. Brown manages overall project review and scheduling. TRC provided a comprehensive environmental and permitting review identifying driving permit requirements, required field analysis, associated schedule and risks associated with each project. TRC's support of these early development activities have helped the projects gain development financing and TRC continues to support these projects as the prime environmental, engineering, and permitting contractor.

Case No. 16-F-0062

Rose

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Judah Rose

ICF Resources, LLC

9300 Lee Highway

Fairfax, VA 22031

1 **Q: Please state your name, employer, and business address.**

2 A: Judah Rose, ICF Resources, LLC, a subsidiary of ICF (ICF), 9300 Lee Highway, Fairfax,  
3 VA 22031.

4 **Q: What is your position at ICF?**

5 A: I am an Executive Director of ICF.

6 **Q: How long have you been employed with ICF?**

7 A: I have worked at ICF for over 35 years.

8 **Q: Please describe your educational background and professional experience.**

9 A: I received a degree in economics from the Massachusetts Institute of Technology and a  
10 Master's Degree in Public Policy from the Kennedy School of Government at Harvard  
11 University. I have over 35 years of experience in the energy industry including in electricity  
12 generation, fuels, power market design, environmental compliance, market mitigation,  
13 planning, finance, forecasting and modeling, and transmission. My clients include electric  
14 utilities, financial institutions, law firms, government agencies, power consumers,  
15 environmental groups, fuel companies, and Independent Power Producers. I am one of  
16 ICF's Distinguished Consultants, an honorary title given to three of ICF's 5,000 employees,  
17 and I have served on the Board of Directors of ICF as the Management Shareholder  
18 Representative. I frequently provide expert testimony and litigation support. I have  
19 supported the financing of tens of billion dollars of new and existing power plants and I am  
20 a frequent counselor to the financial community in restructuring and financing. I have  
21 testified in more than 130 instances in scores of state, federal, international, and other  
22 legal proceedings. I have also addressed approximately 100 major energy conferences,  
23 authored numerous articles published in Public Utilities Fortnightly, the Electricity Journal,  
24 Project Finance International, written numerous company studies, and appeared in TV  
25 interviews.

26 **Q: Please describe your current responsibilities with ICF.**

27 A: I now direct ICF's Wholesale Power Line of Business and I chair ICF's Advisory Services  
28 Practice.

29 **Q: Have you previously testified before the New York State Public Service Commission**  
30 **or Siting Board on Electric Generation?**

31 A: Yes, I have testified before the New York State Public Service Commission.

32 **Q: Have you previously served as an expert witness before any other court, agency, or**  
33 **other body on the subject you plan to offer testimony on today?**

34 A: I have testified before, filed with, or made presentations to the Federal Energy Regulatory  
35 Commission (FERC), an international arbitration tribunal, federal courts, domestic  
36 arbitration panels, and state regulators in 24 U.S. states and Canadian provinces,  
37 including Arizona, Arkansas, California, Connecticut, Florida, Indiana, Kentucky,  
38 Louisiana, Manitoba, Massachusetts, Minnesota, Missouri, Nevada, New Jersey, New  
39 York, North Carolina, Ohio, Oklahoma, Pennsylvania, Quebec, South Carolina, and  
40 Texas. I have testified extensively on the topics of electric power prices and markets, utility  
41 planning, the development of new generation resources and transmission, and generation  
42 asset valuation. Many of the testimonies were on subjects similar to the referenced Eight  
43 Point Wind Energy Center Project.

44 **Q: What is the purpose and scope of your testimony in this proceeding?**

45 A: To sponsor certain portions of the Eight Point Wind Project Application or the Exhibits  
46 thereto.

47 **Q: What portion(s) of the Application is your testimony sponsoring?**

48 A: Exhibit 8: Electric Systems Production Modeling.

49 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
50 **direction and supervision?**

51 A: Yes.

52 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications,**  
53 **data or documents produced by persons other than yourself/your company? If so,**  
54 **please cite these sources. [These are independent studies, etc.]**

55 **A:** References are listed in Exhibit 8.

56 **Q: Does this conclude your testimony?**

57 **A:** Yes.

## Judah L. Rose

### Executive Director

## ICF International

### EXPERIENCE OVERVIEW

Judah L. Rose joined ICF in 1982 and currently serves as an Executive Director of ICF International. He directs ICF's Wholesale Power practice and co-chairs its Energy Advisory and Solution Line of Business. Mr. Rose has over 35 years of experience in the energy industry including in electricity generation, fuels, power market design, environmental compliance, market mitigation, planning, finance, forecasting and modeling, and transmission. His clients include electric utilities, financial institutions, law firms, government agencies, power consumers, environmental groups, fuel companies, and Independent Power Producers. Mr. Rose is one of ICF's Distinguished Consultants, an honorary title given to three of ICF's 5,000 employees, and has served on the Board of Directors of ICF International as the Management Shareholder Representative.

Mr. Rose frequently provides expert testimony and litigation support. He has provided testimony in 130 instances in scores of state, federal, international, and other legal proceedings. Mr. Rose has testified in over 24 states and provinces, at the Federal Energy Regulatory Commission, in numerous court settings and internationally.

Mr. Rose has supported the financing of tens of billion dollars of new and existing power plants and is a frequent counselor to the financial community in restructuring and financing.

Mr. Rose has also addressed approximately 100 major energy conferences, authored numerous articles published in Public Utilities Fortnightly, the Electricity Journal, Project Finance International, and written numerous company studies. He has also appeared in TV interviews.

---

#### Accomplishment Highlights

- Over 35 years of experience in the energy industry
  - Testimony in 130 instances in scores of state, federal, international, and other legal proceedings
  - Frequent counselor on restructuring and financing of new and existing power plants
- 

#### Education

- M.P.P., John F. Kennedy School of Government, Harvard University, 1982
  - S.B., Economics, Massachusetts Institute of Technology, 1979
- 

### SELECTED PRESS INTERVIEWS

- |                   |  |
|-------------------|--|
| <b>Television</b> | <ul style="list-style-type: none"> <li>▪ "The Most With Allison Stewart," MSNBC, "Blackouts in NY and St. Louis &amp; ongoing Energy Challenges in the Nation," July 25, 2006</li> <li>▪ CNBC Wake-Up Call, August 15, 2003</li> <li>▪ Wall Street Journal Report, July 25, 1999</li> <li>▪ Back to Business, CNBC, September 7, 1999</li> </ul> |
| <b>Journals:</b>  | <ul style="list-style-type: none"> <li>▪ Electricity Journal</li> <li>▪ Energy Buyer Magazine</li> </ul>   |

- Public Utilities Fortnightly
- Power Markets Week

- Magazines:**
- Business Week
  - Power Economics
  - Costco Connection

- Newspapers:**
- Denver Post
  - Rocky Mountain News
  - Financial Times Energy
  - LA Times
  - Arkansas Democratic Gazette
  - Galveston Daily News
  - The Times-Picayune
  - Pittsburgh Post-Gazette
  - Power Markets Week

- Wires:**
- Associated Press
  - Bridge News
  - Dow Jones Newswires

## TESTIMONY

130. Rebuttal testimony on behalf of Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company, October 20, 2015.
129. Expert testimony on the January 14, 2015 “stopgap” filing at FERC on behalf of The PJM Power Providers Group, Docket No. ER15-852-000, February 13, 2015.
128. Damages Testimony on behalf of Duke Energy Indiana, Inc. Plaintiff v. Cause No. 1:13-cv-1984-SEB/TAB, Benton County Wind Farm LLC, January 5, 2015.
127. Responsive Testimony of Judah L. Rose on Behalf of Oklahoma Energy Results, LLC December 16, 2014, CAUSE NO. PUD 201400229.
126. Rebuttal Testimony on behalf of Duke Energy Indiana, Inc. Plaintiff v. Cause No. 1:13-cv-1984-SEB/TAB, Benton County Wind Farm LLC, November 26, 2014.
125. Statement of Opinions on behalf of Duke Energy Indiana, Inc. Plaintiff v. Cause No. 1:13-cv-1984-SEB/TAB, Benton County Wind Farm LLC, October 30, 2014.
124. Direct Testimony, CO<sub>2</sub> price forecasts provided to IPL for use in their compliance analysis, as well as, support for the probabilities assigned to the Coal Combustion Residuals (“CCR”),

316 (b) and Effluent Limitation Guidelines (“ELG”) regulations for use in IPL analysis in support of their Compliance Project, Indianapolis Power & Light Company, IURC Cause No. 44540, October 14, 2014.

123. Direct Testimony, Support for an Electric Security Plan Filing, Ohio Edison Company (FirstEnergy), August 4, 2014.
122. Rebuttal Testimony, Valuation of Mad River Power Plant, FirstEnergy, February 27, 2014.
121. Expert Report, Computation of Future Damages, Breach of Wolf Run Coal Sales Agreement, prepared for Meyer, Unkovic, and Scott, LLP, filed February 12, 2014.
120. Supplemental Direct Testimony of Judah Rose on behalf of National Grid and Northeast Utilities, Petition of New England Power Company d/b/a/ National Grid for Approval to Construct and Operate a New 345 kV Transmission Line and to Modify an Existing Switching Station Pursuant to G.L. c. 164, § 69J, August 8, 2013.
119. Rebuttal Testimony of Judah Rose on Behalf of Monongahela Power Company, The Potomac Edison Company, Petition for Approval of a Generation Resource Transaction and Related Relief, Case No. 12-1571 – E – PC, May 17, 2013.
118. Direct Testimony of Judah Rose on behalf of New England Power Company d/b/a National Grid before the Commonwealth Of Massachusetts Energy Facilities Siting Board and Department Of Public Utilities, Petition of New England Power Company d/b/a National Grid for Approval to Construct and Operate a New 345kV Transmission Line and to Modify an Existing Switching Station Pursuant to G.L. c. 164, § 69, Docket EFSB 12-1/D.P.U. 12-46/47, November 21, 2012.
117. Direct Testimony for the Narragansett Electric Company d/b/a National Grid (Interstate Reliability Project), Before the State of Rhode Island Public Utilities Commission, Energy Facility Siting Board ("Siting Board") Notice of Designation to Public Utilities Commission ("PUC") to Render an Advisory Opinion on need and cost-justification for Narragansett Electric d/b/a National Grid's proposal to construct and alter major energy facilities in RI, the "Interstate Reliability Project", RIPUC Docket No. 4360, November 21, 2012
116. Sur-Surrebuttal Testimony, In the Matter of Southwestern Electric Power Company's Petition for a Declaratory Order Finding That Installation of Environmental Controls at the Flint Creek Power Plant is in the Public Interest, Docket No. 12-008-U, September 21, 2012.
115. Rebuttal Testimony, In the Matter of Southwestern Electric Power Company's Petition for a Declaratory Order Finding That Installation of Environmental Controls at the Flint Creek Power Plant is in the Public Interest, Docket No. 12-008-U, July 30, 2012.
114. Direct Testimony, The Connecticut Light & Power Company, Application for a Certificate of Environmental Compatibility and Public Need for the Connecticut Portion of the Interstate Reliability Project that traverses the municipalities of Lebanon, Columbia, Coventry,

Mansfield, Chaplin, Hampton, Brooklyn, Pomfret, Killingly, Putnam, Thompson, and Windham, which consists of (a) new overhead 345-kV electric transmission lines and associated facilities extending between CL&P's Card Street Substation in the Town of Lebanon, Lake Road Switching Station in the Town of Killingly, and the Connecticut/Rhode Island border in the Town of Thompson; and (b) related additions at CL&P's existing Card Street Substation, Lake Road Switching Station, and Killingly Substation, Docket No. 424, July 17, 2012.

113. Direct Testimony, Southwestern Electric Power Company, In the Matter of Southwestern Electric Power Company's Petition for a Declaratory Order Finding That Installation of Environmental Controls at the Flint Creek Power Plant is in the Public Interest, Docket No. 12-008-U, February 9, 2012.
112. Rebuttal Testimony, Otter Tail Power Company, Before the Office of administrative Hearings, for the Minnesota Public Utilities Commission, In The Matter of Otter Tail Power Company's Petition for an Advance Determination of Prudence for its Big Stone Air Quality Control System Project, September 7, 2011.
111. Rebuttal Testimony, on behalf of Arizona Public Service, In the Matter of the Application of Arizona Public Service Company for Authorization for the Purchase of Generating Assets from Southern California Edison, and for an Accounting Order, Docket No. E-01345A-10-0474, June 22, 2011.
110. Direct Testimony, Duke Energy Ohio, Inc., Application of Duke Energy Ohio for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan, Accounting Modifications and Tariffs for Generation Service, Case No. 11-XXXX-EL-SSO. Application of Duke Energy Ohio for Authority to Amend its Certified Supplier Tariff, P.U.C.O. No. 20. Case No. 11-XXXX-EL-ATA. Application of Duke Energy Ohio for Authority to Amend its Corporate Separation Plan. Case No. 11-XXXX-EL-UNC, June 20, 2011.
109. Direct Testimony, Manitoba Hydro Power Sales Contracting Strategy, U.S. Power Markets, Manitoba Hydro Drought Risks, Modeling, Forecasting and Planning, Selected Risk and Financial Issues, Governance, Trading and Risk Related Comments Before the Public Utilities Board of Manitoba, February 22, 2011.
108. Surrebuttal Testimony – Revenue Requirement of Judah Rose on Behalf of Dogwood Energy, LLC, In the Matter of the Application of KCP&L Greater Missouri Operations Company for Approval to Make Certain Changes to its Charges for Electric Service, Case No. ER-2010-0356, January 12, 2011.
107. Rebuttal Report Concerning Coal Price Forecast for the Harrison Generation Facility, Meyer, Unkovic and Scott, LLP, filed December 6, 2010.

106. Direct Testimony of Judah Rose on behalf of Duke Energy Ohio In the Matter of the Application of Duke Energy Ohio for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications, and Tariffs for Generation Service, Case No. 10-2586-EL-SSO, filed November 15, 2010.
105. Updated Forecast, Coal Price Report for the Harrison Generation Facility, Meyer, Unkovic and Scott, LLP, filed October 18, 2010.
104. Declaration of Judah Rose in re: Boston Generating LLC, et al., Chapter 11, Case No. 10-14419 (SCC) Jointly Administered, September 29, 2010.
103. Declaration of Judah Rose in re: Boston Generating LLC, et al., Chapter 11, Case No. 10-14419 (SCC) Jointly Administered, September 16, 2010.
102. Direct Testimony of Judah Rose on behalf of Plains and Eastern Clean Line LLC, in the Matter of the Application of Plains and Eastern Clean Line Oklahoma LLC to conduct Business as an Electric Utility in the State of Oklahoma, Cause No.PUD 201000075, July 16, 2010.
101. Direct Testimony of Judah Rose on behalf of Plains and Eastern Clean Line LLC, in the Matter of the Application of Plains and Eastern Clean Line LLC for a Certificate of Public Convenience and Necessity to Operate as an Electric Transmission Public Utility in the State of Arkansas, Docket No. 10-041-U, June 4, 2010.
100. Supplemental Testimony on Behalf of Entergy Arkansas, Inc., In the Matter of Entergy Arkansas, Inc., Request for a Declaratory Order Approving the Addition of the Environmental Controls Project at the White Bluff Steam Electric Station Near Redfield, Arkansas, Docket No. 09-024-U, July 6, 2009.
99. Rebuttal Testimony on Behalf of TransEnergie, Canada, Province of Quebec, District of Montreal, No.: R-3669-2008-Phase 2, FERC Order 890 and Transmission Planning, July 3, 2009.
98. Surrebuttal Testimony – Revenue Requirement of Judah Rose on Behalf of Dogwood Energy, LLC, before the Missouri Public Service Commission, In the Matter of the Application of KCP&L GMO, Inc. d/b/a KCP&L Greater Missouri Operations Company for Approval to Make Certain Changes to its Charges for Electric Service, Case No. ER-2009-0090, April 9, 2009.
97. Hawaii Structural Ironworkers Pension Trust Fund v. Calpine Corporation, Case No. 1-04-CV-021465, Assessment of Calpine’s April 2002 Earnings Projections, March 25, 2009.
96. Coal Price Report for Harrison Coal Plant, Allegheny Energy Supply Company, LLS and Monongahela Power Company versus Wolf Run Mining Company, Anker Coal Group, etc.,

Civil Action. No. GD-06-30514, In the Court of Common Pleas, Allegheny County, Pennsylvania, February 6, 2009.

95. Supplemental Direct Testimony of Judah Rose, on behalf of Southwestern Electric Power Company, In the Matter of the Application of Southwestern Electric Power Company for Authority to Construct a Natural-Gas Fired Combined Cycle Intermediate Generating Facility in the State of Louisiana, Docket No. 06-120-U, December 9, 2008.
94. Rebuttal Testimony of Judah Rose on behalf of Kelson Transmission Company, LLC re: Application of Kelson Transmission Company, LLC For A Certificate of Convenience and Necessity For the Amended Proposed Canal To Deweyville 345 kV Transmission Line Within Chambers, Hardin, Jasper, Jefferson, Liberty, Newton, And Orange Counties, SOAH Docket No. 473-08-3341, PUCT Docket No. 34611, October 27, 2008.
93. Testimony of Judah Rose, on behalf of Redbud Energy, LP, in Support of Joint Stipulation and Settlement Agreement, In the Matter of the Application of Oklahoma Gas and Electric Company for an Order of the Commission Granting Pre-Approval of the Purchase of the Redbud Generating Facility and Authorizing a Recovery Rider, Cause No. PUD 200800086, September 3, 2008.
92. Direct Testimony of Judah L. Rose on behalf of Duke Energy Carolinas, In the Matter of Advance Notice by Duke Energy Carolinas, LLC, of its Intent to Grant Native Load Priority to the City of Orangeburg, South Carolina, and Petition of Duke Energy Carolinas, LLC and City of Orangeburg, South Carolina for Declaratory Ruling With Respect to Rate Treatment of Wholesale Sales of Electric Power at Native Load Priority, Docket No. E-7, SUB 858, August 15, 2008.
91. Affidavit filed on behalf of Public Service of New Mexico pertaining to the Fuel Costs of Southwest Public Service for Cost-of-Service and Market-Based Customers, August 11, 2008.
90. Direct Testimony of Judah L. Rose on behalf of Duke Energy Ohio, Inc., Before the Public Utilities Commission of Ohio, In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Electric Security Plan, July 31, 2008.
89. Rebuttal Testimony, Judah L. Rose on Behalf of Duke Energy Carolinas, in re: Application of Duke Energy Carolinas, LLC for Approval of Save-A-Watt Approach, Energy Efficiency Rider and Portfolio of Energy Efficiency Programs, Docket No. E-7, Sub 831, July 21, 2008.
88. Updated Analysis of SWEPCO Capacity Expansion Options as Requested by Public Utility Commission of Texas, on behalf of SWEPCO, June 27, 2008.
87. Direct Testimony of Judah L. Rose on Behalf of Nevada Power/Sierra Pacific Electric Power Company, Docket No. 1, Public Utilities Commission of Nevada, Application of Nevada

- Power/Sierra Pacific for Certificate of Convenience and Necessity Authorization for a Gas-Fired Power Plant in Nevada, May 16, 2008.
86. Rebuttal Testimony of Judah L. Rose on Behalf of the Advanced Power, Commonwealth of Massachusetts, Before the Energy Facilities Siting Board, Petition of Brockton Power Company, LLC, EFSB 07-7, D.P.U. 07-58 & 07-59, May 16, 2008.
  85. Supplemental Rebuttal Testimony on Commissioner's Issues of Judah L. Rose for Southwestern Electric Power Company, on behalf of Southwestern Electric Power Company, PUC Docket No. 33891, Public Utilities Commission of Texas, May 2008.
  84. Supplemental Direct Testimony on Commissioners' Issues of Judah Rose for Southwestern Electric Power Company, for the Application of Southwestern Electric Power Company for Certificate of Convenience and Necessity Authorization for a Coal-Fired Power Plant in Arkansas, SOAH Docket No. 473-07-1929, PUC Docket No. 33891, Public Utility Commission of Texas, April 22, 2008.
  83. Rebuttal Testimony of Judah Rose, In the Matter of the Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize A Reasonable Rate of Return on the Fair Value of Its Operations Throughout the State of Arizona, Estimation of Market Value of Fleet of Utility Coal Plants, April 1, 2008.
  82. Rebuttal Report of Judah Rose, Ohio Power Company and AEP Power Marketing Inc. vs. Tractebel Energy Marketing, Inc. and Tractebel S.A. Case No. 03 CIV 6770, 03 CIV 6731 (S.D.N.Y.), January 28, 2008
  81. Proposed New Gas-Fired Plant, on behalf of AEP SWEPCO, 2007
  80. Rebuttal Report, Calpine Cash Flows, on behalf of Unsecured Creditor's Committee, November 21, 2007.
  79. Expert Report. Calpine Cash Flows, on behalf of Unsecured Creditor's Committee, November 19, 2007.
  78. Application of Duke Energy Carolina, LLC for Approval of Energy Efficiency Plan Including an Energy Efficiency Rider and Portfolio of Energy, Docket No. 2007-358-E, Public Service Commission of South Carolina, December 10, 2007.
  77. Independent Transmission Cause No. PUD200700298, Application of ITC, Public Service of Oklahoma, December 7, 2007.
  76. Verified Petition of Duke Energy Indiana, Inc. Requesting the Indiana Utility Regulatory Commission to Approve an Alternative Regulatory Plan Pursuant to Ind. Code §8-1-2.5-1, et. Seq. for the Offering of Energy Efficiency Conservation, Demand Response, and Demand-Side Management Programs and Associated Rate Treatment Including Incentives Pursuant to a Revised Standard Contract Rider No. 66 in Accordance With Ind. Code §§8-1-

- 2.5-1 et seq. and 8-1-2-42(a); Authority to Defer Program Costs Associated with its Energy Efficiency Portfolio of Programs; Authority to Implement New and Enhanced Energy Efficiency Programs, Including the PowerShare® Program in its Energy Efficiency Portfolio of Programs; and Approval of a Modification of the Fuel Adjustment Cause Earnings and Expense Tests, Indiana Utility Regulatory Commission, Cause No. 43374, October 19, 2007.
75. Rebuttal Testimony, Docket No. U-30192, Application of Entergy Louisiana, LLC For Approval to Repower the Little Gypsy Unit 3 Electric Generating Facility and for Authority to Commence Construction and for Certain Cost Protection and Cost Recovery, October 4, 2007.
  74. Direct Testimony of Judah Rose on Behalf of Tucson Electric Power Company, In the matter of the Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of Its Operations Throughout the State of Arizona, Estimation of Market Value of Fleet of Utility Coal Plants, July 2, 2007.
  73. Supplemental Testimony on behalf of Southwestern Electric Power Company before the Arkansas Public Service Commission, In the Matter of Application of Southwestern Electric Power Company for a Certificate of Environmental Compatibility and Public Need for the Construction, Ownership, Operation, and Maintenance of a Coal-Fired Base Load Generating Facility in the Hempstead County, Arkansas, dated June 15, 2007, Docket No. 06-154-U.
  72. Rebuttal Testimony, Causes No. PUD 200500516, 200600030, and 20070001 Consolidated, on behalf of Redbud Energy, before the Corporation Commission of the State of Oklahoma, June 2007.
  71. Rebuttal Testimony on behalf of Duke Energy Indiana, IGCC Coal Plant CPCN, Cause No. 43114 before the Indiana Utility Regulatory Commission, May 31, 2007.
  70. Responsive Testimony, Causes No. PUD 200500516, 200600030, and 200700012 Consolidated, on behalf of Redbud Energy, before the Corporation Commission of the State of Oklahoma, May 2007.
  69. Rebuttal Testimony on behalf of Florida Power & Light Company In Re: Florida Power & Light Company's Petition to Determine Need for FPL Glades Power Park Units 1 and 2 Electrical Power Plant, Docket No. 070098-EL, March 30, 2007.
  68. Rebuttal Testimony, Electric Utility Power Hedging, on behalf of Duke Energy Indiana, Cause No. 38707-FAC6851, May 2007.

67. Direct Testimony for Southwestern Electric Power Company, Before the Louisiana Public Service Commission, Docket No. U-29702, in re: Application of Southwestern Electric Power Company for the Certification of Contracts for the Purchase of Capacity for 2007, 2008, and 2009 and to Purchase, Operate, Own, and Install Peaking, Intermediate and Base Load Coal-Fired Generating Facilities in Accordance with the Commission's General Order Dated September 20, 1983. Consolidated with Docket No. U-28766 Sub Docket B in re: Application of Southwestern Electric Power Company for Certification of Contracts for the Purchase of Capacity in Accordance with the Commission's 'General Order of September 20, 1983, February 2007.
66. Second Supplemental Testimony on Behalf of Duke Energy Ohio Before the Public Utility Commission of Ohio, Case No. 03-93-EL-ATA, 03-2079, EL-AAM, 03-2081, EL-AAM, 03-2080, EL-ATA, February 28, 2007.
65. Electric Utility Power Hedging, on behalf of Duke Energy Indiana, Cause No. 38707-FAC6851, February 2007.
64. Supplemental Testimony on behalf of Duke Energy Carolinas before the North Carolina Utilities Commission in the Matter of Application of Duke Energy Carolinas, LLC for Approval for an Electric Generation Certificate of Public Convenience and Necessity to Construct Two 800 MW State of Art Coal Units for Cliffside Project, Docket No. E7, SUB790, December 2006.
63. Expert Report, Chapter 11, Case No. 01-16034 (AJG) and Adv. Proc. No. 04-2933 (AJG), November 6, 2006.
62. IGCC Coal Plant, Testimony on behalf of Duke Energy Indiana, Cause No. 43114, October 2006.
61. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU Staff, NJBPU, BPU Docket No. EM05020106 OAL Docket No. PUC-1874-05, Supplemental Testimony March 20, 2006.
60. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU Staff, NJBPU, BPU Docket No. EM05020106, OAL Docket No. PUC-1874-05, Surrebuttal Testimony December 27, 2005.
59. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU Staff, NJBPU, BPU Docket No. EM05020106, OAL Docket No. PUC-1874-05, November 14, 2005.
58. Brazilian Power Purchase Agreement, confidential international arbitration, October 2005.
57. Cost of Service and Fuel Clause Issues, Rebuttal Testimony on behalf of Public Service of New Mexico, Docket No. EL05-151, November 2005.

56. Cost of Service and Peak Demand, FERC, Testimony on behalf of Public Service of New Mexico, September 19, 2005, Docket No. EL05-19.
55. Cost of Service and Fuel Clause Issues, Testimony on behalf of Public Service of New Mexico, FERC Docket No. EL05-151-000, September 15, 2005.
54. Cost of Service and Peak Demand, FERC, Responsive Testimony on behalf of Public Service of New Mexico, August 23, 2005, Docket No. EL05-19.
53. Prudence of Acquisition of Power Plant, Testimony on behalf of Redbud, September 12, 2005, No. PUD 200500151.
52. Proposed Fuel Cost Adjustment Clause, FERC, Docket Nos. EL05-19-002 and ER05-168-001 (Consolidated), August 22, 2005.
51. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU, FERC, Docket EC05-43-000, May 27, 2005.
50. New Air Emission Regulations and Investment in Coal Power Plants, rebuttal testimony on behalf of PSI, April 18, 2005, Causes 42622 and 42718.
49. Rebuttal Report: Damages due to Rejection of Tolling Agreement Including Discounting, February 9, 2005, CONFIDENTIAL.
48. New Air Emission Regulations and Investment in Coal Power Plants, supplemental testimony on behalf of PSI, January 21, 2005, Causes 42622 and 42718.
47. Damages Due to Rejection of Tolling Agreement Including Discounting, January 10, 2005, CONFIDENTIAL.
46. Discount rates that should be used in estimating the damages to GTN of Mirant's bankruptcy and subsequent abrogation of the gas transportation agreements Mirant had entered into with GTN, December 15, 2004. CONFIDENTIAL
45. New Air Emission Regulations and Investment in Coal Power Plants, testimony on behalf of PSI, November 2004, Causes 42622 and 42718.
44. Rebuttal Testimony of Judah Rose on behalf of PSI, "Certificate of Purchase as of yet Undetermined Generation Facility" Cause No. 42469, August 23, 2004.
43. Rebuttal Testimony of Judah Rose on behalf of the Hopi Tribe, Case No. A.02-05-046, Mohave Coal Plant Economics, June 4, 2004.
42. Supplemental Testimony "Retail Generation Rates, Cost Recovery Associated with the Midwest Independent Transmission System Operator, Accounting Procedures for Transmission and Distribution System, Case No. 03-93-EL-ATA, 03-2079, EL-AAM, 03-2081, EL-AAM, 03-2080, EL-ATA for Cincinnati Gas & Electric, May 20, 2004.

41. "Application of Southern California Edison Company (U338-E) Regarding the Future Disposition of the Mohave Coal-Fired Generating Station," May 14, 2004.
40. "Appropriate Rate of Return on Equity (ROE) TransAlta Should be Authorized For its Capital Investment Related to VAR Support From the Centralia Coal-Fired Power Plant", for TransAlta, April 30, 2004, FERC Docket No. ER04-810-000.
39. "Retail Generation Rates, Cost Recovery Associated with the Midwest Independent Transmission System Operator, Accounting Procedures for Transmission and Distribution System, Case No. 03-93-EL-ATA, 03-2079, EL-AAM, 03-2081, EL-AAM, 03-2080, EL-ATA for Cincinnati Gas & Electric, April 15, 2004.
38. "Valuation of Selected MIRMA Coal Plants, Acceptance and Rejection of Leases and Potential Prejudice to Lessors" Federal Bankruptcy Court, Dallas, TX, March 24, 2004 CONFIDENTIAL.
37. "Certificate of Purchase as of yet Undetermined Generation Facility", Cause No. 42469 for PSI, March 23, 2004.
36. "Ohio Edison's Sammis Power Plant BACT Remedy Case", In the United States District Court of Ohio, Southern Division, March 8, 2004.
35. "Valuation of Power Contract," January 2004, confidential arbitration.
34. "In the matter of the Application of the Union Light Heat & Power Company for a Certificate of Public Convenience and Necessity to Acquire Certain Generation Resources, etc.," before the Kentucky Public Service Commission, Coal-Fired and Gas-Fired Market Values, July 21, 2003.
33. "In the Supreme Court of British Columbia", July 8, 2003. CONFIDENTIAL
32. "The Future of the Mohave Coal-Fired Power Plant – Rebuttal Testimony", California P.U.C., May 20, 2003.
31. "Affidavit in Support of the Debtors' Motion", NRG Bankruptcy, Revenues of a Fleet of Plants, May 14, 2003. CONFIDENTIAL
30. "IPP Power Purchase Agreement," confidential arbitration, April 2003.
29. "The Future of the Mohave Coal-Fired Power Plant", California P.U.C., March 2003.
28. "Power Supply in the Pacific Northwest," contract arbitration, December 5, 2002. CONFIDENTIAL
27. "Power Purchase Agreement Valuation", Confidential Arbitration, October 2002.
26. "Cause No. 42145 - In support of PSI's petition for authority to acquire the Madison and Henry County plants, rebuttal testimony on behalf of PSI. Filed on 8/23/02."

25. "Cause No. 42200 - in support of PSI's petition for authority to recover through retail rates on a timely basis. Filed on 7/30/02."
24. "Cause No. 42196 - in support of PSI's petition for interim purchased power contract. Filed on 4/26/02."
23. "Cause No. 42145 - In support of PSI's petition for authority to acquire the Madison and Henry County plants. Filed on 3/1/2002."
22. "Analysis of an IGCC Coal Power Plant", Minnesota state senate committees, January 22, 2002
21. "Analysis of an IGCC Coal Power Plant", Minnesota state house of representative committees, January 15, 2002
20. "Interim Pricing Report on New York State's Independent System Operator", New York State Public Service Commission (NYSPSC), January 5, 2001
19. "The need for new capacity in Indiana and the IRP process", Indiana Utility Regulatory Commission, October 26, 2000
18. "Damage estimates for power curtailment for a Cogen power plant in Nevada", August 2000. CONFIDENTIAL
17. "Valuation of a power plant in Arizona", arbitration, July 2000. CONFIDENTIAL
16. Application of FirstEnergy Corporation for approval of an electric Transition Plan and for authorization to recover transition revenues, Stranded Cost and Market Value of a Fleet of Coal, Nuclear, and Other Plants, Before PUCO, Case No. 99-1212-EL-ETP, October 4, 1999 and April 2000.
15. "Issues Related to Acquisition of an Oil/Gas Steam Power plant in New York", September 1999 Affidavit to Hennepin County District Court, Minnesota
14. "Wholesale Power Prices, A Cost Plus All Requirements Contract and Damages", Cajun Bankruptcy, July 1999. Testimony to U.S. Bankruptcy Court.
13. "Power Prices." Testimony in confidential contract arbitration, July 1998.
12. "Horizontal Market Power in Generation." Testimony to New Jersey Board of Public Utilities, May 22, 1998.
11. "Basic Generation Services and Determining Market Prices." Testimony to the New Jersey Board of Public Utilities, May 12, 1998.
10. "Generation Reliability." Testimony to New Jersey Board of Public Utilities, May 4, 1998.

9. "Future Rate Paths and Financial Feasibility of Project Financing." Cajun Bankruptcy, Testimony to U.S. Bankruptcy Court, April 1998.
8. "Stranded Costs of PSE&G." Market Valuation of a Fleet of Coal, Nuclear, Gas, and Oil-Fired Power Plants, Testimony to New Jersey Board of Public Utilities, February 1998.
7. "Application of PECO Energy Company for Approval of its Restructuring Plan Under Section 2806 of the Public Utility Code." Market Value of Fleet of Nuclear, Coal, Gas, and Oil Power Plants, Rebuttal Testimony filed July 1997.
6. "Future Wholesale Electricity Prices, Fuel Markets, Coal Transportation and the Cajun Bankruptcy." Testimony to Louisiana Public Service Commission, December 1996.
5. "Curtailment of the Saguaro QF, Power Contracting and Southwest Power Markets." Testimony on a contract arbitration, Las Vegas, Nevada, June 1996.
4. "Future Rate Paths and the Cajun Bankruptcy." Testimony to the U.S. Bankruptcy Court, June 1997.
3. "Fuel Prices and Coal Transportation." Testimony to the U.S. Bankruptcy Court, June 1997.
2. "Demand for Gas Pipeline Capacity in Florida from Electric Utilities." Testimony to Florida Public Service Commission, May 1993.
1. "The Case for Fuel Flexibility in the Florida Electric Generation Industry." Testimony to the Florida Department of Environmental Regulation (Der), Hearings on Fuel Diversity and Environmental Protection, December 1992.

#### **SELECTED PUBLICATIONS AND PRESENTATIONS**

- Rose, J.L., "Return of the RTO: Auction Results Portend Recovery," White Paper, June 14, 2014.
- Rose, J. L., "The Next Polar Vortex: How Long Will Grid Emergencies and Price Volatility Continue?" Public Utilities Fortnightly, June 2014.
- Rose, J.L., "Wind Curtailment, Assessing and Mitigating Risks," White Paper, December 2012.
- Rose, J.L. and Henning, B. "Partners in Reliability: Gas and Electricity," PowerNews, September 1, 2012.
- Rose, J.L. and Surana, S. "Using Yield Curves and Energy Prices to Forecast Recessions – An Update." World Generation, March/April 2011, V.23 #2.
- Rose, J.L. and Surana, S. "Oil Price Increases, Yield Curve Inversion may be Indicators of Economic Recession." Oil and Gas Financial Journal, Volume 7, Issue 6, June 2010
- Rose, J.L. and Surana, S. "Forecasting Recessions and Investment Strategies." World-Generation, June/July 2010, V.22, #3.

- Rose, J.L., "Should Environmental Restrictions be Eased to Allow for the Construction of More Power Plants? The Costco Connection, April 2001.
- Rose, J.L., "Deregulation in the US Generation Sector: A Mid-Course Appraisal", *Power Economics*, October 2000.
- Rose, J. L., "Price Spike Reality: Debunking the Myth of Failed Markets", *Public Utilities Fortnightly*, November 1, 2000.
- Rose, J.L., "Missed Opportunity: What's Right and Wrong in the FERC Staff Report on the Midwest Price Spikes," *Public Utilities Fortnightly*, November 15, 1998.
- Rose, J.L., "Why the June Price Spike Was Not a Fluke," *The Electricity Journal*, November 1998.
- Rose, J.L., S. Muthiah, and J. Spencer, "Will Wall Street Rescue the Competitive Wholesale Power Market?" *Project Finance International*, May 1998.
- Rose, J.L., "Last Summer's "Pure" Capacity Prices – A Harbinger of Things to Come," *Public Utilities Fortnightly*, December 1, 1997.
- Rose, J.L., D. Kathan, and J. Spencer "Electricity Deregulation in the New England States," *Energy Buyer*, Volume 1, Issue 10, June-July 1997.
- Rose, J.L., S. Muthiah, and M. Fusco, "Financial Engineering in the Power Sector," *The Electricity Journal*, Jan/Feb 1997.
- Rose, J.L, S. Muthiah, and M. Fusco, "Is Competition Lacking in Generation? (And Why it Should Not Matter)," *Public Utilities Fortnightly*, January 1, 1997.
- Mann, C. and J.L. Rose, "Price Risk Management: Electric Power vs. Natural Gas," *Public Utilities Fortnightly*, February 1996.
- Rose, J.L. and C. Mann, "Unbundling the Electric Capacity Price in a Deregulated Commodity Market," *Public Utilities Fortnightly*, December 1995.
- Booth, William and J.L. Rose, "FERC's Hourly System Lambda Data as Interim Bulk Power Price Information," *Public Utilities Fortnightly*, May 1, 1995.
- Rose, J.L. and M. Frevert, "Natural Gas: The Power Generation Fuel for the 1990s." Published by Enron.

#### **AWARDS AND RECOGNITION**

One of ICF's *Distinguished Consultants*, an honorary title given to only three of ICF's 5,000

employees

**EMPLOYMENT HISTORY**

ICF International	Senior Vice President	1999 - Present
ICF International	Vice President	1996-1999
ICF International	Project Manager	1993-1996
ICF International	Senior Associate	1986-1993
ICF International	Associate	1982-1986

Case No. 16-F-0062

Bartos

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Judith A. Bartos

TRC Environmental Corporation

Wannalancit Mills, 650 Suffolk Street

Lowell, MA 01854

1 **Q: Please state your name, employer, and business address.**

2 A: Judith Bartos, TRC Environmental Corporation (TRC), Wannalancit Mills, 650 Suffolk  
3 Street, Lowell, Massachusetts, 01854.

4 **Q: What is your position at TRC?**

5 A: Senior Scientist and Senior GIS Analyst.

6 **Q: How long have you been employed with TRC?**

7 A: I have been employed at TRC since 1999.

8 **Q: Please describe your educational background and professional experience.**

9 A: I have a Bachelor of Science and a Masters in Soil Science from the University of  
10 Massachusetts at Amherst. I have completed several GIS courses offered by ESRI, the  
11 leading vendor for GIS mapping software products. I have also participated in one-on-one  
12 training in the use of Autodesk 3DS Max visualization software, specifically for use in  
13 photosimulations.

14 I have 22 years of experience in the environmental field primarily on energy-related  
15 projects. At TRC, I have served in the capacity as Senior GIS Analyst for 17 years and  
16 have provided both the written reports and performed the technical analyses necessary  
17 for Visual Impact Assessment for numerous projects nationwide.

18 **Q: Please describe your current responsibilities with TRC.**

19 A: I work with several GIS software packages and 3-dimensional visualization programs to  
20 provide GIS analysis and visual impact assessments. I am responsible for performing the  
21 technical and written work of visual assessments and supervise junior staff on other GIS  
22 projects.

23 **Q: Have you previously testified before the New York State Public Service Commission  
24 or Siting Board on Electric Generation?**

25 A: No.

26 **Q: Have you previously served as an expert witness before any other court, agency,**  
27 **or other body on the subject you plan to offer testimony on today?**

28 A: Yes. I have testified before the Public Service Commission of West Virginia and the Energy  
29 Facility Siting Board in Massachusetts. I have recently provided written testimony to the  
30 Vermont Public Service Board.

31 **Q: What is the purpose and scope of your testimony in this proceeding?**

32 A: To sponsor the work performed for Exhibit 24 and accompanying Visual Impact  
33 Assessment Report.

34 **Q: What portion(s) of the Application is your testimony sponsoring?**

35 A: Exhibit 24 and accompanying Visual Impact Assessment Report.

36 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
37 **direction and supervision?**

38 A: Yes.

39 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
40 **publications, data or documents produced by persons other than yourself/your**  
41 **company? If so, please cite these sources. [These are independent studies, etc.]**

42 A: References are provided in the relevant Exhibit 24 and Visual Impact Report.

## JUDITH A. BARTOS

### AREAS OF EXPERTISE

Ms. Bartos has 18 years of cumulative experience in the following:

- GIS 10.3 ArcInfo/Spatial Analyst/3D Analyst; ArcServer/sde Geodatabase; 3DS Max 2016; Global Mapper; Visual Nature Studio 3; AutoCad; ArcGISPro
- Three-Dimensional Modeling, Photosimulation, Viewshed Analysis, Line-of-Sights, Advanced Terrain Analysis, Linear Referencing, Shadow Study, Animated Fly-Through, Cut and Fill, Air Modeling and Groundwater Modeling Isopleths, Advanced Geodatabases
- Visual Impact Assessments
- Expert Testimony for Visual Impact Assessments and Photosimulations
- GIS Web Mapping and GIS Mobile App Development
- Wind Farm and Generating Facility siting studies
- Watershed and Hydrologic Modeling using National Hydrography Dataset (NHDPlus), ArcHydro and Time Series Framework
- Soils, Glacial Geology, Hydrology, Landform Interpretation, Ecology, Forest Community Assessment, Stream Characterization, Wildlife Habitat Assessment, Census demographics, Environmental Justice: raster and vector data analysis with occasional use of external relational and non-relational databases
- Tailoring natural gas pipeline engineering information to state and federal permitting applications. Previously have written Resource Reports for FERC applications as well as final GIS analysis and cartography.
- FGDC-compliant metadata
- Environmental Inspection (FERC Guidelines) Natural Gas Pipeline Construction
- Wetland Assessment and Delineation in CT, DE, MA, MD, ME, NH, NJ, PA, VT, & WV.
- Ecology, Forest Community Assessment, Stream Characterization, Wildlife Habitat Assessment
- Environmental Permitting for Wetland Resource Areas and Hazardous Waste
- Construction Remediation Oversight, Hazardous Waste Management, Site Assessment, Remediation for large-scale infrastructure projects

### REPRESENTATIVE EXPERIENCE

#### Geographic Information Systems (GIS) and Visualization Studies

Ms. Bartos currently works with an integrated collection of GIS and visual/3-dimensional software products enabling her to deploy GIS functionality and to provide a full range of computerized visualization services for qualitative and quantitative visual impact assessments. Such elements include complex use of

vector and raster data for geoprocessing, linear referencing, analytical models, and centralizing data by building geodatabases and/or internet web-based mapping services, and utilizing database technology by integrating spatial data with other business data.

Her main area of expertise includes three dimensional modeling skills and photosimulations of proposed facilities in real world coordinates for those projects requiring visual impact studies, as well as viewshed analysis and lines-of-sight. She has provided expert testimony deposition and has assisted in the preparation of pretrial written testimony for visual assessments.

**Eversource West Roxbury to Needham Transmission Reliability Project, Massachusetts – (Sr. GIS Systems Analyst: 2016 to present).**

Ms. Bartos provided Visualization Services and expert testimony to the EFSB regarding the proposed new build electric transmission line for the West Roxbury to Needham Reliability Project. The project was a new transmission line build traversing through the towns of Needham, Dedham, and Boston (West Roxbury) along an existing above ground transmission. The work provided was in response to an EFSB Information Data Request dated December 8, 2016. Comparative viewshed analyses and photosimulations were provided.

**Eversource Sudbury to Hudson Transmission Reliability Project, Massachusetts – (Sr. GIS Systems Analyst: 2016 to present).**

Ms. Bartos performed and prepared a Visual Impact Assessment in support for a petition to the EFSB pursuant to G.L. c. 164, § 69J for authority to construct, operate, and maintain an approximately 9-mile 115-kilovolt transmission line from Eversource's Sudbury Substation on Boston Post Road in Sudbury to Hudson Light & Power Department's substation at Forest Avenue in Hudson. Ms. Bartos provided a viewshed analysis to assess impacts at a regional landscape level as well as producing photosimulations.

**Eight Point Wind Energy Center, Steuben County, NY – (Sr. GIS Systems Analyst: 2016 to present).**

Eight Point Wind expects to install up 34 commercial scale wind turbines in addition to a collection substation and 16-mile overhead 115kv transmission line. Ms. Bartos has produced a combined Visual Impact Assessment for the project that was conducted according to the requirements in 16 NYCRR §1001.24 to be included as Exhibit 24 in an Article X application. The NYSDEC Program Policy "Assessing and Mitigating Visual Impacts was used in order to comply with NYSPSC requirements and Article VII process for the transmission part of the project.

**Vermont Green Line, Addison County, VT & Clinton County, NY – (Sr. GIS Systems Analyst: 2015 to present).**

The Vermont Green Line Project is a high voltage direct current (HVDC) 400 MW electric power transmission system connecting the New York Power Authority

(NYPA) Plattsburgh Substation in Beekmantown, Clinton County, New York, and the Vermont Electric Power Company (VELCO) New Haven Substation in New Haven, Addison County, Vermont. Ms. Bartos conducted a visual impact assessment and corresponding analyses for the project including viewshed analyses and photosimulations. As part of the deliverable, the NYDEC Visual Policy was used to fulfill Article VII visual requirements for the state of NY and an extensive Quechee Analysis was performed for the VT part of the project to fulfill Section 248(b)(5) of Title 30 Vermont Statutes. In addition, she has submitted pre-trial written testimony for the project.

**Lasher Road Substation Project, Saratoga County New York – (Sr. GIS Systems Analyst: 2015 to 2016).**

As part of an Article VII application, Ms. Bartos provided visual impact studies and final report writing for a proposed 115kV distribution substation and associated 115 KV tap lines tying into National Grid's existing 115 kV Spier Falls to Rotterdam Transmission Line #2. The Article VII visual assessment used the NYDEC Visual Policy as guidelines for the submittal and included a visual resources inventory, viewshed analyses using existing point cloud LiDAR data and photosimulations.

**Shoreham Solar Project, Suffolk County New York – (Sr. GIS Systems Analyst: 2015).**

Shoreham Solar Commons, LLC proposed to construct and operate a 24.9MW ground-mounted, stationary/non-tracking solar array installed on mounting racks and associated electric interconnect infrastructure to LIPA's 69 kV power grid. The site is located in Brookhaven, Long Island, NY and subject to SEQRA and 6 NYCRR §617. Ms. Bartos provided technical oversight and analyses for a team providing visual simulations and authored a visual impact assessment following NYSDEC's Visual Program Policy.

**Island Park Energy Center LLC, The Island Park Energy Center – A Repowering of the E.F. Barrett Power Station, Town of Hempstead, Nassau County, NY (Sr. GIS Systems Analyst & GIS Coordinator: 2013 – Present).**

This project is currently on hold. Ms. Bartos served as Sr. GIS Analyst and GIS lead for the repowering of the existing E.F. Barrett Power Station for Island Park Energy Center LLC. Proposed is the development of a new approximately 690 MW combined cycle facility with an additional development of approximately 290 MWs of new peaking (simple cycle) capacity to be known as the Island Park Energy Center (IPEC). The project requires a Certificate of Environmental Compatibility and Public Need from the New York State Board on Electric Generation Siting and the Environment under Article 10 of the New York State Public Service Law. Ms. Bartos is also responsible for conducting a comprehensive Visual Impact Assessment according to 16 NYCRR §1001.24.

Case No. 16-F-0062

Parikh

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Kunhal V. Parikh

Sargent & Lundy LLC

55 East Monroe Street

Chicago, IL 60603

1 **Q: Please state your name, employer, and business address.**

2 A: Kunhal V. Parikh, Sargent & Lundy LLC, 55 East Monroe St., Chicago IL, 60603

3 **Q: What is your position at Sargent & Lundy LLC?**

4 A: Project Manager.

5 **Q: How long have you been employed with Sargent & Lundy LLC?**

6 A: Five years.

7 **Q: Please describe your educational background and professional experience.**

8 A: Bachelors of Science in Electrical Engineering from Drexel University. I have over 11  
9 years of experience in Transmission, Substation and Power Plant design.

10 **Q: Please describe your current responsibilities with Sargent & Lundy LLC.**

11 A: Currently the Project Manager for Sargent & Lundy LLC, overseeing the wind, solar and  
12 FERC 1000 projects for Nextera Energy Resources.

13 **Q: Have you previously testified before the New York State Public Service  
14 Commission or Siting Board on Electric Generation?**

15 A: No.

16 **Q: Have you previously served as an expert witness before any other court, agency,  
17 or other body on the subject you plan to offer testimony on today?**

18 A: No.

19 **Q: What is the purpose and scope of your testimony in this proceeding?**

20 A: Providing expert opinion on transmission line, substation and collection design.

21 **Q: What portion(s) of the Application is your testimony sponsoring?**

22 A: Exhibits 5 and 35.

23 **Q: Were these Exhibits, Application sections, or studies prepared by you or under  
24 your direction and supervision?**

25 A: Yes.

26 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
27 **publications, data or documents produced by persons other than yourself/your**  
28 **company? If so, please cite these sources. [These are independent studies, etc.]**

29 **A: New York Power Pool (NYPP) now known as New York ISO, Tie-line rating report.**

**KUNHAL V. PARIKH**  
**Project Manager**  
**Power Delivery Services**



---

## **EDUCATION**

Drexel University  
B.S. Electrical Engineering (Concentration in Power Systems) – 2006

## **REGISTRATION**

Professional License (Delaware, Florida, Minnesota, New York, North Dakota, South Dakota & Wisconsin)  
IEEE / IEEE PES / Committee Senior Member # 41620409  
Cigré Member  
American Wind Energy Association Transmission Committee Member  
IEEE Working Group Subcommittee Member on HVDC  
IEEE Working Group Subcommittee Member on Overhead Transmission Lines

## **EXPERTISE**

Project Management  
Business Development  
Transmission Line Design Engineering  
Substation Design Engineering  
Graphical Information System (GIS) Interface  
High Voltage Direct Current (HVDC)  
EMF & EMI Studies  
EMTP Studies  
Calculation Preparation  
Specification Preparation  
Relay Settings & Coordination  
Arc Flash Calculation  
Short Circuit / Load Flow  
Feasibility and Facility Studies  
Conceptual Projects  
Project Schedules (Primavera and Microsoft Project)  
Construction Support

## **RESPONSIBILITIES**

Kunhal Parikh is responsible for managing the engineering for substation and transmission line projects of the Power Delivery Service group, at Sargent & Lundy. His responsibility includes the oversight of the design of substation and transmission line projects, client interface and project schedules.

Mr. Parikh was elected by senior executives to Sargent & Lundy Leadership Team in 2016 and directly reports to the Senior Vice President of Power Delivery Services. He serves as a liaison between the client and S&L and reports to the client regarding performance and project status.

As a manager, Mr. Parikh is responsible for providing technical direction and technical management for projects. He is also responsible for monitoring and coordinating the activities of the various

**KUNHAL V. PARIKH**  
**Project Manager**  
**Power Delivery Services**



disciplines involved in substation and transmission projects with the objective of completing the work on schedule and within the authorized budget, while ensuring that the design is performed in accordance with client requirements and Sargent & Lundy (S&L) standards and QA/QC procedures.

Finally, Mr. Parikh is the process owner of transmission line routing and spotting process, and the HVDC process and subject matter expert in siting of substations and transmission lines.

## **EXPERIENCE**

Mr. Parikh has more than eleven (11) years of experience working in the electric power generation, transmission and substation industry. He has worked on numerous transmission line, substation and fossil plant projects. He has been the transmission line lead engineer for projects ranging from 6.6 kV – 765 kV, and +/- 200 kV to +/- 400 kV HVDC and has prepared and reviewed various project deliverables, including calculations, electrical studies, design criteria, cost estimates, and construction specifications.

Also, Mr. Parikh is actively involved in the IEEE subcommittee of Overhead Transmission Lines, and working groups with HVDC, electrical field effects and optical fiber cables.

In addition, Mr. Parikh has extensive experience in the following areas: preparation of purchase specifications, project proposals, project planning, budget estimates, developing conceptual designs, engineering evaluations, single-line diagrams, transmission line design, system studies, detailed and high level cost estimates, project schedules, budget management, preparation of reports, and field commissioning.

### **Sargent & Lundy LLC (S&L)**

**September 2012-Present**

- **Nextera Energy Resources, LLC**
  - **FERC 1000**
    - Quebec to Maine HVDC and HVAC Transmission Line (2015)
      - The project consisted of proposing a HVDC transmission lines interconnecting Quebec to Maine for a FERC 1000 submission into NEISO RFP. Utilizing PLS-CADD, PLS-POLE, and Global Mapper to design the new transmission line and spot the structures in accordance to all applicable standards and requirements for the client. Preliminary insulator and hardware selection based on electrical contamination and leakage distances. Structure development of +/- 400 kV HVDC line.
    - PJM RTEP Window #1 (2017)
    - PJM RTEP Window #3 (2016)
    - New York Energy Highway Project
    - Western New York Project
      - The transmission line project engineer for the proposed transmission lines interconnecting multiple 345 substations. Utilizing PLS-CADD, PLS-POLE, and Global Mapper to design




---

the new transmission line and spot the structures in accordance to all applicable standards and requirements for the client.

- **Solar**

- Eldora 230 kV Transmission Line and 230 kV / 34.5 kV Substation Solar Interconnection
- Heru 230 kV / 34.5 kV Substation Solar Interconnection
- Athens 138 kV / 34.5 kV Substation Solar Interconnection
- Interstate 230 kV / 34.5 kV Substation Solar Interconnection

- **Wind**

- White Hills – 345 kV Substation and Transmission Line Project
- Heartland – Divide 161 kV Substation and Transmission Line Project
- Dodge County 345 kV Substation and Transmission Line Project
- Emmons – Logan 230 kV and 115 kV Substation and Transmission Line
- Ninnescah 345 kV Transmission Line Project
- Rush Springs 345 kV Transmission Line Project
- Mt. Storm 138 kV Transmission Line Project
- Oliver III 230 kV Transmission Line Project
- Crowned Ridge 230 kV Transmission Line Project
- Huron 345 kV Transmission Line Project
- Eight Point 115 kV Collection, Transmission and Substation Wind Farm Interconnect
- Kramer 220 kV Road Replacement Project
  - The transmission line project manager providing oversight for various new greenfield installation for wind projects between the substation interconnection and collector substation.
- Javelina 345 kV Transmission Line Project
  - The transmission line project engineer for the new 345 kV transmission line between Javelina 345 kV substation and existing 345 kV AEP/ETT Cenizo substation. Utilizing PLS-CADD, PLS-POLE, and Global Mapper to design the new transmission line and spot the structures in accordance to all applicable standards and requirements for the client.
- Mammoth – Plains – Tatonga 345 kV Transmission Line Project
  - The transmission line project engineer for the new 345 kV transmission line between Mammoth Plains 345 kV substation and existing 345 kV OG&E Tatonga substation. Utilizing PLS-CADD, PLS-POLE, and Global Mapper to design the new transmission line and spot the structures in accordance to all applicable standards and requirements for the client. Development of the induction calculation utilizing the SES CDEGS program to




---

calculate the induced current and voltages on the parallel pipelines along the transmission corridors.

- **Westar Energy**
  - **Central Crossing 115 kV Transmission Line Rebuild**
    - Developed Westar Energy as a new client for Sargent & Lundy in 2016.
    - Worked with contracts, and procurement agents to develop a new general service agreement (GSA) for five (5) years for engineering services, for engineering, procurement and construction.
    - Project Manager for three (3) phases of the 115 kV Central Crossing rebuild and new greenfield transmission line project interconnecting (3) three new greenfield substations in Topeka, Kansas.
- **Confidential Client**
  - Ft. McMurray 500 kV Transmission Line
    - The transmission line project engineer for the new 500 kV – 500 km transmission line in Alberta, Canada. Utilizing PLS-CADD, PLS-POLE, and Global Mapper to design the new transmission line and spot the structures in accordance to all applicable standards and requirements for the client. EMF, EMI, AN and RI studies were calculated utilizing EPRI AC/DC program. EMTP calculations were performed to determine the number of transposition structures to mitigate the voltage imbalance utilizing long line parameters.
- **American Transmission Company Transmission Line Projects**
  - Y-311 345 kV Rerate Project
  - 8962 138kV Rerate Project
  - 9942/9962 138 kV Rebuild Project
  - 6853 138 kV Rebuild Project
  - 138 kV Zoo Interchange Project
  - 345 kV PLP41 Rebuild Project
  - Q303 345 kV OPGW Replacement Project
  - L121 345 kV OPGW Replacement Project
    - Transmission line projects included the design utilizing PLS-CADD, PLS-POLE, FAD 4.0/5.0 and SAG10. Development of structure loads and drawings for tubular steel poles and laminate poles. Foundation design for poles, h-frames and laminate structures utilizing FAD, and LPILE. Thermal study preparation based on IEEE 738-2006 in accordance to all NERC and FERC requirements. Preparation of the EMF calculation for transmission lines utilizing the EPRI workstation.




---

- **Tucson Electric Power**

- DMP – Tucson 138 kV Transmission Line Project
  - New 138 kV transmission line between DeMoss Petrie substation and Tucson substation. Utilizing PLS-CADD to design the new transmission line and spot the structures in accordance to all applicable standards and requirements for the client.

**URS Energy and Construction (formally Washington Group) June 2006 – September 2012**

- **Trans Bay Cable, LLC**

- Transcable HVDC +/- 200 kV – 400 MW UG Cable
  - Acted as owner's engineer for the 400 MW +/- 200 kV XLPE submarine cable between San Francisco and Pittsburg, CA. Supporting the environmental siting and constraints of the HVDC UG cable and reviewing construction drawings and terminations.

- **Public Service Electric & Gas**

- Burlington-Camden 230 kV Conversion Project.
- North Central Reliability Project.
  - Lead engineer in developing the 230 kV transmission line upgrades using PLSCADD, PLS-POLE and Tower software. Developed the construction sequencing schedule and drawings for the 230 kV rebuild, utilizing fall and spring construction outages in the PJM network. Development of the underground technology report for use in the alternative analysis study provided to the Client. Development of the construction package, including the electrical technical package and the demolition package. Developed project design criteria, project cost estimates, project specification, calculations, material lists and primavera schedule.

- **Ameren.**

- Tie Line Interconnect
  - Lead engineer modeling of the 345 kV transmission tie-line using PLSCADD software. Developed project design criteria, project cost estimates, project specification, calculations, material lists and schedule.

- **Pennsylvania Power & Light (PPL)**

- Carlisle 138 kV Underground Cable Project
  - Development of the 138 kV underground alternative report between Carlisle and West Carlisle substations using, 138 kV EPR cable. Calculated the required ampacity using CymCAP for the cable selected and provided the cost estimate to determine if the underground route was feasible.

- **Suncor Energy**

- Stage 4 - Pad 116



- 
- Modeling of the 144 kV transmission line using PLS-CADD, and PLS-POLE which were subjected to heavy icing and wind loading conditions. (2011).
  - Stage 3 HV System
    - Development of the specifications for the A-frame, CCVT, circuit breaker design and auxiliary components for three substations. Developed the grounding grid analysis for the substations and switchyards using GroundMat program. Development of the battery sizing, line charging current relay setting calculations. Development of the induction calculation utilizing the SES CDEGS program to calculate the induced current and voltages on the parallel pipelines along the transmission corridors.
  - **PECO**
    - Limerick Re-licensing Project
      - Development of the Induced Voltage calculation using EPRI standards and programs for the 500 kV, 230 kV and 138 kV transmission lines interconnecting PECO Limerick station with various substations on their network.
  - **Next Generation Nuclear Project**
    - Development of the system design descriptions (SDD) for medium voltage, low voltage switchgear, circuit breakers, high voltage transformers, and generators in accordance to all applicable standards and requirements.
  - **Public Service New Hampshire**
    - Merrimack Clean Air Project
      - Responsibilities included development of specifications for LV, MV switchgear, MCC, DC & UPS system, and cable bus. Development of the short circuit & load flow / voltage drop, relay coordination, DC & UPS load study, and arc flash protection calculations using SKM PowerTools. Reviewed vendor drawings used for the construction of the LV and MV switchgear, MCC, DC & UPS system, and cable bus. Implementation of the electrical installation package, used to determine the BOP electrical contractor. Development of the Arc Flash Hazard Calculation, utilizing the short circuit and relay coordination study to determine the arc flash incident energy, flash protection boundary and hazard risk category and associated PPE required gear for the 4.16kV medium voltage switchgear and 480 low voltage switchgear and MCCs. This calculation was computed using IEEE 1584, NFPA 90E and SKM PowerTools software program.
  - **Salt River Project**
    - Springerville Generating Station

**KUNHAL V. PARIKH**  
**Project Manager**  
**Power Delivery Services**



- 
- Developed the grounding grid analysis for the substation and Unit 4 generator using SKM GroundMAT. Developed the Transient Recovery Voltage (TRV) study for proposed dead time breakers to verify if it met the design criteria specified by SRP.

Case No. 16-F-0062

Coakley

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Louis Coakley

NextEra Energy Resources

700 Universe Blvd., JES/JB

Juno Beach, FL 33408

1 **Q: Please state your name, employer, and business address.**

2 A: Louis Coakley, NextEra Energy Resources, 700 Universe Blvd., JES/JB, Juno Beach,  
3 FL 33408.

4 **Q: What is your position at NextEra Energy Resources?**

5 A: Manager, Environmental Services.

6 **Q: How long have you been employed with NextEra Energy Resources?**

7 A: 29 years.

8 **Q: Please describe your educational background and professional experience.**

9 A: I have a Bachelor of Arts in Marine Environmental Policy and Geography from  
10 the University of Rhode Island and a Master of Public Administration in Energy  
11 Management and Coastal Zone Management from the University of West Florida. I  
12 have 15 years of experience in the wind energy industry and over 36 years of  
13 experience in the environmental and permitting fields. Please see attached resume for  
14 additional information.

15 **Q: Please describe your current responsibilities with NextEra Energy Resources.**

16 A: I am responsible for management of permitting activities for wind, solar, and fossil  
17 generation; energy storage; and transmission in the Northeast US and Canada. I have  
18 three direct reports who also support these activities. In addition, I am the Environmental  
19 Natural Resource Protection Unit Leader for the NextEra Energy Corporate Oil Spill  
20 Response Team.

21 **Q: Have you previously testified before the New York State Public Service  
22 Commission or Siting Board on Electric Generation?**

23 A: Yes, New York State Department of Public Service hearings concerning the New York  
24 Energy Highway transmission proceedings in 2016.

25 **Q: Have you previously served as an expert witness before any other court, agency,  
26 or other body on the subject you plan to offer testimony on today?**

27 A: No.

28 **Q: What is the purpose and scope of your testimony in this proceeding?**

29 A: To sponsor certain portions of the Eight Point Wind Project Application or the Exhibits  
30 thereto.

31 **Q: What portion(s) of the Application is your testimony sponsoring?**

32 A: Exhibit 17: Air Emissions; Exhibit 18: Safety and Security; Exhibit 19: Noise and  
33 Vibration; Exhibit 20: Cultural Resources; Exhibit 21: Geology, Seismology, and Soils;  
34 Exhibit 22: Terrestrial, Ecology and Wetlands; Exhibit 23: Water Resources and Aquatic  
35 Ecology; Exhibit 24: Visual Impacts; Exhibit 28: Environmental Justice.

36 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
37 **your direction and supervision?**

38 A: Yes, under my direction and supervision.

39 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
40 **publications, data or documents produced by persons other than yourself/your**  
41 **company? If so, please cite these sources.**

42 A: References are provided in the corresponding Exhibits and Reports.



# Louis "Coke" Coakley

---

700 Universe Blvd, Juno Beach, FL 33458 (561) 691-7060

1988 to Present:

**NextEra Energy Resources & Florida Power & Light, Juno Beach, Florida**  
**Manager, Environmental Services**

- Conduct environmental and development support necessary for NextEra Energy Resources renewable energy and fossil power generation and transmission projects. Regional project manager for the Northeastern US and Canada. Assist with project financings, acquisitions and divestitures. Manage all environmental development activities and permitting issues, energy facility siting, and report analyses/ conclusions. Participate in agency, stakeholder and public meetings. Involved in over 300 projects throughout the US and Canada.
- **Permitting Manager** for the 101-MW Eight Point Wind Project, 345 kV Empire Transmission Project, New England solar projects (15); 345 kV NY Enterprise Transmission Project, 230 kV Ontario East West Transmission Project; 660 MW Island Park Energy Center combined cycle project. Responsible for expedited development, permitting and post-construction monitoring.
- **Permitting/ Development Manager** for the Long Island Offshore Wind Park, a 140-MW offshore wind project off the south shore of Long Island, NY. Previously led project development and coordination with Long Island Power Authority and held over 200 public hearings.
- **Environmental Audits Team leader** for NextEra Energy facilities. Responsible for scheduling, managing and directing field audits and preparing draft and final audit reports.
- **Environmental Resource Protection Unit Leader** for NextEra Energy corporate oil spill response team to provide oil spill environmental sensitivity assessments and trajectory/ impact modeling using the SIMAP oil spill model and other resources for all bulk oil storage facilities and pipeline sites.
- Manage corporate process management system for environmental support of wind projects and the Environmental Competitive Utility Database using utility databases and other sources.
- Previous Utilitree Carbon Company Board of Directors, a 42 electric utility non-profit organization providing cost-effectiveness carbon sequestration forestry projects. Developed FPL carbon footprint survey and evaluation program for mitigation activities. Managed FPL submittals for the US Department of Energy Section 1605(b) climate change program.
- Technical environmental licensing lead to the FPL Fort Myers and Sanford repowering projects, Manatee Orimulsion project, Crane-Bridge-Plumousus 230 kV and Levee-Midway 500kV transmission line certifications.
- Established the first Environmental Services Department environmental information management system including the Permit Tracking database, REG Files, Lexis Nexis, environmental alerts notification system, Ventyx database and environmental GIS. Managed Environmental Services responsibilities for the FPL Ten-Year Site Plan.
- Managed federal permitting of the Martin 1,600 megawatt combined cycle/ IGCC power plant, provided primary state licensing support for the Martin Expansion Project, and coordinator of post-certification activities concerning other FPL power plants, including the combined-cycle repowering projects. Created FPL Manatee Island donation to the US Fish & Wildlife Service, largest private land donation to the Service.

1982-1988	<p><b>Southern States Energy Board</b>  Atlanta, Georgia  <b>Assistant Director</b>  Managed energy related environmental projects for the Southern States Energy Board, a 17-state compact organization involved in regional energy and environmental issues. Major projects included electricity policy/ energy facility planning; air and water quality; acid rain; fossil fuel, nuclear and alternative energy development; hazardous waste management and minimization; radioactive materials transportation and storage; biomass; radon; and cogeneration. Organized major regional and national meetings, and directed environmental and energy liaison with government and industry representatives, including governors, Congressmen and leading state legislators.</p>	169
Pre-1982	<ul style="list-style-type: none"> <li>• Environmental Affairs Analyst, Southern Natural Gas Company.</li> <li>• Coastal Planner, Florida Beach Management Project. Florida Department of Natural Resources.</li> <li>• Coastal Energy Analyst, Escambia County Energy Project. Escambia County, Florida.</li> <li>• Energy Facility Siting Planner, Coastal Energy Impact Program. Kingston, Rhode Island.</li> <li>• Fisheries Biostatistical Specialist, National Marine Fisheries Service. Narragansett, Rhode Island.</li> </ul>	
<b>Education</b>	<p>Masters of Public Administration: Energy Management and Coastal Zone Management, 1982  University of West Florida</p> <p>BA, Marine Environmental Policy and Geography, 1980  University of Rhode Island</p>	
<b>Professional</b>	<p>National Association of Environmental Professionals; National, Florida and Treasure Coast Chapters</p>	
<b>Personal</b>	<p>Married; Jupiter Glory Day National Baseball over-35 Champions 2003, 2006, 2014; Chairman, Town of Jupiter Beach Committee, since 1995; FPL MS South Florida Bike Team Captain since 2007.</p>	

**Publications/  
Presentations:**

*Bat Acoustic Monitoring- Bat Movement Forecasting*, co-author American Wind Energy Association Annual Conference, Atlanta, GA 2012

*Long Island Offshore Wind Park*, European Offshore Wind Conference, Copenhagen, Denmark, November 2005

*Long Island Offshore Wind Park*, Wind Power Conference, Denver, CO, May 2005.

*Use of Oil Spill Modeling for Contingency Planning and Impact Assessment*, International Oil Spill Conference, Tampa, FL, February 2001.

*Benefits and Use of an Oil Spill Response Website*, International Oil Spill Conference, Tampa, FL, February 2001.

*Display of Site Characteristics via Poster Illustration for Oil Storage Facilities: Florida Power & Light Cases*, International Oil Spill Conference, Tampa, FL, February 2001.

*Where's the Spill Now? Evaluating the Usefulness of a GIS Oil Spill Trajectory Model During the Initial Stages of an Oil Spill Event. A Case Study of the Florida Power & Light Company, Corporate Oil Spill Drill, Port Manatee, Florida, April 15, 1999*, Florida Department of Environmental Protection GIS Conference, Tallahassee, FL, October, 1999.

*FPL Mechanical and Vegetative Carbon Sequestration Research and Development Study*, Electric Utilities Environmental Conference, Tucson, AZ, January, 1999.

*Utility Options and Costs for Mechanical and Vegetative Carbon Sequestration*, American Forests Conference, Nebraska City, NE, February, 1996.

*FPL Environmental Management Information System*, National Association of Environmental Professionals Conference, St Louis, MO, June 1996.

*A Growth Utilities' Perspective of Global Climate Change Issues: The Florida Power & Light Experience*, Air & Waste Management Conference, San Antonio, TX, March, 1995.

*A Public Interaction Program Process for Energy Facility Siting*, EEI Public Participation Conference, West Palm Beach, FL, October, 1988.

*Legal and Institutional Barriers to OTEC Commercialization*, International Conference on Alternative Energy Sources, Miami Beach, FL, December, 1987.

Case No. 16-F-0062

Thompson

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Mark Thompson

NextEra Energy Resources

700 Universe Blvd.

Juno Beach, FL 33408

1 **Q: Please state your name, employer, and business address.**

2 A: Mark Thompson, Nextera Energy Resources (NEER), 700 Universe Blvd, Juno Beach,  
3 FL 33408.

4 **Q: What is your position at NEER:**

5 A: Engineering Manager.

6 **Q: How long have you been employed with NEER:**

7 A: 13 years.

8 **Q: Please describe your educational background and professional experience.**

9 A: I have a BSc. in Electrical Engineering and a Master's in Business Administration. I have  
10 been involved in, or facilitated the design, construction and operation of over 7 GW of  
11 wind generating facilities. I am vastly experienced in the design, construction,  
12 maintenance of renewable transmission and generating infrastructure.

13 **Q: Please describe your current responsibilities at NEER:**

14 A: I currently manage the Wind Engineering Team who provides engineering support to the  
15 development of wind projects from conceptualization to commercial operation.

16 **Q: Have you previously testified before the New York State Public Service  
17 Commission or Siting Board on Electric Generation?**

18 A: No.

19 **Q: Have you previously served as an expert witness before any other court, agency,  
20 or other body on the subject you plan to offer testimony on today?**

21 A: No.

22 **Q: What is the purpose and scope of your testimony in this proceeding?**

23 A: To confirm that NEER has taken all prudent measures to ensure that our generating  
24 facility exist in harmony with the environment and land owners.

25 **Q: What portion(s) of the Application is your testimony sponsoring?**

26 A: Exhibits 5, 11, 12, 14, 34, 35.

27 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
28 **your direction and supervision?**

29 **A:** Yes.

30 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
31 **publications, data or documents produced by persons other than yourself/your**  
32 **company? If so, please cite these sources.**

33 **A:** Yes. Sargent & Lundy Engineering, TRC Engineering, Kenney Geotechnical.

# MARK THOMPSON

11075 Watercrest Circle East, Parkland, FL 33076 | (H) 561-691 7350 | (C) 561-289-8216 |

mark.thompson@nee.com

## PROFESSIONAL SUMMARY

I have been involved in, or facilitated with the design, construction and operation of 7GW of wind generating facilities. I am vastly experienced in the design, construction, maintenance of renewable generating and transmission infrastructures.

## SKILLS

- Project management
- Process implementation
- Risk management processes and analysis
- Team leadership
- Staff development
- Electrical substation components
- Leading technical teams
- Client assessment and analysis
- Engineering design and analysis
- Root cause analysis
- Complex problem solving
- Technical problem solving
- Multidisciplinary exposure
- FMEA
- HVAC system design

## WORK HISTORY

JANUARY 2010-CURRENT

*Engineering Manager | NextEra Energy Resources | Juno Beach, FL*

- Responsible for managing an engineering team that develops wind projects from conceptualization to commercial operations, while remaining cost competitive.
- Worked directly with internal and external stakeholders to ensure that key project requirements and milestones are met.
- Responsible for creative designs that meet external stakeholders' requirements.

- Performed due diligence on projects to determine viability.

NOVEMBER 2007-JANUARY 2010

*Senior Buyer for long lead equipment | Florida Power & Light Co | Juno Beach, FL*

- Initiated key partnerships with suppliers to reduce equipment cost and improve vendor performance.

NOVEMBER 2004-NOVEMBER 2007

*Substation Engineer | Florida Power & Light Co | Juno Beach, FL*

- Design and supported construction of 10 distribution substation, ranging in voltages from 69kV to 230kV.
- Design temporary substations to support replacement of aged 13kV metal clad infrastructure
- Design and install up to 300MVAR of capacitor banks in 115kV and 230kV
- substation Supervised storm restoration crews of 100 personnel to restore distribution infrastructure damaged by hurricanes.

SEPTEMBER 2002-NOVEMBER 2004

*Distribution Line Engineer | Florida Power & Light Co | Juno Beach, FL*

- Responsible for creative distribution line designs at 13kV and 23kV.

JUNE 1992-AUGUST 2002

*Maintenance Engineer | Alumina Partners of Jamaica | Nain, St. Elizabeth*

- Developed electrical designs and provide technical solutions and feedback.
- Oversaw maintenance, designs and releases for new technologies in the refining of bauxite.
- Maintain an 110MW 13.8kV generation and distribution system

## EDUCATION

---

1999

*MBA: Business*

Nova Southeastern University, Fort Lauderdale, FL

1992

*Bachelor of Science: Electrical Engineering*

University of Technology, Jamaica, Kingston, St. Andrew

- Parish, Jamaica 1st class honors

## CERTIFICATIONS

---

- Certified Six Sigma Green Belt
- Certified Six Sigma Black Belt – in progress

Case No. 16-F-0062

Fennell

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Patrick J. Fennell, P.E.

TRC Environmental Corporation

21 Griffin Road North

Windsor, CT 06095

1 **Q: Please state your name, employer, and business address.**

2 A: Patrick J. Fennell, P.E.

3 TRC Environmental Corporation

4 21 Griffin Road North

5 Windsor, CT 06095

6 **Q: What is your position at TRC Environmental Corporation (TRC)?**

7 A: Principal Engineer and Project Manager.

8 **Q: How long have you been employed with TRC?**

9 A: 17 years.

10 **Q: Please describe your educational background and professional experience.**

11 A: I have the following degrees:

12 B.S. in Civil Engineering from the University of Missouri at Columbia

13 M.S. in Civil Engineering from the University of Illinois at Urbana-Champaign

14 M.E. in Environmental Engineering from the University of Harford

15

16 My professional experience includes the following:

17 Combustion Engineering / ABB – 17 years performing seismic analysis, safety analysis,  
18 and licensing for commercial nuclear power plants.

19 ABB – 6 years performing environmental compliance functions for ABB facilities.

20 TRC – 17 years performing air quality engineering and permitting.

21

22 My resume is attached.

23 **Q: Please describe your current responsibilities with TRC Environmental Corporation.**

24 A: I perform air quality engineering and permitting for various projects, including fossil fuel  
25 and renewable electric power generation facilities, natural gas pipelines and storage  
26 facilities, liquefied natural gas terminals, and industrial and commercial clients. I have

27 prepared air permit applications, environmental assessments, environmental impact  
28 statements, and due diligence assessments for projects throughout the country.

29 **Q: Have you previously testified before the New York State Public Service Commission**  
30 **or Siting Board on Electric Generation?**

31 A: No.

32 **Q: Have you previously served as an expert witness before any other court, agency,**  
33 **or other body on the subject you plan to offer testimony on today?**

34 A: No.

35 **Q: What is the purpose and scope of your testimony in this proceeding?**

36 A: To sponsor Exhibit 17 - Air Emissions of the Eight Point Wind Energy Center Application.

37 **Q: What portion(s) of the Application is your testimony sponsoring?**

38 A: Exhibit 17 - Air Emissions.

39 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
40 **direction and supervision?**

41 A: Yes.

42 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
43 **publications, data or documents produced by persons other than yourself/your**  
44 **company? If so, please cite these sources.**

45 A: Yes. The other studies, publications, data, and documents are referenced in Exhibit 17.

## **PATRICK J. FENNELL, P.E., BCEE**

### **EDUCATION**

M.E., Environmental Engineering, University of Hartford, 1997

M.S., Civil Engineering, University of Illinois at Urbana, 1977

B.S., Civil Engineering, University of Missouri at Columbia, 1975

### **PROFESSIONAL REGISTRATIONS/CERTIFICATIONS**

Licensed Professional Engineer, Connecticut (#18763) 1995

Board Certified Environmental Engineer, American Academy of Environmental Engineers, 2008.

### **AREAS OF EXPERTISE**

Patrick J. Fennell, P.E. has demonstrated engineering and project management expertise in:

- Air Pollution Engineering and Permitting
- Oil and Gas Industry Permitting
- Power Plant Permitting
- Liquefied Natural Gas Terminal and Seaport Permitting
- Renewable Energy Permitting
- Surface Mine Permitting
- Odor Assessment and Environmental Compliance

### **REPRESENTATIVE EXPERIENCE**

Mr. Fennell has 39 years of experience and progressive responsibility in Environmental, Civil, and Nuclear Engineering. He currently works in TRC's Planning, Permitting, and Licensing group, and supports Energy and Environmental Services clients on a range of projects.

#### **Air Pollution Engineering and Permitting - Oil and Gas Industry (TRC Environmental Corporation, 2000 - Present)**

Mr. Fennell prepares air permit applications and FERC environmental reports for oil and gas industry facilities, including natural gas compressor stations, storage facilities, and pipelines. He prepares emission inventories for facility construction and operation. Mr. Fennell prepares third-party environmental analyses and environmental impact statements under contract to FERC. He has also prepared general conformity submittals. Typical project experience includes the following:

Kemmerer Mine Relocation - The project involved the relocation of a natural gas pipeline in Wyoming to accommodate the ongoing operation of the Kemmerer Mine. Prepared the air emission calculations and the air quality section for the project's environmental assessment for the Bureau of Land Management.

Antelope Creek Oil and Gas Field - The project involved installation and operation of over 500 natural gas and oil wells in Utah. Prepared the air emission calculations and the air quality section for the project's environmental assessment for the Bureau of Indian Affairs.

Dominion Transmission New Market - The project involved construction and operation of two new natural gas compressor stations and modifications to three existing compressor stations and one metering station in New York State. Performed third-party review of resource report submittals and prepared the air quality-related portions of the environmental assessment for the FERC.

Dominion Transmission Allegheny Storage - The project involved the construction of new natural gas compressor stations in Maryland and Ohio, expansion of natural gas compressor stations in West Virginia and Pennsylvania, and construction of pipelines in these states. Prepared the pipeline construction calculations and made extensive revisions to the FERC Resource Report 9 (Air Quality) submittal prepared by another organization. Also prepared responses to numerous public comments submitted to the FERC concerning air quality.

Midcontinent Express Pipeline - The project involved construction and operation of an approximately 500 mile pipeline from Oklahoma to Alabama, including four new compressor stations, one booster station, and numerous meter and regulating stations. Prepared air permit applications in Texas, Louisiana, and Alabama, and the FERC Resource Report 9 (Air Quality).

Sawgrass Storage - The project involved a depleted natural gas reservoir located in Louisiana. Prepared the air permit application for the associated natural gas handling and compression facility.

Florida Gas Transmission Company Phase VIII Expansion - The project involved the construction and acquisition of approximately 500 miles of natural gas pipeline in Alabama and Florida. Prepared detailed air emissions calculations for the project construction for the FERC Resource Report 9 (Air Quality) submittal.

Ruston Compressor Replacement - The project involved replacement of natural gas compressors and ancillary equipment at the Ruston Compressor Station in Louisiana. Prepared the FERC Resource Report 9 (Air Quality) submittal.

Kosciusko Compressor Station - The project involved the replacement of existing natural gas compressors and ancillary equipment at the Kosciusko Compressor Station in Mississippi. Prepared the FERC Resource Report 9 (Air Quality) submittal.

Natural Gas Pipeline Company of America Compressor Station 201 - The project involved replacement of existing natural gas compressors and ancillary equipment, and the installation of additional compressors at the NGLP CS 201 in Illinois. Prepared the FERC Resource Report 9 (Air Quality) submittal.

Creole Trail Expansion - The project involved modifying the existing Creole Trail pipeline system to accommodate bi-directional gas flow. This entailed construction of a new compressor station and pipeline. Prepared the FERC Resource Report 9 (Air Quality) submittal.

Daleville Compressor Station - The project involved replacement of existing natural gas compressors and ancillary equipment at the Daleville Compressor Station in Pennsylvania. Prepared the Pennsylvania air plan approval and operating permit applications and the FERC Resource Report 9 (Air Quality) submittal.

Eastern Shore Natural Gas System Reliability Project - The project involved installation of a natural gas compressor and ancillary equipment at the Bridgeville Compressor Station and installation of 10 miles of pipeline Delaware. Prepared the Delaware synthetic minor operating permit application and the FERC Resource Report 9 (Air Quality) submittal.

Eastern Shore Natural Gas White Oak Mainline Expansion Project - The project involved installation of a natural gas compressor and ancillary equipment at the Delaware City Compressor Station and installation of 7 miles of pipeline in Pennsylvania. Prepared the Delaware Synthetic Minor Operating Permit application and the FERC Resource Report 9 (Air Quality) submittal.

Eastern Shore Natural Gas 2017 Expansion Project - The project involved installation of a natural gas compressor and ancillary equipment at the Daleville compressor station in Pennsylvania and installation of 32 miles of pipeline in Pennsylvania, Maryland, and Delaware. Prepared the Pennsylvania air plan approval application, and the FERC Resource Report 9 (Air Quality) submittal, and the applicant-prepared environmental assessment.

### **Air Pollution Engineering and Permitting - Power Plants (TRC Environmental Corporation, 2000 - Present)**

Mr. Fennell conducts engineering evaluations and prepares permit applications for power plants, including simple-cycle and combined-cycle combustion turbines, boilers, reciprocating engines, and integrated gasification combined-cycle facilities. He prepares stationary and mobile source emissions inventories for single-source and multi-source modeling. Mr. Fennell performs air pollution control technology assessments and economic analyses for BACT, LAER, BART, MACT, etc. He helps clients respond to problems that arise during startup and routine operation. Typical project experience includes the following:

Long Island Fast Track Project - The project involved preparing the initial air permit applications for three simple-cycle GE LM6000 combustion turbine facilities (Edgewood, Equus, and Pine Lawn) in Long Island, New York. Also prepare submittals for subsequent power up-rates and compliance activities.

Shoreham Solar Commons - The Project involved preparing the Environmental Assessment for a 24.9 MW solar photovoltaic facility in Brookhaven, New York.

Kleen Energy Systems - The project involved preparation of the NSR air permit application for a 620 MW combined-cycle dual fuel-fired power plant in Middletown, Connecticut.

FirstLight Power Resources - The project involved preparation of the NSR air permit application for the Waterbury Generation Project, a dual-fuel General Electric LMS-100 gas turbine generator in Waterbury, Connecticut.

Connecticut Municipal Electric Energy Cooperative - The project involved preparation of the NSR air permit application for the Alfred L. Pierce Generating Station Repowering Project, a dual-fuel simple-cycle General Electric 7EA gas turbine generator in Wallingford, Connecticut.

Connecticut Municipal Electric Energy Cooperative - The project involved preparation of applications to construct and operate twenty 2.5 MW diesel engines located at 10 sites in 5 Connecticut cities or towns plus another site on Fishers Island, New York.

Beacon Falls Energy Park - The project involved preparation of the air permit application to construct a 63.3 MW fuel cell park in Beacon Falls, Connecticut.

LS Power Wallingford Energy - The project involved preparation of the NSR air permit application for the addition of two GE LM6000 simple-cycle natural gas-fired combustion turbines at a power plant in Wallingford, Connecticut.

Lawrence Energy Center - The project involved preparation of the Permit to Install/Prevention of Significant Deterioration air permit application and corresponding sections of the Ohio Power Siting Board application for a combined-cycle natural gas-fired power plant in Lawrence County, Ohio.

Fremont Energy Center - The project involved preparation of the Permit to Install/Prevention of Significant Deterioration air permit application and corresponding sections of the Ohio Power Siting Board application for a combined-cycle natural gas-fired power plant in Fremont, Ohio.

CPV Warren - The project involved preparation of the PSD air permit application for a 580 MW combined-cycle power plant in Front Royal, Virginia.

CPV Fluvanna County - The project involved preparation of the PSD air permit application for a 520 MW combined-cycle power plant in Fluvanna County, Virginia.

**Air Pollution Engineering and Permitting - Liquefied Natural Gas Terminals and Seaports (TRC Environmental Corporation, 2000 - Present)**

Mr. Fennell prepares air permit applications and FERC environmental reports for liquefied natural gas terminals. He has prepared third-party environmental analyses and environmental impact statements under contract to FERC. He has also prepared general conformity submittals. Mr. Fennell prepares air emissions inventories for seaport facilities on the Gulf of Mexico and Pacific Coasts. The inventories included emissions from stationary facilities, onshore mobile sources, construction, and shipping and tow vessels. Typical project experience includes the following:

Jordan Cove Energy Project - The project involved preparing detailed calculations of the construction air emissions for natural gas liquefaction and export facilities in Oregon.

Sabine Pass LNG Project - The project involved construction of a LNG terminal in Cameron Parish, Louisiana. Revised construction calculations performed by another organization to avoid general conformity review.

Freeport LNG Liquefaction Project - The project involves construction and operation natural gas liquefaction and export facilities at and near an existing LNG terminal in Freeport. Provided the third-party review of FERC Resource Report 9 submittals (Air Quality) for FERC jurisdictional and non-jurisdictional facilities.

Sabine Pass Liquefaction Expansion / Cheniere Creole Trail Pipeline Expansion - The project involved expansion of natural gas liquefaction and export facilities and pipeline facilities in Louisiana. Prepared the FERC Resource Report 9 (Air Quality) submittal.

Total Peaking Services - The project involved installation of new compressors, emergency engines, and vaporizers at a liquefied natural gas terminal in Milford, Connecticut. Prepared the FERC Resource Report 9 (Air Quality) submittal.

**Air Pollution Engineering and Permitting - Renewable Energy (TRC Environmental Corporation, 2000 - Present)**

Mr. Fennell prepared air quality impacts evaluations for renewable energy facilities. Typical project experience includes the following:

Eight Point Wind Energy Center The project involved construction of and operation of a 103.4 megawatts (MW) with 32 wind turbines in Steuben County,

New York. Prepared the air quality exhibit for the Article 10 submittal to the New York State by the Board on Electric Generation Siting and the Environment (Siting Board).

Shoreham Solar Commons The project involved construction of and operation of a 24.9 MW solar photovoltaic facility in the Town of Brookhaven, New York. Prepared the air quality analyses and narrative for the Environmental Analysis.

#### **Air Pollution Engineering and Permitting - Surface Mines (TRC Environmental Corporation, 2000 - Present)**

Mr. Fennell prepared air permit applications and emissions inventories for surface mines. These included the tailpipe emissions from stationary and mobile mining equipment, blasting emissions, and fugitive dust emissions from mining operations and wind erosion. Typical project experience includes the following:

Great Northern Project Development South Heart Project - The project involved preparing the air permits for a lignite mine and a 600 MW circulating fluidized bed mine-mouth power plant in Stark County, North Dakota.

#### **Odor Assessment and Environmental Compliance (TRC Environmental Corporation, 2000 - Present)**

Mr. Fennell provides environmental compliance services to commercial, industrial and academic facilities. Typical project experience includes the following:

Due Diligence Assessment of Power Plant Acquisition (New York State) - Performed the due-diligence assessment of air quality-related concerns and liabilities associated with the potential acquisition of a 1,000 MW combined-cycle combustion turbine power plant in New York State.

Feasibility Assessments of Power Plant Permit Consolidation (Northern California) - Performed the feasibility assessments of the potential consolidation of the NSR and Title V operating permits for a reciprocating internal combustion engine power plant in the North Coast Air Quality Management District and a combustion turbine power plant in the Colusa County Air Pollution Control District.

Orange Grove Energy Center - Prepared routine and non-routine the air quality compliance submittals to the San Diego Air Pollution Control District, California Energy Commission, California Air Resources Board, and U.S. EPA for two simple-cycle LM6000 combustion turbines.

Waste Transfer Station Odor Study - Performed a third-party review for the City of Waterbury, Connecticut of the potential odor impacts of a proposed municipal solid waste transfer station. Testified at Planning and Zoning Board Hearing.

Asphalt Plant Odor Study - Performed a third-party assessment of odor impacts of an asphalt plant pursuant to a consent order with the Connecticut Department of Environmental Protection. Identified causes of potential nuisance odors and mitigation measures.

Wastewater Treatment Plant Odor Study - Performed an odor assessment of a Connecticut municipal wastewater treatment plant and sewage sludge incineration operation.

Environmental Laboratory Air Permitting and Enforcement Action Response - Assisted a Massachusetts environmental laboratory obtain an air permit for its operations and respond to an enforcement action by the Massachusetts Department of Environmental Protection and the Office of the Attorney General.

Odor Hotline - Staff an odor complaint hotline for a Connecticut municipal solid waste resource recovery facility. On a rotating basis, assume on-call responsibility for responding to odor complaint calls to a 24-hour hour hotline. Investigate complaints and report on findings.

Emergency Plans - Prepared spill prevention control and countermeasure plans, stormwater plans, and wastewater general permit applications for power plants, hospitals, office buildings, and industrial facilities.

**ABB, Inc., Corporate Environmental Health and Safety - Windsor, CT (Senior Environmental Engineer: 1994 - 2000)**

Mr. Fennell developed and implemented regulatory compliance programs and procedures, prepared permit applications, conducted inspections and audits, developed emergency plans, performed regulatory reviews, and conducted training for the ABB Windsor, Connecticut facility, a 600-acre site with nuclear and fossil energy engineering, research and development, construction, maintenance, and remediation activities. Also served as Program Manager for the successful ISO 14000 certification of three ABB facilities.

**ABB Inc./Combustion Engineering, Nuclear Safety and Nuclear Licensing - Windsor, CT (Nuclear Engineer: 1977 - 1994)**

Mr. Fennell held a series of positions from Staff Engineer to Principal Nuclear Engineer. His responsibilities included performing seismic and structural analyses and accident simulations for nuclear power plants, providing project management and regulatory compliance support for the decommissioning of a nuclear reactor fuel manufacturing facility, and performing compliance and licensing functions for an operating nuclear fuel manufacturing facility.

**SPECIALIZED TRAINING**

- California Climate Action Registry Green House Gas Verifier, 2007
- ABB, Inc. Courses in Environmental Management Systems, 1999 - 2000
- OSHA 40-Hour HAZWOPER Course, 1996

- DOT Hazardous Materials Transportation Courses, 1996
- Arthur D. Little Institute, Environmental Auditing Course, 1995

**PROFESSIONAL AFFILIATIONS**

- Air and Waste Management Association
- American Academy of Environmental Engineers - Board Certified Environmental Engineer

**TEACHING AND ADVISORY**

- Associate Adjunct Professor, College of Engineering, Technology, and Architecture, University of Hartford, 1998 to the present
- Advisory Committee, Department of Civil, Environmental, and Biomedical Engineering, University of Hartford, 2001 to the present.

Case No. 16-F-0062

Kazaniwsky

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Petro W. Kazaniwsky, P.E.

TRC Companies, Inc.

16000 Commerce Parkway, Suite B

Mount Laurel, NJ 08054

1 **Q: Please state your name, employer, and business address.**

2 A: Petro W. Kazaniwsky, P.E., TRC Companies, Inc. (TRC), 16000 Commerce Parkway,  
3 Suite B, Mount Laurel, NJ 08054.

4 **Q: What is your position at TRC?**

5 A: Chief Geotechnical Engineer.

6 **Q: How long have you been employed with TRC?**

7 A: I have been employed at TRC since 1977.

8 **Q: Please describe your educational background and professional experience.**

9 A: I earned Bachelor and Master of Science degrees in Civil Engineering from Drexel  
10 University. I am a licensed professional engineer in New York, Pennsylvania, Virginia,  
11 Delaware, Maryland, Louisiana, North Carolina, New Jersey, Maine, South Carolina and  
12 West Virginia. I have over 40 years of experience in geotechnical engineering and field  
13 quality control on a wide variety of residential, commercial and industrial projects, including  
14 power generation facilities and electrical transmission. This experience includes  
15 development of subsurface investigations, geotechnical interpretation and analysis of  
16 subsurface data, deep and shallow foundation analysis, slope stability analysis and other  
17 related subjects. See the attached curriculum vitae for details.

18 **Q: Please describe your current responsibilities with TRC**

19 A: I am responsible for all phases of a project, including client contact, proposal preparation,  
20 coordination and management of all phases of the project, supervision of personnel,  
21 engineering analyses, preparation of reports and specifications and consultation during  
22 construction. Provide peer reviews of geotechnical reports prepared by engineering staff.

23 **Q: Have you previously testified before the New York State Public Service Commission**  
24 **or Siting Board on Electric Generation?**

25 A: Yes. For a Cogeneration Facility proposed in Borough of Brooklyn, NY.

26 **Q: Have you previously served as an expert witness before any other court, agency,**  
27 **or other body on the subject you plan to offer testimony on today?**

28 A: I have provided expert witness reports and testimony related to geotechnical engineering  
29 issues for various litigation cases some identified in the attached curriculum vitae; and  
30 testimonies before local municipal boards on behalf of developers.

31 **Q: What is the purpose and scope of your testimony in this proceeding?**

32 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
33 or the Exhibits thereto.

34 **Q: What portion(s) of the Application is your testimony sponsoring?**

35 A: Exhibit 21: Geology, Seismology and Soils.

36 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
37 **direction and supervision.**

38 A: Yes.

39 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
40 **publications, data or documents produced by persons other than yourself/your**  
41 **company? If so, please cite these sources. [These are independent studies, etc.]**

42 A: See Exhibit 21 for references.

43 **Q: Does this conclude your testimony?**

44 A: Yes.

---

**PETRO W. KAZANIWSKY, PE**

---

**EDUCATION**

M.S., Civil Engineering, Drexel University, 1981

B.S., Civil Engineering, Drexel University, 1977

**PROFESSIONAL REGISTRATIONS/CERTIFICATIONS**

Professional Engineer, New York (#081310-0), 2003

Professional Engineer, Pennsylvania (#PE-031597E), 1982

Professional Engineer, Virginia (#0402-022160), 1991

Professional Engineer, Delaware (#8666), 1991

Professional Engineer, Maryland (#18238), 1990

Professional Engineer, Louisiana (#31880), 2005

Professional Engineer, North Carolina (#017204), 1991

Professional Engineer, New Jersey (#24GE02919900), 1983

Professional Engineer, Maine (#7237), 1984

Professional Engineer, South Carolina (#19751), 1999

Professional Engineer, West Virginia (#014547), 2000

**AREAS OF EXPERTISE**

Mr. Petro W. Kazaniwsky, PE has project management and technical experience in the following general areas:

- Development of Subsurface Investigations
- Geotechnical Interpretation and Analyses of Subsurface Data
- Deep and Shallow Foundation Analyses and Recommendations
- Ground Improvement
- Slope Stability Analyses
- Slope Stabilization
- Stabilization of Foundation Settlement
- Foundation and Earthwork Construction Quality Control
- Pavement Design
- Litigation Support
- Expert Testimony
- Development of Geo-instrumentation Programs

**REPRESENTATIVE EXPERIENCE**

Mr. Kazaniwsky possesses over 40 years of experience in geotechnical engineering and field quality control for such projects as low to high-rise residential developments, industrial processing facilities, power generation facilities, electrical transmission, hospitals, low to high-rise office complexes, regional shopping centers, multi-story parking facilities, highways, bridges, schools and churches. Primary responsibilities include all phases of a project including client contact, proposal preparation, coordination and management of all phases of the project, supervision of personnel, engineering analyses, preparation of reports and specifications, and consultation during construction. Specialized experience includes site stabilization, modeling and in-situ testing of pile and drilled pier foundations, design and installation of geotechnical

instrumentation monitoring systems, and pavement design. He has provided third-party reviews for construction claims resolution, as well as expert witness testimony in connection with geotechnical-related claims. He also currently serves as the Quality Assurance Manager for the firm's geotechnical engineering and drilling practices and is responsible for peer reviews of all technical aspects of the practice. He has been with the firm since 1977 and has been involved in over 2,600 geotechnical projects.

**Champlain Hudson Power Express- Canada to New York City High DC Voltage Transmission Line (Chief Geotechnical Engineer/Senior Project Manager: 2012-2013)**

The project consists of the installation of a buried high voltage DC power line delivering energy from Canada to New York City, traveling through entire length of Lake Champlain, highways, along railroad right-of-ways, and then eventually through the Hudson River. TRC was responsible for the terrestrial portion of the project which begins in Dresden, NY where the route runs in a southerly direction along NY Route 22, transitions to the Canadian (CP) Pacific railroad right-of-way, then the route follows the CSX Transportation (CSX) railroad right-of-way terminating in Catskill, NY. The entire length of the terrestrial portion of the project entailed a trenched buried cable with a large number of horizontal direction drilling (HDD), as well as jack and bore (JB) locations. The entire terrestrial route length was approximately 125 miles and a total of 209 test borings were drilled for the project. Mr. Kazaniwsky acted as the senior project manager and was responsible for developing all the geotechnical requirements for the project and coordinating the geotechnical field investigation program (test borings and field thermal and electrical resistivity testing), as well as the laboratory testing program (geotechnical testing of soil and rock and thermal resistivity testing). Responsibilities included coordinating all the work with the client and the client's construction manager/constructor. At the completion of the field and laboratory program for each relevant terrestrial section of the project, a geotechnical data report was prepared under Mr. Kazaniwsky's technical oversight. A total of three comprehensive geotechnical data reports were prepared and submitted on a timely basis to meet the client's schedule.

**86 Bayside Drive (Pepe Property) – Borough of Atlantic Highlands, NJ (Geotechnical Consultant: 2014)**

Currently Mr. Kazaniwsky is providing geotechnical consultation services for this on-going project. To date he reviewed the construction documents associated with the slope remediation construction at the property located at 86 Bayside Drive in the Borough of Atlantic Highlands. The purpose of this review was to establish the potential adverse impact of the proposed construction at this property on the existing Henry Hudson Trail. Any requirements for protection or restoration of the trail property were also identified. A brief letter report was prepared subsequent to the review and a site visit. Mr. Kazaniwsky continues reviewing the construction photos and updated drawings and additional site visits are planned.

**ASC-64 Locomotive Commissioning Facility AMTRAK Maintenance Facility-  
Wilmington, DE (Chief Geotechnical Engineer: 2013)**

Mr. Kazaniwsky directed a geotechnical investigation that included test borings and laboratory testing for the proposed construction consisting of a new locomotive commissioning facility at AMTRAK's Wilmington, DE maintenance facility. The project consists of a new truss-supported roof structure approximately 100 ft wide and 200 ft long with a peak roofline extending approximately almost 40 ft above the adjacent exterior grade. The facility will include new locomotive platforms and maintenance pits connecting to two existing tracks, office space located on a raised platform, and associated ramps and slabs. Due to presence of deep uncontrolled fills and soft compressible soils all structure and equipment support was to consist of deep foundations such as auger-cast, driven timber, or concreted pipe pile alternatives.

**Stormwater Management Upgrades at Westchester County Airport –  
Westchester County, NY (Geotechnical Engineer: 2013)**

Led a geotechnical investigation associated with the expansion of existing storm water basins A and B, as well as the installation of a new water quality improvement area. Directed the completion of a test boring (26) program, laboratory testing program and infiltration tests in the field in general accordance with the New York State Stormwater Management Design Manual. Also performed a global stability analyses to assess the feasibility and/or potential concerns related to construction of the proposed berms in Basins A and B. Based on the results of such investigative measures, he provided recommendations associated with earthwork and groundwater impacts.

**New York City Department of Parks and Recreation, Ferry Point Park Golf  
Course, Borough of The Bronx, NYC (Lead Geotechnical Engineer: 2008 –  
2009)**

Mr. Kazaniwsky assumed the role of Lead Geotechnical Engineer during the development and design of a tournament quality 18-hole golf course over an existing municipal waste landfill. Responsibilities included his development and implementation of a geotechnical investigation program which consisted of nearly 70 test borings to establish municipal waste depths, as well as the thickness of compressible river silts. Laboratory testing was completed on the compressible silts to evaluate their performance under load of new fills required to attain final grades. After the evaluation of anticipated settlements under imposed fill load, recommendations were then developed to mitigate the settlements for the critical golf course components such as greens and tees, irrigation basin and utility corridors. Solutions included Deep Dynamic Compaction and surcharging. Furthermore, geogrids were incorporated under the greens and tees, as well as the irrigation basin and parking/driveway areas, to limit localized subsidence. Structures such as the comfort station and rain shelters were to be founded on shallow mat foundations in connection with deep dynamic compaction and use of cellular concrete to create a "net zero load" condition.

**Consolidated Edison, Corona Substation Circuit Breaker Upgrades - Queens, New York (Lead Geotechnical Engineer: 2008 - 2009)**

Located just northwest of the intersection of 98th Street with 55th Avenue, the project involved the installation of new and replacement circuit breakers. According to historic test borings performed in 1975 at the project site during initial construction of the substation, the site is underlain by uncontrolled fill materials extending to 20 to 30 ft below the ground surface. Underlying the fill material the test borings encountered natural soils consisting of alternating layers of sand with varying quantities of silt and clay, and silt/clayey silt. Utilizing this information, Mr. Kazaniwsky characterized the engineering properties of the subsoils at the specific location of proposed construction, and developed foundation solutions to support the new electrical equipment on micro-piles or alternatively helical screwed-in anchor piles, including the preparation of associated foundation specifications.

**Market Street Elevated Reconstruction-Stations & Cobbs Creek Contracts, Philadelphia, PA (Chief Geotechnical Engineer 2004-2007)**

Responsibility included client contact and technical oversight and direction of TRC's Foundation Quality Control Engineer during the reconstruction of SEPTA's Market Street Elevated rail system between 46th Street and Millbourne Station. Project requirements included monitoring the installation of drilled shaft and mat foundations for the new platforms and stations, as well as the soldier pile-based support of excavation systems. Additionally reviewed the Osterberg Cell load testing program, soil placement and compaction, and material testing operations. Project also included field oversight by the Foundation Quality Control Engineer during a 3000 lineal foot test boring program which included over 1600 lineal feet of rock coring.

**NJ Department of Transportation, Route 47 Bridge Over Grassy Sound - Cape May County, NJ (Chief Geotechnical Engineer: 1997-2000)**

Mr. Kazaniwsky was responsible for managing all aspects of a geotechnical study to investigate two bridge piers that were tilting, including determining the probable cause and providing recommendations to halt or mitigate additional tilting. The bridge structure itself consists of seven bridge spans, six piers, and two abutments supported on timber piles. A compaction grouting program was designed to stabilize the subsoils.

**Masonic Temple Settlements and Stabilization - Philadelphia, PA (Geotechnical Consultant: 1995)**

Mr. Kazaniwsky provided consultation to the owner with regard to settlements that were allegedly caused by the construction of deep foundations for a new detention center adjacent to the historic Masonic Temple. He directed a very comprehensive subsurface investigation to establish the mechanism of the settlements and to provide sufficient subsurface information for stabilization of the existing masonry foundations. The study showed that the structure is underlain by a layer of very sensitive soil subject to liquefaction and the study verified that the observed settlements in fact were caused by the construction

related vibrations. A stabilization program consisting of compaction grouting was designed and implemented to stabilize the problematic soils. Monitoring of the structure was performed during the stabilization program to minimize heave-associated problems. The information obtained by this study was then used to settle the outstanding claim on behalf of the Masonic Temple.

**Riverfront State Medium Security Prison - Camden, NJ (Geotechnical Engineer: 1981-1984)**

Mr. Kazaniwsky assumed the role of Geotechnical Engineer during the completion of a subsurface investigation for this new medium security prison that was constructed on a 35-acre parcel of land adjacent to the Delaware River. The project included multiple 3-story cast-in-place concrete structures for inmate housing, a visitors building, a dining facility, and three (3) guard towers. The resulting foundation system employed concrete-filled pipe piles, while a methane gas abatement system was incorporated into the project due to the discovered presence of such gas. A load testing program was developed to minimize production pile lengths, while a program to stabilize old remnant piers was also implemented.

**Slope Failure Below Residential Structure Claim - Bethel Park, PA (Geotechnical Consultant: 2002)**

Claim involved a down-slope failure impacting an upslope property and residence. Mr. Kazaniwsky represented the owner who experienced significant instability of an approximately 50 ft high slope, which caused excessive vertical and horizontal movements and cracking of an in-ground swimming pool. This slope was reportedly rebuilt and stabilized by the developer in accordance with a designed remediation approach prior to development of this property. A comprehensive study was performed to establish the subsurface conditions and overall condition of the slope and likely mechanism of failure. The study established that the remediation approach was not implemented as per the original stabilization design, and the ongoing slope failure can be attributed to poor construction procedures and lack of the stabilization implementation.

**Valley Creek Coalition v. Commonwealth of Pennsylvania DEP and Vanguard Group (Geotechnical Consultant: 2005)**

Vanguard Group developed an 80 acre site in Whiteland Twp., PA as part of their corporate office complex. The project site is located in karst terrain subject to sinkhole development. Various environmentalist groups represented by the Valley Creek Coalition felt that the currently designed storm water management systems (SWMS) were insufficient and brought suit against the PADEP and Vanguard Group to expand the SWMS to include on-site recharge systems. Mr. Kazaniwsky prepared expert reports and testimony on behalf of the Vanguard Group that identified, from a geotechnical perspective, the potential for future problems and difficulties associated with implementing such an on-site recharge system at this project site. The courts ruled on behalf of the Vanguard Group.

**Residential Development Roadway Pavement Distress Claim - Wall Township, NJ (Geotechnical Consultant: 2005)**

At the request of the owner's association, Mr. Kazaniwsky directed a detailed investigation to establish the causes of pavement blistering and disintegration throughout the relatively large development. Localized removal of the pavement and subgrade materials was performed to expose the pavement components and extensive laboratory testing was conducted to establish conformity of pavement construction materials to accepted standards, and find the cause of the pavement blistering. The study established that the cause of the pavement blistering was due to the presence of reactive product within the subbase material having highly expansive properties and subsequently causing pavement heave and the observed localized blistering. Furthermore, the laboratory testing showed that the subbase materials and pavement sections were deficient. An expert report was prepared.

**Pocahontas Parkway - Chesterfield and Henrico Counties, VA (Chief Geotechnical Engineer: 1995-2001)**

Mr. Kazaniwsky assumed the role of Chief Geotechnical Engineer for this major, \$325 million Design-Build project that involved the design of a 3.9 mile long section of new, 4-lane limited-access interstate highway with toll facilities. Included a major crossing of the James River (segmental concrete), new ramp (4) and mainline (6) bridges, bridge widenings (2), a bridge replacement over the CSX railroad, toll facilities, a new four-level interchange with I-95, and a trumpet type interchange with Laburnum Ave. Mr. Kazaniwsky was responsible for the completion of a geotechnical investigation for a new bridge over the James River and nine (9) new ramps that tied the bridge into I-95. Responsibilities included: preparation, implementation, and supervision of subsurface investigations and laboratory testing programs for over 300 test borings; foundation design for each ramp and bridge substructure unit (H-piles, pipe piles, drilled shafts, and spread footings); design of gravity, Mechanically-Stabilized Earth (MSE), and ground anchor-supported retaining walls; large-scale earthwork operations (high embankments, steep reinforced slopes, geosynthetic stabilization, and undercut of soft roadbed soils); load testing of drilled pier and pile foundations; preparation of specifications; value engineering, and construction consultation. A pavement analysis was performed and recommendations made for the toll plaza portion of the project. A geotechnical instrumentation system consisting of vibrating wire piezometers and settlement platforms was designed and installed as part of the project.

**R.E. Michael Co. Building Floor Slab Settlement Claim - Wilmington, DE (Geotechnical Consultant: 1997)**

Mr. Kazaniwsky provided consultation to the owner regarding large settlements that were being experienced by a building that was constructed along the Christiana River. At the request of counsel representing the building owner, a subsurface investigation was implemented to determine the causes of the settlements and potential remediation methods. The study established that the building site is underlain by very soft highly compressible organic soils that settled under the weight of fill required to raise the grades, as well as the live

floor loads. The building frame was supported on deep foundations. An expert report was prepared concluding the mechanism of settlements and finding that the original geotechnical engineer neglected to consider the impact of the required grading in the decision not to support the floor slab on piles. Expert testimony was then provided on behalf of the building owner.

**Transgas Energy Systems 1,100 Megawatt Combined Cycle Cogeneration Facility - Borough of Brooklyn, NY (Chief Geotechnical Engineer: 2003-2005)**

Mr. Kazaniwsky assumed the role of Chief Geotechnical Engineer during the completion of a preliminary geotechnical investigation at the planned location of a cogeneration facility that was proposed for construction within an existing fuel storage facility on the East River. The purpose of this investigation was to characterize the subsurface conditions and evaluate alternative foundation systems for support of the proposed facility. A preliminary geotechnical report was prepared which included recommendations for alternative deep pile foundations. In conjunction with Transgas Energy Systems' public need and environmental compliance application to the New York Public Service Commission, a written rejoinder testimony was prepared and expert witness testimony was provided during the Public Service Commission hearings.

**Alfred Pierce Generating Station Upgrades - Wallingford CT (Sr. Geotechnical Engineer)**

Mr. Kazaniwsky was a Sr. Geotechnical Engineer responsible for compiling the geotechnical report associated with upgrades to this existing power plant. Major new structures included a new turbine generator, electrical transformers, oil and water tanks, a new stack, roadways, above and below grade utilities, and many other small ancillary buildings/structures. The report included an evaluation of subsurface conditions, evaluation and recommendation of feasible foundation alternatives for heavy, highly sensitive structures and smaller lightly loaded structures, recommendations for re-use of onsite soils in structural fills and recommendations for maintaining the stability of temporary excavations. Pavement design was also prepared for this facility.

**Dynegy Combined-Cycle Power Station, Frederick, MD (Chief Geotechnical Engineer: 2001-2002)** – Mr. Kazaniwsky provided technical oversight during the planning and execution of all aspects of a comprehensive geotechnical evaluation for this new combined cycle power plant covering approximately 35 acres of a 115 acre property. The proposed construction consists of a combined cycle electric power generating station. Major structures associated with this facility include 4 gas turbine generators, numerous transformers, condensing units, roadways, water tanks, fuel oil storage tanks, storm water detention basins, and many small ancillary buildings. The site is underlain by solution-prone limestone conglomerate. During the geotechnical investigation, a parallel hydrogeologic study being completed by others in which a groundwater pump test was being conducted caused the occurrence of a 50 ft wide and 30 ft deep sinkhole. Mr. Kazaniwsky reviewed the recommendations for repair of this

sinkhole and the results of a detailed reconnaissance of the site and surrounding area to evaluate the potential for future sinkhole activity. Recommendations for foundations and earthwork activities were developed to account for the potential for subsidence under Mr. Kazaniwsky's oversight.

**Brookhaven Energy Facility- Long Island, NY (Chief Geotechnical Engineer: 2004 – 2006)**

Mr. Kazaniwsky was responsible for planning and directing all aspects of a comprehensive geotechnical evaluation for this new combined cycle power plant covering approximately 20 acres. Major structures include cooling towers, combustion turbine generators, steam turbine generators, heat recovery steam generators, electrical transformers, oil and water tanks, stacks, roadways, above and below grade utilities, and many other small ancillary buildings/structures. Work also included resistivity survey arrays. Mr. Kazaniwsky also planned and oversaw a seismic cross-hole survey at this site with a team subcontractor that was conducted to provide typical shear and compression-wave velocities ( $V_s$  and  $V_p$ ). Pavement recommendations were provided.

**Puddledock Substation, Manchester, ME (Chief Geotechnical Engineer: 2012)**

Mr. Kazaniwsky was responsible for a peer review of a geotechnical report prepared for a substation upgrade consisting of new transformers, a new control building and dead end structures. Subsurface conditions consisted of clayey glacial marine deposits underlying by dense glacial till. Groundwater was at shallow depths, which provided a challenge for the anticipated site work. Shallow foundations founded in the stiff natural soils were recommended in conjunction with dewatering.

**Paulsboro Marine Terminal, Paulsboro, NJ (Chief Geotechnical Engineer: 2008 – 2009)**

Mr. Kazaniwsky was responsible for planning and directing all aspects of a comprehensive geotechnical investigation and evaluation for this new 167 acre marine terminal located on the Delaware River. Major structures include a 2,350 ft long ship berth to accommodate up to three "Handy-Max" 650 LOA bulk carrier ships, a 44 acre forest products storage area and five transit buildings, a 52 acre metal scrap storage and steel shredder facility, 16 acres of wheeled cargo storage, as well as numerous terminal roads and terminal railways. Mr. Kazaniwsky also planned and oversaw environmental sampling and testing of river sediments for proposed dredging. Deep foundation systems, consisting of concrete or concrete filled pipe piles were evaluated for the berth system.

**Science Center Buildings at 3711 and 3737 Market Street- Philadelphia, PA (Chief Geotechnical Engineer: 2006 – 2010)**

Mr. Kazaniwsky served as the senior project manager for these two multi story structures. His responsibilities included technical oversight for the geotechnical studies and geotechnical engineering analyses for these two projects. He provided geotechnical consultation during drilled pier foundation construction at

3711 Market Street. He also provided geotechnical engineering consultation during conceptual plan development at 3737 Market Street which included foundation constructability review and ground water management during construction and permanent, as well as storm water recharge. Additionally, alternative drilled pier foundation inspection methods were considered and their impact on design and construction evaluated. A formal geotechnical report was prepared for both projects.

**Chesterfield County Dept. of Public Works, Old Buckingham Road  
Realignment - Chesterfield County, VA (Chief Geotechnical Engineer: 2001)**

Mr. Kazaniwsky provided technical oversight for this roadway rehabilitation project which included the preparation of a Geotechnical Engineering Report for the substructure of a proposed new bridge in accordance with AASHTO Load Factor Design (LFD) specifications. Mr. Kazaniwsky performed the roadway pavement design.

**Drexel University- North Hall, 33<sup>rd</sup> and Race Streets, Philadelphia, PA  
(Chief Geotechnical Engineer: 1997 – 1999)**

Directed the completion of a geotechnical investigation and associated consultation for the design and construction of an 8-story residence hall on the campus of Drexel University. Project included the completion of a cost-based feasibility study for foundation selection (drilled piers versus auger-cast piles), monitoring and analysis of auger-cast pile load tests, and the direction of field inspection personnel during construction.

**Drexel University- East Hall (former AMTRAK property), 32<sup>rd</sup> Streets,  
Philadelphia, PA (Chief Geotechnical Engineer: 1999 – 2000)**

Directed the completion of a geotechnical investigation and associated consultation for the design and construction of the new residence hall on the campus of Drexel University. Project included the completion of a cost-based feasibility study for foundation selection (drilled piers versus auger-cast piles) with the auger-cast found to be more cost effective. Providing monitoring and analysis of auger-cast pile load tests during construction.

**Laurel Creek Office Buildings - Burlington County, NJ (Chief Geotechnical  
Engineer: 2002)**

Mr. Kazaniwsky provided technical oversight during the geotechnical study performed for this proposed corporate complex that consists of three (3) three-story steel frame office buildings and related infrastructure. Oversaw the preparation of the Geotechnical Engineering Report which included an evaluation and recommendation of foundation support for structures and floor slabs, groundwater conditions and management, soil material and compaction requirements for the support and backfill of structures, reusability of on-site soils in compacted fill, and frost penetration depth. Mr. Kazaniwsky prepared a pavement design for this project.

**Franklin Mills Mall, Philadelphia, PA (Geotechnical Project Manager: 1986)**

—Mr. Kazaniwsky was responsible for managing all of the required geotechnical engineering work for this 2,000,000 sq ft regional mall, as well as all out-parcels. Portions of the site were underlain by extensive fill materials with a thickness of up to 30 feet, which would experience significant amounts of settlement under applied load. To remedy this, and minimize the potential for differential settlement across the project area, deep dynamic compaction in conjunction with a limited soil exchange was employed at the site. The use of dynamic compaction offered a less time consuming alternative to preloading and allowed for the use of shallow spread footing foundations rather than deep foundation systems and/or extensive soil removal and replacement, which were deemed to be more costly alternatives. Extensive pavement design was also required to offer economical pavement alternatives to deal with the variable subsurface conditions. Storm water management was designed to be contained in both retention and detention basins, which required very tall embankment sections. These were considered and designed as earthen dams. Included oversight of the quality control testing for all earthwork, foundations, steel erection, roofing, drainage installation, and pavement construction.

**Temple University School of Podiatric Medicine Office and Parking Garage (Geotechnical Project Manager: 1986) - Philadelphia, PA**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager responsible for the development of a geotechnical investigation program for a multi-story parking garage and office over-built on Race Street between 8th and 9th Streets. Because the building is uniquely situated over the Center City Commuter Tunnel, the building would need to span approximately 60 ft over the tunnel which in turn required maximization of the bearing capacity for drilled pier foundations. During construction he provided engineering direction and redesigned the piers to take advantage of locally better quality rock which was better than 50 tsf.

**Seapointe Village - Lower Twp., NJ (Geotechnical Engineer: 1990-2006)**

Mr. Kazaniwsky assumed the role of Geotechnical Engineer for the investigation and resulting construction of a residential condominium complex located on a barrier island in Cape May County on the New Jersey coast. Employed partial excavation, ground water monitoring, dewatering and surface stabilization to allow for the use of shallow footings and/or deep pile foundations for certain structures. Evaluated storm water recharge feasibility.

**Gallery II Parking Garage, 11<sup>th</sup> and Filbert Streets, Philadelphia, PA - (Geotechnical Project Manager: 1985)**

Mr. Kazaniwsky developed and implemented a geotechnical study for a 6 story parking garage facility constructed at 11th and Filbert Streets in Philadelphia, PA. Due to proximity of the Center City Commuter Tunnel and on the basis of subsurface conditions, utilized high capacity drilled pier foundations. He provided engineering consultation and oversight of drilled pier foundation construction, as well as subgrade preparation for support of the slab on-grade.

Coring of a pier shaft and evaluation of the concrete due to concrete quality problems was also performed.

**Hilton Garden Inn Overbuild- Gallery II Garage, 11<sup>th</sup> and Filbert Streets, Philadelphia, PA (Geotechnical Project Manager: 1988)**

Mr. Kazaniwsky developed and implemented a geotechnical study for a hotel structure overbuild over the constructed parking garage at 11th and Filbert Streets in Philadelphia, PA. Provided engineering evaluation of the existing drilled pier foundations to maximize the bearing capacity for support of portions of the building overbuild. Evaluated high capacity drilled pier foundations for portions of the overbuild that need to span certain portions of the existing garage and considering the vicinity of the Center City Commuter Tunnel.

**Queens West Development Stages III and IV- Queens, NY (Chief Geotechnical Engineer: 2006-2007)**

Mr. Kazaniwsky assumed the role of Chief Geotechnical Engineer during the completion of a geotechnical feasibility study in connection with a due diligence study being conducted for this project. The project site is located along the East River in Long Island City (Queens), NY and is approximately 30 acres in size. An AMTRAK and the Queens Midtown Tunnels traverse below the project site. Preliminary plans called for 12 residential towers up to 40 stories in height, and multiple 3 to 6 story garage structures. The purpose of this geotechnical study was to characterize the subsurface conditions on a preliminary basis and evaluate the impact of the conditions on foundations and anticipated site development. A total of 13 test borings were drilled at the project site. Due to the presence of deep heterogeneous fills, thick highly compressible silts, and localized boulders, as well as the presence of tunnels, alternative deep foundations such as H-piles, concrete filled pipe piles and micro piles were recommended based on specific subsurface conditions and location. Additionally, deep dynamic compaction and surcharging were recommended for roadways to stabilize the fill and silt and minimize post construction settlements.

**University of Pennsylvania UDAG Development - Philadelphia, PA (Geotechnical Project Manager: 1982-1994)**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager for this major health care facility project. The development consists of two biomedical research facilities, the CHOP Ambulatory Care Facility, Children's Seashore House, the CHOP Stokes Research Facility, a below grade parking facility and plaza, and a 6-story parking facility. All of the buildings have three levels of below grade parking, are typically up to 13 stories in height, and occupy an area of approximately 8 acres. Mr. Kazaniwsky was responsible for developing and implementing specific geotechnical investigations for each of these buildings which were built at separate times. He also evaluated alternative foundation systems and concluded that the cost-effectiveness and practicality of using straight shaft drilled piers with rock sockets was the most practical. Due to shallow ground water and deep basements, he also conducted in-place permeability tests and designed permanent subdrainage systems for most of the

buildings. During foundation and earthwork construction he provided engineering oversight and consultation regarding geotechnical-related issues.

**Marriott Convention Hotel - Philadelphia, PA (Geotechnical Project Manager: 1996-1998)**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager responsible for the development and implementation of a geotechnical exploration study for a 21-story hotel located at 12th and Market Streets in Philadelphia, PA. While alternative shallow and deep foundation systems were evaluated, a drilled pier foundation system was recommended that would bear in mica schist rock due to a shallow basement. Due to the presence of soft, liquefiable soils at basement level, he developed a subgrade stabilization method to act as a construction platform and provide support for the basement slab. During construction, he was responsible for oversight of the drilled pier foundations and subgrade preparation, as well as for providing consultation relating to geotechnical issues and foundation inspection.

**The Murano, 2101 Market Street - Philadelphia, PA (Chief Geotechnical Engineer: 2006)**

Mr. Kazaniwsky served as the chief geotechnical engineer overseeing the completion of a geotechnical investigation for this 45-story, \$165 million, condominium tower built at 21st and Market Streets in Center City Philadelphia. Responsibilities included the planning, and coordination of oversight for a supplemental subsurface investigation consisting of Pressuremeter Testing (PMT) and Borehole Shear Testing (BST) of the site bedrock. Pavement subgrade recommendations were made and a pavement design was provided for the access driveways.

**Commerce Square Twin Towers - Philadelphia, PA (Geotechnical Project Manager: 1984-1987)**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager responsible for the preliminary and then final geotechnical engineering studies for each of two 40-story towers that were built at 22nd and Market Streets in Center City. Based on his evaluation of a combination of shallow footings and drilled pier foundations, drilled piers were utilized due to simplicity and ease of excavation, some of which were relatively shallow while most were deep. He also designed a permanent ground water control system based on results of in-place permeability testing, as well as developed a unique method of reducing lateral loads on basement walls by utilizing a compressible foam drainage board. During construction, he provided direction and consultation during the contractor's foundation and earthwork activities. To reduce costs, drilled pier sockets were continually redesigned based on the quality of rock that was encountered. He additionally provided monitoring and evaluation of vibrations and their impact on fresh concrete due to localized blasting for deep elevator pits.

**Temple University, Temple University Health Science Garage - Philadelphia, PA (Geotechnical Project Manager: 1988)**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager responsible for the development and implementation of a geotechnical study for a 4-story parking garage structure at 15th and North Carlisle Streets. Based on highly variable rock conditions, he evaluated various deep foundation systems and concluded that a straight shaft drilled pier socketed in weathered rock was most effective. Also developed an extensive soil exchange scheme for slab support due to extensive unstable on site soils and fills. Years after construction, he performed a comprehensive re-evaluation of the adequacy of existing foundations for the addition of two parking levels. Prepared alternative stabilization schemes, including pin-pile underpinning, where conditions warranted.

**Paulsboro Marine Terminal Bridge and Roadway-Pilot Surcharge, Paulsboro/West Deptford, NJ (Chief Geotechnical Engineer: 2010)**

Mr. Kazaniwsky was responsible for assisting the design engineer with planning and installation of geotechnical instrumentation for monitoring a pilot surcharge. The purpose of the pilot surcharge was to evaluate magnitude and rates of settlements, as well as the lateral deformation at the toe of the surcharge to be used in the final design of the roadway and bridge approaches. Mr. Kazaniwsky oversaw all aspects of the installation of the geotechnical instrumentation consisting of slope inclinometers with Sondex vertical settlement measuring capabilities and multi stage vibrating wire piezometers for measuring pore pressure dissipation in the compressible layer.

**Hog Island Road Extension - Tinicum Twp., PA (Geotechnical Project Manager: 1999-2002)**

Mr. Kazaniwsky directed the completion of a geotechnical investigation (2 phases) for a 3,500 LF extension and 2,000 LF realignment of Hog Island Road which serves as the main loop road around the Philadelphia International Airport. Because the locations of both the extension and realignment are situated over marshland that was hydraulically-filled, the subsurface conditions consisted of underconsolidated soft compressible organic silts. In order to establish stability and limit post-consolidation settlements, a preloading system was developed that consisted of an earthen surcharge and wick drains to accelerate the time of consolidation. An instrumentation system consisting of 20 vibrating wire piezometers and settlement platforms was subsequently designed to monitor the consolidation. A pile foundation system was developed to support a bridge. The work included monitoring of the piezometers and settlement plates, as well as load testing of bridge foundations, and inspecting the installation of production piles.

**LA Department of Transportation and Development, I-10 Bridges over Lake Pontchartrain - St. Tammany and Orleans Parishes, LA (Geotechnical Consultant: 2005-2006)**

Mr. Kazaniwsky was responsible for providing geotechnical engineering analyses

associated with the fast-track design of approximately 5-mile long parallel segmental bridges to replace an existing bridge that was severely damaged by Hurricane Katrina. The two parallel bridges consist of both low deck and high spans, with the high span subject to large barge collision loads. Tasks include: review of existing subsurface data from the existing bridge and provision of preliminary geotechnical analysis and recommendations for precast concrete piles and drilled piers; review of LADOTD-developed preliminary foundation systems; assist LADOTD with the development of a supplementary geotechnical sampling and laboratory testing program to be performed by LADOTD; assist LADOTD with the development of an advanced pile and drilled pier testing program to be performed by LADOTD; provide part-time oversight of the supplementary geotechnical sampling and the advanced pile and drilled pier testing programs; review the results of the supplementary geotechnical sampling and laboratory testing programs and re-evaluate the foundation systems in view of the supplementary data; review the results of the pile and drilled pier testing program and re-evaluate the foundation recommendations; provide assistance during the bid process and review of the submitted bids. (2006)

**Camden Aquarium Parking Garage - Camden, NJ (Geotechnical Project Manager: 1988)**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager during the completion of a geotechnical investigation for this 7-story parking garage located across from the New Jersey State Aquarium. The footprint of the structure was approximately 51,000 ft<sup>2</sup> with column loads that ranged from 600 to 1,300 kips. Due to a significant thickness of compressible organic silt, driven piles were recommended for support of the structure, with subsequent consultation and monitoring being provided during pile load testing and production pile installation.

**Monopile Mooring System for Berth No. 2 Reconstruction at Beckett St. Terminal – Camden, NJ (Geotechnical Engineer: 2003)**

Mr. Kazaniwsky directed the completion of a geotechnical investigation for this project which consisted of the analysis of a large-diameter (60-inch) monopile for lateral loading and drivability studies for pile installation, including the evaluation of subsurface investigation data obtained by others. The project involved the design of a permanent mooring for the bow line of a ship to be docked at the reconstructed Berth No. 2. at Beckett Street Terminal adjacent to the Delaware River. The permanent mooring was proposed to consist of a large (60 in.) diameter monopile. Mr. Kazaniwsky's responsibilities included an evaluation of the monopile system and modeling of alternative pile driving systems. A report was then prepared with recommendations for design and construction.

**VA Department of Transportation, I-64/Mercury Boulevard Interchange - City of Hampton, VA (Chief Geotechnical Engineer: 1997-2003)**

Mr. Kazaniwsky assumed the role of Chief Geotechnical Engineer for this \$70 million urban interstate project that involved the addition of HOV lanes in the median of I-64 along a 2.6 mile section; auxiliary, acceleration and deceleration lanes; and the reconfiguration of an existing interchange with I-64 to include high-speed ramps, 5 new curved steel ramp bridges and 2 replacement bridges.

Mr. Kazaniwsky's responsibilities included the implementation of subsurface investigation and laboratory testing programs for over 110 test borings, pile foundation design for five (5) multi-span curved girder flyover bridges and two (2) major highway overpass bridges, design of over 150,000 sq. ft. of Mechanically Stabilized Earth (MSE) retaining walls using lightweight aggregate fills, slope stability, and design of six (6) miles of new highway. A geotechnical instrumentation system consisting of settlement platforms and vibrating wire piezometers was designed and installed. Load testing of deep pile foundations was also conducted.

**SC Department of Transportation, Statewide Design-Build Bridge Replacement (Geotechnical Engineer: 2004-2006)**

Mr. Kazaniwsky participated in the completion of geotechnical studies that were completed for this fast-tracked, design/build contract that included the replacement of 33 bridges throughout the state. Provided an evaluation of subsurface conditions, feasible foundation types, foundation design recommendations and pile driveability analyses (where applicable) for 6 replacement bridges. Driven piles were recommended for use as foundation support, while all substructure design for this project was completed in accordance with AASHTO Load and Resistance Factor Design (LRFD) specifications.

**NJ Department of Transportation, NJ Route 9, Section 15 D Instrumentation - Atlantic County, NJ (Geotechnical Engineer: 2002)**

Mr. Kazaniwsky directed the oversight and installation of specialty geotechnical instrumentation, including four (4) vibrating wire piezometers, seven (7) inclinometers and six (6) extensometers to monitor pore pressures, lateral displacements and vertical settlements induced by applied surcharge loads. Extensometers and inclinometers were installed to depths of 90 to 100 feet below ground surface under difficult drilling conditions. Included the establishment of baseline measurements for each instrument that was installed and training the owner representatives who were responsible for on-going monitoring.

**St. Mary's RC Church Floor Slab and Foundation Deficiencies Claim - Cherry Hill, NJ (Geotechnical Consultant: 1990)**

Mr. Kazaniwsky directed a subsurface study to establish alleged deficiencies in foundation and floor slab construction as part of an overall forensic study being performed by a team of experts. The study in fact verified that the foundations and floor slabs were found to be insufficient in view of the current loading conditions, and the potential for future problems was identified by this study. An expert report was prepared and verbal testimony was then provided on the behalf of the church.

**Farnham Park Wetlands Restoration - Camden, NJ (Geotechnical Project Manager: 2004)**

Mr. Kazaniwsky assumed the role of Project Manager for the geotechnical data acquisition activities his duties and responsibilities included cost estimating, contract preparation, scheduling, and coordination of field activities. He also acted as the client liaison and technical manager. TRC provided all test boring drilling, laboratory analysis and data interpretation. With the site being located along the Cooper River within a tidal wetlands area, the test borings were completed using ATV-mounted equipment due to extremely wet and soft conditions. Laboratory analysis of the subsoils will include a full suite of physical analysis in TRC's AASHTO-accredited soil mechanics laboratory.

**1800 and 1880 JFK Boulevard Twin Office Towers - Philadelphia, PA  
(Geotechnical Engineer: 1980-1981)**

Mr. Kazaniwsky assumed the role of Geotechnical Engineer during the completed of a preliminary and final investigation for each of two, 21-story office towers that were constructed in the 1800 block of JFK Boulevard in Center City Philadelphia. Concluded that a drilled pier foundation system designed for a 25 to 40 tsf rock bearing capacity could be utilized in the design. Provided engineering oversight during foundation construction and general earthwork, as well as redesigned socket lengths based on the rock that was encountered.

**PA Department of Transportation, S.R. 3040, Section 01A/01B, Park Road Corridor - Berks County, PA (Chief Geotechnical Engineer: 1989-1992)**

Mr. Kazaniwsky assumed the role of Chief Geotechnical Engineer responsible for all aspects of a subsurface investigation program and providing design recommendations for this project which involved the design of a four-lane limited access expressway on new alignment. A major portion of this project involved the construction of eight (8) new multi-span bridge structures along 5 miles of highway, all of which traversed highly solution-prone limestone formations. All of the new bridge crossings were grade separation structures, with two of the crossings representing dual bridge structures. Preliminary pavement design was performed for this project.

**SC Department of Transportation, US 76 Bridge Replacement over Chattooga River on South Carolina/Georgia State Line (Geotechnical Engineer: 2005-2006)**

Mr. Kazaniwsky assisted with the evaluation of subsurface conditions, feasible foundation types and foundation recommendations for this project which represented a major crossing of the Chattooga River between Oconee County, SC and Rabun County, Georgia. Due to the variable depth to rock that was encountered at substructure locations, a combination of driven piles and drilled shafts were recommended. He also participated in the development of preliminary soil nail wall evaluations for consideration as an alternative to performing large volume cuts in existing slopes and evaluated the stability of cut slopes and cantilever walls that were selected for use on the project. All substructure and wall evaluations for this project were performed in accordance with AASHTO Load and Resistance Factor Design (LRFD) specifications.

**PA Department of Transportation, Stabilization of the Route 76 and Route 676 Interchange - Philadelphia, PA (Geotechnical Engineer: 1984-1990)**

Mr. Kazaniwsky assumed the role of Geotechnical Engineer for this project site which was located over deep man-made fills and river silts adjacent to the Schuylkill River. Because of noticeable movements observed during construction, alternative schemes were evaluated for stabilization. These included the "net zero load" concept using cellular concrete, deep dynamic compaction, stone columns and deep foundations. An instrumentation program consisting of slope inclinometers and piezometers was subsequently implemented during construction to monitor the horizontal and vertical movement, as well as pore pressure, of the subsoils as a result of embankment loads. Load testing of pile foundations was also conducted.

**NJ Department of Transportation, I-295, Section 1-BC, Embankment Instrumentation and Monitoring - Gloucester County, NJ (Chief Geotechnical Engineer: 1997)**

Mr. Kazaniwsky designed and implemented an embankment instrumentation and monitoring program for a new NJDOT bridge over I-295. Installed vibrating wire piezometers and porous tube-type piezometers prior to construction of the main approach embankments for the bridge. Also provided monitoring of the pore pressure in compressible subsoils compared with height of fill, rate of placement, and settlements that were determined from settlement platforms. Also performed analyses to determine when completion of the embankment settlement would be achieved.

**NJ Department of Transportation, Route 42 Widening, Section 13M/14S - Camden and Gloucester Counties, NJ (Chief Geotechnical Engineer: 1990-1993)**

Mr. Kazaniwsky assumed the role of Chief Geotechnical Engineer involved with overseeing a geotechnical investigation for the widening of an existing highway from three lanes to four lanes in each direction, including three bridge structures. Length of the roadway that was subject to his work was 3½ miles. Project involved the installation of the sound barriers, culverts, retaining walls, signs and exterior lighting, as well as bridge widenings. A combination of deep and shallow foundations was utilized to support the structures.

**NJ Department of Transportation, Route 47 Bridge Over Grassy Sound - Cape May County, NJ (Chief Geotechnical Engineer: 1997-2000)**

Mr. Kazaniwsky was responsible for managing all aspects of a geotechnical study to investigate two bridge piers that were tilting, including determining the probable cause and providing recommendations to halt or mitigate additional tilting. The bridge structure itself consists of seven bridge spans, six piers, and two abutments supported on timber piles. A compaction grouting program was designed to stabilize the subsoils.

**WV Department of Transportation, Division of Highways, Elkins Bypass, US 219 to Canfield - Randolph County, WV (Chief Geotechnical Engineer: 1996-1999)**

Mr. Kazaniwsky assumed the role of Chief Geotechnical Engineer during the design of a new roadway through the Appalachian Mountains along Corridor H in West Virginia. Responsibilities for this project included: development of subsurface investigation and laboratory testing programs for over 120 test borings, stability analysis and design of rock cuts over 100 ft high in weak, steeply dipping shale bedrock, rock slope hazard reduction studies, stability analysis for roadway fill and embankments over 70 ft high, foundation design and analysis for two bridges and culverts, and the production of geotechnical engineering reports.

**Plant 15-2B Crane Foundation Analysis, Sunoco Plant - Marcus Hook, PA (Geotechnical Project Manager: 2000)**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager during the completion of geotechnical analyses associated with the placement of a Demag CC1800 track-mounted crane that would lift a maximum 150 kip load. From a soil-based analysis, it was determined that use of the crane would be feasible without subsurface modification. The primary concern, however, became the presence of subsurface utilities and their associated tolerable stresses and displacements upon load application and corresponding compression of the upper soil mass. Based on crane information provided by the client, it was determined that ultimate distributed loads of up to 10.5 ksf were possible during setup and/or operation directly under the crane tracks. Strictly from a soil performance standpoint, the use of continuous double-stacked matting placed in alternate directions to ensure rigidity was recommended. However, due to the concern for utility performance, it was stressed that consideration be given to the construction of a 3 ft thick working pad directly below the crane matting to aid in distributing and dissipating the applied loads.

**Crane Foundation Analysis – Units 1232 & 431, Sunoco Plant – Philadelphia, PA (Geotechnical Project Manager: 2003)**

Mr. Kazaniwsky assumed the role of Geotechnical Project Manager during this project which involved the completion of a geotechnical investigation associated with the placement of five (5) different cranes, each at a different location, as part of a regularly scheduled maintenance program. The first stage of our analysis evaluated the placement of a 500-ton Demag AC1200 crane and a 300-ton Grove GMK 6300 B crane near the CAT facility at Unit 1232. Two of the remaining cranes would be placed on the recovery side of Unit 1232 while the last crane would be placed in the street at Unit 431. The two cranes at Unit 1232 are a 50-ton Grove RT 750 and a 175-ton Grove GMK 5175, while the 500-ton crane at Unit 431 is a Grove GMK 7450. Analyses were performed at each of the lift sites to evaluate allowable contact pressures in view of existing subsoil conditions and subsurface utilities. Utilization of various matting and steel plating systems were utilized based on the site specific locations.

**SELECTED PUBLICATIONS AND PRESENTATIONS**

Partos, A. and Kazaniwsky, P.W., "Geoboard Reduces Lateral Earth Pressures", *Proceedings of North American Conference on Geosynthetics*, New Orleans, LA, 1987.

Partos, A. and Kazaniwsky, P.W., "Case Histories of Shallow Foundations on Improved Soils", *Proceedings of Foundation Engineering Congress*, Evanston, IL, 1989.

Brinker, F.A., Kazaniwsky, P.W., Logan, M., "Case History Illustrating The Challenges of Foundation Design and Construction in Karst Terrain", *Fifth International Conference on Case Histories in Geotechnical Engineering*, New York, NY, April 2004.

**PROFESSIONAL AFFILIATIONS**

- Member, American Society of Civil Engineers
- Member, International Society for Soil Mechanics and Foundation Engineering
- Member, Deep Foundation Institute
- Member, American Society of Highway Engineers
- Member, International Code Council

Case No. 16-F-0062

Lampeter

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Richard M. Lampeter

Epsilon Associates, Inc.

3 Mill & Main Place, Suite 250

Maynard, MA 01754

1   **Q:     Please state your name, employer, and business address.**

2   A:     Richard M. Lampeter, Epsilon Associates, Inc. (Epsilon), 3 Mill & Main Place, Suite 250,  
3         Maynard, MA 01754.

4   **Q:     What is your position at Epsilon Associates?**

5   A:     I am an Associate at Epsilon.

6   **Q:     How long have you been employed with Epsilon Associates?**

7   A:     I have been employed by Epsilon for 16 years.

8   **Q:     Please describe your educational background and professional experience.**

9   A:     I am an Associate at Epsilon Associates, Inc. (Epsilon), with over 10 years of experience  
10        in conducting impact assessments for various developments across the United States.  
11        Prior to joining Epsilon, I graduated from Lyndon State College in Vermont with a B.S. in  
12        Environmental Science. While at Epsilon, I have been involved in approximately 80 wind  
13        energy projects evaluating potential impacts from noise and shadow flicker with  
14        approximately 35 of these projects involving shadow flicker impact assessments. With  
15        respect to shadow flicker analyses, the projects have ranged in size from 1.5 MW to 320  
16        MW. I utilize the WindPRO software package to calculate shadow flicker durations in the  
17        vicinity of a project on both a worst-case and expected basis. As part of project  
18        evaluations, I have assisted in refinements in wind turbine layouts to minimize shadow  
19        flicker at residences, evaluated curtailment options, and analyzed the impact of existing  
20        vegetation to modeled shadow flicker durations. In addition to conducting and/or  
21        managing the impact assessments, I have presented the results of the analyses at  
22        public meetings to county and township boards.

23        In addition to shadow flicker, my areas of expertise include the measurement of ambient  
24        sound levels, modeling sound levels from proposed developments, evaluation of  
25        conceptual mitigation, and compliance sound level measurements. I have conducted  
26        impact assessments for power generating facilities, commercial developments, industrial

27 facilities, and transfer stations. Additional detail regarding my education, background and  
28 experience is contained in my curriculum vita which is attached

29 **Q: Please describe your current responsibilities with Epsilon Associates.**

30 A: As an Associate of Epsilon Associates, my role on a given project ranges from project  
31 manager, to modeler, to field scientist. For projects that include a presentation at a  
32 public hearing, I am typically the Epsilon representative to discuss the shadow flicker  
33 analysis.

34 **Q: Have you previously testified before the New York State Public Service  
35 Commission or Siting Board on Electric Generation?**

36 A: No.

37 **Q: Have you previously served as an expert witness before any other court, agency,  
38 or other body on the subject you plan to offer testimony on today?**

39 A: Yes. I was the expert witness before the Perquimans County Board of Commissioners,  
40 North Carolina on shadow flicker for the Desert Wind Project in 2011. I was the expert  
41 witness before the Pasquotank County Board of Commissioners, North Carolina on  
42 shadow flicker for the Desert Wind Project in 2011. In addition, I have provided sworn  
43 testimony regarding shadow flicker during several county hearings for various projects in  
44 the U.S.

45 **Q: What is the purpose and scope of your testimony in this proceeding?**

46 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
47 or the Exhibits thereto.

48 **Q: What portion(s) of the Application is your testimony sponsoring?**

49 A: The shadow flicker component of Exhibit 24: Visual Impacts. Epsilon Associates, Inc.  
50 prepared a Shadow Flicker Report for the Eight Point Wind Energy Center.

51 **Q: Were these Exhibits, Application sections, or studies prepared by you or under  
52 your direction and supervision?**

53 A: Yes.

54 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
55 **publications, data or documents produced by persons other than yourself/your**  
56 **company? If so, please cite these sources. [These are independent studies, etc.].**

57 A: References are provided in Exhibit 24.

58 **Q: Does this conclude your testimony?**

59 A: Yes.



# Richard M. Lampeter, INCE

Associate

## EDUCATION

B.S., Environmental Science, Lyndon State College

## PROFESSIONAL MEMBERSHIPS

Institute of Noise Control Engineering (INCE)

Mr. Lampeter is a senior consultant with over 10 years of experience in conducting community sound level impact assessments. His areas of expertise include the measurement of ambient sound levels, modeling sound levels from proposed developments, evaluation of conceptual mitigation, and compliance sound level measurements. Mr. Lampeter has conducted impact assessments for power generating facilities, commercial developments, industrial facilities, and transfer stations. Richard's understanding of acoustical standards and modeling software has allowed him to provide accurate and reliable modeling results to developers and communities.

Since 2004, Mr. Lampeter has been involved in approximately 80 wind energy projects. In addition to performing numerous sound level impact assessments for wind energy facilities, Mr. Lampeter has conducted shadow flicker analyses for approximately 35 wind energy projects across the United States. Mr. Lampeter frequently presents key aspects of analyses to boards and committees and has provided sworn expert testimony.

Mr. Lampeter utilizes his diverse skill set as he serves in a variety of rolls on projects, ranging from project manager, to modeler, to field scientist. Richard is adept at using Larson Davis, Norsonic, RION, and CEL sound level meters and various modeling software packages including, Cadna/A and WindPRO.

Mr. Lampeter also has experience in air quality modeling and meteorological monitoring. Richard has used a range of air dispersion models including CAL3QHCR, AERMOD, and CALPUFF and has displayed expertise in working with HOBO and NovaLynx portable weather stations.

Mr. Lampeter has co-authored several papers ranging in topics from wind energy to metal shredders, one of which appeared in a peer-reviewed journal. Mr. Lampeter has been a speaker at CanWEA's annual conference on the topic of low frequency noise from wind turbines and presented shadow flicker guidance and a regulatory update in a New England Wind Energy Education Project webinar.

---

**PROFESSIONAL EXPERIENCE*****Noise Impact Assessment – Power Projects***

- ◆ *NextEra Energy Resources – Tuscola Wind II, Tuscola County, MI.* Project manager for pre- and post-construction sound level impact assessments for a 100 megawatt (MW) wind energy facility composed of 59 GE wind turbines. Modeling was performed in order to demonstrate compliance with the sound level limits in each community. During multiple public hearings, Mr. Lampeter responded to questions and comments. Following construction, operational sound levels were measured in each of the four townships per ordinance requirements.
- ◆ *Medical Area Total Energy Plant (MATEP), Boston, MA.* Managed multiple sound level measurement programs for the plant following the installation of two combustion turbines, gas compressors, and cooling towers. These programs included background sound level measurements, compliance operational sound level measurements, and evaluations of noise mitigation. The results of these measurement programs have been summarized in reports submitted to Veolia Energy and regulatory agencies. Assisted in the sound level modeling of a proposed 14.4 MW combustion turbine with a Heat Recovery Steam Generator.
- ◆ *Palmer Renewable Energy Project, Springfield, MA.* Predicted future sound levels from a proposed 38 MW renewable biomass energy plant using the Cadna/A software package. Impacts were compared to state and local regulations with the results presented in the Environmental Notification Form
- ◆ *Hollingsworth & Vose, Inc. Combined Heat & Power Project, West Groton, MA.* Conducted a sound level impact assessment for the proposed CHP. Sound levels were modeled using the Cadna/A noise calculation software. Evaluated multiple project designs. Presented the analysis to the local planning board.
- ◆ *FPL Energy (now NextEra Energy Resources) – Horse Hollow Wind Energy Center, Taylor County, TX.* Assisted in the development and execution of multiple sound level measurement programs for the 735 MW wind farm which at the time of its in-service date it was the world's largest wind farm. Analyzed sound level data in conjunction with power output data provided by NextEra Energy Resources and assisted in the preparation for legal proceedings.

***Noise Impact Assessment – Quarries / Sand & Gravel / Asphalt***

- ◆ *Aggregate Industries, Peabody, MA.* Project Manager for sound level measurement programs developed as part of the Special Permit requirements for the quarry and asphalt plant. Gathered data before and after mitigation measures were implemented, analyzed potential impacts due to a proposed relocation of equipment, and presented results at a Peabody Board of Health Meeting.
- ◆ *McCullough Crushing, Calais, VT.* Collected reference sound level data at an operating sand and gravel pit and modeled future sound levels due to sand and gravel extraction and processing using Cadna/A. Prepared a comprehensive report evaluating potential community noise impacts.

***Noise Impact Assessment – Additional Projects***

- ◆ *Holliston Solid Waste Transfer Station, Holliston, MA.* Participated in a sound level measurement program at a solid waste transfer station in Massachusetts. Coordinated with the transfer station and with local residences on the placement of noise equipment. Weekday and weekend measurements (short-term and continuous) were taken at up to six locations around the facility. Participated in additional sound level measurement programs following the enclosure of the C&D facility to evaluate various mitigation options.

♦ *Berwick Iron and Metal Recycling, Berwick, ME.* Modeled a proposed metal shredder at an existing metal recycling facility using Cadna/A and proposed mitigation to minimize sound level impacts to the community. Participated in a post-construction sound level measurement program to assess compliance with respect to local sound level limits.

#### *Shadow Flicker*

♦ *Iberdrola Renewables – Desert Wind, Perquimans and Pasquotank Counties, NC.* Managed a shadow flicker impact assessment for a proposed wind power generation facility to be located in North Carolina. Shadow flicker from the 150 Gamesa G97 2.0 MW wind turbines was calculated. Separate reports were prepared for each county. Gave sworn testimony to the Board of Commissioners in each county.

♦ *NextEra Energy Resources – Tuscola Bay Wind Energy Center, Tuscola, Bay, & Saginaw Counties, MI.* Project Manager for a shadow flicker analysis for a proposed 120 MW wind power generation facility composed of 75 wind turbines. The expected duration of shadow flicker was calculated at sensitive receptors in the vicinity of the project. Responded to questions and comments at multiple public hearings.

♦ *State of Connecticut Siting Council, CT.* Contributor to the Epsilon project team providing professional consulting services for renewable energy projects to the Siting Council in CT. Examined analyses conducted, including shadow flicker, for a proposed wind energy project in CT. Reviewed submittals provided by the council and submitted comments

♦ *State of New Hampshire, Concord, NH.* Conducted an independent review of the shadow flicker analysis for the proposed 24 MW Lempster Mountain Wind Power Project in Lempster, NH. Calculated the duration of shadow flicker using WindPRO software and compared the results to the developer's analysis.

♦ *Pioneer Green Energy – Great Bay Wind I, Somerset County, MD.* Calculated the expected annual duration of shadow flicker from a 25-wind turbine project. Multiple layouts and wind turbine types were evaluated for the project. Reductions in shadow flicker due to vegetation were calculated for individual residences. A scaling factor due to curtailments was incorporated into the analysis. There results were presented in a stand-alone report.

#### **PUBLICATIONS**

"Low frequency sound and infrasound from wind turbines." Noise Control Engineering Journal, Institute of Noise Control Engineering, Volume 59, Number 2, March-April 2011. O'Neal, R.D., Hellweg, Jr., R.D. and R. M. Lampeter.

"Sound Defense for a Wind Turbine Farm." North American Windpower, Zackin Publications, Volume 4, Number 4, May 2007. O'Neal, R.D., and R. M. Lampeter.

#### **PRESENTATIONS**

"Sound Levels and the Evolving Regulatory Landscape." AWEA WINDPOWER 2016 Poster Presentation, May 23-26, 2016.

"Shadow Flicker Regulations and Guidance: New England and Beyond." New England Wind Energy Education Project Webinar, February 10, 2011.

"Low Frequency Sound and Infrasound from Wind Turbines." CanWEA 2010, Montreal, Canada, November 1-3, 2010. O'Neal, R.D., Hellweg, Jr. R.D. and R. M. Lampeter.

Case No. 16-F-0062

O'Neal

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Robert D. O'Neal

Epsilon Associates, Inc.

3 Mill & Main Place, Suite 250

Maynard, MA 01754

1   **Q:     Please state your name, employer, and business address.**

2   A:     Robert D. O'Neal, Epsilon Associates, Inc. (Epsilon), 3 Mill & Main Place, Suite 250,  
3         Maynard, MA 01754.

4   **Q:     What is your position at Epsilon Associates?**

5   A:     I am a Principal at Epsilon.

6   **Q:     How long have you been employed with Epsilon Associates?**

7   A:     I have been employed by Epsilon for 17 years.

8   **Q:     Please describe your educational background and professional experience.**

9   A:     I received a Bachelor of Arts degree in Engineering Science from Dartmouth College in  
10         1983. I earned a Masters in Atmospheric Science from Colorado State University in  
11         1987. I have over 30 years of experience in the areas of community noise impacts,  
12         meteorological data collection and analyses, and air quality modeling. My noise impact  
13         evaluation experience includes the design and implementation of sound level  
14         measurement programs, modeling of future impacts, conceptual mitigation analyses,  
15         and compliance testing. I am a member of the Institute of Noise Control Engineers  
16         (INCE), the Acoustical Society of America, and the American Meteorological Society. I  
17         am Board Certified by INCE in Noise Control Engineering and I am a Certified  
18         Consulting Meteorologist (CCM) by the American Meteorological Society. Both of these  
19         certifications are national programs.

20         From 1987 until 1997, I was employed by Tech Environmental, Inc. where I was a  
21         Project Manager responsible for noise impact assessments and air quality modeling  
22         studies. In 1997, I joined Earth Tech, Inc. as a Program Director. In that capacity, I was  
23         responsible for community noise studies for electric generating stations, as well as  
24         meteorological analyses, and air quality modeling. In 2000, I joined Epsilon Associates,  
25         Inc. as a Senior Consultant. In 2004, I was made a Principal of the firm. Since 2004 I  
26         have performed noise impact assessments and meteorological analyses for wind energy

facilities in over 25 states across the U.S. and Canada. Other types of projects I have worked on include fossil fuel power generation facilities, hard rock quarries, aggregate handling, asphalt and concrete plants, C&D processing facilities, landfills, real estate development, and mobile sources. Additional detail regarding my education, background and experience is contained in my curriculum vita which is attached.

**Q: Please describe your current responsibilities with Epsilon Associates.**

A: As a Principal of Epsilon Associates, I share in responsibility for overall direction and operation of the company. As the leader of the Acoustics Group, I manage staff and assign resources on our noise-related projects. In addition, I perform technical studies myself on wind energy projects ranging from sound level measurements, sound modeling, noise control design, and expert testimony.

**Q: Have you previously testified before the New York State Public Service Commission or Siting Board on Electric Generation?**

A: Yes. I testified in 2003 on behalf of the Besicorp-Empire Development Company, LLC 505 MW combined cycle cogeneration plant, Rensselaer, NY [Article X Case No. 00-F-2057].

**Q: Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?**

A: Yes. I have testified on noise issues before numerous agencies, including the Maine Board of Environmental Protection, the Massachusetts Energy Facilities Siting Board, the Environmental Review Tribunal, Ontario, Canada, the Vermont Superior Court, and the New Hampshire Site Evaluation Committee, and in many other judicial and quasi-judicial settings. A more complete list is found in my attached CV.

**Q: What is the purpose and scope of your testimony in this proceeding?**

A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application or the Exhibits thereto.

53 **Q: What portion(s) of the Application is your testimony sponsoring?**

54 A: Exhibit 19: Noise and Vibration. Epsilon Associates, Inc. prepared a Noise Impact  
55 Assessment for the construction and operation of the Eight Point Wind Energy Center,  
56 related facilities and ancillary equipment.

57 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
58 **your direction and supervision?**

59 A: Yes.

60 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
61 **publications, data or documents produced by persons other than yourself/your**  
62 **company? If so, please cite these sources. [These are independent studies, etc.].**

63 A: References are provided in Exhibit 19.

64 **Q: Does this conclude your testimony?**

65 A: Yes.



# Robert D. O'Neal, CCM, INCE Board Certified

## Principal

### EDUCATION

M.S., Atmospheric Science, Colorado State University

B.A., Engineering Science, Dartmouth College

### PROFESSIONAL REGISTRATION

Certified Consulting Meteorologist, #578

Institute of Noise Control Engineering, Board Certified

### PROFESSIONAL MEMBERSHIPS

American Meteorological Society

Institute of Noise Control Engineers (INCE), Board Certified Member, Board of Directors (2014-2016)

Acoustical Society of America

A Principal of the firm, Mr. O'Neal is a Certified Consulting Meteorologist with over 30 years of experience in the areas of community noise impact assessments, meteorological data collection and analyses, and air quality modeling. Mr. O'Neal's noise impact evaluation experience includes design and implementation of sound level measurement programs, modeling of future impacts, conceptual mitigation analyses, compliance testing, and expert witness testimony.

His expert witness testimony experience includes state and local boards, courts of law, and adjudicatory hearings. Specifically, Rob has testified before the MA Energy Facilities Siting Board, Maine Board of Environmental Protection, Vermont Superior Court, NH Site Evaluation Committee, NY DEC Administrative Law Judge, 42<sup>nd</sup> District Court of Texas, MA Land Court, Environmental Review Tribunals (Ontario, Canada), and Boards of County Commissioners.

Rob is a nationally recognized acoustics expert in the wind energy field having performed noise impact assessments in over 25 states across the U.S. and Canada. Other industries served include fossil fuel power generation facilities, hard rock quarries, aggregate handling, asphalt and concrete plants, C&D processing facilities, landfills, real estate development, and mobile sources.

Mr. O'Neal is active on siting and environmental committees associated with the wind and materials handling industries. He has presented the results of wind turbine low frequency noise and infrasound research at major conferences and peer-reviewed scientific journals. He was invited by the Commissioner of the Massachusetts Department of Environmental Protection to serve as a technical expert on the Wind Noise Technical Advisory Group (WNTAG) for the period 2013-2016. In addition, Rob has been an invited speaker at conferences on a variety of noise and meteorological topics.

## PROFESSIONAL EXPERIENCE

### *Wind Energy Projects*

- ◆ *Apex Clean Energy – Lighthouse Wind, Orleans & Niagara Counties, NY.* Mr. O'Neal developed an extensive sound level measurement and modeling program for a proposed 200-megawatt (MW) wind farm in western NY. In addition to the technical noise studies, Epsilon provided input and response to comments for the Preliminary Scoping Statement and Stipulations as part of the Article 10 permitting process. The results will be presented as expert witness testimony during the NYS Public Service Board public hearings.
- ◆ *Avangrid Renewables – North Ridge Wind, St. Lawrence County, NY.* Mr. O'Neal developed an extensive sound level measurement and modeling program for a proposed 100-megawatt (MW) wind farm in northern NY. In addition to the technical noise studies, Epsilon provided technical support as part of the Article 10 permitting process.
- ◆ *NextEra Energy Resources – Eight Point Wind, Stueben County, NY.* Mr. O'Neal developed an extensive sound level measurement and modeling program for a proposed 100-megawatt (MW) wind farm in the southern tier of NY. In addition to the technical noise studies, Epsilon provided technical support as part of the Article 10 permitting process.
- ◆ *Iberdrola Renewables – Groton Wind, Groton, NH.* Mr. O'Neal developed an extensive sound level measurement and modeling program for a proposed 48-megawatt (MW) wind farm. Concurrent sound level data and meteorological data were collected and analyzed and the results were presented as expert witness testimony at community open houses and during the Site Evaluation Committee public hearings.
- ◆ *Massachusetts Clean Energy Center – Research Study on Wind Turbine Acoustics.* The study includes measuring sound emissions from a variety of operating wind turbines in the Commonwealth of Massachusetts. Fieldwork includes measuring both the level and quality of sound emissions from operating wind turbines under various wind regimes and topography. To better understand how wind speed and wind direction vary over the turbine height, meteorological data are collected using on-site meteorological towers and LiDAR systems. Acoustical data are measured at various distances from the wind turbines and include broadband, one-third octave band, low frequency and infrasound, and interior/exterior sound levels.
- ◆ *NextEra Energy Resources (formerly FPL Energy) – Low Frequency & Infrasound Study, TX.* Developed and executed a sound level measurement program as part of a scientific study to determine low frequency and infrasound levels from two types of wind turbines. Both interior and exterior data were compared to independent impact criteria for audibility, vibration, rattle, and annoyance. The study results were published in the peer-reviewed Noise Control Engineering Journal.
- ◆ *FPL Energy – Horse Hollow Wind Energy Center, Taylor County, TX.* Mr. O'Neal developed and executed an extensive sound level measurement program for a 735 MW wind farm. Concurrent sound level data, meteorological data, and wind turbine power output data were collected and analyzed and the results were used in legal proceedings as part of expert witness testimony in the case.
- ◆ *Eolian Renewable Energy – Antrim Wind, Antrim, NH.* Developed an extensive sound level measurement and modeling program for a proposed 30 MW wind farm in Antrim, NH. Concurrent sound level data and meteorological data were collected and analyzed. The results were presented as expert witness testimony at community open houses and during the NH Site Evaluation Committee public hearings.
- ◆ *John Deere Renewables – Michigan Thumb I Wind Farm, Huron County, MI.* Developed and executed a long-term sound level measurement program for an existing 69 MW wind farm in Michigan to

determine compliance with the local noise ordinance. Concurrent sound level data and meteorological data were collected and analyzed.

### ***Independent Power Projects***

◆ *Braintree Electric Light Department, Braintree, MA.* Mr. O'Neal conducted long-term continuous ambient sound level measurement program for this 116 MW natural gas- and oil-fired simple cycle electric power generation facility. Acoustical modeling, including several rounds of mitigation, was performed to demonstrate compliance with the state noise policy.

◆ *Advanced Power Services – Brockton Power, Brockton, MA.* Conducted a 168-hour continuous ambient sound level measurement program at multiple sites for a proposed 350 MW natural gas-fired combined cycle electric power generation facility. Acoustical modeling, including mitigation, was performed to demonstrate compliance with the state noise policy. Expert testimony on noise issues was presented to the EFSB.

### ***Linear Siting and Transmission Projects***

◆ *NSTAR 345 kV Transmission Reliability Project, Stoughton, Canton, Milton, Boston, MA.* Mr. O'Neal was responsible for the noise impact assessment for this 18-mile multi-circuit underground 345 kV project. Construction noise impacts along the route and operational noise from substations in Hyde Park and South Boston were analyzed and expert testimony before the EFSB was provided.

◆ *Weaver's Cove Energy, Fall River, MA.* This project proposed a new liquefied natural gas (LNG) import terminal and natural gas pipeline to be located on the Taunton River. Mr. O'Neal managed the implementation of an extensive existing condition sound level measurement program including long-term continuous and short-term measurements. Expected future sound level impacts from operation of the LNG import terminal were calculated and community sound level impacts from associated dredging were also evaluated. The Federal Energy Regulatory Commission Resource Report 9 section on noise impacts was prepared.

### ***Industrial/Commercial Projects***

◆ *General Electric Company, Hudson River PCBs Superfund Site, Hudson River, NY.* Mr. O'Neal prepared the Noise Impact Assessment for dredging, processing, and construction activities associated with Phase 1 of the Final Design Report. Source-specific sound level measurements of key sources were made and sound level monitoring was done during Phase 1 dredging and processing of the sediment to determine compliance with the Quality of Life Performance Standards.

### ***Sand & Gravel Operations, Asphalt Plant, and Rock Quarry Projects***

◆ *Okemo Mountain Resort, Ludlow, VT.* A sound level impact analysis was performed for a proposed sand and gravel excavation site in Ludlow. Ambient background sound level measurements were collected around the site. Project-specific impacts of the excavation and haul equipment were used to model future sound levels from operation of gravel extraction. Expert testimony on noise impacts was presented before the Act 250 District Environmental Commission and the local review board.

◆ *Dalrymple Gravel & Contracting Co., Inc., Erwin, NY.* A sound level impact analysis was performed for a proposed sand and gravel excavation site in support of the New York State Department of Environmental Conservation Mined Land Reclamation Permit and SEQRA process. Mr. O'Neal measured ambient background sound level around the site and measured project-specific impacts of the excavation and

haul equipment at an existing excavation site, which were used to calculate future sound level impacts. Expert testimony on noise impacts was presented before a New York State Administrative Law Judge.

### *Transfer Station/Landfill Projects*

♦ *Juniper Ridge Landfill, Old Town, ME.* Prepared a noise impact assessment for the 9.35 million cubic yard expansion of an existing landfill. This project involved ambient background noise monitoring at sensitive receptors around the site, predictive modeling of future activity, a compliance evaluation with State and local noise regulations, and expert testimony before the Maine Board of Environmental Protection and City of Old Town during the licensing hearings.

### **EXPERT TESTIMONY EXPERIENCE**

Expert witness before the Maine Board of Environmental Protection, on noise issues for the Juniper Ridge Landfill expansion, Old Town, ME (2016).

Expert witness before the Board of Commissioners, Chowan and Perquimans Counties, NC, on blade and ice drop for Timbermill Wind Conditional Use Permit (2016).

Expert witness before the Environmental Review Tribunal (via skype), Ontario, Canada on noise issues for wpd White Pines Wind, Prince Edward County, Ontario [Case ERT 15-071, Alliance to Protect Prince Edward Co. v. Director, Ministry of the Environment] (2015).

Expert witness before the Jackson Township Board of Supervisors, Cambria County, PA on noise issues for a 980 MW natural gas-fired combined-cycle power generation plant (2015).

Expert witness before the Environmental Review Tribunal, Ontario, Canada on noise issues for Grey Highlands Clean Energy GP Corp., Grey Highlands, Ontario [Case ERT 15-026, Fohr v. Director, Ministry of the Environment] (2015).

Expert witness in Vermont Superior Court, Environmental Division, on noise issues for an aggregate extraction and crushing operation, McCullough Crushing, Calais, VT (2015).

Expert witness before the Environmental Review Tribunal, Ontario, Canada on noise issues for Grey Highlands Zero Emission People Wind Farm, Grey Highlands, Ontario [Case ERT 15-011, Dingeldein v. Director, Ministry of the Environment] (2015).

Prepared witness statement for the Environmental Review Tribunal, Ontario, Canada on noise issues for Niagara Region Wind Corporation, Haldimand County, Ontario [Case ERT 14-096, Mothers Against Wind Turbines, Inc. v. Director, Ministry of the Environment] (2015).

Expert witness before the Environmental Review Tribunal, Ontario, Canada on noise issues for SP Armow Wind Ontario GP Inc., Kincardine, Ontario [Case ERT 13-124 to 13-125, Kroeplin v. Director, Ministry of the Environment] (2014).

Expert witness before the Environmental Review Tribunal, Ontario, Canada on noise issues for K2 Wind Ontario, Inc., Ashfield-Colbourne-Wawanosh, Ontario [Case ERT 13-097 to 13-098, Drennan v. Director, Ministry of the Environment] (2013).

Expert witness before the Environmental Review Tribunal, Ontario, Canada on noise issues for Dufferin Wind Power, Melancthon, Ontario [Case ERT 13-070 to 13-075, Bovaird v. Director, Ministry of the Environment] (2013).

Expert witness before the NH Site Evaluation Committee on noise issues for the 30 MW Antrim Wind Project (2012; 2016); 48 MW Groton Wind project (2010).

Expert witness before the MA Energy Facilities Siting Board on noise issues for: 18-mile underground electric transmission line and substation project in the Boston Metropolitan area (2004-2005); Billerica Energy Center power plant (2007); Brockton Clean Energy (2008-2009), West Medway II power plant (2015), Woburn-Wakefield electric transmission line (2016).

Expert witness in Vermont Act 250 Land Use proceedings on noise issues for a proposed sand and gravel excavation site at Okemo Mountain (2007).

Expert witness in the 42<sup>nd</sup> District Court of Texas on noise issues for a 735 MW wind turbine farm (2006).

Expert witness before NY DEC Administrative Law Judge on noise issues for a hard rock quarry facility (1997), two sand and gravel excavation sites (2001; 2003), and a cogeneration power plant (2003).

Expert witness for site assignment hearings on noise issues from solid waste transfer stations in Lowell, MA (1998); Marshfield, MA (1999); Holliston, MA (2004); Oxford, MA (2006).

Expert witness in Massachusetts Land Court on noise issues for a proposed sand and gravel pit (1991), a proposed cross-dock distribution center (2002), and an existing concrete batch plant (2005).

Expert witness in Vermont Act 250 Land Use process for air quality impacts at ski areas (1991; 1992; 1997).

Expert witness before MA DEP Administrative Law Judge for an asphalt plant in Boston (1996).

Expert witness before municipal boards on issues of air pollution and noise impacts from local industries (many years).

Invited specialty speaker on noise impact assessments for Boston University's Masters of Urban Planning degree program (1994; 1996).

## **Publications**

O'Neal, R.D., Hellweg, Jr., R.D. and R. M. Lampeter, 2011. Low frequency sound and infrasound from wind turbines. Noise Control Engineering Journal, 59 (2), 135-157.

O'Neal, R.D., and R.M. Lampeter, 2007: Sound Defense for a Wind Turbine Farm. North American Windpower, Zackin Publications, Volume 4, Number 4, May 2007.

O'Neal, R.D., 1991: Predicting potential sound levels: A case study in an urban area. Journal of the Air & Waste Management Association, 41, 1355-1359.

McKee, T.B. and R.D. O'Neal, 1989: The role of valley geometry and energy budget in the formation of nocturnal valley winds. Journal of Applied Meteorology, 28, 445-456.

---

**Conference Presentations**

- Kaliski, K., O'Neal, R.D., et al 2016. Massachusetts Research Study on Wind Turbine Acoustics: Over view and Conclusions. NOISE-CON 2016, Providence, RI.
- O'Neal, R.D., 2014. Wind Energy Sound Monitoring Under High Wind Shear Conditions. NOISE-CON 2014, Fort Lauderdale, FL.
- O'Neal, R.D. Lampeter, R.M., Emil, C.B. and B.A. Gallant. Evaluating and controlling noise from a metal shredder system. Presented at INTER-NOISE 2012, NY, NY, August 19-22, 2012.
- O'Neal, R.D., 2011. Wind Turbine sound Levels: The Michigan I, Huron County, MI Study. Presented at Great Lakes Wind Collaborative 4<sup>th</sup> Annual Meeting, Ypsilanti, MI.
- O'Neal, R.D., Hellweg, Jr., R.D. and R. M. Lampeter, 2011. Low frequency sound and infrasound from wind turbines. Presented at WINDPOWER 2011, Anaheim, CA.
- O'Neal, R.D., Hellweg, Jr., R.D. and R. M. Lampeter, 2010. Low frequency sound and infrasound from wind turbines – a status update. NOISE-CON 2010, Baltimore, MD.
- O'Neal, R.D., 2010. Noise control evaluation for a concrete batch plant. NOISE-CON 2010, Baltimore, MD.
- O'Neal, R.D., and R.M. Lampeter, 2009: Nuisance noise and the defense of a wind farm. INTER-NOISE 2009, Ottawa, Canada, August 23-26, 2009.
- O'Neal, R.D., and R.M. Lampeter, 2009: Sound from Wind Turbines: A Key Factor in Siting a Wind Farm. 12<sup>th</sup> Annual Energy & Environment Conference – EUEC 2009, Phoenix, AZ, February 2, 2009.
- O'Neal, R.D., 2001: The Impact of Ambient Sound Level Measurements on Power Plant Noise Control in Massachusetts: A Case Study. Proceedings of the Air & Waste Management Association 94th Annual Meeting and Exhibition, Orlando, FL, June 24-28.
- Hendrick, E.M., and R.D. O'Neal, 2001: A Case Study of Class I Impacts Using CALPUFF Screen. Proceedings of the Air & Waste Management Association Guideline On Air Quality Models: A New Beginning, Newport, RI, April 2001.
- O'Neal, R.D., 1994: Indoor air sampling techniques used to meet workplace and ambient air toxic detection requirements. Proceedings of the Air & Waste Management Association 87th Annual Meeting and Exhibition, Cincinnati, OH, June 19-24.
- O'Neal, R.D., 1992: Estimating future noise levels from industrial noise sources. Acoustical Society of America 124th Meeting, New Orleans, LA, October 31 - November 4.
- O'Neal, R.D., 1991: Temporal traffic fluctuations and their impact on modeled peak eight-hour carbon monoxide concentrations. Proceedings of the Air & Waste Management Association 84th Annual Meeting and Exhibition, Vancouver, B.C., June 16-21.
- O'Neal, R.D., 1990: Noise barrier insertion loss: A case study in an urban area. Proceedings of the Air & Waste Management Association 83rd Annual Meeting and Exhibition, Pittsburgh, PA, June 24-29.

Case No. 16-F-0062

Kranes

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Samantha W. Kranes

TRC Environmental Corporation

225 Greenfield Parkway, Suite 115

Liverpool, NY 13088

1 **Q: Please state your name, employer, and business address.**

2 A: Samantha W. Kranes, TRC Environmental Corporation (TRC), 225 Greenfield Parkway,  
3 Suite 115, Liverpool, NY 13088.

4 **Q: What is your position at TRC?**

5 A: I am a Planner and Project Manager.

6 **Q: How long have you been employed with TRC?**

7 A: I have been employed with TRC since June 2014.

8 **Q: Please describe your educational background and professional experience.**

9 A I received a Bachelor of Arts in Environmental Studies from William Smith College and a  
10 Masters of Professional Studies in Ecology, with a focus in Environmental Policy, from the  
11 State University of New York College of Environmental Science and Forestry (SUNY  
12 ESF). I have worked in the environmental consulting industry for over nine years. I worked  
13 as a Project Scientist for several years, working on environmental resource studies for  
14 development, including wetland and ecology field evaluations and associated permitting  
15 at the local, state and federal level. This included baseline evaluations and planning for  
16 development to avoid and minimize impacts to sensitive ecological resources and in line  
17 with applicable regulations, as well as coordination with clients and regulatory agencies.

18 **Q: Please describe your current responsibilities with TRC.**

19 A: My current responsibilities as a Planner and Project Manager include managing a variety  
20 of renewable and traditional energy projects, including proposal preparation, budget and  
21 task management, technical oversight and quality control, and client relations.

22 **Q: Have you previously testified before the New York State Public Service Commission  
23 or Siting Board on Electric Generation?**

24 A: No.

25 **Q: Have you previously served as an expert witness before any other court, agency,  
26 or other body on the subject you plan to offer testimony on today?**

27 A: No.

28 **Q: What is the purpose and scope of your testimony in this proceeding?**

29 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
30 or the Exhibits thereto.

31 **Q: What portion(s) of the Application is your testimony sponsoring?**

32 A: Exhibit 4, Land Use; Exhibit 31, Local Laws and Ordinances; Exhibit 32, State Laws and  
33 Regulations.

34 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
35 **direction and supervision?**

36 A: Yes.

37 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
38 **publications, data or documents produced by persons other than yourself/your**  
39 **company? If so, please cite these sources. [These are independent studies, etc.]**

40 A: See Exhibits listed above for references.

41 **Q: Does this conclude your testimony?**

42 A: Yes.

## **SAMANTHA W. KRANES**

### **EDUCATION**

B.A., Environmental Studies, William Smith College, 2008

M.P.S., Ecology, SUNY College of Environmental Science and Forestry, 2015

### **PROFESSIONAL COURSEWORK & TRAINING**

- NYSDEC Erosion & Sediment Control Training
- 40-Hour HAZWOPER Certification
- Technical Writing
- Natural Resource Policy (2012)
- Environmental Impact Analysis (2013)
- Watershed Ecology & Management (2013)
- Ecology & Management of Invasive Species (2014)
- Environmental Law and Policy (2014)
- Stormwater Management (2014)
- Natural Resource Law (2015)
- CSX Training, e-RAILSAFE
- Internal TRC 8-Hour FERC 101 Training
- NAS Open Water SCUBA Diving Certification
- First Aid/CPR

### **AREAS OF EXPERTISE**

- Environmental Permitting
- Agency Consultation
- Proposal Writing
- Project Management
- Wetland Delineation
- Wetland Mitigation Site Design
- Wetland Mitigation Construction Oversight
- Environmental Assessments
- State Environmental Quality Review Act
- National Environmental Policy Act
- Ecological Risk Assessment
- Stormwater Pollution Prevention Plans
- Stormwater Inspections
- Environmental Compliance
- Environmental Assessments
- Environmental Impact Statements
- Implementation of Best Management Practices

### **REPRESENTATIVE EXPERIENCE**

Ms. Kranes is a Planner and Project Manager with over nine years of experience working on a variety of scientific and regulatory projects in the environmental field, including federal, state and local permitting and compliance, wetland delineation and ecological assessment, risk assessment, project siting and stormwater pollution

prevention plan development and inspection. She is experienced in client and regulatory coordination and prepares proposals and cost estimates for a variety of environmental projects. She manages projects from the proposal stage to project completion, including client coordination, staffing, oversight of project completion, monthly invoicing and project budget management.

**NextEra Energy Resources, Eight Point Wind Energy Center – Steuben County, NY (Project Manager)**

Manages the budget, monthly invoicing and client coordination for the preparation of an Article 10 Application for a wind energy project in Steuben County, New York. Tasks managed as part of the project include wetland delineation field work and data collection, completion and compilation of the Article 10 Application, coordination for review and submittal of the application to applicable agencies, and coordination with the client regarding project status and budget. Scope also includes the preparation of an Article VII Application for the associated project transmission line. Ms. Kranes is also the lead author on Exhibit 4 (Land Use), Exhibit 13 (Real Property), Exhibit 31 (Local Laws and Regulations), Exhibit 32 (State Laws and Regulations) and Exhibit 33 (Other Applications and Filings). She has also been a lead reviewer on several exhibits prior to submittal to the client.

**Dunkirk Gas Corporation, Article VII Application, Wetland Delineation and Mitigation (Planner)**

Assisted in preparing responses to NYS Public Service Commission comments on the Environmental Effects section of the Article VII Application for Major Electric and Gas Transmission Facilities for the proposed Dunkirk Natural Gas Pipeline in western New York State. Assisted in wetland and waterbody delineations and impact calculations associated with revisions to the pipeline route and at potential mitigation site (*i.e.*, wetland enhancement area). Performed Water Budget Analyses in accordance with the Pierce (1993) Methodology to evaluate current and future conditions at the mitigation site.

**SolarCity, Plattsburgh Solar Project, State Environmental Quality Review Act (Planner)**

Prepared Part 1 of the State Environmental Quality Review Act (SEQRA) Full Environmental Assessment Form (FEAF) and supplemental information attachments to address SEQRA and concerns of town, county and state agencies as part of the siting, permitting and development of a 1.25 megawatt fixed-tilt ground-mounted solar photovoltaic system in Clinton County, New York. Performed desktop analysis of project site to evaluate potential permitting concerns and required approvals. Prepared project consultation packages and coordinated review with the New York State Historic Preservation Office (SHPO), New York Natural Heritage Program (NYNHP) and the US Fish and Wildlife Service (USFWS) as part of SEQRA review.

**SolarCity, Broome County Solar Project, State Environmental Quality Review Act (Planner)**

Coordinated and oversaw the preparation of Part 1 of the State Environmental Quality Review Act (SEQRA) Full Environmental Assessment Form (FEAF) to address SEQRA and concerns of town, county and state agencies as part of the siting, permitting and development of a 5.46 megawatt fixed-tilt ground-mounted solar photovoltaic system in Broome County, New York. Performed desktop analysis of project site to evaluate potential permitting concerns and required approvals. Coordinated project consultation with the New York State Historic Preservation Office (SHPO), New York Natural Heritage Program (NYNHP) and the US Fish and Wildlife Service (USFWS) as part of SEQRA review.

**SolarCity, Multiple Solar Projects, State Environmental Quality Review Act and Local Permitting (Planner)**

Coordinated and oversaw the preparation of Part 1 of the State Environmental Quality Review Act (SEQRA) Full Environmental Assessment Form (FEAF) to address SEQRA and concerns of town, county and state agencies as part of the siting, permitting and development of approximately eight (8) commercial fixed-tilt ground-mounted solar photovoltaic systems throughout New York State. Performed desktop analysis of project site to evaluate potential permitting concerns and required approvals. Coordinated project consultation with the New York State Historic Preservation Office (SHPO), New York Natural Heritage Program (NYNHP) and the US Fish and Wildlife Service (USFWS) as part of SEQRA review. Coordinated with applicable agencies through formal consultation processes and prepared local permitting documents in accordance with local, regional, county and state requirements.

**SolarCity, Multiple Solar Projects, Local Permitting Review (Planner)**

Evaluated local, state and county regulations for the development of multiple solar sites throughout New York State. Review included coordination with multiple local, state and county offices and evaluation of codes and regulations pertaining to solar development, as well as desktop review of mapped natural and historic resources.

**SolarCity, Multiple Solar Projects, Wetland Delineation Reporting (Planner)**

Coordinated field teams for completion of wetland delineations on multiple potential solar development sites throughout New York State. Oversaw completion of wetland delineation reports according to the US Army Corps of Engineers (USACE) Wetland Delineation Manual (1987) and the Northcentral and Northeast Regional Supplement to the Wetland Delineation Manual (2012) for use in permitting.

**Confidential Client – Multiple Solar Sites, Environmental Due Diligence (Project Manager and Planner)**

Managed the environmental due diligence and constraints analyses of over 70 proposed ground-mounted solar projects (approximately 1-2 MW in size) throughout New York State, including oversight of field work and associated reporting. Coordinated field work, including wetland delineation and other field surveys, and oversaw preparation of technical reports and GIS mapping. Consults client regarding

regulatory requirements and potential agency jurisdiction for each of the project sites. Prepared formal consultation letters to agencies for their regulatory determination and advises client on local requirements. Performed regulatory database review of existing mapping, aerial photography, and online databases to evaluate potential permitting implications for each Project site and completion of a Limited NEPA/SEQRA Report summarizing findings and recommendations to the client regarding siting, potential concerns, and permitting strategies.

**Confidential Client – Ground-Mounted Solar Project, Town of Montgomery, Orange County (Project Manager)**

Manages the environmental due diligence and permitting of a ground-mounted solar project on approximately 20 acres in the Town of Montgomery, Orange County, New York. Applicable permits being sought include an Article 15 (Protection of Waters) permit from the NYSDEC for crossing of a Class B waterbody onsite. Coordinates and reviews the preparation of the permit application package to the NYSDEC and USACE and advises client on regulatory framework and recommended path forward. Coordinates with TRC civil engineers regarding preparation of the stream crossing design in line with agency requirements.

**Confidential Client – 2 MW Solar Project, Town of Harpersfield, Delaware County (Project Manager)**

Manages the environmental due diligence and permitting of a ground-mounted solar project on approximately 60 acres in the Town of Harpersfield, Delaware County, New York. Attended multiple town meetings/hearings as the environmental representative to discuss the project and potential impacts to regulated resources, including wetlands and waterbodies, RTE species, land use and cover, archaeological resources, and stormwater. Advises client on agency consultations and recommended path forward.

**Spectra Energy, Texas Eastern Appalachian Lease Project, Resource Report 7 – Soils (Lead Author)**

Prepared Resource Report 7 (Soils) for submittal to the Federal Energy Regulatory Commission (FERC) for the proposed Texas Eastern Appalachian Lease Project in Ohio, which includes the installation of two pipeline segments and associated compressor stations and regulator facilities. Evaluated and described soils on the Project area and reported on avoidance and minimization of impacts to soils.

**NEXUS Pipeline, Master of Change Reviews (Planner)**

Performed reviews of proposed pipeline routing changes for the NEXUS pipeline in Ohio and Michigan, including review of ROW, wetland/waterbody resources, flood zones, RTE species, cultural resources, land use types, residences, and federal and state lands impacted. Advised regarding avoidance and minimization to documented resources and provides to client for final review.

**Millennium Pipeline Company, LLC. Valley Lateral Project, Resource Report 3 – Fisheries, Vegetation and Wildlife and Wetland Delineation Report (Lead Author)**

Prepared Resource Report 3 – Fish, Wildlife and Vegetation – for submittal to FERC for a 7.8 mile pipeline installation in Orange County, New York. Developed an Invasive Species Management Plan for the project based on field visits and construction techniques planned. Evaluated fisheries and species of concern at both the state and federal levels and coordinated with the USFWS to receive applicable permits for project completion.

**National Grid, MV EDGE Gas Pipeline, Environmental Site Assessment and Siting Analysis (Project Manager)**

Managed the siting analysis for the MV EDGE Gas Pipeline Project, which involves the installation of an approximately 3.5 mile gas pipeline in Utica and Marcy, Oneida County, New York, to serve the Marcy Nanocenter. Assisted National Grid's gas engineering department in selection of a final pipeline route, entirely within new right-of-way. Performed a desktop review of environmentally sensitive resources as well as a preliminary field visit to identify potential wetlands, and prepared an Environmental Site Assessment submitted to National Grid for use in permitting, design and coordination with MV EDGE. Reviewed potential permitting implications for the project in light of local, state and federal regulations and developed a permitting matrix indicating which permits and approvals are required, as well as the recommended notifications and consultations needed to complete the project. Participated in weekly meetings with National Grid's gas engineering, environmental and real estate departments.

**National Grid, MV EDGE Gas Pipeline, Environmental Permitting (Project Manager)**

Managed the permitting and environmental services for implementation of the permitting plan for the MV EDGE gas pipeline project in Oneida County, New York. Coordinated field team for wetland and waterbody delineations along the proposed pipeline route and reviewed the wetland delineation report per USACE protocol. Prepared a permit application for the Project under Section 10 of the Rivers and Harbors Act (RHA) for horizontal directional drilling under the Mohawk River and the Erie Canal. Prepared consultation letters and coordinated with the NYNHP, USFWS and SHPO regarding potential resources under their jurisdiction in the vicinity of the Project. Coordinated with TRC archaeologists to prepare a Phase 1A/1B Report for potential impacts to archaeologically sensitive resources within the project area. Oversaw preparation of a SWPPP in accordance with SPDES GP-0-15-002 and oversees weekly SWPPP inspections for the project, as necessary, during construction.

**National Grid, MV EDGE Gas Pipeline, State Environmental Quality Review Act (SEQRA) and Local Permitting (Project Manager)**

Managed the local and State Environmental Quality Review Act (SEQRA) permitting for a 12 inch natural gas pipeline in the Town of Marcy and City of Utica, Oneida County, New York. Reviewed and evaluated local permitting requirements and attended local planning board meetings/hearings to present the project to the planning board/zoning board and local community. Worked with National Grid's gas

engineering department to fully complete local permit applications for successful completion of the project, which is currently under construction.

**National Grid, Pipeline #16 Upgrades Project and Chestnut Street Regulator Station Project (Project Manager)**

Managed the environmental monitoring and stormwater inspections portion of the pipeline installation and restoration in Phoenix, New York. The project involved work in an archaeologically-sensitive agricultural field as well as work in wetlands and directional drilling under the Oswego River. Performed weekly stormwater inspections in accordance with the SPDES General Permit. Also managed the permitting and stormwater inspections of the second phase of work, which involved the expansion of the gas regulator station.

**National Grid, Oneida-Porter #7 115 kV Transmission Line Conductor Clearance Refurbishment Project (Project Manager)**

Managed the Oneida-Porter #7 Conductor Clearance Refurbishment Project. Performed wetland and waterbody delineations for the project area. Coordinated with the NYSDEC, NYNHP, SHPO, and USFWS through the IPaC process to meet permit requirements for the project under USACE Nationwide Permit #12. Prepared the Part 102 Report for submittal to the New York State Public Service Commission. Prepared and submitted a General Permit Notice for the project to the NYSDEC under National Grid's General Permit for maintenance. Developed a SWPP per NYSDEC SPDES General Permit.

**National Grid, Clay-Teall #11 115 kV Transmission Line Conductor Clearance Refurbishment Project**

Managed the Clay-Teall Conductor Clearance Project to alleviate substandard clearances along the line. Coordinated wetland delineations and associated field work, including the development of access for construction and subsequent GIS mapping. Prepared a Part 102 report in accordance with the NYS Public Service Commission's most recent guidance (August 2014). Prepared notification of the project to the NYSDEC for coverage under National Grid's maintenance permit (NYSDEC GP-0000-01147). Assisted in preparation of the SWPPP in accordance with NYSDEC GP-0-15-002 and performed weekly SWPPP inspections.

Case No. 16-F-0062

Wilkinson

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Steven D. Wilkinson, PE

Fisher Associates

135 Calkins Road

Rochester, NY 14623

1 **Q: Please state your name, employer, and business address.**

2 A: Steven D. Wilkinson, Fisher Associates, P.E., L.S., L.A., D.P.C. (Fisher), 135 Calkins  
3 Road, Rochester, New York 14623.

4 **Q: What is your position at Fisher?**

5 A: Senior Project Manager.

6 **Q: How long have you been employed with Fisher?**

7 A: I have been employed by Fisher since January of 2006.

8 **Q: Please describe your educational background and professional experience.**

9 A: I received a Bachelor of Science Degree in Civil Engineering Technology from the  
10 Rochester Institute of Technology and am a licensed professional engineer in New York,  
11 Indiana and North Carolina. I have approximately 18 years of experience civil/site design,  
12 storm water analysis and permitting and transportation design. My resume is attached.

13 **Q: Please describe your current responsibilities with Fisher.**

14 A: In my current capacity at Fisher, my practice is focused on the civil/site design issues  
15 relating to wind energy development, including turbines, laydown yards and substations. I  
16 am also responsible for roadway design along the access roads and public roads required  
17 for construction and maintenance of the wind turbines and ancillary facilities and for the  
18 preparation of studies to assess the impact of construction and operation of wind projects  
19 roads and traffic.

20 **Q: Have you previously testified before the New York State Public Service Commission  
21 or Siting Board on Electric Generation?**

22 A: No.

23 **Q: Have you previously served as an expert witness before any other court, agency,  
24 or other body on the subject you plan to offer testimony on today?**

25 A: No.

26 **Q: What is the purpose and scope of your testimony in this proceeding?**

27 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
28 or the Exhibits thereto.

29 **Q: What portion(s) of the Application is your testimony sponsoring?**

30 A: Exhibit 25: Effect on Transportation.

31 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
32 **direction and supervision.**

33 A: Yes.

34 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
35 **publications, data or documents produced by persons other than yourself/your**  
36 **company? If so, please cite these sources.**

37 A: References are provided in the corresponding Exhibits and Reports.

38 **Q: Does this conclude your testimony?**

39 A: Yes.



P: (585) 334-1310 x282  
E: [swilkinson@fisherassoc.com](mailto:swilkinson@fisherassoc.com)

**Education**

B.S., Civil Engineering, 1998  
Rochester Institute of Technology

**Years of Experience**

18

**Registration**

Professional Engineer:

- New York
- North Carolina
- Indiana

**Affiliations**

- AWEA
- American Public Works Association

**Areas of Specialization**

- Hydrologic Studies
- Stormwater Quantity & Quality Control
- Erosion & Sediment Control
- Highway Crossing Permits
- Wetland Permits
- Utility Permits and Extensions
- U.S. Corps of Engineer Joint Permits
- Site Development

Steve Wilkinson, P.E. has a diverse background that includes civil/site design, storm water analysis & permitting, and transportation design. Wind Power projects are a unique combination of civil/site design around the turbines, laydown yards, and substation; storm water analysis & permitting for the entire project; and roadway design along the access roads and public roads. The following is a brief summary of select projects in New York. Additional New York projects, projects from other States, and references can be provided upon request.

**Project Experience**

**Jericho Rise Wind Farm, New York:** Mr. Wilkinson is the Project Manager for the Civil Engineering and Survey of this 80 MW project in northern New York. This project had a fast track schedule and Steve mobilized multiple teams to complete the design, storm water analysis, and NYS DOT permitting in a short time frame.

**Arkwright Wind Farm, New York:** Mr. Wilkinson is the Project Manager for the Civil Engineering of this 80 MW wind farm in the Town of Arkwright, New York. The project area has a significant number of wetlands and Steve provided optimized access road and collection layout options to minimize impacts, while also keeping constructability in mind. He also managed the Survey, Geotechnical, and Foundation design contracts for the project.

**Ball Hill Wind Farm, New York:** Mr. Wilkinson is the Project Manager for the Civil Engineering of this 120 MW wind farm in Lewis County, New York.

**Number 3 Wind Farm, New York:** Mr. Wilkinson is the Project Manager for the Civil Engineering of this 100 MW wind farm in Lewis County, New York. This project is in the preliminary stages preparing for an Article 10 submission.

**Alabama Ledge Wind Farm, New York:** Mr. Wilkinson has provided Civil Engineering services for this 80 MW wind farm in Genesee County, New York.

**Horse Creek Wind Farm, New York:** Mr. Wilkinson was the Project Engineer for the Preliminary Design of this 100 MW wind farm in the Town of Clayton, New York. He quickly mobilized a team for the horizontal and vertical alignments of 14 miles of access roads as well as the SWPPP to accompany the SDEIS. He balanced the cut/fill volumes for the project and minimized the wetland impacts. This was all completed in 2 short months through the end of the year holiday period. Of particular note was that the SWPPP for the project was required to follow the new NYSDEC regulations which were substantially more challenging than previous regulations and required the assessment of new "Green Practices" for approval.

**Preliminary Engineering Term Agreement:** Mr. Wilkinson led the engineering on several of the projects for this Preliminary Engineering Term Agreement. Fisher Associates was provided project layouts (10 projects to date) and was tasked with conducting constraint analyses, developing optimized access roads, collection corridor layout, drainage design, transportation plan, and preliminary engineering plans.

Case No. 16-F-0062

Sara

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Timothy R. Sara, RPA

TRC Environmental Corporation

4425 Forbes Blvd, Suite B

Lanham, MD 20707

1   **Q:     Please state your name, employer, and business address.**

2   A:     Timothy R. Sara, TRC Environmental Corporation (TRC), 4425 Forbes Blvd, Suite B,  
3         Lanham, MD 20707

4   **Q:     What is your position at TRC?**

5   A:     I am the Office Practice Leader and Cultural Resources Program Manager.

6   **Q:     How long have you been employed with TRC?**

7   A:     I have been employed by TRC for over 9 years.

8   **Q:     Please describe your educational background and professional experience.**

9   A:     I have a B.A. (1984) from Binghamton University, double major in Geography and  
10        Anthropology. I have an M.A. in Anthropology (1994) from City University of New York. I  
11        am a Registered Professional Archaeologist (RPA) with 33 years of professional  
12        experience in cultural resources management and historic preservation planning. Over the  
13        course of amassing this experience I have designed and directed surveys and excavations  
14        of historic and prehistoric archaeological resources in the Northeast, Mid-Atlantic,  
15        Southeast, Midwest, Southwest, and Caribbean. I have also obtained a thorough  
16        knowledge of Section 110 and Section 106 and of the National Historic Preservation Act  
17        as amended (NHPA) and applying the National Register of Historic Places (NRHP)  
18        eligibility criteria to cultural resources. I have received honors and awards for both  
19        academic and professional studies.

20   **Q:     Please describe your current responsibilities with TRC.**

21   A:     I am responsible for all business functions of TRC's Lanham, Maryland office and serve  
22        as the Principal Investigator on cultural resources studies conducted for our clients in  
23        support of project permitting. I also conduct quality control on all products produced in our  
24        office and am responsible for staff management, fiscal budgets, and hiring staff.

25   **Q:     Have you previously testified before the New York State Public Service Commission**  
26        **or Siting Board on Electric Generation?**

27 A: No.

28 **Q: Have you previously served as an expert witness before any other court, agency,**  
29 **or other body on the subject you plan to offer testimony on today?**

30 A: No.

31 **Q: What is the purpose and scope of your testimony in this proceeding?**

32 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
33 or the Exhibits thereto.

34 **Q: What portion(s) of the Application is your testimony sponsoring?**

35 A: Exhibit 20: Cultural Resources

36 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
37 **direction and supervision?**

38 A: Yes.

39 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
40 **publications, data or documents produced by persons other than yourself/your**  
41 **company? If so, please cite these sources. [These are independent studies, etc.]**

42 Q: Please refer to Exhibit 20.

**TIMOTHY R. SARA, RPA**

**Program Manager, Archaeology  
Office Practice Leader, Lanham, MD**

---

**EDUCATION**

M.A., Anthropology, Hunter College, City University of New York, 1994

B.A., Anthropology and Geography, State University of New York at Binghamton, 1984

**PROFESSIONAL REGISTRATIONS/CERTIFICATIONS**

Register of Professional Archaeologists (1995 – Present)

**REPRESENTATIVE EXPERIENCE**

Mr. Sara is a Registered Professional Archaeologist (RPA) with 33 years of professional experience in cultural resources management and historic preservation planning. Over the course of amassing his experience he has designed and directed surveys and excavations of historic and prehistoric archaeological resources in the Northeast, Mid-Atlantic, Southeast, Midwest, Southwest, and Caribbean. He has also obtained a **thorough knowledge of Section 110 and Section 106 and of the National Historic Preservation Act as amended** (NHPA) and applying the National Register of Historic Places (NRHP) eligibility criteria to cultural resources. Mr. Sara has received honors and awards for both his academic and professional studies.

As a professional in the field of cultural resources management, Mr. Sara has also worked directly with other environmental conservation program areas implemented by the National Environmental Policy Act (NEPA). He has served as a key member of overall environmental planning teams, working with other environmental professionals including soil scientists, wetlands specialists, biologists, and hazardous waste managers. He has been a contributing author on more than 100 Environmental Assessments (EAs) and/or Environmental Impact Statements (EIS) and principal or contributing author to more than 250 cultural resources management reports. Mr. Sara currently serves as Program Manager and Office Practice Leader for TRC's Lanham, Maryland office with responsibility for all business functions of the office as well as quality control and staff management.

Mr. Sara has a broad knowledge of cultural resource management principles and practices, archaeological survey, evaluation, and data recovery methodologies, and presentation of research results within Federal and state agency, academic, and public sector frameworks. His areas of expertise include:

- Northeastern Historical and Prehistoric Archaeology
- Cultural Resource Permitting for Energy Development Projects
- Survey and Resource Evaluation
- Project Management for Cultural Resources Studies
- Environmental Impact Assessment and Studies
- Public Outreach and Exhibit Services

**SELECTED PROJECTS:**

**Eight Point Wind Energy Center, Steuben County, New York (Project Manager/Principal Investigator 2016 - 2017).** Prepared research design and directed all aspects of archaeological background and field research associated with wind energy development project in central New York. Contributing author of report submitted to NextEra Energy Resources, LLC, and New York State Historic Preservation Office. Prepared Exhibit 10 (Cultural Resources) for Article 20 New York State environmental documentation.

**Dominion Eastern Market Access Project: Loudoun Compressor Station, Loudoun M&R Station, Pleasant Valley Compressor Station, and Pleasant Valley M&R Station, Loudoun and Fairfax Counties, Virginia (Project Manager/Principal Investigator 2015 - 2016).** Prepared research design, directed archaeological fieldwork, and prepared project report for Phase I investigation of improvements to Dominion's LNG facilities. Contributing author report submitted to Virginia Department of Historic Resources.

**Cypress Creek Renewables - Multiple Solar Projects, New York State (Principal Investigator 2017).** Oversaw Phase I fieldwork for nine proposed solar projects in central New York State. Performed QA/QC review of technical reports submitted to CCR, LLC and New York State Historic Preservation Office.

**Capon Bridge Replacement Project – Phase I and II Archaeological Studies, Hampshire County, West Virginia, State Project S314-50-31.02 (Project Manager/Principal Investigator 2016).** Directed all aspects of archaeological background and field research associated with a bridge replacement project in eastern West Virginia. Two newly recorded sites were recorded during Phase I investigation. Site 46HM210 was found to have poor integrity and was recommended as not eligible for NRHP-listing. Site 46HM211, a multi-component site contained both historic and prehistoric cultural deposits and was recommended for further study. Phase II study conducted in 2017 determined site 46HM211 eligible for the NRHP. Co-author of reports submitted to the West Virginia Department of Transportation, Division of Highways (WVDOH); lead author of research design for Phase III date recovery approved by WVDOH and West Virginia State Historic Preservation Office.

**Millville Quarry, Phase I and II Archaeological Investigations, Prince George's County Maryland (Project Manager/Principal Investigator 2014 and 2017).** Directed all aspects of archaeological background and field research associated with a sand and gravel mine expansion project in southern Maryland. The Phase I survey identified twelve (12) archaeological sites yielding 1,521 artifacts. NRHP evaluation (Phase II) was conducted on two prehistoric sites (18PR1079 and 18PR1081) yielding 3,200 artifacts. Lead author of technical reports submitted to Aggregate Industries and the Maryland State Historic Preservation Office.

**Bird Run Bridge Replacement Project, Pocahontas County, West Virginia, State Project S338-84-1.53 (Project Manager/Principal Investigator 2016).** Directed all aspects of archaeological background and field research associated with a bridge replacement project in southeastern West Virginia. Documented elements of an abandoned CCC camp just outside the project area. No artifacts were recovered and no archaeological features were identified within the APE. Co-author of report submitted to the West Virginia Department of Transportation, Division of Highways.

**Eastern System Upgrade Project, Orange, Sullivan, Delaware, and Rockland Counties, New York, Phase I Archaeological Investigation (Project Manager/Principal Investigator 2015 - 2016).** Oversaw all aspects of archaeological background and field research associated with proposed 7.3-mile natural gas pipeline construction project in southern New York. Contributing author of the technical report to be submitted to FERC and Millennium Pipeline Company.

**HDD Fiber Optic Exit Site for Potomac River Crossing, Loudoun County, Virginia (Project Manager/Principal Investigator 2015 - 2016).** Directed all aspects of archaeological background and field research associated with Phase I archaeological survey for proposed Horizontal Direction Drill (HDD) installation of fiber optics line beneath the Potomac

River. Principal author of technical report submitted to U.S. Army Corps of Engineers and Virginia Department of Historic Resources.

**Northfield Mountain Pumped Storage Project (No. 2485) and Turners Falls Hydroelectric Project (No. 1889), Franklin County, Massachusetts and Cheshire County, New Hampshire, and Windham County, Vermont (Project Manager/Principal Investigator 2013-2016).** Directed Phase IA archival and field investigations as part of environmental impact studies required for 30-year license renewal. Principal author of report submitted to FirstLight Power Resources and the Massachusetts, New Hampshire, and Vermont SHPOs.

**Cairo Bridge Replacement Project, Ritchie County, West Virginia, State Project S243-31-9.82 (Project Manager/Principal Investigator 2015).** Oversaw all aspects of archaeological background and field research in support of a new bridge construction in western West Virginia. One previously unrecorded historic archaeological site was identified. Based on lack of stratigraphic integrity and absence of structural features or remains, the site was recommended as ineligible for inclusion on the National Register. Co-author of report submitted to the West Virginia Department of Transportation, Division of Highways.

**McDonalds Upper Plaza Bridges Project, Marshall County, West Virginia, State Project S326-2-19.50 (Project Manager/Principal Investigator 2015).** Oversaw all aspects of archaeological background and field research associated with a project to widen WV 2 through the town of Moundsville. One historic archaeological site was identified and recommended as ineligible for inclusion in the NRHP and for no further work. Principal author of technical report submitted to the West Virginia Department of Transportation, Division of Highways.

**Pratt Burial Archaeological Monitoring and Documentation, Pratt, Kanawha County, West Virginia (Project Manager/Principal Investigator 2015).** Oversaw all aspects of archaeological monitoring and documentation associated with the unanticipated discovery of Native American burials encountered during excavations of a buried water line in the town of Pratt. Over 4,700 artifacts were recovered from two apparent burials during the investigation. The collection was prepared for curation and submitted to the West Virginia Division of Culture, Grave Creek Mound Archaeological Complex Research Facility for future research. Principal author of letter report submitted to the WV SHPO.

**NiSource Utica Access Natural Gas Pipeline Project, Kanawha and Clay Counties, West Virginia (Project Manager/Principal Investigator 2014 - 2015).** Oversaw all aspects of archaeological background and field research associated with proposed 9.4-mile natural gas pipeline construction project in south-central West Virginia. One historic site was identified but recommended for no further study. Contributing author of technical report submitted to FERC and Columbia Gas Transmission, LLC.

**Utica Marcellus Texas Natural Gas Project, Brooke, Doddridge, and Tyler Counties, West Virginia (Principal Investigator 2014 - 2015).** Oversaw all aspects of archaeological background and field research associated with proposed 75-mile natural gas pipeline construction project in northeastern West Virginia. Eight archaeological sites and two isolated finds were identified. Two prehistoric sites (46BR80 and 46BR90) were recommended for further investigation to determine National Register significance. Contributing author of technical report submitted to FERC and Utica Marcellus Pipeline LLC.

**Utica Marcellus Texas Natural Gas Project, Mercer, Lawrence, Allegheny, and Washington Counties, Pennsylvania (Principal Investigator 2014 - 2015).** Oversaw all aspects of archaeological background and field research associated with proposed 75-mile natural gas pipeline construction project in western Pennsylvania. Five archaeological sites (36WH1687, 36WH1688, 36WH1689, 36WH1690, and 36WH1692) and three isolated finds were identified. Based on the lack of integrity and limited research value, none of the resources were recommended as eligible for inclusion in the National Register of Historic Places (NRHP).

**Dunkirk Natural Gas Pipeline Project, Phase I Archaeological Survey, Chautauqua County, New York (Project Manager/Principal Investigator 2014 - 2015).** Directed all aspects of Phase I archaeological study for proposed 11 miles of new 16-inch buried pipeline to transport natural gas from the Tennessee Gas Transmission Pipeline to the Dunkirk Generating Station. Principal author of project report and Article VII documentations submitted to Dunkirk Gas Corporation and state review agencies.

**Service Wire Industrial Access Road Project, Cabell and Putnam Counties, West Virginia, State Project X306-164/12-0.00 (2014 - 2015).** Oversaw all aspects of archaeological background and field research associated with road construction project in southwestern West Virginia. One prehistoric archaeological site was identified and recommended for further investigation to determine National Register significance. Principal author of technical report submitted to the West Virginia Department of Transportation, Division of Highways.

**Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC (Senior Archaeologist 2013 - 2014).** Conducted background research and prepared Cultural Resources section of Draft SEIS for State Pollutant Discharge Elimination System (SPDES) Permit (No. NY-0004472), as required by New York State Environmental Quality Review Act. Submitted to Entergy Services, Inc., Jackson, Mississippi.

**Martins Creek - Siegfried #2 230kV Transmission Line Reconstruction Project, Northampton County, Pennsylvania, Phase I Archaeological Studies (Project Manager/Principal Investigator 2012).** Directed all aspects of archaeological background and field research associated with rebuild of 11-mile long transmission line. Principal author of technical report submitted to PPL Electric Utilities, Lehigh Valley, Pennsylvania.

**Conowingo Hydroelectric Relicensing Project, Cecil and Harford Counties, Maryland, and Lancaster and York Counties, Pennsylvania, FERC No. 405, Phase IA and IB Cultural Resources Study (Project Manager/Principal Investigator 2011 - 2012).** Directed background research and Phase I field investigations as part of environmental impact studies required for 30-year license renewal. Principal author of report submitted to Exelon Generation Company, LLC and the Pennsylvania and Maryland SHPOs.

**Conley Industrial Access Road Project, Wood County West Virginia, State Project S354-14/47-0.04 (Project Manager/Principal Investigator 2014).** Directed all aspects of archaeological background and field research associated with road construction project in northwestern West Virginia. Principal author of technical report submitted to the West Virginia Department of Transportation, Division of Highways.

**Manor–Graceton 230kv Transmission Line Corridor, Lancaster and York Counties, Pennsylvania, Phase I Archaeological Survey (Project Manager/Principal Investigator 2011).** Directed all aspects of archaeological and background and field research

associated with rebuild of 10-mile long transmission line. Principal author of technical report submitted to PPL Electric Utilities, Lehigh Valley, Pennsylvania.

**Tabler Station Connector Access Road Project, Berkeley County, West Virginia, Phase I and II Archaeological Studies, State Project S302-51-2.24 00, (Project Manager/Principal Investigator 2013 - 2014).** Directed all aspects of archaeological background and field research associated with road construction project in northeastern West Virginia. Phase II investigation was conducted on one historic archaeological site but was recommend ineligible for inclusion in the National Register. Principal author of technical report submitted to the West Virginia Department of Transportation, Division of Highways.

**Phase II Archaeological Evaluation of Sites 28HU566 and 28HU567 and Historic Architecture Studies of the Edward Fox House and Fox/Phillips/Pittenger House in the Frenchtown III Solar Park, Hunterdon County, New Jersey, (Archaeologist 2013-14).** Directed all aspects of archaeological research in support of solar park development. The work was conducted for Con Edison Development, Valhalla, NY under Subcontract to Whitman, Cranbury, New Jersey. Contributing author of technical report and public outreach program in preparation for the New Jersey Historic Preservation Office.

**CPV Valley Energy Center and Transmission Corridors, Archaeological Studies, Town of Wawayanda, Orange County, New York (Project Manager/Principal Investigator 2008 - 2010 and 2015).** Prepared research design and oversaw all aspects of field and laboratory research in support a proposed gas-fired 630MW power plant. Principal author of project report and Environmental Impact Statement submitted to CPV Valley, LLC and state and municipal review agencies.

**Leonardtown Educational and Recreational Site - Phase II Archaeological and Geophysical Studies, St. Mary's County, Maryland (Project Manager/Principal Investigator 2014 - 2015).** Directed archaeological field research associated with school construction project in southern Maryland. Phase II investigation was conducted on one historic archaeological site recommend ineligible for inclusion in the NRHP. Lead author of report submitted to Soltesz, Inc. and St. Mary's County.

**Caithness Long Island Energy Center II, Phase I Archaeological Survey, Town of Brookhaven, Suffolk County, New York (Project Manager/Principal Investigator 2013).** Directed all aspects of Phase I archaeological study for proposed natural gas fired power facility in Town of Brookhaven. Principal author of project report and Environmental Impact Statement submitted to Caithness Long Island II, LLC and state and municipal review agencies.

**NYSEG Corning Valley Upgrade Project, Towns of Erwin and Campbell, Steuben County, New York Phase I Archaeological Survey (Project Manager/Principal Investigator 2009 - 2010).** Prepared research design and oversaw all aspects of archival research, field and laboratory research in support of modernization of a 9-mile electrical transmission corridor and substations. Principal author of project report submitted to New York State Electric and Gas and the New York Office of Parks Recreation and Historic Preservation.

**Paradise Solar Energy Project, Gloucester County New Jersey; Phase I and II Archaeological Studies (Project Manager/Principal Investigator 2009 - 2010).** Prepared research design and supervised all aspects of field and laboratory research in support of a proposed photovoltaic solar array in southern New Jersey. Conducted Phase II National Register

eligibility evaluations of prehistoric site 28GL415. Principal author of project reports submitted to Paradise Solar, LLC (NextEra) and the New Jersey State Museum.

**Phase II and III Archaeological Investigations of Sites 46BY229 and 46BY230, Cattle Pass Bridge Realignment Project, Berkeley County, West Virginia, State Project S302-51-2.24 00 (Project Manager/Principal Investigator 2012 - 2013).** Directed all aspects of archaeological research on National Register-eligible site in support of road straightening project in eastern West Virginia. The work was conducted for the West Virginia Department of Transportation, Division of Highways.

**Mantua Grove Solar Energy Project, Gloucester County, New Jersey, Phase I and II Archaeological Studies (Project Manager/Principal Investigator 2009 - 2010).** Prepared research design and supervised all aspects of field and laboratory research in support of proposed photovoltaic solar array in southern New Jersey. Conducted Phase II National Register eligibility evaluations of two multicomponent sites (28GL417 and 28GL418). Principal author of project reports submitted to SunPower Corporation and the New Jersey State Museum.

**Mount Olive Solar Energy Project, Morris County, New Jersey, Phase I Archaeological Survey (Project Manager/Principal Investigator 2010).** Directed background and field research for proposed ground-mounted photovoltaic solar facility in central New Jersey. Principal author of project report submitted to Constellation Solar I, LLC and the New Jersey State Museum.

**Ash Landfill Siting Evaluation, Franklin, Connecticut (Principal Investigator 2009-2010).** Directed background research and conducted field reconnaissance for archaeological resource sensitivity in support of a siting investigation for an ash landfill. Initiated formal consultation with the Connecticut State Historic Preservation Office and Tribal Historic Preservation Offices (Mohegan and Mashantucket Pequot Tribes).

**Queen Anne's Solar Energy Project, Queen Anne's County, Maryland, Phase I Archaeological Survey (Project Manager/Principal Investigator 2010).** Directed archaeological survey of 80-acre solar energy development parcel on Maryland's Eastern Shore. Principal author of project report submitted to NextEra Energy Resources, LLC and the Maryland Historical Trust.

**Snowy Creek Wind Power Project, Cultural Resource Studies, Preston County, West Virginia (Project Manager/Principal Investigator 2009-2010).** Directed archaeological research in support of a 54-turbine wind power development project along mountaintops in northeastern West Virginia. Survey included ROW and proposed substation development. The work was conducted for AES New Creek LLC, Arlington Virginia.

**SWEPI LP Natural Gas Pipelines, Cultural Resources Studies, Tioga County, Pennsylvania (Project Manager/Principal Investigator 2010 – 2011).** Prepared research design and supervised all aspects of field and laboratory research in support of a more than 50 miles of proposed natural gas pipeline construction in north-central Pennsylvania. Principal author of 12 technical reports submitted to Entech and PHMC.

**Penn Main Interceptor, Wastewater Collection and Conveyance System, Penn Township, York County, Pennsylvania, Phase I Archaeological Survey. (Project Manager/Principal Investigator 2010).** Directed archaeological background and field

research for new sewer line installation in York County. The work was conducted for CET Engineering Services and Penn Township.

**Proposed Upper Allen Township Waste Water Treatment Plant Sludge Storage Pad, Cumberland County, Pennsylvania; Phase I Archaeological Survey (Project Manager/Principal Investigator 2009).** Prepared research design and supervised all aspects of field and laboratory research in support of a proposed waste water treatment sludge storage pad in south-central Pennsylvania. Principal author of project report submitted to CET Engineering Services and Upper Allen Township.

**Proposed Waste Water Treatment Plant and Interceptor, North Londonderry Township, Lebanon County, Pennsylvania; Phase I Archaeological Survey (Project Manager/Principal Investigator 2009).** Prepared research design and supervised all aspects of field and laboratory research in support of a proposed waste water treatment plant and interceptor in south-central Pennsylvania. Principal author of project report submitted to CET Engineering Services and North Londonderry Township.

**18.5 Mile East Resources Gas Pipeline, Bradford and Lycoming Counties, Pennsylvania, Phase I Archaeological Survey (Project Manager/Principal Investigator 2009).** Prepared research design and supervised all aspects of field and laboratory research in support of a proposed gas pipeline in north-central Pennsylvania.

**New Creek Mountain Wind Power Project, Cultural Resource Studies, Grant and Mineral Counties, West Virginia (Project Manager/Senior Archaeologist 2008 - 2009).** Directed archaeological research in support of a 48 turbine wind power development project along a nine-mile ridge in northeastern West Virginia. Survey included ROW and proposed substation development. The work was conducted for AES New Creek LLC, Arlington Virginia.

**Mountaineer CCS II Project, Mason County, West Virginia, Archaeological Studies, 2010, (Project Manager/Principal Investigator 2010).** Spearheaded consultation with State and Federal review agencies, prepared research design, and oversaw all aspects of field research in support proposed CO<sub>2</sub> capture and storage project. Principal author of project report and cultural resources section of EIS submitted to American Electric Power Corporation and the U.S. Department of Energy.

**Buckeye Truss Bridge Replacement Project, Pocahontas County, West Virginia Phase I Archaeological Survey, State Project S238-219/15-0.33 00 (Project Manager/Principal Investigator 2011).** Directed all aspects of archaeological and geomorphological research in support of a new bridge construction in eastern West Virginia. The work was conducted for the West Virginia Department of Transportation, Division of Highways.

**West Virginia Department of Transportation - Division of Highways, Cattle Pass Bridge Replacement, Archaeological Studies, Berkeley County, West Virginia (Project Manager/Principal Investigator 2011).** Directed all aspects of archaeological research in support of a new bridge construction in eastern West Virginia. The work was conducted for the West Virginia Department of Transportation, Division of Highways.

**Czar to Helvetia Bridge Replacement, Archaeological Studies, Randolph County, West Virginia (Project Manager/Principal Investigator 2011).** Directed all aspects of

archaeological research in support of a new bridge construction in central West Virginia. The work was conducted for the West Virginia Department of Transportation, Division of Highways.

**Annamoriah Bridge Replacement, Archaeological Studies, Calhoun County, West Virginia (Project Manager/Principal Investigator 2009 - 2010).** Directed all aspects of archaeological and geomorphological research in support of a new bridge construction in central West Virginia. The work was conducted for the West Virginia Department of Transportation, Division of Highways.

**Armenia Mountain Wind Power Project, Bradford and Tioga Counties, Cultural Resource Studies, Pennsylvania (Project Manager/Senior Archaeologist 2007-2008).** Supervised archaeological research in support of a 124-turbine wind power development project within 10,000 acres of leased land in north central Pennsylvania. Survey included three substations, two 18,000 m transmission lines, operations and maintenance building. The work was conducted for AES Armenia Mountain, LLC, Arlington, Virginia.

**National Register Eligibility Evaluations of Sites 18ST659 and 18ST754 and Data Recovery Excavations at Site 18ST659, VXX Presidential Helicopter Facility, Naval Air Station Patuxent River, St. Mary's County, MD (Principal Investigator/Project Manager 2005 – 2006).** Mr. Sara prepared research design for large-scale data recovery excavations of National-Register-eligible Archaic site; directed all aspects of field execution, laboratory analysis of more than 25,000 specimens, and was principal author of project report.

**West Point Military Academy Integrated Cultural Resources Management Plan (ICRMP), West Point, New York. U.S. Army Corps of Engineers, Fort Worth District; U.S. Military Academy (Principal Archaeologist 2003 – 2004).** Mr. Sara developed the archaeological research design, cultural overview, and standard operating procedures for protection of archaeological resources for Plan Years 2001-2006. The planning document aids in management of historic buildings, structures, and archeological sites for Nation's oldest military academy.

**Section 106 Oversight for USDA/Natural Resources Conservation Service, New York (Principal Investigator/Project Manager, 2002 – 2003).** Mr. Sara managed a year-long program for conducting Initial Project Reviews, Field Inspections, and Phase 1 surveys for all planned NRCS conservation projects throughout New York State. He directed a project team of historians, project archaeologists, and GIS specialists in executing Section 106 compliance review process on behalf of the NRCS and OPRHP (NY SHPO).

**Webster Field Annex, Patuxent River Naval Air Station, Archaeological Evaluation of Sites 18ST234 and 18ST328 Maryland. U.S. Navy, Chesapeake (Principal Investigator/Project Manager 2002).** Mr. Sara prepared research design and directed testing of two National Register-eligible prehistoric sites dating to the Middle Woodland period. Mr. Sara designed an avoidance plan that allowed construction to proceed on schedule and within budget while avoiding impacts to significant archaeological deposits.

**Patuxent River Naval Air Station, Archaeological Survey of 3,250 Acres, St. Mary's County, Maryland Principal Investigator/Project Manager 2001-2002).** Prepared research design and directed intensive survey of remaining portions of the Naval Air Station in order to bring the Navy into compliance with Section 110 of the NHPA.

**Archaeological Studies in Support of Section 110 Compliance at Five Naval Facilities Engineering Command Mid-Atlantic (MIDLANT) Support Facilities Project Manager/Principal Investigator 2006-2007).** Prepared research designs, directed archaeological fieldwork, and prepared project reports for Phase I and II investigations at five Naval support facilities in Peninsula and Tidewater Virginia. Project sites included NAS Norfolk, FTC Dam Neck, FISC Craney Island, Cheatham Annex and Yorktown Naval Weapons Station.

**Archaeological Survey and Site Evaluation, Naval Station Roosevelt Roads, Puerto Rico (Principal Investigator/Project Manager 2004 - 2005).** Contract No. N62470-02-D-9997, Task Order 0031, Modification No. 5. U.S. Department of the Navy, Atlantic Division (NAVFACANT), Norfolk. Directed all aspects of archaeological survey of 80 acres of High Probability lands and evaluative testing of one pre-Columbian, one multi-component, and one Historic-age site within the Naval Station. Responsible for overall fiscal management and coordination with Federal and Commonwealth agencies. Principal author of report submitted to Naval Facilities Engineering Command, Atlantic Fleet, Norfolk, Virginia.

**Archaeological Survey and Site Evaluation, Naval Station Roosevelt Roads, Puerto Rico (Principal Investigator/Project Manager 2003 - 2004).** Contract No. N62470-02-D-9997, Task Order 0031, Modification No. 2. U.S. Department of the Navy, Atlantic Division (LantDiv), Norfolk. Directed all aspects of archaeological survey, archaeological reconnaissance, and evaluative testing of four pre-Columbian sites within the naval station. Responsible for overall fiscal management and coordination with Federal and Commonwealth agencies. Principal author of report submitted to Naval Facilities Engineering Command, Atlantic Fleet, Norfolk, Virginia.

**Archaeological Survey and Paleoenvironmental Investigations of Portions of U.S. Naval Station Guantanamo Bay, Cuba (Principal Investigator/Project Manager 2003 - 2004).** Contract No. N62470-02-D-9997 Task Order 0004. U.S. Department of the Navy, Atlantic Division (LantDiv), Norfolk. Coordinated archival, palynological, and macrobotanical research and directed archaeological investigations within 1200 acres of the naval station. Principal author of report submitted to Naval Facilities Engineering Command, Atlantic Fleet, Norfolk, Virginia.

#### **SPECIALIZED TRAINING**

Section 106 Principals and Practices, SRI Foundation, 1999  
24-Hour HAZWOPER Training, 2007  
First Aid and Adult CPR, Multiple Years

#### **PROFESSIONAL AFFILIATIONS**

Society for American Archaeology (member)  
International Association of Caribbean Archaeologists (member)  
New York Archaeological Council (voting member)

Case No. 16-F-0062

Peterson

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Trevor S. Peterson

Stantec Consulting Services, Inc.

30 Park Drive

Topsham, ME 04086

1   **Q:     Please state your name, employer, and business address.**

2   A:     Trevor S. Peterson, Stantec Consulting Services Inc., 30 Park Drive, Topsham, ME 04086

3   **Q:     What is your position at Stantec?**

4   A:     I am a Senior Wildlife Biologist and Project Manager.

5   **Q:     How long have you been employed with Stantec?**

6   A:     I have been employed at Stantec since 2003.

7   **Q:     Please describe your educational background and professional experience.**

8   A:     I earned my Bachelor's degree in Biology and Environmental Studies from Bowdoin  
9         College in 2002. I am currently a PhD candidate in University of Maine's Ecology and  
10        Environmental Science program where I am studying use of long-term acoustic bat data  
11        to study bat migration and manage potential impacts at wind projects. During my time at  
12        Stantec, I have conducted and managed a wide range of ecological surveys, focusing  
13        since 2006 on bird and bat issues at proposed and existing wind projects. Please see my  
14        resume attached.

15  **Q:     Please describe your current responsibilities with Stantec.**

16  A:     I design, conduct, and manage field studies and analyze survey results to support our  
17        clients' needs. I also work with clients, agency representatives, and other stakeholders to  
18        determine appropriate scope and level of effort for pre-construction and post-construction  
19        studies at wind projects. Typical projects include surveys for rare species presence, bat  
20        activity and species composition, bird and bat fatality rates, and effectiveness of  
21        operational curtailment programs. I am also technical lead within the company for acoustic  
22        bat survey methods.

23  **Q:     Have you previously testified before the New York State Public Service Commission  
24           or Siting Board on Electric Generation?**

25  A:     Yes. I provided written and oral testimony related to EverPower's Cassadaga project  
26        (Case No. 14-F-0490).

27 **Q: Have you previously served as an expert witness before any other court, agency,**  
28 **or other body on the subject you plan to offer testimony on today?**

29 A: I provided written and oral testimony on potential impacts to birds and bats at the proposed  
30 Laurel Mountain Wind Energy Project in West Virginia, before the West Virginia Public  
31 Service Commission (Case No. 08-0109-E-CS-CN).

32 **Q: What is the purpose and scope of your testimony in this proceeding?**

33 A: To sponsor certain portions of the Eight Point Wind Energy Center Article 10 Application  
34 and associated Exhibits.

35 **Q: What portion(s) of the Application is your testimony sponsoring?**

36 A: Exhibit 22: Terrestrial Ecology and Wetlands. Specifically my testimony is to provide  
37 explanations of results of pre-construction bird and bat studies conducted by Stantec.

38 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
39 **direction and supervision?**

40 A: Yes.

41 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
42 **publications, data or documents produced by persons other than yourself/your**  
43 **company? If so, please cite these sources. [These are independent studies, etc.]**

44 A: I will rely upon references cited in individual reports prepared by Stantec.

## Trevor S. Peterson

Project Manager, Senior Wildlife Biologist



Mr. Peterson is a senior wildlife biologist and project manager specializing in renewable energy projects, bird and bat migration, and rare species assessments. He focuses on solutions to quantify and manage turbine-related wildlife impacts at terrestrial and offshore commercial wind projects. Since joining the company in 2003, Trevor's project experience has included a wide range of wildlife surveys at proposed and existing wind projects, rare bat surveys, breeding bird surveys, raptor surveys, nocturnal radar surveys, vernal pool water quality and ecological monitoring, rare turtle telemetry and demographic studies, natural community characterization, and vegetation monitoring. He is a PhD candidate in the University of Maine's Ecology and Environmental Science program, where he is researching the use of long-term acoustic bat data to study bat migration and predict and manage potential impacts from land-based and offshore wind projects. Before working at Stantec, Trevor worked seasonally for the National Park Service at Acadia National Park and Isle Royale National Park and as an island caretaker for the Maine Island Trail Association. Mr. Peterson serves as Stantec's technical lead for acoustic bat surveys, responsible for updating equipment, survey methods, and data analysis/reporting methods.

### PROFESSIONAL EXPERIENCE

- Stantec Consulting Services Inc. 2007-present. Project Manager and Senior Wildlife Biologist
- Woodlot Alternatives, Inc. 2003-2007. Project Manager
- Acadia National Park. 2000. Biological Technician
- Isle Royale National Park. 1999. Biological Technician

### EDUCATION

PhD candidate in Ecology and Environmental Science program, University of Maine, expected completion 2018

Semester Program in Costa Rica, Tropical Field Biology, Environmental Studies, and Spanish, Duke University, Durham, North Carolina, 2000

AB, Biology/Environmental Studies, Summa cum Laude, Phi Beta Kappa, Bowdoin College, Brunswick, Maine, 2002

40-Hour Hazwoper Certification, OSHA, Topsham, Maine, 2005 (refreshed annually).

McMillan Offshore Survival Training, Castine, Maine, 2016

### MEMBERSHIPS

The Wildlife Society  
The Northeastern Bat Working Group  
Northeastern Migration Monitoring Network

### SELECTED PROJECT EXPERIENCE

#### Offshore Renewable Energy

Regional Offshore Acoustic Bat Monitoring, Gulf of Maine, mid-Atlantic, Great lakes

*Senior Biologist and Project Manager. Developed and implemented survey techniques and data analysis for long-term (2009–2014) acoustic bat monitoring in the Gulf of Maine, mid-Atlantic, and Great Lakes. Surveys included long-term monitoring at over 40 locations including remote islands, offshore weather buoys, ships, and coastal sites. Project was funded by Stantec, the US Department of Energy, and supported by federal, state, academic, and NGO partners.*

Tracking Bats using Nanotag Telemetry in the Gulf of Maine

*Senior Biologist and Project Manager. Developed and implemented survey techniques to track bats along the Maine coast using nanotag technology. Constructed and installed 5 telemetry receivers along the coast to supplement an existing network of monitoring stations. Project was funded by Stantec and supported by federal, state, academic, and NGO partners.*

## Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

---

### Renewable Energy

#### Pre-construction Avian and Bat Surveys at Proposed Wind Energy Project, Texas

*Project Manager and Field Supervisor. Developed an innovative work scope to conduct a variety of field surveys focusing on assessing potential impacts to Mexican free-tailed bats and managed a variety of field surveys including nocturnal radar surveys, NEXRAD data analysis, acoustic bat monitoring, and visual night-vision surveys. Mr. Peterson also coordinated discussions between project developers, state wildlife agencies, and non-profit groups.*

#### Avian and Bat Surveys at New Creek Wind Energy Project, Grant County, West Virginia

*Project Manager, Field Supervisor, Expert Witness. Developed protocols for pre-construction and post-construction bird and bat field surveys within wind project. Coordinated field efforts, including breeding bird surveys, raptor surveys, bat mist-netting surveys, bat telemetry surveys, acoustic bat surveys, carcass monitoring, and curtailment studies. Managed correspondence between the developer, operator, and state and federal wildlife agencies. Prepared survey reports, a site-specific bird and bat risk assessment, and direct testimony, all of which were presented at public hearings.*

#### Avian and Bat Surveys at Laurel Mountain Wind Energy Project, Randolph and Barbour Counties, West Virginia

*Project Manager, Field Supervisor, Expert Witness. Conducted bird and bat field surveys within proposed wind project. Coordinated pre-construction and post-construction field efforts, including breeding bird surveys, raptor surveys, bat mist-netting surveys, acoustic bat surveys, carcass monitoring, and curtailment studies. Managed correspondence between the developer, operator, and state and federal wildlife agencies. Prepared survey reports, avian bird and bat risk assessment, testimony, and a site-specific Avian and Bat Protection Plan.*

#### Avian and Bat Surveys at Armenia Mountain Wind Energy Project, Tioga and Bradford Counties, Pennsylvania

*Project Manager and Field Supervisor. Conducted bird and bat field surveys within proposed wind project. Coordinated field efforts, including breeding bird surveys, raptor surveys, bat mist-netting surveys, and acoustic bat surveys. Managed correspondence between the developer and state and federal wildlife agencies. Prepared survey reports and a site-specific bird and bat risk assessment for the project. Managed two years of post-construction monitoring according to Pennsylvania Game Commission protocols.*

#### Post-construction Avian and Bat Mortality Monitoring at Forward and Lookout Wind Projects, Somerset County, Pennsylvania

*Project Manager and Field Supervisor. As the Project Manager for post-construction bird and bat mortality surveys at two of the first operational wind projects to participate in Pennsylvania's Voluntary Cooperative Wind Energy agreement, Mr. Peterson developed survey work scopes, and coordinated fieldwork for multiple years of monitoring, including daily mortality surveys, acoustic bat surveys, and diurnal raptor surveys. Mr. Peterson also coordinated project-related agency communications with state and federal wildlife agencies.*

### Natural Resource Services

#### Acoustic Bat Surveys: Proposed Road Corridors, Tennessee

*Technical and Field Supervisor. Conducted acoustic bat surveys in a variety of habitats within 67-kilometer long segments of multiple potential highway corridors within a National Forest for the Tennessee Department of Transportation. Completed data analysis and prepared survey reports.*

#### Indiana Bat and Rare Bird Surveys at Proposed Wind Energy Project, Jefferson and Oswego Counties, New York

*Project Manager and Field Supervisor. Coordinated multiple years of habitat evaluations, acoustic bat surveys, and radio telemetry surveys for Indiana bats at a proposed wind project in northwestern New York. Mr. Peterson also coordinated and conducted field surveys for breeding birds and rare birds within the area.*

## Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

---

### Spotted Turtle and Vernal Pool Monitoring on Greenbush Railroad, Southeastern Massachusetts

*Project Manager, Field Team Leader, Field Technician. Managed a field crew responsible for monitoring the water quality, invertebrate diversity, amphibian populations, and plant communities within vernal pools located in a commuter rail corridor. Led efforts to document and track populations of spotted turtles within the same corridor. Assisted with development of amphibian/turtle crossing structures, and protocols for testing the effectiveness of these structures.*

### Natural Community Surveys and Resource Inventory, Moosehead Lake Region, Maine

*Field Scientist. Mr. Peterson conducted natural community surveys and rare species surveys, classified natural communities, identified rare plants and animals, and evaluated potential wildlife habitat within parcels proposed for development and conservation within a large proposed development in Maine's north woods.*

### Eastern Box Turtle Protection Plan, Construction Monitoring, and Relocation, Duxbury, Massachusetts

*Field Scientist. Mr. Peterson developed a protocol to protect box turtles during construction in compliance with MESA, and participated in fieldwork efforts, which included pre-construction searches, construction monitoring, turtle handling/relocation, and habitat management.*

### Blue-Spotted Salamander Surveys and Relocation, Reading, Massachusetts

*Field Scientist. Mr. Peterson developed and implemented a survey protocol to inventory, identify, and relocate blue and yellow-spotted salamanders from an upland area proposed for development. Coordinated communications with state wildlife agencies.*

### Diamondback Terrapin Habitat Assessment and Nesting Surveys, Massachusetts

*Field Scientist. Mr. Peterson developed survey protocols and conducted an assessment of suitable habitat features to evaluate mating and nesting activities of a newly discovered diamondback terrapin population at a former landfill proposed for mixed use development in southern Massachusetts.*

## Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

### PUBLICATIONS

Peterson, T.S., S.K. Pelletier and M. Giovanni. 2016. Long-term bat monitoring on islands, offshore structures, and coastal Sites in the Gulf of Maine, mid-Atlantic, and Great Lakes—final report. Prepared for the US Department of Energy.

Peterson, T.S., S.K. Pelletier, S.A. Boyden, and K.S. Watrous. 2014. Offshore acoustic monitoring of bats in the Gulf of Maine. *Northeastern Naturalist* 21(1): 86-107.

Pelletier, S.K., K.S. Omland, K.S. Watrous, and T.S. Peterson. 2013. Information synthesis on the potential for bat interactions with offshore wind facilities—final report. US Department of the Interior, Bureau of Ocean Energy Management, Headquarters, Herndon, Virginia. OCS Study BOEM 2013-01163. 119 pp.

Johnson, J.S., L.E. Dodd, J.D. Kiser, T.S. Peterson, and K.S. Watrous. 2012. Food habits of *Myotis leibii* along a forested ridgetop in West Virginia. *Northeastern Naturalist* 19(4): 665-672.

Johnson, J.S., K.S. Watrous, G.J. Giumarro, T.S. Peterson, S.A. Boyden, and M.J. Lacki. 2011. Seasonal and geographic trends in acoustic detection of tree-roosting bats. *Acta Chiropterologica*, 13(1): 157-168.

Peterson, T.S., A. Uesugi, and J. Lichter. 2005. Tree recruitment limitation by introduced snowshoe hares, *Lepus americanus*, on Kent Island, New Brunswick. *Canadian Field Naturalist* 119 (4). 569-572.

### PRESENTATIONS

Peterson, T.S. Bats in the rotor zone...managing risk with acoustics. *Presented at the 2<sup>nd</sup> International Bat Echolocation Symposium, Tucson, Arizona, 2017.*

Peterson, T.S., and A.J. Gravel. How to mortality and activity Relate? *Presented at the American Wind Energy Association Wind Project Siting and Environmental Compliance Conference, Austin, Texas, 2017.*

Peterson, T.S. Unprecedented change in Maine bats: evidence of the widespread effects of white-nose syndrome. *Presented at the Maine Chapter of The Wildlife Society 41<sup>st</sup> Annual Meeting, Bangor, Maine, 2017.*

Peterson, T.S. Bats in the rotor zone...managing risk with acoustics. *Presented at the National Wind and Wildlife Coordinating Collaborative Wind and Wildlife Research Meeting XI, Broomfield, Colorado, 2016.*

Peterson, T.S. Bats offshore! WREN Webinar *Presented Online, 2016.*

Peterson, T.S. Managing risk to bats at offshore wind projects: Applying Lessons Learned from Onshore. *Presented at the Northeast Bat Working Group, South Portland, Maine, 2015.*

Peterson, T.S., S. Pelletier. Bats Offshore...Results of a long-term regional acoustic study. *Poster Presentation at the American Wind Energy Association Offshore WindPower 2015, Baltimore, Maryland, 2015.*

## Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

Peterson, T.S., S. Pelletier, S. Boyden, L. Wight, and K. Watrous. Tracking bats on the Maine coast using nanotags. *Presented at the Northeast Natural History Conference, Springfield, Massachusetts, 2015.*

Peterson, T.S. Northern long-eared bats and potential impacts on wind projects in New England. *Maine Ocean & Wind Industry Initiative Webinar Presented Online, 2015.*

Peterson, T.S., S. Pelletier, S. Boyden, L. Wight, and K. Watrous. Tracking bats offshore using nanotag technology – a pilot study in the Gulf of Maine. *Presented at the Energy Ocean International Conference, Atlantic City, New Jersey, 2014.*

Peterson, T.S., S. Pelletier, S. Boyden, L. Wight, and K. Watrous. Where, When, and Why are Bats Offshore...and What are the Implications for Offshore Wind Energy? *Presented at the Northeast Fish and Wildlife Conference, Portland, Maine, 2014.*

Peterson, T.S., S. Boucher, and L. Berube. The aerosphere as wildlife habitat – managing risk. *Presented at the Northeastern Association of Fish and Wildlife Agencies, Portland, Maine, 2014.*

Hildt, S., and T. Peterson. Surveying the damage: tools and techniques. *Invited Presentation at the NRDA Short Course, University of Massachusetts, 2014.*

Pelletier, S.K., and T.S. Peterson. Wind Power & Bats Offshore—What are the risks? A current understanding of offshore bat activity. *Presented at the American Wind Energy Association Offshore WindPower 2013, Providence, Rhode Island, 2013.*

Peterson, T.S., S. Boyden, and K. Watrous. Comparison of automated and manual identification methods for acoustic bat survey datasets: implications for future protocols. *Poster Presentation at the Northeast Bat Working Group Meeting: Albany, New York, 2013.*

Pelletier, S.K., T. Peterson, S. Boyden, K. Watrous, and J. Perkins. Ongoing offshore acoustic bat research in the Atlantic and Great Lakes regions. *Poster Presentation at the Northeast Bat Working Group Meeting: Albany, New York, 2013.*

Peterson, T.S. A new look at bat activity and wind speed in the rotor zone. *Poster Presentation at the Northeast Bat Working Group Meeting: Carlisle, Pennsylvania, 2012.*

Peterson, T.S., J. Costa, K. Omland, and K. Watrous. Use of pre-construction acoustic bat data to design and forecast site-specific curtailment plans. *Poster Presentation at the NWCC Wind Wildlife Research Meeting IX: Denver, Colorado, 2012.*

Peterson, T.S., S.K. Pelletier, S.A. Boyden. Acoustic survey of offshore bat activity and migration in the Gulf of Maine. *Presentation at the Maine Chapter of the Wildlife Society Wind and Wildlife Meeting, Orono, Maine, 2011.*

Peterson, T.S. A Discussion of a suitable framework and scale for modeling and managing impacts to migratory bats at wind projects. *Presented at the NWCC Wind Wildlife Research Meeting VIII; Lakewood, Colorado, 2010.*

Peterson, T.S., K.S. Watrous, and S.K. Pelletier. Combining technologies to assess potential impacts to Mexican free-tailed bats in central Texas. *Poster presentation at the NWCC Wind Wildlife Research Meeting VIII, Lakewood, Colorado, 2010.*

## Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

Giumarro, G.J., K.S. Watrous, J.S. Johnson, T.S. Peterson, S.A. Boyden, and M.J. Lacki. Correlation of bat acoustic activity to bat mortality in the eastern United States: a broader understanding of seasonal and geographic trends in acoustic detection of tree-roosting bats. *Presented at the NWCC Wind Wildlife Research Meeting VIII, Lakewood, Colorado, 2010.*

Pelletier, S.K., G.C. Kendrick, T.S. Peterson, and A.J. Gravel. Atlantic offshore bird & bat pilot study: 2009 results. *Poster Presentation at the AWEA Offshore Energy Conference, Atlantic City, New Jersey, 2010.*

Pelletier, S.K., T.S. Peterson, and G.C. Kendrick. Understanding of the current knowledge of offshore wind and wildlife Issues. *Presented at the NWCC Wind Wildlife Research Meeting VIII; Lakewood, Colorado, 2010.*

Giumarro, G.J., K.S. Watrous, T.S. Peterson, S.A. Boyden, M.J. Lacki, and J.S. Johnson. Seasonal and geographic trends in acoustic detection of tree-roosting bats. *Presented at the Windpower Conference and Exhibition, Dallas, Texas, 2010.*

Giumarro, G., T.S. Peterson, C.W. Meinke, and S.K. Pelletier. Understanding risk to long-distance migratory bats in Canada using an ecological risk framework. *Presented at the CanWEA Environmental Assessment Siting Workshop, Halifax, Nova Scotia, 2009.*

Pelletier, S., G. Kendrick, G. Giumarro, T. Peterson, and A. Gravel. Gulf of Maine offshore bat and bird project. *Poster Presentation at AWEA Offshore Energy Conference; Boston, Massachusetts, 2009.*

Giumarro, G., J.S. Johnson, T.S. Peterson, K.S. Watrous, and S. Boyden. Summary of seasonal distribution of migratory tree bats in the northeastern United States using passive acoustic sampling. *Presented at the 1st International Symposium on Bat Migration, Berlin, Germany, 2009.*

Giumarro, G., S. Pelletier, K. Watrous, T. Peterson, and J. Johnson. Seasonal distribution of tree bats in the Northeast using passive acoustic sampling. *Poster Presentation at the Windpower Conference and Exhibition, Chicago, Illinois, 2009.*

Pelletier, S.K., C.W. Meinke, T.S. Peterson, and A.J. Gravel. Radar and acoustic bat surveys in pre and post-construction bird and bat mortality monitoring. *Poster Presentation at the AWEA Conference in Los Angeles, California, 2008.*

Pelletier, S.K., A.J. Gravel, and T.S. Peterson. Nocturnal avian flight heights relative to risk of collision with wind turbines. *Presented at the NWCC Wind Wildlife Research Meeting VII, Milwaukee, Wisconsin, 2008.*

Meinke, C.W., T.S. Peterson, J.P. Lortie, and S.K. Pelletier. Assessing risk to bats from wind facilities using the weight-of-evidence approach to ecological risk assessment. *Presentation at the joint meeting of the Northeast Bat Working Group and the Southeastern Bat Diversity Network, Blacksburg, Virginia, 2008.*

Lortie, J.P., G. Giumarro, R.D. Roy, and T.S. Peterson. Using ecological risk assessment to characterize risk to birds and bats at wind farms. *Presentation at the 14th Annual Conference of the Wildlife Society, Tucson, Arizona, 2007.*

Case No. 16-F-0062

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Jeromy Miceli

NextEra Energy Resources

700 Universe Blvd.

Juno Beach, FL 33408

1 **Q: Please state your name, employer, and business address.**

2 A: Jeromy Miceli, NextEra Energy Resources ("NextEra"), 700 Universe Boulevard,  
3 Juno Beach, FL 33408.

4 **Q: What is your position at NextEra?**

5 A: My position at NextEra is Principal Project Engineer. I manage internal and  
6 external engineering resources to support our wind fleet.

7 **Q: How long have you been employed with NextEra?**

8 A: I have been employed there for approximately 7 years.

9 **Q: Please describe your educational background and professional experience.**

10 A: I have over 12 years of experience in the development, design, and construction of  
11 wind projects, seven of which have been with NextEra. During that time, my  
12 responsibilities have included early stage project planning; management of  
13 engineering resources for detailed design of turbine foundations, transmission  
14 lines, substations, underground and overhead collector systems, switchyards, and  
15 SCADA systems; construction support and resource management; and project  
16 operational turnover. I have a Bachelor of Science, Chemical Engineering from the  
17 University of Illinois-Chicago; a Master of Science, Environmental Engineering from  
18 Northwestern University; and a Master of Science, Project Management, also from  
19 Northwestern University.

20 **Q: Please describe your current responsibilities at NextEra.**

21 A: In my current position I'm responsible for all engineering tasks associated with the  
22 development, design, and construction of wind projects. This includes the  
23 contracting of engineering resources (e.g., Engineers of Record for substations,  
24 transmission, etc.); scope definition for engineering tasks; management of these  
25 tasks to achieve NextEra's quality, schedule, and budget goals; coordination with  
26 external stakeholders (power purchase agreement holders, transmission owners,  
27 independent system operators, etc.) to ensure their design requirements are

captured and implemented; communication of engineering work product to NextEra's construction team; monitoring and supporting these construction teams as they execute the project; and support for the turnover of the completed project to our Operations team. In addition to these project-specific tasks, as a senior team member I'm also responsible for standards development, team mentoring, and management reporting.

**Q: What is the purpose and scope of your testimony in this proceeding?**

A: To confirm that NextEra has taken all prudent measures to ensure that our generating facility exists in harmony with the environment and land owners. My testimony replaces the testimony of Mark Thompson, which was submitted with the Application on November 29, 2017. Other than replacing the witness, I am not changing anything from Mr. Thompson's original testimony.

**Q: What portion(s) of the Application is your testimony sponsoring?**

A: Exhibits 5, 11, 12, 14, 34, 35.

**Q: Were these Exhibits, Application sections, or studies prepared by you or under your direction and supervision?**

A: Although they were prepared by Mr. Thompson or under his supervision, I am adopting them as my own as if they were prepared by me or under my supervision.

**Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.**

A: Yes. Sargent & Lundy Engineering, TRC Engineering, Kenney Geotechnical.

jeromy27@hotmail.com  
(847) 372-6034

6321 N. Wyndwood Dr.  
Crystal Lake, Illinois 60014

## **Professional Summary**

**Renewable Energy Professional** degreed in Project Management, with 12 years of experience in wind farm development, engineering, and construction. Proven history of executing successful projects across a wide range of scales and responsibilities – from project contributor to team leader. Subject matter expertise in wind project engineering, including civil works; geotechnical engineering and foundation design; underground and overhead electrical facilities design; and substation engineering. Possesses deep skills in project design and construction economics; material, labor and major equipment costs; construction contract terms and conditions; and project financing, with specific knowledge of these topics for wind energy projects. Broad knowledge of relevant industry issues, including transmission constraints and planning processes; project interconnection; energy markets; and avian, wetlands, and other major permitting issues.

## **Work History**

### **NextEra Energy Resources, Juno Beach, FL Project Engineering Manager**

**March, 2012 – Present**

Managed engineering support for the development and construction of over 20 wind energy projects, totaling over 2500 MW.

- Contracted and managed final collector system, transmission, substation, and switchyard design engineers to ensure on-time completion of IFC drawings and equipment specifications to support project procurement and construction schedules.
- Directed coordination between various stakeholders – including transmission owners, ISOs, off-takers, contractors, and design engineers – to ensure compliance with all project requirements.
- Provided extensive construction support, including facilitating regular meetings between design engineers and construction teams; directing responses to field RFIs; performing on-site inspections throughout construction to ensure compliance with project drawings and Owner specifications; and support for project commissioning and turnover to Operations.

Contributed to, and in many cases led, engineering process improvement initiatives.

- Lead the development of substation design standards documentation, as well as standard substation equipment specifications.
- Lead the development of standard substation protection and control philosophy and documentation.
- Was a key contributor to improving engineering processes by incorporating feedback from internal and external sources into design standards (i.e. integrating “Lessons Learned” into engineering process updates).
- Selected to participate as a mentee in corporate mentoring program.

### **Iberdrola Renewables, Inc., Portland, OR Project Engineer**

**2007 – March, 2012**

Managed engineering support for the development and construction of 5 wind energy projects, totaling 656 MW. Managed engineering support for an additional 6 wind energy projects in late-stage development, totaling 730 MW; and 10+ projects in early-stage development.

- Developed preliminary civil and electrical facilities layouts to support early- to late-stage project development functions, such as CapEx estimates, permitting studies, and construction bid processes. Implemented cost-based engineering and design standards that led to more robust preliminary designs, reducing budget contingencies and overall project development and construction costs. Managed and optimized pre-construction turbine micro-siting and field design review, thereby minimizing construction uncertainties and change orders.
- Contracted and managed final civil, electrical, and foundation design engineers, ensuring that IFC drawings and installation specifications met company standards, turbine OEM specifications, landowner and permitting commitments, and other project constraints.

- Contracted and managed a variety of project studies, including geotechnical evaluations, aerial photography and contour mapping, interference mapping (microwave beam path, DoD radar, FAA flight path), construction material and turbine component transportation studies, among others.
- Coordinated with transmission owners and ISOs/RTOs on interconnection specifications and schedules ensuring that equipment procurement and installation of interconnection facilities was consistent with utility practices and outage schedules.
- Provided construction contracting support resulting in successful negotiation of contract terms and conditions.
- Facilitated the procurement process by providing technical input on equipment purchases attaining best price and terms.
- Performed engineering due diligence on potential project acquisitions, including cost estimates and scopes of work to bring acquired projects up to company standards.
- Coordinated with – and at times managed – other project support groups, including Development, Land Management, Wind Resources, GIS, Permitting, and Construction.

**Cascade Water Services, Inc., Hicksville, NY**

**2002 - 2004**

**Manager of Technical Services**

2003 – 2004

**Technical Coordinator**

2002 – 2003

- Hired as sales/service representative for customers with industrial water use (heating, cooling, process water). Provided technical support to clients with water quality issues.
- Responsible for product formulation and product R&D.
- Recognized as industry regulatory compliance specialist.

## **Education**

**Northwestern University, Evanston, IL**

**M.S., Environmental Engineering, Dec. 2006**

**M.S., Project Management, Dec. 2006**

**University of Illinois at Chicago, Chicago, IL**

**B.S., Chemical Engineering, May 2001**

## **Professional Skills**

Professionally trained and certified in AutoCAD, Microsoft Project, and Primavera. Proficient in Word, Excel (including advanced programming), PowerPoint, ArcGIS, and Delorme XMap.

Case No. 16-F-0062

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Application of Eight Point Wind Energy Center for  
a Certificate under Article 10 of the Public Service Law

---

Case No. 16-F-0062

PRE-FILED TESTIMONY OF:

Kris Scornavacca

NextEra Energy Resources, LLC

700 Universe Blvd.

Juno Beach, FL 33408

**Q: Please state your name, employer, and business address.**

A: Kris Scornavacca, NextEra Energy Resources ("NextEra"), 700 Universe Boulevard, Juno Beach, FL 33408.

**Q: What is your position at NextEra?**

A: My position at NextEra is Project Director for Development. I lead the development of renewable energy projects.

**Q: How long have been employed with NextEra?**

A: I have been employed with NextEra for approximately 6.5 years.

**Q: Please describe your educational background and professional experience.**

A: I have over 3 years of experience managing assets as part of NextEra's Asset Management group where I held the position of Sr. Business Manager and was directly responsible for the general business affairs for a nuclear power plant, a wind energy center, and a portfolio of energy storage projects. Responsibilities included, but were not limited to, managing revenue, hedging, contracts, regulatory affairs, and all financial planning activities. Prior to those responsibilities, I spent approximately 2 years in NextEra's Internal Audit group managing projects related to NextEra's Asset Management, Gas Infrastructure, and Energy Trading groups. I am a licensed C.P.A. in the State of Florida and have approximately 8 additional years of experience performing audit and consulting services for various public and private enterprises in a wide range of industries. I have a Bachelor of Business Administration from Stetson University and a Master of Accounting from Florida Atlantic University.

**Q: Please describe your current responsibilities with NextEra Energy Resources.**

A: I am currently a Project Director in NextEra's renewables group and am responsible for developing new projects. My role includes responsibilities related to acquiring leases for sites, origination, permitting projects, and managing the development process until construction is complete and a new project is turned over to NextEra's Asset

1 Management group.

2 **Q: What is the purpose and scope of your testimony in this proceeding?**

3 A: I am the lead developer of the Eight Point Wind Energy Center and as such am familiar  
4 with nearly all aspects of the Project. I plan to demonstrate that the Applicant has  
5 complied with the Article 10 regulations and the Stipulations agreed to by several New  
6 York State agencies and the Towns of Greenwood and West Union. My testimony  
7 replaces the testimony of David G. Gil, which was submitted with the Application on  
8 November 29, 2017. Other than replacing the witness, I am not changing anything from  
9 Mr. Gil's original testimony.

10 **Q: What portion(s) of the Application is your testimony sponsoring?**

11 A: I am sponsoring the entire Application.

12 **Q: Were these Exhibits, Application sections, or studies prepared by you or under**  
13 **your direction and supervision?**

14 A: Although they were prepared by Mr. Gil or under his supervision, I am adopting them as  
15 my own as if they were prepared by me or under my supervision.

16 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies,**  
17 **publications, data or documents produced by persons other than yourself/your**  
18 **company? If so, please cite these sources.**

19 A: Yes, several companies, people and subject matter experts contributed to this Project's  
20 Application. As the developer for this Project, I relied upon subject matter experts both  
21 from NextEra and from consulting companies to provide studies, data and documents in  
22 order to fulfill the requirements of the Article 10 process.

## **Professional Experience-----**

### ***NextEra Energy Resources, Project Director (September 2017 – Current)***

- Responsible for the origination, development, and execution of new renewable energy projects through management of all aspects of the transaction process to ensure competitive and cost effective results
- Coordinate key deal functions such as financial feasibility analyses, land acquisition, technical engineering/design, legal review, permitting activities, and regulatory requirements
- Act as a liaison between internal and external specialists regarding procurement, contracting, permitting, and interconnection
- Negotiate agreements with customers, consultants and sub-contractors
- Foster relationships with customers, regulators, and members of the communities in which the Company is developing or intends to develop renewable energy projects

### ***NextEra Energy Resources, Senior Business Manager (September 2014 – September 2017)***

- Direct profit and loss responsibility for a \$1B premier merchant nuclear power plant, a \$200M merchant wind energy center, and a \$50M portfolio of merchant battery energy storage projects
- Primary responsibilities within a matrix organization included revenue and contract management, hedging activities, budgeting, forecasting, financial modeling, management financial reporting, asset financing activities, supported acquisitions, managed regulatory risk, and monitored all daily asset activities to optimize profitability
- Supported executive leadership in the development of strategic plans and prepared analyses and recommendations to improve asset profitability

### ***Nextera Energy, Inc., Internal Auditor, Energy Trading (August 2012 – September 2014)***

- Performed assigned audits primarily for the deregulated and energy trading entities
- Gathered financial, operational, and internal control information and applied various quantitative, qualitative, and statistical analyses to form an objective opinion on the adequacy of internal management control structures
- Prepared formal written reports used as the basis for the communication of audit findings to department leadership

### ***McGladrey LLP, Project Manager (January 2010 – August 2012)***

- Coordinated audits and quarterly reviews necessary for client 10K, 10Q, S-1, and S-4 filings
- Directly responsible for ensuring client accounting methods, financial statements, and disclosures were in accordance with GAAP, SEC reporting rules, and applicable Federal/State laws
- Prepared research related to technical accounting matters and prepared all aspects of client financial statements
- Supervised engagement teams and managed all aspects of planning and completing client engagements

### ***Daszkal Bolton LLP, Supervisor (August 2007 – December 2009)***

- Performed audit, review, and compilation procedures for public and private entities
- Performed due diligence procedures for public and private entities, including new debt and equity issuances, joint ventures, and securitizations
- Prepared all aspects of the Financial Statements for private entity clients

### ***Ernst & Young LLP, Staff Accountant (January 2006 – July 2007)***

- Performed audit and review procedures for public and private entities
- Performed audit procedures related to compliance with **2002 Sarbanes-Oxley Act**
- Performed due diligence procedures related to a billion dollar real property asset securitization

## **Professional Designations and Education-----**

- *Certified Public Accountant (C.P.A.), FL*
- *CFA Institute – Completed CFA Level 1*
- *Florida Atlantic University -- Master of Accounting*
- *Stetson University -- Bachelor of Business Administration*

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

---

**AFFIDAVIT**

STATE OF VIRGINIA       )  
  ) SS.:  
COUNTY OF FAIRFAX    )

Benjamin M. Doyle, being duly sworn, deposes and states:

1. I am the same Benjamin M. Doyle who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.



Benjamin M. Doyle

Sworn to before me this  
5th day of March, 2019



Notary Public

<p><b>YOU MEE KIM</b> NOTARY PUBLIC COMMONWEALTH OF VIRGINIA MY COMMISSION EXPIRES SEPT. 30, 2020 COMMISSION #7203324</p>
---

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Case 16-F-0062 -- Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

---

**AFFIDAVIT**

STATE OF MAINE

COUNTY OF KENNEBEC

Alan M. Wironen, being duly sworn, deposes and states:

1. I am the same Alan M. Wironen who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.



Alan M. Wironen

Sworn to before me this  
27<sup>th</sup> day of Feb., 2019

  
Notary Public

My Commission Expires March 04, 2019

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF Florida )  
 ) SS.:  
COUNTY OF Palm Beach )

Christopher Nunalee, being duly sworn, deposes and states:

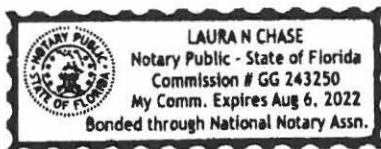
1. I am the same Christopher Nunalee who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

Chris Nunalee  
[NAME]

Sworn to before me this  
1<sup>st</sup> day of March 2019

Laura N Chase

Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

AFFIDAVIT

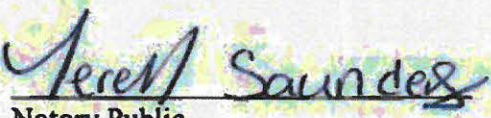
STATE OF Virginia )  
 ) SS.:  
COUNTY OF Landover )

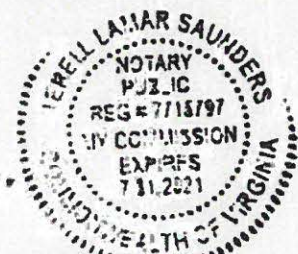
Dennis Jimeno, being duly sworn, deposes and states:

1. I am the same Dennis Jimeno who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Dennis Jimeno

Sworn to before me this  
5 day of March, 2019

  
Notary Public



My Commission Expires  
July 31, 2021

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF FLORIDA )  
 ) SS.:  
COUNTY OF PALM BEACH )

Hui Fung Francis Wang, being duly sworn, deposes and states:

1. I am the same Hui Fung Francis Wang who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

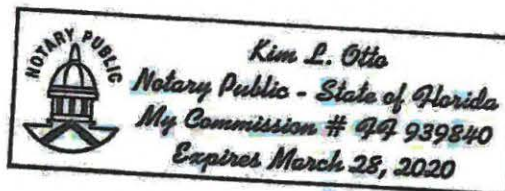


Hui Fung Francis Wang

Sworn to before me this  
8 day of March, 2019



Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF OHIO )  
 ) SS.:  
COUNTY OF WYANDOTA )

James Shea, being duly sworn, deposes and states:

1. I am the same James Shea who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

James T Shea  
[NAME]

Sworn to before me this  
4 day of March 2019

Charlotte DiFranco  
Notary Public



Charlotte DiFranco  
Resident Summit County  
Notary Public, State of Ohio  
My Commission Expires:  
28th day of January, 2023

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

**Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.**

# AFFIDAVIT


COMMONWEALTH OF VIRGINIA )  
 ) SS.:  
COUNTY OF FAIRFAX )

**Judah L. Rose, being duly sworn, deposes and states:**

1. I am the same Judah L. Rose who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Judah L. Rose

Sworn to before me this 1<sup>st</sup> day of March, 2019

  
Julia M. Kayne, Notary Public

#7505852  
Commission Expires January 31, 2022



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT


Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF Illinois )  
 ) SS.:  
COUNTY OF DuPage )

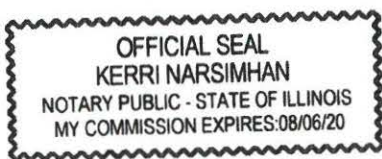
Kunhal V. Parikh, being duly sworn, deposes and states:

1. I am the same Kunhal V. Parikh who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Kunhal V. Parikh

Sworn to before me this  
1<sup>st</sup> day of March, 2019

  
Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

# AFFIDAVIT

STATE OF CONNECTICUT )  
 ) SS.:  
COUNTY OF HARTFORD )

Patrick J. Fennell, being duly sworn, deposes and states:

1. I am the same Patrick J. Fennell who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony. However, by way of clarification Ms. Kaitlyn Tingum of NextEra Energy prepared some of the calculations included in Exhibit 17. Specifically, Ms. Tingum prepared the estimates of the air pollutant emissions from fossil fuel power plants which would be displaced by operation of the Eight Point Wind Energy Center.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

Patrick J. Fennell  
Patrick J. Fennell

Sworn to before me this  
15<sup>th</sup> day of March 2019

Eileen G. Kearney  
Notary Public

**EILEEN R. KEARNEY**  
**NOTARY PUBLIC**  
MY COMMISSION EXPIRES MAY 31, 2012



2023

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT


Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

## AFFIDAVIT

STATE OF NEW JERSEY )  
 ) SS.:  
COUNTY OF BURLINGTON)

Petro W. Kazaniwsky, being duly sworn, deposes and states:

1. I am the same Petro W. Kazaniwsky who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Petro W. Kazaniwsky, P.E.

Sworn to before me this  
28<sup>th</sup> day of February 2019

Kathy J. Horn

Notary Public

KATHY J. HANN  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires 12/27/2019

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF New York )  
 ) SS.:  
COUNTY OF Monroe )

Steven D. Wilkinson, being duly sworn, deposes and states:

1. I am the same Steven D. Wilkinson who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.



Steven D Wilkinson

Sworn to before me this  
27<sup>th</sup> day of Feb, 2019



Notary Public

DONNA WHITCOMB  
Notary Public, State of New York  
Monroe County  
No. 01WH6031345  
Commission Expires 9/27/2021

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

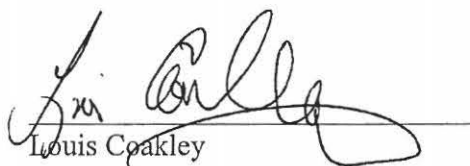
Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF FLORIDA            )  
  ) SS.:  
COUNTY OF PALM BEACH)

Louis Coakley, being duly sworn, deposes and states:

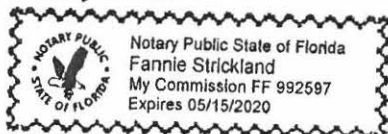
1. I am the same Louis Coakley who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Louis Coakley

Sworn to before me this  
6<sup>th</sup> day of March 2019



Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF NY )  
 ) SS.:  
COUNTY OF WARREN )

Joshua S. Brown, being duly sworn, deposes and states:

1. I am the same Joshua S. Brown who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017.
2. I do not have any revisions to said pre-filed testimony.
3. If I were asked the same questions today that are in the pre-filed testimony pertaining to the sections of the Article 10 Application that I sponsored, my answers would be the same as they appear in the pre-filed testimony.
4. I hereby request that my written testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
[NAME]

Sworn to before me this  
6<sup>th</sup> day of March 2019

  
Notary Public

MARGARET P. AMBUHL  
Notary Public, State of New York  
No. 01AM6082644  
Qualified in Saratoga County  
Commission Expires 11-04-2022

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

---

**REBUTTAL PANEL TESTIMONY  
ON BEHALF OF  
EIGHT POINT WIND, LLC**

Panel Witnesses:

Kris Scornavacca  
Jeromy Miceli  
Brian Schwabenbauer  
Judith Bartos  
Diane Reilly  
Timothy R. Sara  
Robert O’Neal  
Richard Lampeter  
Trevor S. Peterson

Dated: February 11, 2019

**INTRODUCTION**

**Q. Members of the Panel, please state your name, employer, business address, and the purpose of your testimony for the EPW Rebuttal Panel Testimony.**

A. Kris Scornavacca, NextEra Energy Resources (“NextEra”), 700 Universe Boulevard, Juno Beach, FL 33408.

**Q. Mr. Scornavacca, have you previously testified in this proceeding?**

A. No.

**Q. Please summarize your credentials.**

A. My position at NextEra is Project Director for Development. I lead the development of renewable energy projects. I have been employed there for approximately 6.5 years. I have over 3 years of experience managing assets as part of NextEra’s Asset Management group where I held the position of Sr. Business Manager and was directly responsible for the general business affairs for a nuclear power plant, a wind energy center, and a portfolio of energy storage projects. Responsibilities included, but were not limited to, managing revenue, hedging, contracts, regulatory affairs, and all financial planning activities. Prior to those responsibilities, I spent approximately 2 years in NextEra’s Internal Audit group managing projects related to NextEra’s Asset Management, Gas Infrastructure, and Energy Trading groups. I am a licensed C.P.A. in the State of Florida and have approximately 8 additional years of experience performing audit and consulting services for various public and private enterprises in a wide range of industries. I have a Bachelor of Business Administration from Stetson University and a Master of Accounting from Florida Atlantic University.

1 I am currently a Project Director in NextEra's renewables group and am  
2 responsible for developing new projects. My role includes responsibilities related to  
3 acquiring leases for sites, origination, permitting projects, and managing the development  
4 process until construction is complete and a new project is turned over to NextEra's Asset  
5 Management group.

6 **Q. What is your role on the Panel?**

7 A. I have overseen the preparation of the Panel testimony and provide overall  
8 recommendations herein.

9 **Q. Will the next member of the Panel introduce himself.**

10 A. Jeromy Miceli, NextEra, 700 Universe Boulevard, Juno Beach, FL 33408.

11 **Q. Mr. Miceli, have you previously testified in this proceeding?**

12 A. No.

13 **Q. Please summarize your credentials.**

14 A. My position at NextEra is Principal Project Engineer. I manage internal and external  
15 engineering resources to support our wind fleet. I have been employed there for  
16 approximately 7 years. I have over 12 years of experience in the development, design,  
17 and construction of wind projects, seven of which have been with NextEra. During that  
18 time, my responsibilities have included early stage project planning; management of  
19 engineering resources for detailed design of turbine foundations, transmission lines,  
20 substations, underground and overhead collector systems, switchyards, and SCADA  
21 systems; construction support and resource management; and project operational  
22 turnover. I have a Bachelor of Science, Chemical Engineering from the University of  
23 Illinois-Chicago; a Master of Science, Environmental Engineering from Northwestern

1 University; and a Master of Science, Project Management, also from Northwestern  
2 University.

3 In my current position I'm responsible for all engineering tasks associated with  
4 the development, design, and construction of wind projects. This includes the contracting  
5 of engineering resources (e.g., Engineers of Record for substations, transmission, etc.);  
6 scope definition for engineering tasks; management of these tasks to achieve NextEra's  
7 quality, schedule, and budget goals; coordination with external stakeholders (power  
8 purchase agreement holders, transmission owners, independent system operators, etc.) to  
9 ensure their design requirements are captured and implemented; communication of  
10 engineering work product to NextEra's construction team; monitoring and supporting  
11 these construction teams as they execute the project; and support for the turnover of the  
12 completed project to our Operations team. In addition to these project-specific tasks, as a  
13 senior team member I'm also responsible for standards development, team mentoring,  
14 and management reporting.

15 **Q. What is your role on the Panel?**

16 A. I have reviewed the engineering aspects of certain recommendations made in the pre-filed  
17 direct testimony of other parties in this case.

18 **Q. Will the next member of the Panel introduce himself?**

19 A. Brian J. Schwabenbauer, TRC Companies, Inc. ("TRC"), 225 Greenfield Parkway, Suite  
20 115, Liverpool, NY 13088.

21 **Q. Mr. Schwabenbauer, have you previously testified in this proceeding?**

22 A. Yes, my testimony and credentials were submitted as part of the Application.

23 **Q. What is your role on the Panel?**

1 A. I present analysis concerning environmental-related recommendations made in the pre-  
2 filed testimony filed by other parties in this case.

3 **Q. Will the next member of the Panel introduce herself?**

4 A. Judith Bartos, TRC, Wannalancit Mills, 650 Suffolk Street, Lowell, Massachusetts,  
5 01854.

6 **Q. Ms. Bartos, have you previously testified in this proceeding?**

7 A. Yes, my testimony and credentials were submitted as part of the Application.

8 **Q. What is your role on the Panel?**

9 A. I will address the direct testimony of Michael Lawrence and Associates and its Visual  
10 Quality and Scenic Character Impact Assessment Report (“CMORE Report”) filed on  
11 behalf of Citizens for Maintaining Our Rural Environment (“CMORE”). I will also  
12 address, with other members of the Panel, the recommendation by DPS Witness Davis to  
13 eliminate Turbine 15.

14 **Q. Will the next member of the Panel introduce herself?**

15 A. Diane E. Reilly, TRC, 14 Gabriel Drive, Augusta, ME 04330.

16 **Q. Ms. Reilly, have you previously testified in this proceeding?**

17 A. Yes, my testimony and credentials were submitted as part of the Application.

18 **Q. What is your role on the Panel?**

19 A. I will address certain recommendations made by DPS Witness Gadowski in his direct  
20 testimony concerning estimated indirect and induced estimates employment impacts  
21 during the operation of the Project.

22 **Q. Will the next member of the Panel introduce himself?**

23 A. Timothy R. Sara, TRC, 4425 Forbes Boulevard, Suite B, Lanham, MD 20707.

1 **Q. Mr. Sara, have you previously testified in this proceeding?**

2 A. Yes, my testimony and credentials were submitted as part of the Application.

3 **Q. What is your role on the Panel?**

4 A. I will respond to certain archeological-related comments made by DPS Witness Andrew  
5 Davis in his direct testimony.

6 **Q. Will the next member of the Panel introduce himself?**

7 A. Robert D. O’Neal, Epsilon Associates, Inc. (“Epsilon”), 3 Mill & Main Place, Suite 250,  
8 Maynard, MA 01754.

9 **Q. Mr. O’Neal, have you previously testified in this proceeding?**

10 A. Yes, my testimony and credentials were submitted as part of the Application.

11 **Q. What is your role on the Panel?**

12 A. To address arguments presented by DPS Witness Moreno in his direct testimony  
13 concerning the evaluation of sound levels from the Proposed Project and proposing noise  
14 limits for the operation of the Project without precedent in New York State.

15 **Q. Will the next member of the Panel introduce himself?**

16 A. Richard M. Lampeter, Epsilon, 3 Mill & Main Place, Suite 250, Maynard, MA 01754.

17 **Q. Mr. Lampeter, have you previously filed testimony in this proceeding?**

18 A. Yes, my testimony and credentials were submitted as part of the Application.

19 **Q. What is your role on the Panel?**

20 A. I will address assertions made by various witnesses concerning shadow flicker.

21 **Q. Will the next member of the Panel introduce himself.**

22 A. Trevor S. Peterson, Stantec Consulting Services, Inc., 30 Park Drive Topsham, ME  
23 04086.

1   **Q.    Have you previously submitted testimony in this proceeding?**

2    A.    Yes, my testimony and credentials were submitted as part of the Application.

3   **Q.    What is your role on the Panel?**

4    A.    I support the recommendations concerning studies of bat mortality and related testimony.

5   **Q.    Is the Panel sponsoring any exhibits to support your testimony?**

6    A.    Yes, we are sponsoring the following exhibits:

- 7           •   EPW Reb. Exh. 1: Eight Point Wind, LLC's ("EPW" or the "Applicant") responses to
- 8               DPS Staff interrogatories ("IRs") 4–7, 18–20, and 24;
- 9           •   EPW Reb. Exh. 2: EPW's response to DEC IR 1;
- 10          •   EPW Reb. Exh. 3: EPW's responses to GWU IRs 1–11;
- 11          •   EPW Reb. Exh. 4: a location map for the proposed fiber optic telecommunications
- 12               line to be built by Frontier Communications;
- 13          •   EPW Reb. Exh. 5: an analysis of the impacts that would result from shifting turbines
- 14               as suggested by DPS Witness Moreno;
- 15          •   EPW Reb. Exh. 6: *Estimating annoyance to calculated wind turbine shadow flicker is*
- 16               *improved when variables associated with wind turbine noise exposure are considered*
- 17               (Voicescu et al. 2016) and *Shadow Casting from Wind Turbines* (Danish Wind
- 18               Industry Assoc. 2003);
- 19          •   EPW Reb. Exh. 7: DPS Staff responses to EPW IRs 1–2;
- 20          •   EPW Reb. Exh. 8: *Comparison of Predicted and Measured Wind Farm Noise Levels*
- 21               *and Implications for Assessments of New Wind Farms* (Evans & Cooper 2012), a map
- 22               showing turbine locations shifted as suggested by DPS Witness Moreno, and *Effects*

1           *of Wind Turbine Noise on Self-Reported and Objective Measures of Sleep* (Michaud  
2           et al. 2016).

3   **Q.    Please summarize the overall scope of the Panel’s testimony.**

4   A.    We are responding to the direct testimony filed by the parties on January 22, 2019. First,  
5           we will discuss the recommendations from the direct testimony with which Eight Point  
6           Wind, LLC (“EPW” or the “Applicant”) agrees. Second, we will rebut the  
7           recommendations from the direct testimony with which EPW disagrees. Our responses  
8           are further organized by subject matter.

10           **MATTERS FOR WHICH THERE APPEARS TO BE AGREEMENT**

12   **A. Certificate Conditions**

13   **Q.    Does the Panel recommend that the Siting Board adopt the Certificate Conditions**  
14           **filed with the Secretary on January 16, 2019 (“Certificate Conditions”)?**

15   A.    Yes, except as may be specifically noted in this testimony in response to exceptions taken  
16           by a signatory party. The signatory parties developed the Certificate Conditions through  
17           extensive negotiation and they represent agreement on almost all issues in the case, aside  
18           from specific exceptions noted in the parties’ signature pages that we will address herein.

19   **Q.    What is the relevant wording on the signature page to which parties agreed?**

20   A.    The operative wording from the signature page was as follows:  
21           “The Signatory Parties hereby agree to support and recommend, in their respective  
22           testimonial filings and in all other subsequent pleadings to be filed in Case 16-F-0062,  
23           that the Presiding and Associate Examiners recommend to the New York State Board on

1 Electric Generation Siting and Environment (“Siting Board”) that the captioned Eight  
2 Point Wind Energy Center be granted a certificate of environmental compatibility and  
3 public need, under Article 10 of the New York Public Service Law, and that such  
4 certificate shall solely contain the attached Certificate Conditions, without change, and no  
5 other conditions, unless agreed to in writing by the applicable parties ,or unless a specific  
6 issue is noted on the signature page by a Signatory Party, in which case the parties shall  
7 be free to litigate that issue in this proceeding . . . .”  
8

9 **B. Fiber Optic Line**

10 **Q. Does the Panel agree with DPS Witness Mr. Andrew Davis’s recommendation that**  
11 **EPW provide a location map for the proposed fiber optic telecommunications line to**  
12 **be built by Frontier Communications (“Frontier”) (p. 5, ll. 13–14)?**

13 A. Yes. The requested map is attached hereto as EPW Reb. Exh. 4. The map was  
14 developed by TRC based on base mapping from Frontier and ground surveys of existing  
15 pole locations. Frontier informed EPW that Frontier’s facilities will be extended from  
16 existing Frontier infrastructure at the corner of King Hill Road and Christian Hollow  
17 West Union Road, and that those facilities will consist of new fiber optic cable  
18 connecting to existing New York State Electric & Gas distribution poles along King Hill  
19 Road to EPW’s substation and operations and management (“O&M”) building.  
20

21 **C. State Historic Preservation Office (“SHPO”)**

22 **Q. Please address the State Historic Preservation Office (“SHPO”) letter discussed by**  
23 **DPS Witness Davis (p. 12, ll. 16–19).**

1 A. In its letter dated January 31, 2018, SHPO requested an Avoidance Plan for two historic-  
2 period archaeological sites identified during the EPW Phase I archaeological survey; both  
3 sites are located in close proximity to Project development. The requested Avoidance  
4 Plan is in preparation and will be completed and submitted to SHPO, and eventually  
5 included as a Compliance Filing, once the full extent of the final Project design is  
6 completed to ensure both archaeological sites are avoided during construction as Mr.  
7 Davis recommends.

8 **Q. Do you agree with Mr. Davis that Certificate Condition 31 of the proposed January**  
9 **16, 2019 Certificate Conditions (“Certificate Conditions”) contains the appropriate**  
10 **cultural resource protection measures (p. 16, ll. 2–5)?**

11 A. Yes, we agree and agree with him that those measures should be adopted.

12 **Q. Do you agree with Mr. Davis that the Siting Board “. . . could reach appropriate**  
13 **findings as to the probable nature of impacts on cultural resources . . .” (p. 15, ll. 7–**  
14 **9)?**

15 A. Yes we do, based upon Exhibit 20 in the Application and the requirements of Certificate  
16 Condition 31.

17 **Q. Does Certificate Condition 31 also address Mr. Davis’s recommendation that any**  
18 **final consultations, pursuant to National Historic Preservation Act (“NHPA”) § 106**  
19 **or with SHPO in the absence of an NHPA § 106 review, be provided when available,**  
20 **that any requirements be addressed in compliance filings, and that appropriate**  
21 **construction measures be implemented (p. 15, ll. 9–19)?**

1 A. Yes, in Certificate Conditions 31(c) and (d). EPW is also amenable to revisions to that  
2 Certificate Condition if Mr. Davis believes they do not capture his entire  
3 recommendation.  
4

5 **D. Lighting**

6 **Q. DPS Witnesses Davis (p. 20, l. 9) and Rosenthal (p. 14, l. 1) recommend that lighting**  
7 **on turbines taller than 499 feet use red flashing lights at night and also support**  
8 **Certificate Condition 56(e) concerning the evaluation of radar-activated lighting.**  
9 **Do you agree?**

10 A. Yes. As stated in Exhibit 24 (p. 9) of the Application, a majority of the Project's  
11 proposed turbines are above 499 feet (152.1 meters), and therefore are required to be lit  
12 with two L-864 medium intensity flashing red lights on the nacelle. Any turbines in the  
13 Project under 499 feet (152.1 meters) will utilize at least one L-864 medium intensity  
14 flashing red light.

15 As to radar-activated lighting, Certificate Condition 56(e) requires EPW to  
16 include in the Compliance Filing an evaluation of this technology to determine its  
17 feasibility as a possible measure to minimize impacts. Certificate Condition 37(e)  
18 requires EPW to file with the Secretary to the Siting Board extensive information  
19 showing compliance with Federal Aviation Administration ("FAA") requirements  
20 including radar-activated lighting if it's being employed. DPS Staff did not take  
21 exception to either condition. It should be noted that the ability to use of Aircraft  
22 Detection Lighting System ("ADLS") is up to the discretion of the FAA and is evaluated  
23 on a case-by-case basis depending on proximity to airports, flight paths, aeronautical

1 safety concerns, and other considerations (*Obstruction Marking and Lighting Advisory*  
2 *Circular*, FAA (Aug. 17, 2018), p. 14-2,  
3 [https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_70\\_7460-1L\\_-](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_-_Obstuction_Marking_and_Lighting_-_Change_2.pdf)  
4 [\\_Obstuction\\_Marking\\_and\\_Lighting\\_-\\_Change\\_2.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_-_Obstuction_Marking_and_Lighting_-_Change_2.pdf)).

5 **Q. Please discuss Mr. Rosenthal’s testimony on infrared lighting (p. 14, ll. 6–9).**

6 A. Mr. Rosenthal states that an article (Voight et al. 2018) “identifies lighting closer to the  
7 infrared range as more ‘bat friendly.’ If the FAA permits such lighting options, I  
8 recommend their use.” The article he cites states the following: “We argue that bat-  
9 friendly lighting, such as in the infrared range, which is also promoted by pilots for safety  
10 reasons, or context-dependent operation of aviation lighting at wind turbines might  
11 present a way to mitigate the negative effects of ALAN on migratory bats at wind  
12 turbines. Yet, further studies testing light sources in the infrared wavelength spectrum,  
13 particularly on top of tall structures, need to be conducted before formulating general  
14 management recommendations.”

15 **Q. Do you agree with Mr. Rosenthal’s recommendation to use lighting “closer to the**  
16 **infrared range” if the FAA permits such options?**

17 A. There may be a misunderstanding here and additional clarification is needed. His  
18 recommendation is not included in the Certificate Conditions, which DPS Staff signed.  
19 Condition 56(e) does not address this recommendation. Nor did DPS Staff except to this  
20 Certificate Condition on its Signatory page that it executed. In addition, Mr. Rosenthal’s  
21 testimony appears to be inconsistent with the recommendations from Voight et al. The  
22 article suggests that infrared lighting is more bat friendly, but says nothing about lighting  
23 “closer to the infrared range.” Our understanding is that the light color closest to the

1 infrared range on the visible light spectrum is red, which the Project will be using. Thus,  
2 the red lights already proposed and which the FAA will require satisfies Mr. Rosenthal's  
3 recommendation.

4 FAA requirements prevent EPW from relying solely on infrared lights: red hazard  
5 lights are required by the FAA and infrared emitters are likely to be used in conjunction  
6 with the red lights (*Obstruction Marking and Lighting Advisory Circular*, FAA (Aug. 17,  
7 2018), p. 5-1,  
8 [https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_70\\_7460-1L\\_-](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_-_Obstruction_Marking_and_Lighting_-_Change_2.pdf)  
9 [\\_Obstruction\\_Marking\\_and\\_Lighting\\_-\\_Change\\_2.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_-_Obstruction_Marking_and_Lighting_-_Change_2.pdf); *Engineering Brief 86*, FAA (Dec.  
10 18, 2017), [https://www.faa.gov/airports/engineering/engineering\\_briefs/media/eb-98-](https://www.faa.gov/airports/engineering/engineering_briefs/media/eb-98-NVG.pdf)  
11 [NVG.pdf](https://www.faa.gov/airports/engineering/engineering_briefs/media/eb-98-NVG.pdf).

12 **Q. With respect to the collection substation and O&M building, Mr. Davis advises**  
13 **against the use of motion-detection lighting controls on facilities, that the exterior**  
14 **lighting design should be specified to avoid off-site lighting effects, and that lighting**  
15 **should have a degree of manual switching to reduce false operation (p. 27, l. 17–p.**  
16 **28, l. 9). Does EPW agree?**

17 **A.** Yes. Condition 56, which DPS Staff supports, addresses the Exterior Lighting Plan that  
18 will be submitted in the Compliance Filing and covers the recommendations by Mr.  
19 Davis on this subject.

20  
21 **E. Wetlands**

22 **Q. DPS Witness Rosenthal concludes that the Project “. . . reasonably avoids and**  
23 **minimizes impacts to wetlands from an ecological perspective,” and that Certificate**

1       **Conditions 35 and 36 address the mitigation of impacts (p. 14, l. 15–24). Do you**  
2       **agree?**

3     A.     Yes, those two Certificate Conditions address the requirement to file mitigation measures  
4           depending upon the wetlands proposed to be disturbed. It should be noted that the  
5           Applicant has not identified any state regulated freshwater wetlands (or their 100-foot  
6           adjacent areas) to be disturbed.

7  
8     **F. Agricultural Monitoring and Drain Tiles**

9     **Q.     Please address Department of Agriculture & Markets (“DAM”) Witness Mr.**  
10       **Michael Saviola’s recommendation concerning a separate agricultural monitor.**

11    A.     Mr. Saviola requests a designated, qualified, and full-time agricultural monitor for the  
12           Project with a degree or professional background in soil conservation, hydrology and/or  
13           agronomy—in addition to funding an independent Environmental Monitor (p. 10, ll. 19–  
14           20). According to Mr. Saviola, a monitor without such a degree or background, such as  
15           transportation engineer or terrestrial ecologist, cannot address the agricultural issues that  
16           will be encountered at the site.

17           EPW does not entirely disagree with Mr. Saviola concerning the required  
18           qualifications for the agricultural monitor. Certificate Condition 28, with which DAM  
19           took exception, requires the Certificate Holder to retain a qualified agricultural monitor,  
20           unless DAM agrees that one aptly qualified person can perform both the environmental  
21           and agricultural monitoring functions. EPW requests the option to find one person, rather  
22           than two, with both comprehensive environmental and agricultural degrees, background,  
23           and/or experience. This monitor will be qualified in agricultural monitoring along with

1 other environmental compliance skill sets needed to monitor construction of the Project,  
2 including assistance with drainage and top soil retention issues unique to construction  
3 operations in an agricultural setting. If EPW proposes to use one person to fill the role of  
4 environmental and agricultural monitor, the individual would have to be approved by  
5 DPS in consultation with DAM. Thus, under Certificate Condition 28, DAM would be  
6 able to veto EPW's proposed candidate. At this stage of Project development, it would  
7 be unreasonable to preempt EPW's ability to find one person with the requisite  
8 credentials and instead impose significant, unnecessary costs on the Project.

9 **Q. Mr. Saviola also recommends the filing of a Drain Tile Repair Plan (p. 9, l. 20). Do**  
10 **the Certificate Conditions require the filing of such a plan?**

11 A. No, they do not and DAM did not take exception to the Certificate Conditions for this  
12 issue on its signature page. Nevertheless, the Applicant agrees with Mr. Saviola that  
13 drain tiles broken during Project construction should be repaired as soon as practicable.  
14 If the environmental monitor and/or the agricultural monitor does not have the applicable  
15 drain tile repair experience required by the DAM Guidelines, the Applicant agrees to hire  
16 a local contractor experienced in drain tile installation.

17 Certificate Condition 127 requires the Applicant to plan, construct, and mitigate  
18 the Project consistent with the DAM *Guidelines for Agricultural Mitigation for Wind*  
19 *Power Projects*, dated April 19, 2018, to the maximum extent practicable. Within the  
20 guidelines is the advisement that all surface or subsurface drainage structures (including  
21 drainage tiles) damaged during construction shall be repaired to as close to  
22 preconstruction conditions as possible, unless said structures are to be removed as part of  
23 the project design. The Applicant commits that surface or subsurface drainage problems

1 resulting from construction of the Project, including damage to drain tiles, will be  
2 corrected with the appropriate mitigation as determined by agreement between EPW,  
3 DAM, and the affected landowner all the way through successful repair of the damaged  
4 tile.

5  
6 **G. Geotechnical Investigations**

7 **Q. Do you agree with DPS Witness Flaum's recommendation that EPW conduct**  
8 **geotechnical investigations prior to final design and construction of the Project to**  
9 **determine the corrosivity of soils in which Project components will be installed (p. 6,**  
10 **ll. 5–10)?**

11 **A.** We agree that investigating the corrosivity of soils is important for the Project; however,  
12 EPW has already conducted such investigations and determined that mitigation for  
13 corrosive soils is not necessary. Corrosive conditions have the potential to exist when  
14 chlorides concentrations are greater than 500 ppm or sulfates concentrations are greater  
15 than 2000 ppm. Lab testing on six samples from throughout the project area all show  
16 values of less than 50 ppm for sulfates and chlorides (Application Appendix 21-2, pp. 7–  
17 8). In other words, there is little to no potential for corrosive soils. EPW will, therefore,  
18 use uncoated rebar and normal Type I/II concrete for the Project.

19  
20 **H. Local Law Waivers**

21 **Q. Do you have any updates to provide in regard to the DPS Staff Policy Panel's**  
22 **testimony on local law waivers (p. 14, ll. 3–6)?**

1 A. Yes. On January 25, 2019, EPW submitted a supplemental response to GWU-1 (EPW  
2 Reb. Exh. 3, pp. 1–6). There, EPW requested that the Siting Board elect not to apply the  
3 construction time limitation provisions in the local wind energy facility laws of the  
4 Towns of Greenwood and West Union. Instead, EPW asked that the Siting Board impose  
5 the construction time limits in Certificate Condition 121, which the Towns supported.  
6 No signatory party, including the Towns and DPS Staff, excepted to this Certificate  
7 Condition.

8  
9 **I. Collection Line Siting**

10 **Q. Do you agree with DAM Witness Saviola’s recommendation for collection line**  
11 **routing to avoid impacts to the existing tree farm (p. 7, ll. 12–17)?**

12 A. Yes, the proposed collection line will not cut through the tree farm at a diagonal but  
13 instead will route around the tree farm, to the maximum extent practicable.

14  
15 **MATTERS FOR WHICH THERE ARE DISAGREEMENTS**

16  
17 **A. Shadow Flicker**

18 **Q. Can you identify the section of the Application and appendices that address shadow**  
19 **flicker?**

20 A. Shadow flicker is addressed in Exhibit 24 (Visual Impacts) and discussed in detail in  
21 Appendix 15-1 (Eight Point Wind Energy Center Shadow Flicker Report).

22 **Q. Can you briefly explain what shadow flicker is and how it is predicted?**

1 A. With respect to wind turbines, shadow flicker can be defined as an intermittent change in  
2 the intensity of light in a given area resulting from the operation of a wind turbine due to  
3 its interaction with the sun. While indoors, an observer experiences changes in the  
4 brightness of the room as shadows cast from the wind turbine blades briefly pass by  
5 windows as the blades rotate. In order for this to occur, the turbine must be operating  
6 (i.e., the wind is blowing at a certain speed), the sun must be shining, the wind turbine  
7 blades must be oriented towards the subject structure, and the window must be within the  
8 shadow region of the wind turbine; otherwise, there is no shadow flicker.

9 For this Application, shadow flicker was modeled using a software package called  
10 WindPRO. Using the Shadow module within WindPRO, worst-case shadow flicker in  
11 the area surrounding the wind turbines is calculated based on data inputs including:  
12 location of the wind turbines, location of discrete modeling points, wind turbine  
13 dimensions, flicker calculation limits, and terrain data. Based on these data, the model is  
14 able to incorporate the appropriate sun angle and maximum daily sunlight for this latitude  
15 into the calculations. The WindPRO Shadow module can be further refined by  
16 incorporating sunshine probabilities and wind turbine operational estimates by wind  
17 direction over the course of a year to calculate expected annual durations of shadow  
18 flicker.

19 **Q. Are there any limitations in the model that predicts flicker?**

20 A. Yes, very important ones. If obstacles are incorporated into the analysis, the model is  
21 only able to calculate reductions for obstacles that screen the entire wind turbine.  
22 Reduction in the visibility of a portion of the blade cannot be accounted for in the model.  
23 Obstacles were not incorporated in the model for the Application. Therefore, the model

1 may overpredict daily minutes of shadow flicker for this reason and others that we will  
2 discuss below when we address the testimony of various witnesses.

3 **Q. Does the Panel support the shadow flicker mitigation measures contained in the**  
4 **Certificate Conditions?**

5 A. Yes. The mitigation program included in Certificate Condition 30 minimizes shadow  
6 flicker to the maximum extent practicable.

7 **Q. What does proposed Certificate Condition 30 provide?**

8 A. It states as follows:

9 Shadow Flicker Impacts Analysis, Control, Minimization and Mitigation Plan. Shadow  
10 flicker caused by wind turbine operations shall be limited to a maximum of 30 hours  
11 annually at any nonparticipating residential receptor. The Shadow Flicker Impacts  
12 Minimization and Mitigation Plan shall include:

- 13 a) Updated modeling analysis of realistic and receptor-specific predicted flicker  
14 based on the as built coordinates of the wind turbines;
- 15 b) A protocol for monitoring operational conditions and potential flicker exposure at  
16 the wind turbine locations identified in the updated analysis, based on  
17 meteorological conditions;
- 18 c) Details of the shadow detection and prevention technology, if available and  
19 determined by the Certificate Holder to be feasible, that will be adopted for real-  
20 time meteorological monitoring and operational control of turbines;
- 21 d) Potential temporary turbine shutdowns during periods that produce flicker that  
22 exceed the aforementioned 30 hours maximum for two consecutive years and for

1 which complaints are received from the affected residence existing as of the date  
2 this Article 10 certificate is issued; and

3 e) Shielding or blocking measures (such as landscape plantings and window  
4 treatments) for receptor locations that submit complaints for exposures that are  
5 not subject to the 30-hour annual limit.

6 Details of flicker control, minimization and mitigation measures shall be indicated on  
7 final design drawings and standards, and site plans as appropriate.

8 **1. Pre-Filed Testimony of Donald Lewis**

9 **Q. Is CMORE Witness Mr. Donald Lewis's statement that his son's "residence is not**  
10 **listed on the shadow flicker report submitted by Eight Point Wind project" correct**  
11 **(p. 3, ll. 16–17)?**

12 A. Donald Lewis is referring to his son's residence. It is unclear from the testimony the  
13 name of his son or the address to which he refers. CMORE Witness Julia Lewis, who  
14 resides at the same address as Donald, makes similar statements in her testimony but also  
15 lacks the clarification needed to ascertain the exact location. Testimony was submitted  
16 by CMORE Witness Michael Lewis, and we presume that he is the son of Donald and  
17 Julia Lewis. An address for a property is provided in Michael's testimony: 651 Saunders  
18 Road, West Union, NY (p. 2, l. 16). This is different than the address provided as  
19 Michael's home address in his testimony, which is 605 County Route 67, Arkport, NY.  
20 Michael states in his testimony that he has a barn and small cabin surrounded by the wind  
21 project (p. 2, l. 9). It appears to be a seasonal home as there do not appear to be overhead  
22 electric lines running to the structures. The property with the barn and cabin was not

included in the shadow flicker analysis. The shadow flicker modeling has been revised to include the barn and cabin on the property. The modeling results are presented below:

Modeling Receptor	Participation Status	Coordinates UTM NAD83 Zone 18N		Expected Annual Shadow Flicker	Maximum Daily Shadow Flicker
		X (m)	Y (m)	(HH:MM/year)	(HH:MM/day)
Michael Lewis Cabin	Non- Participating	280004.84	4655356.01	20:29	0:43

The expected annual duration of shadow flicker at this receptor is 20 hours, 29 minutes, which meets the Applicant's proposed shadow flicker design goal of 30 hours per year.

**Q. Is Mr. Donald Lewis's statement that his son's "residence is approximately 1,200 feet from #27 turbine" correct (p. 3, ll. 15–16)?**

A. Donald Lewis is referring to his son's cabin, discussed above. The statement is incorrect. The approximate center point of the structure on Michael Lewis' property added to the shadow flicker modeling analysis is approximately 2,205 feet from the closest wind turbine, Turbine 27.

## **2. Pre-Filed Testimony of Karl Schneider**

**Q. Does CMORE Witness Mr. Karl Schneider accurately characterize shadow flicker at his residence when he states, "Flicker would occur every day the turbine turns, exceeding the legal limit" (p. 3, ll. 9–10)?**

A. That statement is incorrect. Karl Schneider's residence is receptor #400. Shadow flicker is predicted to occur on a maximum of 99 days during the year even under the overly conservative, unrealistic assumptions that the (1) the blades are always oriented to create

shadow flicker (they are not); (2) the wind turbines are always spinning (i.e., never any no-wind or low-wind conditions or an outage for maintenance or repair); (3) the sun is always shining during the day (meaning that cloudy, rainy, and snowy days do not exist); and (4) there are no obstacles that would block potential flicker. All four unrealistic assumptions contribute to estimating unrealistic minutes and days of potential shadow flicker. The expected annual hourly estimate of shadow flicker forecast by the model, however, accounts for blade orientation, sun, and wind and therefore is the far more accurate predictor of shadow flicker. The expected annual duration of shadow flicker at this receptor is 18 hours, 20 minutes, which meets the Applicant's proposed shadow flicker design goal of 30 hours per year.

### **3. Pre-Filed Testimony of Mark Bauman**

**Q. Is CMORE Witness Mr. Mark Bauman's statement that "[a] receptor number was not assigned to our residence" correct (p. 3, l. 2)?**

**A.** That statement is correct. The shadow flicker modeling has been revised to include this home at 565 Saunders Road, Rexville, NY. The modeling results are presented below:

Modeling Receptor	Participation Status	Coordinates		Expected Annual	Maximum Daily
		UTM NAD83 Zone 18N		Shadow Flicker	Shadow Flicker
		X (m)	Y (m)	(HH:MM/year)	(HH:MM/day)
Mark & Tracy Bauman Residence	Non-Participating	280015.81	4656012.35	9:03	0:23

The expected annual duration of shadow flicker at this receptor is 9 hours, 3 minutes which meets the Applicant's proposed shadow flicker design goal of 30 hours per year.

### **4. Pre-Filed Testimony of Andrew Davis**

1 **Q. Can you provide more context on DPS Witness Davis’s statement that “[e]xposure**  
2 **to wind turbine shadow flicker has been characterized as an annoyance where it**  
3 **exceeds 30 minutes daily or 30 hours annually” (p. 8, ll. 6–8)?**

4 A. Mr. Davis relies upon a 2012 study cited in his testimony. Based upon that study, Mr.  
5 Davis recommends adding—to the agreed-upon 30-hour annual limit—an additional  
6 shadow flicker limit of 30 minutes per day at any non-participating landowner residence.

7 **Q. Do you agree with this recommendation?**

8 A. No we do not. The 30-hour limit was adopted by the Siting Board in the Cassadaga  
9 decision. In that case, DPS Staff recommended the 30-hour limit and, as we explain  
10 below, no new science has developed supporting a 30-minute daily standard. The 2012  
11 study cited by Mr. Davis testimony in this case recommends 30 minutes per day of  
12 shadow flicker as part of its recommended zoning criteria. It is, however, based simply  
13 upon two references to support that conclusion, and both references essentially refer back  
14 to one 1999 study and the 2002 German guideline.

15 The first reference is *Wind Turbine Health Impact Study: Report of Independent*  
16 *Expert Panel* (Ellenbogen et al. 2012). This study is basically a literature review and  
17 cites the 2002 German guideline. The German guideline, however, was based upon a  
18 laboratory experiment, not actual field conditions experienced at one or more wind  
19 turbine sites. Secondly, the Ellenbogen et al. 2012 study cited by Mr. Davis references a  
20 slide from a presentation Mr. Lampeter gave in 2011 on shadow flicker regulations. This  
21 slide merely presented the range in regulations with respect to time limitations. The  
22 concluding slide of the presentation identifies only 30 hours per year of expected shadow  
23 flicker as the typical criteria used in evaluating shadow flicker impacts. Importantly, as it

1       pertains to Mr. Davis’s recommendation, the German 30-minute daily guideline has been  
2       called into question.

3               According to a Danish Wind Industry Association (“DWIA”) report (EPW Reb.  
4       Exh. 6, pp. 15–16), a German court has ruled that 30 hours of actual shadow flicker per  
5       year was acceptable at a neighbor’s property. According to the DWIA report, the court  
6       declared that a German guideline of only 8 hours per year was invalid. By upholding the  
7       validity of the 30-hour annual limit, the court effectively allowed more than 30 minutes  
8       of flicker per day.

9       **Q.   Have other jurisdictions in the US adopted the 30-hour annual standard?**

10      A.   Yes. A 30-hour per year limit has been adopted by Connecticut, Maine, and Ohio. In  
11      Connecticut, Section 16-50j-95(c) of the Regulations of Connecticut State Agencies  
12      limits the annual duration of shadow flicker to 30 hours at any off-site occupied structure  
13      (Conn. Agencies Regs. § 16-50j-95(c), available at  
14      [http://www.ct.gov/csc/lib/csc/regulations/final\\_clean\\_copy\\_wind\\_regs.pdf](http://www.ct.gov/csc/lib/csc/regulations/final_clean_copy_wind_regs.pdf)). In Maine,  
15      annual shadow flicker at a non-participated occupied building is limited to 30 hours per  
16      year (06-096 Me. Code R. Chap. 382 § 4, available at  
17      <https://www.maine.gov/sos/cec/rules/06/chaps06.htm>). Similarly, Ohio limits shadow  
18      flicker at non-participating residences within 1,000 feet of any turbine to 30 hours per  
19      year (*Ohio Wind Power FAQ*, Ohio Power Siting Bd. (Dec. 13, 2018),  
20      <https://www.opsb.ohio.gov/information/ohio-wind-power-faq/>). Furthermore, Mr. Davis  
21      testified in the Cassadaga proceeding that the applicant there “. . . propose[d] an annual  
22      exposure threshold of greater than 30 hours total exposure annually as warranting  
23      mitigation for non-participating residential exposure, based on past practice in other

operational New York State wind projects, and reference[d] to guidance in other jurisdictions . . .” (Case 14-F-0490, *Cassadaga Wind LLC*, Evidentiary Hearing Tr. (July 18, 2017), p. 814, ll. 9–15).

**Q. Have there been any more recent studies on shadow flicker since the Ellenbogen et al. 2012 study relied upon by Mr. Davis?**

A. There is a 2016 paper which examined shadow flicker and annoyance: *Estimating annoyance to calculated wind turbine shadow flicker is improved when variables associated with wind turbine noise exposure are considered* (EPW Reb. Exh. 6, pp. 1–14). When evaluated alone, without any other variable, the study concluded that shadow flicker’s predictive strength for estimating high annoyance was only approximately 10%. Therefore, it is an inadequate model for estimating high annoyance to shadow flicker and no recommendation for a 30-minute daily limit was made in the paper. The findings presented in this paper are from the Community Noise and Health Study conducted by Health Canada (“Health Canada Study”).

**Q. Have there been any more recent peer reviewed studies on shadow flicker and annoyance?**

A. Not since the Health Canada Study. Thus, since the issuance of the Cassadaga 30-hour annual decision, based upon the DPS Staff recommendation, there have been no additional peer-reviewed studies except for the aforementioned Health Canada Study.

**Q. Would employing a 30-minute daily standard for shadow flicker be unreasonable?**

A. Yes. As discussed, the current knowledge regarding shadow flicker and annoyance does not support this limit. As noted above, according to the Health Canada Study, the modeled maximum daily minutes of shadow flicker represents an inadequate model for

1 estimating high annoyance to shadow flicker and no recommendation for a 30-minute  
2 daily limit was made in the paper. The model also has severe limitations when it  
3 estimates daily minutes of shadow flicker: That is because the calculation assumes that  
4 the wind is blowing during all daylight hours at a speed sufficient for the turbines to spin,  
5 that every day of the year is sunny (no cloudy days, rainy days or snowy days), and that  
6 the turbines are always oriented properly to the subject structure 100% of the time. As  
7 the actual daily minutes of flicker are dependent on the meteorological factors listed  
8 above, the actual amount of daily flicker may be less than what is modeled as worst-case.  
9 The expected annual hourly estimate of shadow flicker forecast by the model, however,  
10 accounts for blade orientation, sun, and wind and therefore is the far more accurate  
11 predictor of shadow flicker. Accordingly, the 30-hour annual limit should remain the  
12 standard for this Project.

13  
14 **B. Undergrounding Collection Lines at Marsh Creek**

15 **Q. DPS Witness Davis recommends that EPW continue to consider underground**  
16 **installation for the collection lines at Marsh Creek and NYS Route 248 (p. 22, ll. 7–**  
17 **11). Does the Panel agree?**

18 **A.** No, EPW fully considered undergrounding this portion of the collection lines and  
19 determined that it is not feasible. As EPW explained in its response to DPS Staff IR 7  
20 (EPW Reb. Exh. 1, p. 4), EPW considered an HDD for crossing the NYS-regulated  
21 Wetland FA-W-04; however, it became apparent that an overhead span of this area is  
22 preferred from engineering, constructability, and environmental impact perspectives. No  
23 overhead poles (or construction work space/activities) are proposed to be located in the

1 NYS-regulated wetland, and the temporary construction workspace associated with the  
2 overhead line will likely be less than that for an HDD in this area. This location was also  
3 chosen as it is collocated with an existing overhead electric distribution line north of  
4 Route 248, and therefore provides existing access to the proposed work space. In  
5 addition, the proposed crossing location does not cross the larger open water area south  
6 of Route 248. Instead, it crosses in the narrower eastern extent of the wetland south of  
7 Route 248 that can be characterized as Scrub-shrub wetland, and therefore has less visual  
8 quality compared to the open water area. Furthermore, this portion of the collection lines  
9 is required regardless of whether Turbine 15 is eliminated, as Mr. Davis recommends and  
10 we address in detail below.

11  
12 **C. Visual Impacts**

13 **Q. Please briefly explain the Visual Impact Assessment (“VIA”) prepared for the**  
14 **Application?**

15 A. The VIA was prepared in accordance with the 16 NYCRR § 1001.24 of the Article 10  
16 regulations and Study Stipulation 24. The VIA described the character of the area, such  
17 as water resources, physiography and landform, types of roads, land use patterns, hamlets  
18 and villages, and the presence of farms. Viewshed mapping depicts the extent of Project  
19 visibility throughout the Visual Study Area (“VSA”) that the CMORE Report used as  
20 guidance for its fieldwork. Photosimulations in the VIA demonstrate the predicted  
21 appearance of the Project as viewed from several viewpoints representing a range of  
22 landscape settings, distance zones, and landscape positions occurring throughout the 10-  
23 mile VSA. Ratings of Project contrast and narrative descriptions provide discussion and

1 analysis of the nature of visibility, user groups, and likely viewers of the associated  
2 facilities of the Project from the viewpoints, and characterization of impacts are provided.

3 **Q. Did DPS Witness Davis address the adequacy of the VIA and whether it**  
4 **satisfactorily characterized the potential visual changes that the Project might**  
5 **create?**

6 A. Yes. Mr. Davis iterates the various components and aspects addressed and presented in  
7 the VIA that was performed according to Article 10 Exhibit 24 requirements and states  
8 that there were no inadequacies (p. 16, l. 19–p. 17, l. 13). He later states that the VIA  
9 presents a reasonable depiction and characterization of the likely appearance of the  
10 proposed generating facility from a range of viewpoints (p. 21, ll. 4–7).

11 **Q. Did CMORE Witness Lawrence perform a VIA in accordance with the Article 10**  
12 **regulations?**

13 A. No he did not. He instead selected only certain elements of the VIA to address.

14 **Q. Please comment on his treatment of the distance zones within the VSA of the VIA?**

15 A. The CMORE Report focuses on viewpoints within approximate one-mile distance to the  
16 turbines within the VSA (CMORE Report, p. 6). Mr. Lawrence's approach is therefore  
17 heavily weighted on Project visibility where it is already known that the most prominent  
18 views of the turbines are likely to occur, i.e., closer to turbines. That is not disputed and  
19 is already acknowledged and presented in the VIA. The CMORE Report addresses 39  
20 square miles of the VSA, but fails to fully acknowledge the remaining approximate 350  
21 square miles of the VSA where visual impacts are not the same as at the one-mile range.  
22 The CMORE Report also ignores the many areas that will not see the Project due to siting  
23 and topography within the truncated VSA as well as going beyond in the 5-mile and 10-

1 mile distance zones used in the VIA. Thus, the CMORE Report exaggerates the potential  
2 visual impacts of the Project.

3 **Q. What was the approach taken in the VIA with respect to Viewer Groups?**

4 A. Viewer Groups are broad categories that characterize the kinds of viewing circumstances  
5 that a person can find themselves in, such as a resident, commuter, visitor, or through-  
6 traveler who might experience long or short duration views or someone who is in a  
7 location that is in a high use area versus one that is less populated or less frequently  
8 visited. The CMORE Report states that the VIA “suggests that the area’s landscape has  
9 less value because few people live and travel here” (CMORE Report, p. 141). This  
10 certainly is not the case. The Article 10 regulations require applicants to consider the  
11 level of viewer exposure, frequency of viewers or relative numbers, residential areas, or  
12 high-volume roadways (16 NYCRR § 1001.24(b)(4)(iii)). The VIA, therefore, made  
13 those distinctions and presented viewshed analyses results and simulations from remote,  
14 less populated areas as well as areas where more of the population is expected to be  
15 present, and indicated those differences when discussing results and compiling tables.

16 **Q. What is the intent of the simulations presented in the VIA?**

17 A. The Article 10 regulations (16 NYCRR §§ 1001.24(a)(6) and (b)(4)(i)) require  
18 representative or typical views from unobstructed or direct line of sight views. 16  
19 NYCRR § 1001.24(a)(7) requires an applicant to show the nature and degree of visual  
20 change. It is the intent of the VIA photosimulations to show a sample of typical views of  
21 the Project in various public locations and circumstances, and to collectively show the  
22 compositional contrasting elements of the Project against the existing landscape. For  
23 example, the simulations show grouped turbines, single turbines, houses, roads, and trees

1 within the representative landscape similarity zones (“LSZ”) of water, agricultural open  
2 land, forested land, ridge and valley locations, and developed land. As is the goal in a  
3 VIA, the physical attributes of the Project are evaluated against landscape qualities, such  
4 as the size of a turbine and how it appears near a house, hillside, or farm, or to give  
5 perspective on how turbines appear with forested areas in view. The VIA accomplishes  
6 this. And, as such, the simulations are also a companion to fulfill the contrast rating  
7 assessment requirement per 16 NYCRR § 1001.24(b)(7).

8 **Q. The CMORE Report claims that the VIA does not adequately describe the beauty of**  
9 **the area (CMORE Report, p. 5). Do you agree?**

10 A. No. The Article 10 regulations effectively require that a VIA present subjective  
11 information in an objective way. Our VIA provides descriptions with succinct and un-  
12 embellished, data-driven text similar to professional academic reports and therefore  
13 provides neutral descriptions and reduces the input of opinionated language. The VIA  
14 acknowledges the prevailing rural aspects of the region in Section 3 and in simulation  
15 descriptions. The VIA’s discussions, photos, and simulations show and state the rural  
16 aspects of the study area, which include rolling hills, ridges, farms, open fields and  
17 meadows, and forest groups, as well as nineteenth and twentieth century farmsteads  
18 throughout.

19 With that said, the CMORE Report asserts that the turbines will “transform the  
20 character of almost every open space in the area” (CMORE Report, p. 141). That is not  
21 correct. The CMORE Report neglects to acknowledge or address that there will be many  
22 places where the turbines will not appear dominant in the view and many areas where  
23 there are no views predicted. As summarized in VIA Tables 5 and 6 for ground-to-blade

1 tip viewshed analysis that includes the presence of trees, approximately 75% of the land  
2 area within the New York portion of the 5-mile VSA and 86% of the New York land area  
3 within 10-mile VSA are predicted to not have views of the Project. The CMORE Report  
4 argues that the Project “will drastically diminish existing landscape beauty in fore,  
5 middleground and distant perspectives that area citizens and visitors currently enjoy”  
6 (CMORE Report, p. 141). But that will not be the case. Attractive pastoral and rural  
7 landscapes will still exist and be appreciated and enjoyed in the region.

8 **Q. Were there opportunities for other interested parties to provide input on viewpoint**  
9 **locations for simulations or inclusion of visual resources that were not listed?**

10 A. Yes. With respect to the identification of important areas, 16 NYCRR § 1001.24  
11 provides a specific listing of visual resources to inventory and results of the findings are  
12 tabulated in VIA Table 4. To appeal to local areas of importance that may have been  
13 missed in initial searches (scenic or otherwise) (and as required by 16 NYCRR §  
14 1001.24(b)(4)), stakeholders and municipalities were contacted for an opportunity to  
15 suggest additional candidate locations for photosimulations or append additional visual  
16 resources of concern in their community that they felt would warrant further  
17 consideration. An interim report prior to a final submittal was produced for the  
18 stakeholders that contained the visual resources inventory, the viewshed analysis results,  
19 the candidate simulation photos, and discussion of preliminary results. Replies were  
20 received and addressed (VIA Attachment 3).

21 **Q. Are there other aspects to consider when assessing scenic landscapes?**

22 A. Yes. The CMORE Report argues landscape beauty will be reduced because of turbine  
23 views in landscapes and will drastically diminish existing landscape beauty in

1 foreground, middle ground, and distant perspectives that area citizens and visitors  
2 currently enjoy (CMORE Report, p. 141). This infers that the expectation of all viewers  
3 in the study area will have a negative perception of the Project. Evaluating scenic  
4 quality, however, is not just about “scenic quality” in isolation; it is also one’s collective  
5 experiences temporally within that scenic quality and that all experiences will not be  
6 negative. Some people enjoy viewing wind turbines. And there are other aspects that  
7 rely less on turbines being big and visible, and more on how people’s continued use in  
8 recreational areas will be affected. Will use of the land, such as for recreational  
9 activities, cease and no longer exist? The answer is no; it is highly unlikely that people  
10 will abandon plans to use places such as Rock Creek State Forest, Greenwood State  
11 Forest, and Turkey Ridge State Forest; visit historic sites in the northwest region; fish at  
12 the Marsh Creek Fishing Easements; hunt; discontinue snowmobiling in the wintertime;  
13 drive the local Sky Tour Scenic Drive; or use the Tall Pines ATV Park.

14 **Q. The CMORE Report states that the Project will irrevocably change the scenic**  
15 **quality of the area (CMORE Report, p. 3). Can you provide a response to this?**

16 A. To say that the Project will irrevocably change the scenic quality is another exaggeration.  
17 Irrevocable means impossible to change, reverse, or be recovered. As we have explained  
18 herein, people, in our opinion, will still enjoy the scenic quality of the area during the life  
19 of the project. At the end of a wind turbine project’s service life, there is the ability to  
20 return the landscape to the state it was in before the turbines were first installed. When  
21 repowering or extending service life of a wind farm is no longer an option,  
22 decommissioning represents a final alternative and a decommissioning process has been  
23 agreed to in the Certificate Conditions. There is decommissioning of wind farms

1 occurring now. The first offshore wind farm started in 1991 in Denmark was  
2 decommissioned in 2017. Per 16 NYCRR § 1001.29, the Applicant has prepared a Site  
3 Restoration and Decommissioning Plan that outlines the methods and means to  
4 decommission the Project. Aesthetically, after decommissioning, the facility site should  
5 be in as close to pre-construction condition as practicable. That will be accomplished by  
6 removing all above-ground facilities and restoring the areas where facilities have been  
7 removed. This ensures the preservation of agricultural uses and that other future uses can  
8 go forward unimpeded, and no remnants of turbine structures will be visible.

9 **Q. The CMORE Report claims that the Project structures will change the landscape**  
10 **character from rural to industrial (CMORE Report, p. 141). Do you agree?**

11 A. No. This characterization is very inaccurate. Common perceptions of industrial sites or  
12 industrially zoned segments of municipalities obviously look very different than what is  
13 presented in the VIA's simulations. The word "industrial" commonly refers to land use  
14 related to parcels with densely placed manufacturing components consisting of brick,  
15 concrete, and steel facilities; possible large or multiple buildings with high amounts of  
16 reflective glass; possible increased large truck and vehicular traffic, backup truck audio  
17 alerts, disposal sites, presence of outdoor equipment and fuel storage, scrap yards or  
18 stockpiles, maintenance staging areas; possible additions of smoke, gas, odor, and dust;  
19 perimeter chain-link barbed wire security fencing, bright signs, large areas of asphalt, or  
20 parking lots with parked cars in urban type environments or over contiguous designated  
21 acreage. The VIA simulations simply show that this is not the case. Rural pastoral  
22 environments are still retained with the ability to still enjoy scenic quality, quiet places,

wildlife and fishing, and other recreations activities that the region has to offer that perhaps one would be restricted from in genuinely industrial environments.

**Q. Can you describe the use of the contrast rating in the VIA?**

A. As noted earlier, contrast rating of simulations was incorporated in the VIA per 16 NYCRR § 1001.24(b)(7). What the ratings analysis and results show are a range of perceived contrasts detecting visual change from the Project that is derived from various viewing distances, LSZs, and viewer circumstances across the 10-mile VSA. The CMORE Report asserts that the contrast rating was performed in order to predict how people will respond or react to the Project (CMORE Report, p. 5). This is an incorrect assumption. There is nothing in the Article 10 regulations stating that the rating exercise is performed to project public opinion nor was that intention stated in the VIA. The rating system and those developed by the agencies listed in Section 9 of the VIA are designed to guide a subjective process (visual observation) objectively by using a developed, structured, straightforward common language that involves the assessment and discussion of compositional elements such as contrast, form, line, shape, etc. for a set of existing and proposed conditions simulations. A rating system is applied from low to high with the intent to detect visual change and provide consistent comparisons between or across subject matter. The rating form is not meant to be a public survey in lieu of an actual public survey, or to assess or appeal to how one feels about the development at a more emotional level.

**Q. Can you explain how the contrast rating results were presented?**

A. The individual ratings applied for each category for each panelist can be found in Attachment 4 of the VIA. However, a summary table in the VIA (Table 13) is provided

1 to consolidate many data points and shows averages of the panelist ratings. It is  
2 important to note that these averages in the table are of panelist opinion regarding  
3 contrasts for one viewpoint. Mean deviations were calculated to observe the level of  
4 variance between the panelists within each simulation evaluation. By presenting rating  
5 results of one set of before and after pictures independent of other sites, one gains a sense  
6 of how compatible the opinions are for each viewpoint. Results show consistency  
7 between the panelists. By further looking at the ratings of all simulations in the Project  
8 area, one is then able to highlight those sites with higher or lower perceived contrasts or  
9 note trends as they are relative to each other.

10 **Q. The CMORE Report claims that the three-person panel evaluating the Project**  
11 **based on the VIA simulations were not fully informed because they were not**  
12 **provided enough comprehensive information (CMORE Report, p. 141). Do you**  
13 **agree?**

14 A. No. The intention of the ratings evaluation is to detect or rate the visual change that a  
15 project introduces. There are no New York Scenic Areas of Statewide Significance in the  
16 area that would warrant attention. There are also no unique areas in the VSA as defined  
17 by those federal agencies listed in Section 9 of the VIA. Uniqueness as defined by the  
18 US Department of Agriculture Forest Service's *Landscape Aesthetics: A Handbook for*  
19 *Scenery Management* ("Handbook 701"), and how it is generally approached in the VIA,  
20 includes those areas such as "a landscape that is unequalled, very rare, or uncommon"  
21 (Handbook 701, pp. 1-15, Glossary-6, available at  
22 [http://blmwyomingvisual.anl.gov/docs/Landscape%20Aesthetics%20\(AH-701\).pdf](http://blmwyomingvisual.anl.gov/docs/Landscape%20Aesthetics%20(AH-701).pdf)). As  
23 noted throughout Handbook 701, unique areas are those such as the presence of water or

1 cultural features, high vertical relief as expressed in prominent cliffs, spires, or massive  
2 rock outcrops, while also considering previous human alteration (Handbook 701, pp. 1-4,  
3 1-5, 1-16). The US Department of the Interior Bureau of Land Management (“BLM”)  
4 places scenic features that appear to be unique or rare within a physiographic region  
5 under a category called “Scarcity,” and these also do not occur in the region (*Manual H-*  
6 *8410-1 – Visual Resource Inventory*, p. 8, available at  
7 [https://www.blm.gov/sites/blm.gov/files/program\\_recreation\\_visual%20resource%20man](https://www.blm.gov/sites/blm.gov/files/program_recreation_visual%20resource%20management_quick%20link_%20BLM%20Handbook%20H-8410-1%2C%20Visual%20Resource%20Inventory.pdf)  
8 [agement\\_quick%20link\\_%20BLM%20Handbook%20H-8410-](https://www.blm.gov/sites/blm.gov/files/program_recreation_visual%20resource%20management_quick%20link_%20BLM%20Handbook%20H-8410-1%2C%20Visual%20Resource%20Inventory.pdf)  
9 [1%2C%20Visual%20Resource%20Inventory.pdf](https://www.blm.gov/sites/blm.gov/files/program_recreation_visual%20resource%20management_quick%20link_%20BLM%20Handbook%20H-8410-1%2C%20Visual%20Resource%20Inventory.pdf)). Those VIA simulations provided to  
10 the panel show typical views found in the VSA: rolling topography with field-forest-farm  
11 rural road landscape patterns and clearer unobstructed line-of-sight views to the Project.  
12 Areas within the one-mile range evaluated by the panel such as VPs 3, 8, 12, 17, and 19  
13 were grouped as having the highest Part 1 Project contrasts and that is noted in the VIA.  
14 This makes sense as those viewers would be more proximal to turbines and views are not  
15 blocked by trees or topography.

16 In response to Mr. Lawrence’s testimony and as a visual expert, Ms. Bartos  
17 conducted contrast ratings of six of the CMORE Report simulations as a comparable  
18 check on consistency for CMORE viewpoints that were also less than a mile and  
19 typically had more than one turbine visible: V-03-C, V-04, V-08-C, V-19, V-35, and V-  
20 38-B. Ms. Bartos further requested that a landscape architect evaluate the same six  
21 simulations. The VIA simulations (VPs 3, 8, 12, 17, 19) ranged from 19 to 24 total  
22 points. The CMORE simulations ranged from 17 to 22 total points. The ratings applied  
23 to the CMORE Report simulations came out as similar or nearly the same. That is, the

(total) Part 1 values show the same trend of values that are placed at the upper end of the collective contrast range as were the five viewpoints in the VIA listed above. That is because the perceived contrasts of form, line, texture, color, project scale and spatial dominance, broken horizon line, and visual acuity can be regarded as very similar in all 11 simulations. The turbines have the same kind of “look” in the landscape from one to another due to proximity and very similar land patterns in the area. Thus, the VIA simulations that were rated and found to have similar ratings as the CMORE Report samples are in the very types of LSZs and distance zones that the CMORE Report chose to focus on. This indicates that the VIA panelists were indeed fully informed since the comparable results can answer that which the CMORE Report attempts to demonstrate. It became clear after six CMORE simulations that ratings would continue to be comparable because views were showing consistent similarities and contrasts between each other. Overall then, the additional CMORE simulations, with the limited focus of the roughly one-mile landscape patterns and views, do not add additional data that would change the outcome of what is already concluded in the VIA.

**Q. Why are there some viewpoints in the VIA with contrast ratings that are lower than others?**

A. Because the VIA treats the whole VSA and not just one mile, there will be other rating values shown in VIA Table 13 that are moderate or not as high because it is perceived that the Project in other viewing environments and distances is not as dominant in the view and/or perceived contrasts are less. The CMORE Report chose not to address viewpoints outside of roughly one mile.

1 **Q. Does the CMORE Report provide new information that would alter the results of**  
2 **the VIA?**

3 A. No. While submitting more views of similar distances in similar landscape patterns as  
4 that of the VIA, the CMORE Report does not add new information that would change the  
5 conclusions drawn in the VIA. Acreages of visibility that can be seen on maps are noted  
6 in the VIA and would not change with the current turbine alignment. The qualitative  
7 size, scale, and look of the turbines against the landscape patterns and houses found  
8 within a one-mile range are similar in the VIA and CMORE Report. Contrast ratings of  
9 the simulations in the VIA and in a sample of the CMORE Report result in similar value  
10 ranges.

11 **Q. How was siting used to minimize impacts for the Project?**

12 A. Siting is a form of mitigation and has been used to reduce visual impacts across the VSA  
13 and also for state resources such as Rock Creek State Forest and Greenwood State Forest  
14 (listed in VIA Table 4). EPW considered turbine models, numbers, and groupings during  
15 site design while also balancing other constraints such as wetlands, setbacks, streams, and  
16 landowner preferences. During the turbine array development, EPW developed voluntary  
17 agreements with willing landowners and neighbors that would allow for the construction  
18 and operation of all Project components. A substantial participation effort on the part of  
19 the landowners and neighbors was obtained prior to development of a preliminary site  
20 layout, and coordination with landowners has helped define the current layout of Project  
21 components. All preliminary layout efforts were reviewed with the landowners, Project  
22 engineering and environmental consultants, and state agencies to minimize impacts to

1 identified site resources and meet landowner requirements to the maximum extent  
2 practicable.

3 **Q. Did Ms. Bartos have any impressions of turbine siting during her site visit?**

4 A. Yes. Ms. Bartos has seen or worked on wind projects where final siting consisted of  
5 placing all turbines on the highest ridge lined up like soldiers in a row or densely grouped  
6 turbines closely spaced together. Similar row siting can be found along highways. As  
7 she was driving through the VSA up, down, and around the rolling hills, her opinion is  
8 that the proposed Project siting works very well in this area. There were many isolated,  
9 open, and forested areas where the terrain would prevent views of turbines, and turbines  
10 that are visible are isolated, or isolated in small groupings, typically at varying distances  
11 from viewer groups and not dominant or obtrusive such as the “soldier design.”  
12

13 **D. Eliminating Turbine 15**

14 **Q. DPS Witness Davis recommends that EPW consider eliminating Turbine 15 due to**  
15 **its position above and in the background of an open water area of Marsh Creek**  
16 **(a.k.a. Cryder Creek), “creating a stark visual contrast with the existing landscape,**  
17 **due to the height of the turbine and the repetitive rotational motion of the turbine**  
18 **blades above a predominantly static landscape” (p. 22, ll. 11–18). Mr. Davis also**  
19 **asserts that recreational opportunities (i.e., public fishing rights) exist on the**  
20 **western shoreline of the open water area, facing Turbine 15, and access thereto is**  
21 **provided from roadside areas along Route 248. Does EPW agree with this request**  
22 **and the rationale behind it?**

1 A. No, we do not. Eliminating any turbine, including Turbine 15, would reduce the energy  
2 output of the Project, minimize EPW's ability to help New York State meet its renewable  
3 energy goals, negatively impact EPW's ability to comply with its New York State Energy  
4 Research and Development Authority ("NYSERDA") renewable energy credit ("REC")  
5 contract, and reduce payments to the host landowner.

6 The Project's turbine siting process involved a myriad of constraints analyses,  
7 including, but not limited to, wind speed, setbacks from residences, parcel boundaries and  
8 roads, communication systems and radar, engineering and constructability considerations,  
9 environmental and agricultural impact minimization, and input from the participating  
10 landowner hosting Turbine 15. EPW examined whether it could move Turbine 15 far  
11 enough away from the open water area to eliminate the perceived visual impact, but it is  
12 unable to do so without exceeding allowable setbacks from adjacent parcel boundaries  
13 and nearby noise receptors (residences).

14 Mr. Davis is concerned about views of Turbine 15 from the western bank of  
15 Marsh Creek, which is adjacent to Route 248. The New York State Department of  
16 Environmental Conservation ("NYSDEC") has Public Fishing Rights ("PFR") over some  
17 portions of Marsh Creek. This PFR can be characterized as mostly open water that runs  
18 adjacent to and abuts Route 248. Much of the western bank is narrow, but there are  
19 wider sections of emergent marsh adjacent to the highway at the very northern end of the  
20 PFR boundary and a wider area of scrub-shrub wetland at the southern end. A majority  
21 of the highway is bordered by a metal guardrail on the eastern side of the road (i.e.,  
22 between Route 248 and Marsh Creek). The western bank of Marsh Creek is roughly 25  
23 feet from pavement for most of its length. On the west side of the bank there are no

1 formal parking areas or signage along the western bank or on Route 248, except as  
2 described below.

3 Route 248 can be described as a double yellow line highway with very narrow  
4 shoulders and is one of the major travel corridors in the Project area. Vehicle speeds are  
5 fairly fast because of the highway class designation, and traffic is more numerous along  
6 this roadway than the area's county or local roads (as indicated in VIA Table 1, which  
7 shows annual average daily traffic counts of various roadways in the VSA). The eastern  
8 bank of Marsh Creek is accessed by using Keenan Road, an unimproved woods road that  
9 is visible from Route 248 and about 500 feet away. The PFR on the eastern bank is  
10 generally at the bottom of a large forested hill that has line-of-sight views to Route 248.  
11 Fishing on the eastern bank will not have a view of Turbine 15: it is located behind  
12 viewers and visibility is physically blocked by the hill. There are 11 other PFR sections  
13 of Marsh Creek that have smaller areas of open water as one heads southwest away from  
14 the Project in areas such as Whitesville and Paynesville. Views are not expected at those  
15 other 11 PFRs. Accordingly, the PFR on the western bank of Marsh Creek is neither a  
16 unique area of visual significance, nor protected in any manner by federal or state  
17 regulation.

18 Although public fishing rights have been established by the NYSDEC for the  
19 western side of the open water area along Route 248, the environment in the area is  
20 hardly one which would be impacted by the presence of the turbine. In addition to the  
21 heavy, high-speed traffic along Route 248, public access to this side of the open water  
22 area for recreation is very limited and is inherently hazardous to the public, raising  
23 serious safety issues. Mr. Davis references Viewpoint 17 of the VIA, which corresponds

1 generally with a road-side pull-off along Route 248. This roadside pull-off appears to be  
2 the only area available for parking vehicles on the western side of the open water area,  
3 and it is on the opposite side of Route 248. This roadside pull-off can only safely support  
4 parking for one to two light vehicles, which inherently limits the amount of viewers in the  
5 area. Upon parking, people intending to use the western side of the open water area for  
6 recreation opportunities must cross the heavily traveled Route 248 in a blind spot on the  
7 road, and in a location where vehicles are sometimes traveling at high speeds. After  
8 crossing the road, people using the area for recreation must then subsequently step over a  
9 guardrail to access the shoreline; there is no trail system or designed access in place to  
10 support the PFR. Moreover, upon crossing Route 248 and traversing the guardrail,  
11 fishing areas are limited due to the dense scrub-shrub vegetation and steep slopes  
12 (essentially the road shoulder) along the western side of the open water area. These  
13 obstacles, along with roadside drainage culverts discharging into the open water area,  
14 also reduce the ability for persons to traverse the shoreline of the open water area freely,  
15 further reducing the area's appeal as a destination for readily available public use and  
16 access. As such, the western bank of this PFR is hardly tranquil, safe, or all that  
17 accessible. Indeed, there is a private road through the woods beyond the haphazard car  
18 pull-off described above that appears to be used by people seeking to fish that leads to the  
19 southeastern and eastern sides of Marsh Creek. It is the eastern bank, where there is no  
20 view of Turbine 15, that is safer and more accessible for fishing.

21 Upon further investigation of the status of Marsh Creek, EPW contacted the  
22 Whitesville Rod and Gun Club (the "Club"). According to one of their officers, the Club  
23 owns 23 acres of Marsh Creek that is along Route 248 and appears to be the subject area

1 of Mr. Davis's testimony. Thus, the area is private property. In order to gain access to  
2 the Creek to fish, a person must join the Club, which provides them a place to safely park  
3 (not at the roadside pull-off described above) and a key to unlock a gate in order to access  
4 the Creek to fish. No trespassing signs are posted around the Creek. Thus, access by the  
5 general public to Marsh Creek at that location is even more restricted than initially  
6 thought.

7 For reasons outlined above, the Applicant believes that public use and roadside  
8 recreation opportunities are limited on the western side of the open water area—at the  
9 very least, the Applicant does not believe that the existing conditions are such that  
10 visibility of Turbine 15 will greatly affect the enjoyment of recreational activities by most  
11 users. As such, the removal of Turbine 15 is not necessary.

12  
13 **E. Post-Construction Bat Monitoring**

14 **Q. DEC Witnesses Ms. Denoncour and Mr. Herzog state that three years of post-**  
15 **construction monitoring is a minimum number of years to properly characterize**  
16 **impacts to bat species and that Certificate Condition 57 should be modified to allow**  
17 **for a minimum of three years of monitoring (p. 29, l. 576–p. 30, l. 579). Does EPW**  
18 **agree with this recommendation?**

19 A. No. NYSDEC's June 2016 *Guidelines for Conducting Bird and Bat Studies at*  
20 *Commercial Wind Energy Projects* (the "Guidelines") established guidelines regarding  
21 how to monitor and characterize bat resources at on-shore wind energy facilities. The  
22 Guidelines recommend a minimum of two years for standard post-construction

1 monitoring, and say additional monitoring may be needed for expanded post-construction  
2 monitoring.

3 As the Project will be permitted to directly or indirectly impact state-listed  
4 threatened and endangered species, post-construction monitoring must be properly  
5 designed to evaluate mortality and displacement impacts. Per Certificate Condition 57,  
6 the Applicant agreed to more than the minimum two years: post-construction monitoring  
7 would be conducted for three non-consecutive years during the first ten years of  
8 operation of the Project at intervals to be determined in the Post-Construction Avian and  
9 Bat Monitoring and Adaptive Management Plan.

10 Of note, in the Cassadaga proceeding, the Siting Board approved post-  
11 construction monitoring for a minimum period of at least two years but no more than  
12 three years. EPW has agreed to three years of post-construction monitoring in Certificate  
13 Condition 57, and believes that is sufficient and will fulfill the intent of the monitoring  
14 and management plan.

15 Therefore, EPW requests that it be allowed to proceed with the plan for an initial  
16 two years post-construction monitoring, and after the results of the first two years are  
17 completed, the Applicant will coordinate with the NYSDEC to see whether a third year is  
18 necessary. This decision would be based on the results from the first two years of  
19 monitoring, and specifically whether the results are in line with other wind energy  
20 projects in the region, industry standards, and best professional judgement as to whether a  
21 third year of monitoring is warranted.

1 **Q. Ms. Denoncour and Mr. Herzog appear to recommend a letter of credit be required**  
2 **to support EPW's ability to manage, maintain, and conduct the monitoring (p. 30, ll.**  
3 **579–581). Can you address that?**

4 A. Yes. Certificate Condition 33(f) requires the Certificate Holder to provide a letter of  
5 credit evidencing its ability to fund and execute the management, maintenance, and  
6 monitoring for the Project.

7 **Q. DPS Witness Rosenthal recommends that “. . . a plan to evaluate bat populations,**  
8 **minimization efforts and potential modifications to [Project] operations every five**  
9 **years be developed by the Applicant and be submitted for Department Staff's**  
10 **review and acceptance as required by Proposed Certificate Condition 57 . . .” (p. 12,**  
11 **ll. 11–18). Does Certificate Condition 57 contain this requirement?**

12 A. Some clarification is needed here. There is no requirement in Certificate Condition 57  
13 for new bat studies to be done every five years, which would mean six new studies,  
14 presumably covering bat populations throughout New York. The DPS Staff signature  
15 page did not except to Certificate Condition 57 either.

16 Certificate Conditions 32–34, which address the Net Conservation Benefit Plan,  
17 including curtailment, specifically provide that there shall not be any further curtailment  
18 required. Certificate Condition 33(j) specifically prohibits any further curtailment or  
19 mitigation related to migratory tree bats. DPS Staff did not except to those conditions  
20 either.

21 Accordingly, on advice of counsel, Mr. Rosenthal's recommendations should not  
22 be considered or adopted as they are precluded by the DPS Staff's agreement on the  
23 Certificate Conditions. However, EPW will be monitoring the evolution of wind turbine

1 technologies concerning mitigation of bat mortality. EPW would agree to a new  
2 certificate condition whereby the Certificate Holder would file reports with the Secretary  
3 in years 8, 16, and 25 explaining whether cost-effective technologies (meaning, as Mr.  
4 Rosenthal testifies at page 13, line 3, technologies that shall not be any costlier than the  
5 curtailment regime contained in Certificate Conditions 32–34) have become  
6 commercially available, and are feasible and cost effective to install. We will agree to  
7 meet and consult with DPS Staff on the contents of each report.

8  
9 **F. Well Setbacks**

10 **Q. DPS Witness Flaum requests that the required setback of turbines from public and**  
11 **private drinking water wells should be 1.5 times the turbine height (wells to be**  
12 **considered non-residential structures) (p. 12, ll. 18–20). Likewise, Mr. Flaum also**  
13 **asserts that during the final design phase of the Project, the Certificate Holder**  
14 **should contact all well owners/operators within the Project Area in order to survey**  
15 **the exact locations of the wells (p. 14, ll. 1–4). Please address these**  
16 **recommendations.**

17 **A.** Perhaps there is a misunderstanding, but while Mr. Flaum states that he disagrees,  
18 partially, with Certificate Condition 52 (p. 12, l. 3), DPS Staff did not except to that  
19 condition on its signatory page. Certificate Condition 52 explicitly states that no turbines  
20 shall be sited within 100 feet of an existing water supply well, not 1.5 times the turbine  
21 height, or approximately 897 feet depending upon the turbine size.

22 In order to properly locate public and private drinking water well locations  
23 throughout the Project Area, well location information was obtained through Freedom of

1 Information Law (“FOIL”) requests to the NYSDEC, as stated in Exhibit 23(a)(4) of the  
2 Application. NYSDEC’s response to the FOIL request included both public and private  
3 well completion reports for the Towns of West Union and Greenwood (included in  
4 Appendix 23-1 of the Application). Through review of the well completion reports, well  
5 locations were approximated based on the coordinates provided and/or local addresses of  
6 residences associated with the well.

7 From review of the data, it does not appear that any public water wells are located  
8 within the vicinity of the Project. The private water well data indicated that one private  
9 water well may be located within 1.5 times the turbine height of a proposed turbine  
10 (Turbine 17), at a distance of approximately 250 feet—based on the coordinates in the  
11 NYSDEC data. However, all the evidence indicates that there is no well at that location  
12 based upon conversations with the landowner, observations on the ground during  
13 surveys, and data from a drone survey conducted in late 2018/early 2019. Indeed, the  
14 apparently mistaken NYSDEC coordinates are approximately 1,900 feet from the nearest  
15 residence, a very unlikely location for a private well to serve a residence, and the  
16 landowner has confirmed there is no well in that location. Other than that one apparently  
17 inaccurately mapped well, no other private water wells are mapped within 1.5 times the  
18 turbine height.

19 It should also be noted that the EPW team has collectively spent thousands of  
20 hours on the ground in the Project Area conducting numerous surveys, and have not  
21 identified any water wells within 1.5 times the height of a turbine, nor are there any wells  
22 within 100 feet of any Project infrastructure. In addition to this on-the-ground work, the

1 Applicant has also utilized LiDAR and conducted a drone survey and those surveys have  
2 not identified any water wells within 1.5 times turbine height.

3 It is the Applicant's opinion that because all turbines are sited at least 1,400 feet  
4 from a residence, mapped NYSDEC public and private well location data indicates that  
5 no water wells are located within 1.5 times the turbine height of the proposed turbine  
6 locations, and site survey work has indicated no wells within 100 feet of Project  
7 infrastructure, impacts on water wells are extremely unlikely.

8 Currently there are no Project components proposed to be located within 100 feet  
9 of a water well. However, if that becomes necessary, Certificate Condition 52 states that  
10 in instances where environmental or engineering constraints require siting of any other  
11 Project facilities within 100 feet of an existing water supply well, the Certificate Holder  
12 shall have a qualified third-party perform pre- and post-construction testing of the  
13 potability of water to ensure the wells are not impacted. Should the third-party conclude  
14 that Project construction had an impact on the potability of a water well based on the test  
15 results, the Certificate Holder shall assure that a new water well will be constructed, more  
16 than 100 feet from a collection line or access road.

17  
18 **G. Socioeconomic Analysis**

19 **Q. Does the Panel agree with DPS Witness Gadowski's recommendations regarding**  
20 **estimated indirect and induced employment impacts during the operation of the**  
21 **Project?**

22 **A. No.**

23 **Q. What are indirect and induced employment estimates?**

1 A. Indirect employment arises from business-to-business spending, but excludes jobs  
2 directly created by the Applicant, such as construction jobs and permanent operational  
3 jobs. Induced employment occurs as money is recirculated through household spending  
4 patterns, generating additional local economic activity. The Siting Board's regulations  
5 require an Article 10 applicant to evaluate indirect and induced job estimates as outlined  
6 in 16 NYCRR § 1001.27. Accordingly, Study Stipulation 27 included the same  
7 requirement.

8 **Q. What is Mr. Gadomski's recommendation in this case?**

9 A. Despite the requirements of the regulations and stipulations, Mr. Gadomski recommends  
10 that the Siting Board give no weight to the Applicant's estimates of indirect and induced  
11 jobs during operation of the Project. His recommendations and rationale do not address  
12 indirect and induced jobs created during construction. He does state that the estimate of  
13 95 construction jobs from the NYSERDA bid package "is reasonable since a NYSERDA  
14 bid proposal estimate likely relies on the Applicant's experience as well as actual  
15 contractor quotes and is the estimate that the Applicant is willing to invest money on" (p.  
16 21, l. 24–p. 22, l. 5). He later states that "a number in the range of Applicant's 103 direct  
17 construction job estimate provided in its Application, to the 67 direct job estimates from  
18 the JEDI model sensitivity using all default input would be reasonable in that they  
19 compare favorably with other NYS job estimates" (p. 27, ll. 4–10). Additionally, he  
20 supports the reasonableness of the estimate that 6 permanent operational jobs will be  
21 created, with an associated local payroll of approximately \$0.5 million annually (p. 27, ll.  
22 10–14).

23 **Q. How did the Applicant develop its indirect and induced job estimates?**

1 A. The Applicant used the JEDI model to evaluate the indirect and induced job estimates  
2 associated with the Project. Mr. Gadomski notes that DPS Staff has previously stated  
3 that “large macroeconomic models are not designed to capture the benefits of an  
4 individual project that might have a relatively small impact on the statewide  
5 economy . . .” (p. 6, ll. 1–5). However, the JEDI model was, in fact, designed to  
6 “estimate the economic impacts of constructing and operating power generation and  
7 biofuel plants at the local and state levels” (*Jobs and Economic Development Impact*  
8 *Models*, Nat’l Renewable Energy Lab., <https://www.nrel.gov/analysis/jedi/>).

9 **Q. Do you have a fundamental problem with Mr. Gadomski’s approach?**

10 A. Yes. Mr. Gadomski argues that a principal limitation of the JEDI Model is that the  
11 “results are an estimate, not a precise forecast . . .” (p. 8, ll. 8–9). No forecast is precise  
12 and that is likely the reason the Siting Board’s regulations are written the way they are.  
13 Requirements for a “precise forecast” would be in contravention with Study Stipulation  
14 27 and 16 NYCRR § 1001.27, which specify using estimates. The JEDI model generates  
15 the estimates required by state law and Study Stipulation 27.

16 **Q. What other fundamental assumption does Mr. Gadomski make regarding the**  
17 **impact of renewable generation on retail electric prices?**

18 A. Mr. Gadomski states that “the construction and operation of renewable generation leads  
19 to an increase in the retail price of electricity and ultimately the ratepayers’ bills. The  
20 money that ratepayers use to pay those higher bills leads to a loss of indirect and induced  
21 jobs . . .” (p. 11, ll. 1–7). He also assumes that unidentified fossil-fueled generator(s)  
22 made unnecessary by renewable energy projects will be displaced in general.

1 **Q. Does 16 NYCRR § 1001.27 require a study of the effect a generator's sale of output**  
2 **into the wholesale market would have on retail electric prices?**

3 A. No, it does not.

4 **Q. Do Mr. Gadomski's criticisms of the modeled indirect and induced impacts apply to**  
5 **the construction period?**

6 A. No. Any changes to retail electric prices would not be felt until the operation phase of  
7 the Project. Estimated indirect and induced impacts associated with the construction  
8 period include:

- 9 • 236 indirect and induced local jobs resulting from short-term construction impacts;
- 10 • Local indirect and induced payroll totaling \$16.9 million during the construction
- 11 phase; and
- 12 • Local indirect and induced output of \$47.8 million associated with the construction of
- 13 the project.

14 **Q. Is the assumption that the Project will cause electricity prices to rise supported by**  
15 **the Applicant's Exhibit 8 analysis of the Project?**

16 A. No. As was noted at the end of Section 27(e) of Exhibit 27, "[n]either the Project nor the  
17 transmission will result in the cancellation of new power projects. Additionally, as  
18 described in Exhibit 8, ICF used PROMOD to evaluate potential impacts on the zonal  
19 price of electricity that would be attributable to the Project. In NYISO Zone C, where the  
20 Project would be located, the average annual price with the Project in service is expected  
21 to be \$38.36 \$/MWh; without Project the average annual price is expected to be \$38.51  
22 \$/MWh. The Project is, therefore, anticipated to reduce the average zonal prices by  
23 approximately \$0.15 \$/MWh in 2019." The Exhibit 8 PROMOD modeling was endorsed

1 by the DPS Staff Policy Panel (p. 9, ll. 4–9). 16 NYCRR § 1001.8 does not require an  
2 analysis of zonal price changes on retail rates. Thus, for this Project, the evidence in the  
3 record points to the Project having a dampening effect on electricity prices, not the  
4 opposite.

5 **Q. Were these Exhibit 8 price impacts included in the JEDI modeling?**

6 A. Price impacts were not included in the JEDI modeling. As Mr. Gadomski has noted,  
7 there is generally an inverse relationship between electricity prices and jobs. That is,  
8 when electricity prices fall, employment increases. Therefore, the results of the JEDI  
9 modeling’s impacts should be seen as conservative (low) with regards to the indirect and  
10 induced employment created by the operation of the Project. Mr. Gadomski’s  
11 assumption that operational job benefits are overstated because of expected job losses  
12 associated with higher electricity prices is contradicted by the Project-specific modeling  
13 of electricity prices.

14 **Q. Does Mr. Gadomski support the use of project-specific data in JEDI modeling?**

15 A. It is unclear, as Mr. Gadomski appears to contradict himself. He states that “[u]sers are  
16 encouraged to incorporate location- and project-specific data into the model to produce  
17 better, more meaningful results for their specific project” (p. 17, ll. 7–10). However, he  
18 later questions “why the Applicant used the JEDI model at all if it was modified in such a  
19 manner to produce an estimate based upon exogenous expectations” (p. 20, ll. 5–8). The  
20 Applicant used the JEDI model as it is intended, to estimate the indirect and induced  
21 impacts for the construction and operation periods of the Project based on Project-  
22 specific data.

1    **Q.    Does Mr. Gadomski correctly explain the relationship between labor costs and wage**  
2        **rates (p. 19, ll. 5–7)?**

3    A.    No. Mr. Gadomski states that “. . . reducing the labor costs, while holding the wage rate  
4        constant results in an increase in the total number of jobs” (p. 19, ll. 5–7). Ms. Reilly  
5        does not believe that he recognized that while labor costs decreased in some categories,  
6        labor costs increased significantly in the “Development and Other Costs” categories. It is  
7        mathematically impossible for the number of jobs to increase when total labor costs are  
8        decreased if the wage rate is held constant (labor costs = labor hours X wage rate). The  
9        JEDI model directly uses labor costs to calculate earnings, as can be traced through the  
10       formulas on the “calculations” tab (start with cell AI42 to trace back to the labor costs).  
11       Mr. Gadomski’s analysis in Exhibit DSG-2 shows that jobs increase with labor costs  
12       (shown as earnings). The table below summarizes his findings.

1

Model Run	Citation	Earnings/ Labor Costs	Direct Jobs
Applicant's Labor Cost & Applicant's Local Shares	DSG-2, page 2	\$8.2 million	103
Default Labor Cost & Default Local Shares	DSG-2, page 3	\$4.9 million	66
Applicant's Labor Cost & Default Local Shares	DSG-2, page 4	\$10.3 million	144
Default Labor Cost & Applicant's Local Shares	DSG-2, page 5	\$3.8 million	50

2

3

4

5

As shown above, Mr. Gadomski's own sensitivity analysis proves that higher labor costs/earnings yield a greater number of direct jobs, while lower labor costs/earnings yield a lower number of direct jobs.

6

7

8

9

10

11

Further, to verify the direct relationship between labor costs and jobs, Ms. Reilly decreased all labor costs by 25% and held all other variables constant in the JEDI model. When all labor costs are decreased by 25%, direct labor is also reduced by 25% (from 103 jobs to 77 jobs in the Applicant's JEDI model). Thus, the model does generate employment estimates that move predictably with changes to user inputs, such as labor costs.

12

13

**Q. What does Mr. Gadomski recommend with regards to indirect and induced jobs estimates?**

14

15

16

17

A. Mr. Gadomski asserts that reasonably reliable estimates of operational indirect and induce jobs cannot be made because of the uncertainties he cites, which we have addressed above. Specifically, he recommends that the following impacts be disregarded:

- 1 • 10 indirect and induced local jobs annually generated by the Project's operation;
- 2 • Local indirect and induced payroll of \$0.9 million annually related to the operation of
- 3 the Project; and
- 4 • Local indirect and induced output totaling \$3.0 million annually from the Project's
- 5 operation.

6 **Q. Does Mr. Gadomski raise credible objections to the JEDI modeling to support his**  
7 **recommendation to disregard indirect and induced job estimates associated with the**  
8 **operation of the Project?**

9 A. No. His recommendation erroneously assumes that “the indirect and induced jobs  
10 created by spending ratepayer money on the Project will be offset by indirect and induced  
11 job losses created by diverting the money from other uses by ratepayers or displacing  
12 another renewable generator” (p. 20, ll. 14–19). As described previously, these concerns  
13 are not credible. There is no expectation that other projects will be displaced and  
14 PROMOD modeling, accepted by the DPS Staff Policy Panel, projects that electric rates  
15 should fall rather than rise as Mr. Gadomski assumes. Further, the indirect and induced  
16 jobs created by the actual construction of the Project would be unaffected in the short  
17 term by any rate impacts or impacts to other projects, as these impacts would only occur  
18 after the Project was in operation. Thus, even if the Board ignores the PROMOD results  
19 for this specific project and accepts Mr. Gadomski's conclusions that New York State's  
20 renewable initiatives seeking to achieve Clean Energy Standards as a whole will increase  
21 retail prices, the indirect and induced jobs, output, and payroll to be created by  
22 construction are still valid estimates and should be considered by the Board.

We recommend that, consistent with 16 NYCRR § 1001.27 and the Study Stipulations, the full impacts (direct, indirect, and induced for construction and operation) be considered by the Board when evaluating the Eight Point Wind Energy Center.

#### **H. Access Road Siting**

**Q. Do you agree with DAM Witness Saviola that “[t]he access road leading to T13 should follow the field edge north of the proposed access road to avoid severing the northernmost portion of the field” (p. 10, ll. 3–4)?**

**A.** No. The current design of the access road to Turbine 13 conforms with DAM guidelines. The current alignment minimizes the impacts to the agricultural field by reducing the total impacted area. Approximate permanent impacts of the two alternatives total:

- Current alignment, +/- STA 10+50 to STA 114+00: 19,650 sf
- Alternative alignment around perimeter of field: 35,298 sf
- Difference: 15,648 sf (0.36 acre)

The alternative alignment will also require tree clearing in order to provide adequate open space for blade delivery. In addition, the current alignment, from approximately STA 110+50 to STA 111+50, is designed to be constructed at existing grade, so the road will not create a barrier to access the most northerly part of the field.

#### **I. Noise**

**Q. DPS Witness Mr. Moreno-Caballero recommends that the short-term 45 dBA-Leq-8-h is not the most protective among all noise guidelines and that a shorter limit, on the order of 42-dBA, should be adopted so that all three World Health Organization**

1       **(“WHO”) guidelines and recommendations are met and that the potential adverse**  
2       **effects from the Project are minimized (p. 17, l. 7; p. 20, l. 3). He also requests that**  
3       **EPW consider shifting or eliminating certain turbines in order to reduce noise levels**  
4       **on the most impacted receptors. Do you agree with these requests?**

5     A.   No, we do not. The siting process for turbine placement is a very complex and  
6       multifaceted process that attempts to balance the highest possible output of renewable  
7       energy, while simultaneously avoiding or minimizing a number of impacts that could  
8       affect the local environment or community. EPW asserts that although the minimization  
9       of noise impacts to the maximum extent practicable is an important design goal for all  
10      parties, it is not the only constraint that the parties, the Examiners, and the Siting Board  
11      must take into consideration. As such, shifting or eliminating turbines for the mitigation  
12      of potential noise impacts as set forth by Mr. Moreno cannot be done in a vacuum.

13           Throughout the siting process, the Applicant has subjected the placement of  
14      turbines to a battery of constraint analyses to find the most practicable locations. In  
15      addition to those listed above in our response about why Turbine 15 should not be  
16      eliminated, we would add that, as currently proposed, the turbines for this Project have  
17      been sited in locations that also take the phenomenon of “wake effect” into account, such  
18      that the proposed turbine locations minimize the amount of wake effect from one turbine  
19      on another which impact energy production and turbine life expectancy.

20           Likewise, the use of alternate turbine locations or shifting turbines could result in  
21      other adverse impacts that Mr. Moreno is not taking into consideration. Included as EPW  
22      Reb. Exh. 5 of this testimony is a table that outlines the multiple environmental/land use  
23      constraints which would (or could) occur as a result of shifting turbines, within

1 participating landowner property, to meet Mr. Moreno's recommended 42-dBA short-  
2 term noise guideline. Although presumed sound levels may be reduced by shifting  
3 turbine locations around the landscape, multiple other—and equally important—  
4 environmental impacts would occur as a result.

5 **Q. Does the Project as proposed avoid or minimize adverse environmental noise**  
6 **impacts to the maximum extent practicable?**

7 A. Yes. The Application demonstrates compliance with all applicable regulations and  
8 guidelines as agreed upon in Study Stipulation 19(g), and signed by DPS Staff, amongst  
9 other parties, and the Applicant. The design goals for the Project, including sound limits  
10 at non-participating landowner receptors, were crafted to be consistent with those  
11 recommended and eventually adopted in the Cassadaga Article 10 proceeding. These  
12 sound levels were discussed with DPS Staff, outside the Stipulation process, in advance  
13 of the Application submittal, and compliance with these limits shows that environmental  
14 noise impacts from the Project have been avoided and minimized.

15 **Q. What are the relevant design goals upon which the Project was designed, and how**  
16 **do they compare to what Mr. Moreno is proposing?**

17 A. As discussed in Study Stipulations 19(g)(1)–(3), modeled sound levels from the Project  
18 were to be compared to:

- 19 • Stipulation 19(g)(1) – NYSDEC Noise Guidelines at DEC lands. Limit increase to no  
20 more than 6 dBA over background.
- 21 • Stipulation 19(g)(2) – WHO 1999. 45 dBA 8-hour  $L_{eq}$  nighttime limit at a non-  
22 participating residence; 55 dBA 8-hour  $L_{eq}$  nighttime limit at a participating residence

- Stipulation 19(g)(3) – WHO 2009. An annual nighttime level of 40 dBA ( $L_{eq, night}$ , outside) at a non-participating residence; 50 dBA ( $L_{eq, night, outside}$ ) at a participating residence.

Mr. Moreno now recommends a new outdoor limit of 45 dBA annual  $L_{den}$  (see WHO 2018 discussion below) that was not included in the Study Stipulations. He claims that this is roughly equivalent to a short-term 8-hour limit of 42 dBA.

**Q. Does Mr. Moreno rely upon *Environmental Noise Guidelines for the European Region*, WHO (2018) (DPS-Moreno Exh. 4) (“WHO 2018”) to support his new design goals and his request for new studies?**

A. Yes. We will discuss the reasons why the Examiners and the Siting Board should not rely upon WHO 2018 later in our testimony. But the 42 dBA advocated by Mr. Moreno is based in part on that study, which study was released after the Study Stipulations were signed and Application was deemed compliant. On advice of counsel, the new studies advocated by Mr. Moreno would use revised study assumptions and limits in violation of the Study Stipulation provision prohibiting the request for new studies by a signatory party.

**Q. Can you provide specific examples of where Mr. Moreno is contradicting the signed Study Stipulations?**

A. Yes. We list three items below, and discuss each in subsequent responses below.

1. Evaluation of sound levels at a new height of 4 meters above ground level. This would require a new study.
2. Introduction of a new outdoor limit (45 dBA annual  $L_{den}$ ). This would require a new study.

1           3. Introduction of a new indoor limit (30 dBA 8-hour  $L_{eq}$ ). This would require a new  
2           study.

3   **Q. Does the Project as proposed comply with Mr. Moreno's proposed 4-meter receptor**  
4   **height, new outdoor 45 dBA  $L_{den}$  sound limit, and 30 dBA indoor limit?**

5   A. No, it would not, and Mr. Moreno requests new acoustical studies to see which turbines  
6       should be eliminated or relocated. At a minimum, he requests that three proposed  
7       turbines be relocated to alternate turbine locations proposed in the Application, and also  
8       proposes eliminating one of the alternate turbine locations, leaving no reserve alternates  
9       for the construction phase.

10 **Q. Please address the new limits/study assumptions Mr. Moreno recommends. What**  
11 **do the Study Stipulations require for a receptor height?**

12 A. Study Stipulation 19(d) states that “. . . noise modeling with the ISO 9613-2 will be  
13 conducted by following the recommendations included in the following reference: “Best  
14 Practices Guidelines for Assessing Sound Emissions from Proposed Wind Farms and  
15 Measuring the Performance of Completer Projects,” October 13, 2011. Prepared for:  
16 The Minnesota Public Utilities Commission Under the auspices of the National  
17 Association of Regulatory Utility Commissioners (NARUC), Washington, DC . . . .”  
18 This NARUC guideline document recommends a receptor height of 1.5 meters above  
19 ground level for sound modeling, and that is what was used for this Application.

20 **Q. Have you ever conducted a noise study in New York using receptor heights of 4**  
21 **meters above ground level?**

22 A. No.

1 **Q. Has the Project changed in any way that would compel more than doubling the**  
2 **meter height to yield accurate modeling results?**

3 A. No. It will result in expected sound levels to be further overestimated as compared to  
4 reality. Furthermore, changing the study inputs at this late date, after Study Stipulations  
5 have been signed, would mean comparing the modeling results in the Application at 1.5  
6 meters to actual post-construction monitoring at 4 meters, which would not yield accurate  
7 compliance results.

8 **Q. What is the new outdoor guideline (45 dBA annual  $L_{den}$ ) proposed by Mr. Moreno?**

9 A. The  $L_{den}$  indicator is an average annual sound pressure level over all days, evenings and  
10 nights in a year (8,760 hours). The  $L_{den}$  in decibels (dB) is defined by a specific formula,  
11 where:

- 12 •  $L_{day}$  is the A-weighted long-term average sound level determined over all the day  
13 periods of a year. No penalty added to the daytime period (07:00–19:00);
- 14 •  $L_{evening}$  is the A-weighted long-term average sound level determined over all the  
15 evening periods of a year. A 5 dB penalty is added to the average level in the evening  
16 (19:00–23:00); and
- 17 •  $L_{night}$  is the A-weighted long-term average sound level determined over all the night  
18 periods of a year. A 10 dB penalty is added to average level in the night (23:00–  
19 07:00).

20 All metrics are in terms of an equivalent sound level or  $L_{eq}$ .

21 The 45 dBA annual  $L_{den}$  is a guideline value suggested by WHO in October 2018  
22 (DPS-Moreno Exh. 4). A comparison to this descriptor was not discussed or agreed to in

1 Study Stipulations 19(g) or 19(h). It comes with many caveats and weaknesses which  
2 will be discussed below.

3 **Q. What is the new indoor guideline (30 dBA 8-hour  $L_{eq}$ ) proposed by Mr. Moreno?**

4 A. On page 23 of Mr. Moreno's testimony, he indicates that, based on WHO 2018, the  
5 WHO 1999 indoor recommendation of 30 dBA 8-hour  $L_{eq}$  should be met. This indoor  
6 guideline has been around for 20 years, yet a comparison to this descriptor was not  
7 discussed or agreed to in Study Stipulations 19(g) or 19(h). The only indoor sound limit  
8 specified in the Study Stipulations (19(k)(2)) is for speech interference, which is 50 dBA  
9 (1-hour) and with which the Project is designed to comply. Mr. Moreno's proposed limit  
10 has never been adopted by the NYS Public Service Commission nor the Siting Board for  
11 any wind turbine or other electric generating facility for which Mr. O'Neal is aware.

12 **Q. Mr. Moreno states that "I think that the actual maximum short-term sound levels  
13 could be greater than those calculated . . ." by the Applicant (p. 25, ll. 5–13). After  
14 stating his rationale based upon a Massachusetts study ("MA Study"), he proceeds  
15 to increase the 2 dBA correction to 5 dBA for maximum 1-hour sound levels  
16 predicted by the Applicant's modeling. Can you address his argument here?**

17 A. Mr. Moreno's reading of that portion of the MA Study (DPS-Moreno Exh. 5) is incorrect.  
18 Mr. O'Neal's firm was involved in preparing the MA Study. Figure 26 in the MA Study  
19 shows excellent agreement between actual measured wind turbine sound levels, and pre-  
20 construction modeled sound levels in MA using the exact same techniques used in the  
21 EPW Application. There is one outlying data point which appears to show an  
22 underprediction of ~3 dBA, and upon which Mr. Moreno focuses. A careful read of the  
23 MA Study (DPS-Moreno Exh. 5, p. 87) discusses several instances where the monitored

1 sound levels were consistently higher than the modeled levels. They found, however,  
2 that they occurred just after the turbines restarted after a forced shutdown and not during  
3 normal operation. When graphing the sound levels as a function of the shutdown, the  
4 sound levels increase rapidly at startup, then decreases over a period of about one minute  
5 or more to a stabilized level. This is most likely not a common occurrence because,  
6 under normal operational circumstances, turbines are not stopped and started again while  
7 wind speeds are higher than the turbine's cut-in threshold. It may be that the blades are  
8 pitched on startup to match the actual wind speed, but the rotor requires some time to  
9 reach its proper speed, resulting in a short period during which the blade pitch is not  
10 correctly optimized. When blade pitch is not optimal, noise generation is increased. This  
11 increase in sound level goes away as the rotor speed matches the proper setting for the  
12 actual wind speed. As a result, the brief increase, about one minute, in operating sound  
13 level observed in the MA Study is most likely an artificial construct of the test design and  
14 would not typically occur under normal conditions.

15 In other words, this 3 dBA underprediction is not real. Therefore, Mr. Moreno's  
16 assertion that 1-hour, worst-case sound levels in the Application may be underpredicted  
17 by 3 dBA is incorrect. This is very important as Mr. Moreno uses the suggested 3 dBA  
18 "underprediction" to adjust predicted outdoor sound levels to meet an indoor sound level  
19 of 30 dBA (p. 30, ll. 4–10). Notwithstanding that an indoor sound level was never part of  
20 Study Stipulation 19 and is unprecedented in New York, this is another flaw of the WHO  
21 2018 Study which will be discussed further below.

22 **Q. Please explain Mr. Moreno's position concerning Noise-Reduced Operations**  
23 **("NROs")?**

1 A. Most modern wind turbines, such as those in this Project, offer an option called noise-  
2 reduced operating mode (NRO = Noise-Reduced Operation). With the aid of the control  
3 system, the turbine can be switched to noise-reduced mode based on pre-determined  
4 parameters such as the time of day, wind direction, wind speed, etc. NRO can be  
5 implemented on an “as needed” basis through the use of software programming. This  
6 typically provides a sound reduction in the range of 1 to 6 dBA per turbine, and is the  
7 most common form of noise control for wind turbines. Use of an NRO, however, reduces  
8 the output production of the turbines with resulting effects on the production of  
9 renewable energy that will be discussed elsewhere in this testimony.

10 In fact, it is routine to include noise control for most energy projects as part of  
11 their pre-construction design modeling effort. For example, a gas-fired turbine routinely  
12 uses an enclosure to reduce sound, or a transformer often uses a sound barrier wall to  
13 reduce sound as part of their pre-construction modeling evaluation. By stating that NROs  
14 should not be used in a Compliance Filing to demonstrate conformance with relevant  
15 criteria and sound conditions, Mr. Moreno is precluding the use of minimization or  
16 mitigation measures for wind turbines in an Article 10 Application. Mr. Moreno  
17 proposes that all NROs be reserved “. . . as a contingency mitigation option to be used  
18 after construction” (p. 19, ll. 5–6). As he explains, Mr. Moreno disagreed with a  
19 proposed Certificate Condition allowing the Applicant to use 3 dBA of available NRO  
20 for the Compliance Filing and instead proposed to reserve the 3 dBA for contingency  
21 mitigation (p. 19, ll. 1–10).

22 Ultimately, the Project is going to have to demonstrate compliance with the  
23 permit conditions imposed by the Siting Board in a Compliance Filing, and the use of

1 NRO, should be one of the tools in the toolbox. It's use for noise control in the modeling  
2 study should not be prohibited. We are not aware of any previous decision where the use  
3 of NRO for noise reduction has been prohibited by a regulatory agency in New York.

4 **Q. Do the Study Stipulations prohibit the use of NRO for a Compliance Filing**  
5 **submittal?**

6 A. No they do not. Nor does any Article 10 regulation.

7 **Q. Did the modeling performed by the Applicant to show compliance with the design**  
8 **goals assume any NRO?**

9 A. No. The design is very conservative. Because NRO reduces project performance, they  
10 are used sparingly and prudently reserved for final design/final layout to confirm  
11 compliance with the Article 10 certificate conditions eventually adopted.

12 **Q. Please explain Mr. Moreno's assertion that certain modeling results should not be**  
13 **corrected to yield more accurate predictions of long-term sound levels?**

14 A. Mr. Moreno uses the one instance in the MA Study, as rebutted above, to suggest that the  
15 ISO 9613-2 modeling standard does not accurately model sound levels. However, as  
16 discussed above, the one data point Mr. Moreno relies upon is flawed due to the artificial  
17 shutdown used in the study. In addition, as discussed further below, there is a paper  
18 supporting the assertion that expected sound levels will not be higher than those predicted  
19 using the ISO 9613-2 methodology, and thus "correcting" the long-term (CONCAWE)  
20 results to match the short-term results is justified.

21 **Q. Do you disagree with Mr. Moreno's comments on the use of correcting long-term**  
22 **sound modeling results (CONCAWE) as compared to the short-term ISO 9613-2**  
23 **model results (p. 36, l. 15–p. 37, l. 9)?**

1 A. Yes. The correction needs to be made because the CONCAWE results are unrealistically  
2 high. The Cadna/A software package allows for the inclusion of CONCAWE  
3 meteorology into the ISO Standard calculations, although this approach is not  
4 recommended by the Cadna/A software developers (Cadna/A Reference Manual,  
5 DataKustik GmbH, Chap. 6, available at  
6 [http://download.datakustik.com/download/CadnaA\\_Englisch\\_3\\_8\\_TEST.pdf](http://download.datakustik.com/download/CadnaA_Englisch_3_8_TEST.pdf)).  
7 Nonetheless, in order to comply with DPS Staff's insistence on annual sound modeling,  
8 the CONCAWE meteorological variables were input to the ISO 9613-2 standard.

9 A detailed modeling versus measurement study by Evans and Cooper (EPW Reb.  
10 Exh. 8, pp. 1–9) compares the model results of ISO 9613-2; G=0.5 to CONCAWE; G=1.  
11 Table 2 of that paper shows that the CONCAWE results drastically overpredicted the  
12 actual measured results except in the case of a concave slope (EPW Reb. Exh. 8, p. 6). It  
13 is also worth noting that these modeling exercises by Evans and Cooper did not include  
14 the additional 2 dBA uncertainty that is already included in the EPW modeling.  
15 Therefore, correcting the CONCAWE results to match the already conservative ISO  
16 9613-2 results is wholly appropriate. If the correction is not made, predicted sound levels  
17 would be overstated. This same comment was made by DPS Staff in the Cassadaga  
18 Wind proceeding (Case 14-F-0490), and the Siting Board found that Cassadaga properly  
19 applied these corrections in the sound modeling.

20 **Q. What do you think of the recommended wind turbine relocations/elimination made**  
21 **by Mr. Moreno (p. 20, ll. 1–11)?**

22 A. He has proposed dropping Turbines 10, 5, ALT3, and 20. He would replace those four  
23 wind turbines with only three: ALT1, ALT2, and ALT4. While the Alternate Turbine

1 locations meet the design goals for the Project, his recommendation is problematic for  
2 several reasons.

3 First, as this Panel has already explained, considering the relatively small number  
4 of turbines in this Project (31) compared to double and triple that amount for other New  
5 York wind projects, it would be very challenging for this Project to entirely eliminate a  
6 turbine. DPS Witness Davis recommends eliminating Turbine 15 and that  
7 recommendation was addressed previously in this Panel testimony.

8 Second, there could be reasons why a wind turbine may not be feasible once final  
9 geotechnical and micro-siting work is complete, and then one of the alternate turbine  
10 locations would be necessary. Therefore, giving up all alternate turbine locations at this  
11 time is unreasonable, particularly when all residences meet the agreed upon comparison  
12 sound guidelines from Study Stipulation 19(g), as discussed above. The Application also  
13 fully evaluated the alternate locations for their potential impacts under the current layout.

14 Epsilon did go through an exercise of trying to relocate, within participating  
15 landowner property, any wind turbine influencing a non-participating receptor over 42  
16 dBA as recommended by Mr. Moreno (nine receptors total) (p. 71, l. 20–p. 72, l. 4). The  
17 map in EPW Reb. Exh. 8 (p. 10) shows where the relocated wind turbines would need to  
18 be in order to meet this request, and the table below summarizes the results of that  
19 exercise. As can be seen in the table, it was possible to reduce sound levels to 42 dBA at  
20 8 of the 9 receptors. Receptor ID #337 remained at 43 dBA despite efforts to move wind  
21 turbines.

22 However, although it was physically possible to move, within participating  
23 landowner property, the required eight wind turbines enough to meet Mr. Moreno's

proposed new 42 dBA sound level, these moves are not viable as they would then violate many other constraints (setbacks, wetlands, etc.), as discussed above. The results of that analysis were previously presented in this testimony.

Modeling Receptor ID	Participation Status	Project Only Maximum 1-hr Leq (dBA) Original Layout	Project Only Maximum 1-hr Leq (dBA) "Mr. Moreno's" Layout	Coordinates UTM NAD83 Zone 18N	
771	Non-Participating	44	39	278444.83	4658758.42
325	Non-Participating	44	42	275530.30	4666290.84
327	Non-Participating	44	41	275493.12	4665719.42
456	Non-Participating	44	39	278676.62	4659320.73
329	Non-Participating	43	41	276412.26	4665423.83
337	Non-Participating	43	43	274850.53	4663888.85
454	Non-Participating	43	41	278775.65	4660335.61
522	Non-Participating	43	37	279061.10	4658953.06
692	Non-Participating	43	41	274334.89	4666675.87

**Q. Please briefly list Mr. Moreno's recommendations that you have discussed and which rely upon WHO 2018?**

A. They are as follows, compared to the assumptions/evaluation levels employed in the Applicant's modeling, based upon Study Stipulation 19:

WHO 2018

EPW Application

42 dBA (non-participating receptor)

45 dBA

30 dBA indoor, window open

Not Applicable

**Q. Are you familiar with WHO 2018? If so, what is your opinion of that report?**

A. Yes. I have reviewed WHO 2018. This is the first time WHO environmental noise guidelines cover wind turbines as a noise source. As explained below, much more work

1 and research needs to be done—as explicitly acknowledged in WHO 2018—before these  
2 guidelines should be used by the Siting Board.

3 This document proposes an annual guideline of 45 dBA  $L_{den}$  (day-evening-night)  
4 for wind turbines. This limit roughly translates to Mr. Moreno’s proposed 42 dBA as  
5 described in pages 48–50 of his testimony. Owing largely to the lack of evidence linking  
6 wind turbine noise and public health, importantly, these WHO recommendations for wind  
7 turbines are *conditional*. This is the weakest classification of recommendations in WHO  
8 2018. A “strong recommendation” is one that WHO 2018 says can be adopted as policy  
9 “in most situations” (DPS-Moreno Exh. 4, p. 43). In contrast, the “conditional  
10 recommendation” means that high quality evidence indicating a strong adverse effect is  
11 lacking. WHO 2018 explained that decisions made using *conditional* recommendations  
12 require “policy-making process with substantial debate and involvement of various  
13 stakeholders. There is less certainty of its efficacy owing to lower quality of evidence of  
14 a net benefit [associated with implementing the WHO guideline], opposing values and  
15 preferences of individuals and populations affected or the high resource implications of  
16 the recommendation, meaning there may be circumstances or settings in which it will not  
17 apply” (DPS-Moreno Exh. 4, p. 43). Indeed, WHO 2018 acknowledges that in forming  
18 its recommendations for wind turbines, it appears there was no stakeholder input at all  
19 (DPS-Moreno Exh. 4, p.166). WHO 2018 also states that “. . . additional considerations  
20 of costs, feasibility, values and preferences should also feature in decision-making when  
21 choosing reference values such as noise limits for a possible standard or legislation”  
22 (DPS-Moreno Exh. 4, p. 49). Mr. Moreno’s recommendation of 42 dBA does not reflect  
23 these considerations; instead, he embraces the limits without question.

1 WHO 2018 states that “. . . only limited data are available on the population’s  
2 perception of newer sources of noise, such as wind turbines” (DPS-Moreno Exh. 4, p.  
3 25), and that the evidence supporting Mr. Moreno’s recommendation of the 45 dBA  $L_{den}$   
4 (and thus his recommendation of 42 dBA  $L_{eq}$  8-hour) is “low quality” (DPS-Moreno Exh.  
5 4, p. 97). WHO 2018 defines “low quality” evidence: Low Quality “further research is  
6 very likely to have an important impact on the certainty of the effect estimate and is  
7 likely to change the estimate” (DPS-Moreno Exh. 4, p. 36). In contrast, “high quality”  
8 evidence is defined as that where “. . . further research is very unlikely to change the  
9 certainty of the effect estimate” (DPS-Moreno Exh. 4, p. 36). Thus, the limits  
10 recommended by Mr. Moreno have little credibility or basis for decision-making on a  
11 proposed wind project.

12 Key findings about Wind Turbine Noise from WHO 2018 (DPS-Moreno Exh. 4,  
13 p. 97):

- 14 • Incidence of heart disease – No studies available
- 15 • Incidence of hypertension – No studies available
- 16 • Prevalence of highly annoyed population – Low quality evidence. The studies used  
17 were primarily self-reporting and did not include objective measures of health. The  
18 Guideline Development Group (“GDG”) recognized that non-acoustic factors are an  
19 important confounder in annoyance (DPS-Moreno Exh. 4, pp. 33–34).
- 20 • Sleep disturbance – Low quality evidence. Based on the low quantity and  
21 heterogeneous nature of the evidence, the GDG was not able to formulate a  
22 recommendation addressing sleep disturbance due to wind turbine noise at night time.

1            “[S]tudies were not consistent and in general did not provide evidence for an effect on  
2            sleep” (DPS-Moreno Exh. 4, p. 98).

3            At page 84 of WHO 2018, it is concluded: “As the foregoing overview has shown, very  
4            little evidence is available about the adverse health effects of continuous exposure to  
5            wind turbine noise” (DPS-Moreno Exh. 4, p. 104).

6            In addition to the absence of high-quality studies or evidence, the GDG was also  
7            operating without knowledge of the measures that could reduce wind turbine noise, or “. .  
8            . the specific consequences of having regulations on wind turbine noise. Therefore, it  
9            could not assess feasibility, or discern whether any beneficial effects of noise reduction  
10           would outweigh the costs of intervention” (DPS-Moreno Exh. 4, p. 105).

11           WHO 2018 concluded that, “[i]n light of the assessment of the contextual factors  
12           in addition to the quality of evidence, the recommendation for wind turbine noise  
13           exposure remains conditional” (DPS-Moreno Exh. 4, p. 105).

14    **Q.    Please address the timing of the issuance of WHO 2018?**

15    A.    These WHO 2018 guidelines were outdated even before they were published. WHO does  
16           identify the need for additional wind turbine sound and health studies, but their review  
17           does not reflect a current review of the scientific literature. It is missing important wind  
18           turbine sound and health literature published after 2014. Importantly, it does not include  
19           the 2016 Health Canada study as well as the 2017 Lawrence Berkeley National  
20           Laboratory study.

21           The Health Canada study began in 2012, was completed in 2014, and peer-  
22           reviewed publications were produced in 2016. This testimony will not attempt to  
23           summarize all aspects of the study but rather will note one relevant conclusion: results of

1 self-reported measures of sleep did not support an association between sleep quality and  
2 wind turbine sound levels.

3 Lawrence Berkeley National Laboratory conducted a survey in 2017 of neighbors  
4 of American wind farms that was not considered in the WHO 2018 conditional guidance.  
5 This is the largest, most comprehensive study of its kind. This study has several relevant  
6 findings:

- 7 • Fewer Americans than Europeans say they can hear the wind farm outside their home  
8 and fewer report being strongly annoyed by turbine sound.
- 9 • If a person was opposed to the project during the development phase, that person was  
10 more likely to report being able to hear the turbines and be annoyed by the noise.

11 The use of an annual sound level descriptor such as  $L_{den}$  or  $L_{night, outside}$ , and upon  
12 which Mr. Moreno bases his 42 dBA, is totally impractical, overly burdensome, and does  
13 not represent sound levels that may lead to complaints at a resident's home. For  
14 example, an annual descriptor such as  $L_{den}$  or  $L_{night, outside}$  can only be measured over an  
15 entire year to evaluate permit compliance. In addition, the studies relating sound levels to  
16 resident's complaints are all based on short-term directly measured sound levels such as  
17 the  $L_{Aeq}$  1-hour, not a calculated  $L_{den}$ , which is converted from direct measurements using  
18 a series of adjustments as explained earlier. Indeed, even WHO 2018 does not  
19 recommend using these descriptors: "Based on all these factors, it may be concluded that  
20 the acoustical description of wind turbine noise by means of  $L_{den}$  or  $L_{night}$  may be a poor  
21 characterization of wind turbine noise and may limit the ability to observe associations  
22 between wind turbine noise and health outcomes" (DPS-Moreno Exh. 4, p. 106).

1 **Q. Do you agree with the outdoor to indoor sound level reduction in WHO 2018? If**  
2 **not, why is this important?**

3 A. No, I do not. WHO 2018 claims “the differences between indoor and outdoor levels are  
4 usually estimated at around 10 dB for open” windows (DPS-Moreno Exh. 4, p. 29). The  
5 citation for this statement (Locher et al., 2018) is a paper based on a study of traffic noise,  
6 not wind turbine noise. A more relevant document to examine for reduction of outdoor  
7 sound to indoor sound would be one of the Health Canada papers *Effects of Wind Turbine*  
8 *Noise on Self-Reported and Objective Measures of Sleep* (EPW Reb. Exh. 8, pp. 11–23).  
9 This research was one of the key sources omitted from WHO 2018. Measurements from  
10 that study of wind turbine noise found that the average façade attenuation with windows  
11 completely opened was 14 dBA  $\pm$  2 dB(A). This reduction allows an outside sound level  
12 of 45 dBA such as proposed for this project to provide for an interior sound level of 30  
13 dBA even with windows open as per Mr. Moreno’s request.

14 Mr. Moreno’s claim in his testimony is that an outside sound level of no more  
15 than 42 dBA would be required to meet 30 dBA inside a residence with the windows  
16 open (42 dBA outside – 12 dBA outside/inside reduction = 30 dBA inside) (p. 23, ll. 14–  
17 21). However, as the more refined data from Health Canada shows, a 45 dBA outside  
18 sound level is still protective of inside sound levels.

19 **Q. Does WHO 2018 discuss any balancing of wind turbine noise and public benefits?**

20 A. Yes: “Regarding the balance of harms and benefits, the GDG would expect a general  
21 health benefit from a marked reduction in any kind of long-term environmental noise  
22 exposure. Health effects of individuals living in the vicinity of wind turbines can  
23 theoretically be related not only to long-term noise exposure from the wind turbines but

1 also to disruption caused during the construction phase. The GDG pointed out, however,  
2 that evidence on health effects from wind turbine noise (apart from annoyance) is either  
3 absent or rated low/very low quality. Moreover, effects related to attitudes towards wind  
4 turbines are hard to discern from those related to noise and may be partly responsible for  
5 the associations. Furthermore, the number of people exposed is far lower than for many  
6 other sources of noise (such as road traffic). Therefore, the GDG estimated the burden on  
7 health from exposure to wind turbine noise at the population level to be low, concluding  
8 that any benefit from specifically reducing population exposure to wind turbine noise in  
9 all situations remains unclear” (DPS-Moreno Exh. 4, p. 104).

10 **Q. Did WHO 2018 benefit from any stakeholder input?**

11 A. As noted above, no. The document covers public health recommendations on exposure  
12 to environmental noise from five areas:

- 13 1. Road traffic noise
- 14 2. Railway noise
- 15 3. Aircraft noise
- 16 4. Wind turbine noise
- 17 5. Leisure noise

18 Wind turbine noise was the only one of the five areas not to have stakeholder input  
19 (Table A1.5, DPS-Moreno Exh. 4, p. 166). This is a significant weakness in the  
20 document, especially when the other four areas had at least one stakeholder participating.

21 **Q. Based upon everything you have found, is there any credible basis for Mr. Moreno**  
22 **to propose a noise limit of 42 dBA for non-participating landowners or 30 dBA**  
23 **indoor?**

1 A. Mr. Moreno's recommendations are one-sided, lack any credible basis, are inconsistent  
2 with the Siting Board's findings in Cassadaga, and, as the analysis this Panel presents, are  
3 simply unworkable.

4 **Q. Mr. O'Neal, based on your 15 years of experience measuring and modeling sound**  
5 **from operating wind turbines, and your over 30 years measuring sound levels from**  
6 **other generating and transmission facilities, what are the important areas to**  
7 **evaluate to minimize adverse noise impacts, meaning which ones would you actually**  
8 **measure post-construction, and which ones are appropriate to evaluate through**  
9 **modeling only?**

10 A. Tables 1 and 2 below summarize the key sound-related attributes from wind energy. This  
11 set of conditions minimize complaints, prevents tonal conditions, prevents air-borne  
12 vibration and rattle from low frequency sound, and allows for a post construction  
13 compliance evaluation. Compliance with all eight conditions can be demonstrated  
14 through pre-construction modeling. The five conditions listed in Table 1, which are  
15 included in the Application, can be measured post-construction to confirm the validity of  
16 the pre-construction modeling. The three conditions in Table 2 would not be measured  
17 post-construction, but compliance with those design goals would be confirmed by the  
18 pre-construction modeling. Ground-borne vibration is not an issue from wind turbines  
19 and so it should be removed from compliance conditions.

20

**Table 1 Summary of Modeled and Measured Sound Standards or Design Goals—Eight Point Wind**

#	Design Goal. (Not to exceed)	Assessment Location	Noise descriptor	Period of Time	Participant Status	Design Goals and basis
1	45 dBA	At residence, Outdoor	Leq	8-hour; daytime and nighttime	Non-participant	Design Goal; Certificate Condition 80(a) Case 14-F-0490 and WHO-1999
2	55 dBA	At residence, Outdoor	Leq	8-hour; daytime and nighttime	Participant	Design Goal; Certificate Condition 80(a) Case 14-F-0490
3	No audible prominent tones or 5 dBA penalty if they occur.	At residence, Outdoor	Leq	1-hour	Non-participant	Design Goal; Certificate Condition 80(c) Case 14-F-0490
4	65 dB at 16, 31.5, and 63 Hz full-octave bands.	At residence, Outdoor	Leq	1-hour; daytime and nighttime	Non-Participant	Design Goal; Certificate Condition 80(d) Case 14-F-0490
5	50 dBA	At residence, Outdoor	L10	1-hour	All residences	Local Law, Towns of West Union and Greenwood

**Table 2 Summary of Modeled-Only Design Goals – Eight Point Wind**

#	Design Goal. (Not to exceed)	Assessment Location	Noise descriptor	Period of Time	Participant Status	Design Goals and basis
6	40 dBA	At residence, Outdoor	Lnight-outside (Leq)	Annual; nighttime. (2009-WHO)	Non-participant	Design Goal; Certificate Condition 80(b) Case 14-F-0490 and WHO-2009
7	50 dBA	At residence, Outdoor	Lnight-outside (Leq)	Annual; nighttime. (2009-WHO)	Participant	Design Goal; Certificate Condition 80(b) Case 14-F-0490 and WHO-2009
8	55 dBA	Property line	Leq	1-hour; daytime and nighttime	Non-participant	Design Goal; Boundary lines and Lands Except Wetlands (WHO 1999)

**Q. Did you discover any additional errors in Mr. Moreno's testimony?**

A. Yes. They are listed below.

P. 7, l. 10. Referenced figure is on page 68 (not 69).

P. 33, l. 9. "Non-participating" should read "participating."

P. 41, l. 13. "... wind direction ..." should read "... wind speed ..."

1 **Q. Notwithstanding EPW's opposition to DPS Witness Moreno's proposed**  
2 **recommendations, and DPS Witness Davis's 30-minute daily shadow flicker**  
3 **recommendation and his recommendation that Turbine 15 be eliminated from the**  
4 **Project, does the Applicant have a proposal to make in this regard?**

5 A. Yes. In the interest of reducing controversy in the proceeding and thereby setting the  
6 stage to have the Siting Board issue a certificate several months earlier than September 5,  
7 2019, EPW is making an offer to settle these issues in one package, meaning they are  
8 interrelated and conditioned upon each other. The offer will be withdrawn and these  
9 issues will continue to be litigated if sufficient agreement on all the issues cannot be  
10 reached in the sole judgment of the Applicant.

11 **Q. What are you proposing for noise?**

12 A. Without agreeing to any of the arguments proposed in DPS Witness Moreno's testimony  
13 concerning WHO 2018 or any of his other proposals, EPW will agree to his proposed  
14 maximum noise limit of 42 dBA  $L_{eq}$  8-hour limit at non-participating landowner  
15 receptors. Condition 74(a) of the Certificate Conditions would replace the 45 dBA  $L_{eq}$  8-  
16 hour limit with a 42 dBA  $L_{eq}$  8-hour limit. Mr. Moreno's proposed Certificate Condition  
17 74(b) would no longer be necessary and should not be added to the Certificate  
18 Conditions. We have no objection to his remaining proposals for Certificate Condition  
19 74. Mr. Moreno's other proposals in his testimony would no longer be litigated nor  
20 adopted and the remaining Certificate Conditions related to noise, except, as noted below,  
21 would not be changed based upon his recommendations.

22 **Q. As part of the EPW offer, how would NROs be treated?**

1 A. The Applicant would be able to use NROs freely in the Compliance Filing analyses in its  
2 sole judgment at any turbine, including at Alternates 1, 2, new Alternative 3 (as explained  
3 below) and 4, provided that it first exercised reasonable efforts to obtain timely  
4 agreements from non-participating landowners that would include them as participating  
5 landowners in the Project on terms equivalent to existing participating landowner  
6 agreements. In other words, NROs would be used in the Compliance Filing analyses  
7 only if it could not obtain the aforementioned agreements, with the goal of preserving  
8 them for any mitigation that may be required after operation commences. Accordingly,  
9 at a minimum, Certificate Condition 65(d) should be revised to eliminate the restriction  
10 on the use of NROs.

11 **Q. In order to comply with the reduced noise limit, will the Applicant be able to employ**  
12 **any of the Alternative turbine sites that are part of the Project that were evaluated**  
13 **in the Article 10 Application and for which certification has been requested?**

14 A. Yes, Alternates 1, 2, and 4 would be available and able to be utilized should the  
15 Applicant require their use, but only if the use of these turbines would comply with a 42  
16 dBA  $L_{eq}$  8-hour limit. The Applicant also proposes to eliminate Alternate 3, as Mr.  
17 Moreno has suggested, and replace it with a new Alternative 3, provided that agreement  
18 is reached on the conditions related to Turbine 15 below.

19 **Q. Please continue with the other elements of this package offer.**

20 A. With respect to shadow flicker, we will agree to retain the annual 30-hour limit discussed  
21 in this testimony and contained in Certificate Condition 30. In order to address daily  
22 flicker, the 30-minute proposal by Mr. Davis would not be adopted. Instead, EPW would  
23 agree that any complaints about shadow flicker could be treated in the Complaint

1 Resolution Process contained in Certificate Condition 55 and blocking measures, at  
2 EPW's expense, such as landscape plantings and window treatments, would be an  
3 available option should mitigation measures be determined necessary as part of the  
4 Complaint Resolution Process.

5 **Q. Please address the last element of the package offer.**

6 A. As part of the package offer, we will agree to use one of the Alternate Turbines (1, 2, or  
7 4) instead of Turbine 15 and classify Turbine 15 as a new Alternate (replacing Alternate  
8 3, which would be eliminated). It would now be called Alternate 3 and would only be  
9 used after the other remaining alternates were first used (1, 2, and 4), in other words, after  
10 the other alternates have been exhausted. If that were to occur, EPW agrees to prepare  
11 and file in the Compliance Filing the justification for using the new Alternate 3 (formerly  
12 Turbine 15). In that filing, EPW would demonstrate the extent Turbine 15 could be  
13 moved south-southeast on participating landowner property, without violating noise  
14 restrictions, setback requirements, or other constraints, to minimize visibility from Marsh  
15 Creek. If that were not satisfactory to DPS Staff, we would also include in the  
16 Compliance Filing a proposed mitigation plan that would explore potential improvements  
17 for access to, and use of, Marsh Creek for fishing, or potential sponsorship of available  
18 recreational events at Marsh Creek, at EPW's expense. Certificate Condition 78 would  
19 need to be revised to accommodate this condition.

20 **Q. If this package offer is accepted, will EPW be eliminating any of its rebuttal**  
21 **testimony?**

22 A. No, but on advice of counsel, together with the signatory party agreement on virtually all  
23 of the Certificate Conditions, we are very hopeful that hearing time, subsequent briefing,

1           and the remaining stages of the process could be reduced to allow for the schedule to be  
2           shortened by several months.

3   **Q.    Does this conclude the Panel's rebuttal testimony at this time?**

4   **A.    Yes it does.**

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

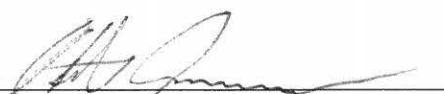
Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF NEW YORK     )  
  ) SS.:  
COUNTY OF ALBANY     )

Kris Scornavacca, being duly sworn, deposes and states:

1. I am the same Kris Scornavacca who submitted replacement, pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on March 5, 2019 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Kris Scornavacca

Sworn to before me this  
6<sup>th</sup> day of March, 2019

  
Notary Public

SAM M. LANIADO  
Notary Public, State of New York  
Qualified in Rensselaer County  
No. 4795491  
My Commission Expires 7/31/21

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

---

**AFFIDAVIT**

STATE OF California )  
 ) SS.:  
COUNTY OF San Diego )

Jeromy Miceli, being duly sworn, deposes and states:

1. I am the same Jeromy Miceli who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

Jeromy Miceli  
Jeromy Miceli

Sworn to before me this  
66 day of March, 2019

Notary Public

See Jurat

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
County of San Diego

Subscribed and sworn to (or affirmed) before me on this 06  
day of March, 2019, by Jeromy Miceli

proved to me on the basis of satisfactory evidence to be the  
person(s) who appeared before me.



(Seal)

Signature



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

---

**AFFIDAVIT**

STATE OF NEW YORK     )  
                                      ) SS.:  
COUNTY OF STEUBEN    )

Brian Schwabenbauer, being duly sworn, deposes and states:

1. I am the same Brian Schwabenbauer who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

*Brian Schwabenbauer*

---

Brian Schwabenbauer

Sworn to before me this  
6th day of March, 2019

*Margaret P. Ambuhl*  
Notary Public

MARGARET P. AMBUHL  
Notary Public, State of New York  
No. 01AM6082644  
Qualified in Saratoga County  
Commission Expires 11-04-2022

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

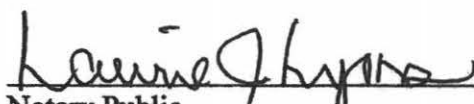
STATE OF MASSACHUSETTS)  
) SS.:  
COUNTY OF WORCESTER)

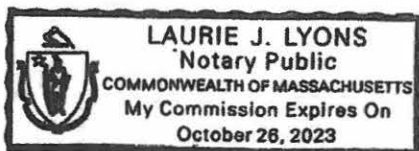
Judith A. Bartos, being duly sworn, deposes and states:

1. I am the same Judith A. Bartos who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Judith A. Bartos

Sworn to before me this  
4 day of March 2019

  
Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF SOUTH CAROLINA )  
 ) SS.:  
COUNTY OF BEAUFORT )

Diane E. Russell Reilly, being duly sworn, deposes and states:

- DIANE E. RUSSELL REILLY*
1. I am the same ~~[NAME]~~ who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
  2. I do not have any revisions to said Pre-Filed Testimony.
  3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
  4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

*Diane E. Russell Reilly*  
Diane E. Russell Reilly

Sworn to before me this  
5<sup>th</sup> day of March, 2019

*Lyna Maria Benitez Ganan Diaz*  
Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

STATE OF MARYLAND

SS.:

COUNTY OF PRINCE GEORGES

Timothy Sara being duly sworn, deposes and states:

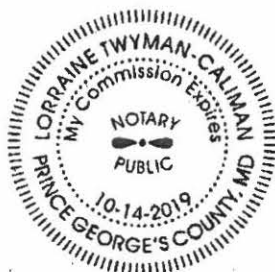
1. I am the same Timothy Sara who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
[NAME]

Sworn to before me this  
1 day of March, 2019



Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

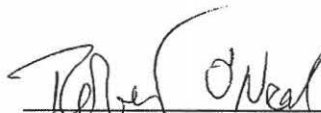
Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

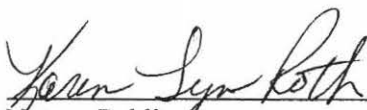
STATE OF MASSACHUSETTS     )  
  ) SS.:  
COUNTY OF MIDDLESEX )

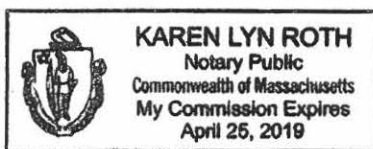
Robert O'Neal, being duly sworn, deposes and states:

1. I am the same Robert O'Neal who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Robert O'Neal

Sworn to before me this  
6 day of march, 2019

  
Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

# AFFIDAVIT

STATE OF MASSACHUSETTS )  
 ) SS.:  
COUNTY OF MIDDLESEX )

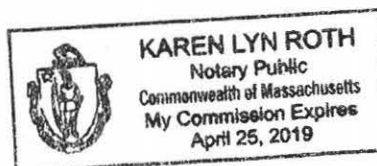
Richard Lampeter, being duly sworn, deposes and states:

1. I am the same Richard Lampeter who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Richard Lampeter

Sworn to before me this  
5 day of march 2019

Karen Lynn Roth  
Notary Public



NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

---

**AFFIDAVIT**

STATE OF MAINE :  
COUNTY OF CUMBERLAND, ss  
TREVOR PETERSON, being duly sworn, deposes and states:

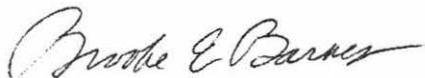
1. I am the same TREVOR PETERSON who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.



---

TREVOR PETERSON

Sworn to before me this  
5th day of March, 2019



---

Brooke E. Barnes  
Notary Public/Attorney at Law  
Maine Bar #3347

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

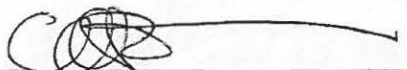
Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.

**AFFIDAVIT**

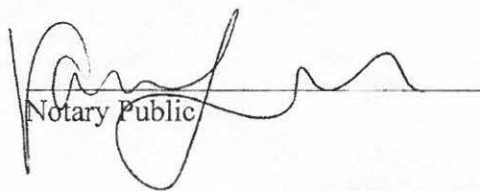
STATE OF NORTH DAKOTA     )  
  ) SS.:  
COUNTY OF WARD            )

Christopher Ollson, being duly sworn, deposes and states:

1. I am the same Christopher Ollson who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Christopher Ollson

Sworn to before me this  
7 day of March, 2019

  
Notary Public

VANESSA SHARMA  
Notary Public, State of North Dakota  
My Commission Expires May 16, 2019

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

---

Case 16-F-0062 – Application of Eight Point Wind, LLC  
for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct a  
Wind Energy Project.


---

**AFFIDAVIT**

STATE OF NEW YORK     )  
  ) SS.:  
COUNTY OF ONONDAGA )

Samantha Kranes, being duly sworn, deposes and states:

1. I am the same Samantha Kranes who submitted pre-filed testimony as part of the Eight Point Wind, LLC Article 10 Application in Case 16-F-0062 on November 29, 2017 and/or I am a member of the Eight Point Wind, LLC Rebuttal Panel Testimony filed on February 11, 2019 (hereinafter collectively "Pre-Filed Testimony").
2. I do not have any revisions to said Pre-Filed Testimony.
3. If I were asked the same questions today that are in the Pre-Filed Testimony pertaining to the sections of the Article 10 Application that I sponsored, and/or Rebuttal Panel Testimony my answers would be the same as they appear in the Pre-Filed Testimony.
4. I hereby request that the Pre-Filed Testimony be copied into the record of Case 16-F-0062 as if orally given today.

  
Samantha Kranes

Sworn to before me this  
6<sup>th</sup> day of March, 2019

  
Notary Public

Morgan Miller  
Notary Public, State of New York  
Qualified in Onondaga County  
Reg. No. 01M16258666  
My Commission Expires April 2, 2020

BEFORE THE  
STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of  
  
Eight Point Wind LLC  
  
Case 16-F-0062  
  
January 22, 2019

---

Prepared Testimony of:  
Consumer Services Panel

Lorna Gillings  
Utility Consumer Assistance  
Specialist 4

Erin O'Dell-Keller  
Chief

Office of Consumer Services

State of New York  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 Q. Will each member of the Consumer Services Panel  
2 (the CSP or Panel) state your names and business  
3 addresses?

4 A. My name is Lorna Gillings and my business  
5 address is Three Empire State Plaza, Albany, New  
6 York 12223.

7 Q. Please describe your educational background.

8 A. I received a Bachelor of Science degree in  
9 Business, Management and Economics from the  
10 State University of New York Empire State  
11 College in 2009.

12 Q. Please describe your professional experience and  
13 responsibilities with the New York State  
14 Department of Public Service (the Department).

15 A. I have been employed by the Department since  
16 1986 and have held administrative positions in  
17 various offices. In 2001, I joined the Office  
18 of Consumer Services (OCS), Call Center Unit, as  
19 a Utility Consumer Assistance Specialist (UCAS)  
20 I. My key responsibility was to assist  
21 customers with utility-related complaints,

CASE 16-F-0062

CONSUMER SERVICES PANEL

1        regarding energy, telecommunication, cable, and  
2        water services. I was promoted to UCAS II and  
3        joined the Analysis Unit within OCS. I then  
4        transferred to the Office of Consumer Policy  
5        (which is now merged with Office of Consumer  
6        Services), Consumer Outreach and Education Unit  
7        where I was promoted to UCAS III. I have been  
8        recently promoted to a UCAS IV position. My key  
9        responsibility in the Outreach and Education  
10       Unit is to promote consumer education regarding  
11       electric, natural gas, telecommunication and  
12       water utility services and ensure opportunities  
13       for public participation in Commission and  
14       Siting Board proceedings.

15    Q.    Have you ever provided testimony before the  
16       Commission or the Siting Board?

17    A.    Yes. I provided testimony as part of the  
18       Consumer Services Panel for Case 14-F-0490,  
19       Cassadaga Wind.

20    Q.    Ms. O'Dell-Keller, please state your full name,  
21       employer and business address.

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 A. My name is Erin O'Dell-Keller. I am employed by  
2 the Department and my business address is Three  
3 Empire State Plaza, Albany, New York 12223.

4 Q. Ms. O'Dell-Keller, what is your position with  
5 the Department?

6 A. I am the chief of the Outreach and Education and  
7 Call Center sections within the Office of  
8 Consumer Services.

9 Q. Please describe your educational background.

10 A. I received a Bachelor's Degree in Biology from  
11 Siena College in 1986 and Master's Degree in  
12 Environmental Studies from the State University  
13 of New York College of Environmental Science and  
14 Forestry in 1988.

15 Q. Please describe your professional experience.

16 A. From 1990 to 2001, I was employed as a Citizen  
17 Participation Specialist with the New York State  
18 Department of Environmental Conservation (DEC)  
19 where I assisted in coordinating and  
20 implementing DEC's public participation and  
21 community outreach and education efforts. I

CASE 16-F-0062

CONSUMER SERVICES PANEL

1       joined the Department in 2001 as a Utility  
2       Outreach and Education Specialist 2. The  
3       Department of Civil Service subsequently  
4       reclassified this title to Utility Consumer  
5       Program Specialist. Between 2001 and 2018, I  
6       was promoted three times to reach my current  
7       position. I oversee the Department's complaint  
8       call center, as well as the development and  
9       delivery of a statewide outreach and education  
10      program for Commission policies, programs and  
11      initiatives. Under my direction, the Outreach  
12      and Education Unit promotes consumer education  
13      through development of publications and other  
14      outreach materials, management of the AskPSC.com  
15      website, oversight of utility outreach programs  
16      and administration of grass roots efforts such  
17      as participating in events and presentations and  
18      fostering relationships with consumer leaders  
19      and advocacy groups across the state. Consumer  
20      Outreach and Education also ensures consumers  
21      have opportunities to participate in Commission

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 proceedings and comment on utility related

2 issues.

3 Q. Have you ever provided testimony before the

4 Commission or the Siting Board?

5 A. Yes. I provided testimony in Case 05-G-1494,

6 Orange and Rockland Utilities, Inc., regarding

7 service quality incentives, low income customer

8 needs and the company's outreach and education

9 program. I also testified in recent water-

10 related utility rate cases, including Case 16-W-

11 0130, Suez Water New York, Inc., regarding

12 service quality incentives, outreach and

13 education, and the company's proposed water

14 conservation plan, as well as Case 16-W-0259,

15 New York American Water, Inc. in regard to

16 implementation of a Customer Service Performance

17 Incentive mechanism, a proposed Low Income

18 Payment Program, the company's outreach and

19 education plan, and a proposal to merge several

20 tariffs into one, new tariff. For electric

21 generation cases, I have provided testimony as

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 part of the Consumer Services Panel and Staff  
2 Policy Panel for Case 14-F-0490, Cassadaga Wind.

3 Q. Are you providing testimony elsewhere in this  
4 proceeding?

5 A. Yes. I am testifying as part of the Staff Policy  
6 Panel.

7 Q. Is the Consumer Services Panel sponsoring any  
8 exhibits to accompany and support your  
9 testimony?

10 A. No.

11 Q. What is the purpose of the Panel's testimony in  
12 this proceeding?

13 A. We are testifying regarding the following  
14 issues: (1) public involvement, and (2) public  
15 comments received by the Department regarding  
16 the proposed Eight Point Wind Farm (the Project  
17 or Facility) proposed by Eight Point Wind LLC  
18 (the Applicant), a subsidiary of Innogy  
19 Renewable US.

20 Q. What is the intent of Public Service Law (PSL)  
21 Article 10 as it relates to public involvement?

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 A. Article 10 regulations mandate that an applicant  
2 actively seek public involvement throughout the  
3 Article 10 process, including planning, pre-  
4 application, certification, compliance and  
5 implementation.

6 Q. For what purpose?

7 A. It is the policy of the Siting Board to enable  
8 the public to participate in the decisions that  
9 affect their health, safety and the environment.  
10 The goal is to facilitate communication between  
11 applicants and interested or affected  
12 stakeholders; solicit public comments, ideas and  
13 local expertise; provide timely notice of  
14 proposed project milestones and events; and to  
15 encourage the public and interested parties to  
16 engage in the process and provide input into key  
17 decisions. A robust public involvement program  
18 will ensure that the Siting Board is aware of  
19 stakeholder concerns when making a determination  
20 regarding whether to award a Certificate of  
21 Environmental Compatibility and Public Need

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 (Certificate).

2 Q. How does public involvement become part of the  
3 Article 10 process?

4 A. Applicants are expected to communicate with the  
5 public early in the process and establish a  
6 community presence. The Article 10 regulations  
7 at 16 NYCRR §1000.4 require applicants to  
8 develop and implement a public involvement  
9 program (PIP) plan. The PIP must include  
10 consultation with affected agencies and other  
11 stakeholders; pre-application activities to  
12 encourage stakeholder participation at the  
13 earliest opportunity, as well as activities  
14 during certification and compliance; activities  
15 to educate the public about the proposed project  
16 and the Article 10 process; and the  
17 establishment of a project website to  
18 disseminate information to the public.

19 Q. When does the PIP plan have to be submitted on a  
20 proposed Article 10 project?

21 A. Applicants must submit a written PIP plan to the

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 Department at least 150 days prior to submitting  
2 a Preliminary Scoping Statement (PSS).

3 Q. Did the Applicant for the Project develop a PIP  
4 Plan?

5 A. Yes. The Applicant filed a PIP Plan with the  
6 Department in January 2016. Department Staff  
7 (Staff) reviewed the plan and the Applicant  
8 filed a revised PIP Plan in March 2016. The  
9 Applicant also provided an updated PIP Plan in  
10 July 2016 to include updated stakeholder  
11 information following a revision to the Project  
12 boundary.

13 Q. What elements were included in the Applicant's  
14 PIP Plan?

15 A. The Applicant stated in the PIP Plan that it had  
16 developed a preliminary stakeholder list by  
17 identifying parties that may be interested or  
18 affected by the Project, including affected  
19 federal, state and local agencies, host and  
20 adjacent municipalities, school districts,  
21 highway departments and emergency responders,

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 landowners, public interest groups, utility  
2 companies, and other stakeholders. The PIP Plan  
3 described how the Applicant planned to foster  
4 participation in the Article 10 process by  
5 disseminating Project information using the  
6 stakeholder list, soliciting knowledge through  
7 consultation with affected agencies and  
8 stakeholders, and conducting activities designed  
9 to educate the public about the Project, the  
10 process and intervenor funding opportunities.  
11 The Applicant established a Project website,  
12 document repositories, a local office in the  
13 Project Area and a toll-free telephone number  
14 for public access to Project information.  
15 Throughout the process, the Applicant has  
16 completed a log recording its consultation and  
17 outreach activities. The logs are included in  
18 the Eight Point Wind case file (Case number 16-  
19 F-0062) on the Department's website at,  
20 [www.dps.ny.gov](http://www.dps.ny.gov).  
21 Q. Throughout the pre-application, scoping and

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 application phases, did the Applicant implement  
2 a public involvement program as described in the  
3 PIP Plan?

4 A. Yes. In Staff's opinion, the Applicant was  
5 successful in implementing the PIP Plan  
6 elements. The Applicant encouraged  
7 participation from municipal officials and  
8 affected local, state and federal agencies, and  
9 as evidenced in the meeting tracking logs,  
10 sought input from these stakeholders. In  
11 addition, the Applicant attended local town  
12 board meetings, met with school districts and  
13 emergency response organizations, communicated  
14 with certain stakeholders by letter and email,  
15 and hosted three open houses for the public  
16 between June 2016 and July 2017. The Applicant  
17 also posted notice of the meetings and Project  
18 milestone filings in the local newspapers of  
19 record. The Applicant provided access to  
20 Project information through the Project website  
21 and the establishment of local document

CASE 16-F-0062

CONSUMER SERVICES PANEL

1           repositories.

2    Q.    Were there elements of the PIP plan that were  
3           less successfully implemented?

4    A.    Yes.  In the PIP plan, the Applicant agreed to  
5           track the public involvement program and provide  
6           regular updates on meetings, including dates,  
7           locations, attendees, purpose and follow-up  
8           actions.  The Applicant was diligent in filing  
9           timely Meeting Logs documenting outreach  
10          activities and consultations that occurred as  
11          the Project progressed.  In 2016, the Applicant  
12          filed a log nearly every month.  In 2017, there  
13          were five updates filed.  However, following  
14          submittal of the application in at the end of  
15          November 2017, there has only been one update  
16          filed (in August 2018).

17   Q.    In addition to the PIP plan developed and  
18          implemented by the Applicant, did the Siting  
19          Board conduct other public involvement  
20          activities?

21   A.    Yes.  As part of the Document and Matter

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 Management (DMM) system on the Department's  
2 website, the Department maintains a list of  
3 parties to the case, as well as individuals and  
4 organizations that request to be informed of  
5 Project filings.

6 Q. How does the Siting Board use the party list and  
7 service list?

8 A. The parties on the party and service lists are  
9 advised, by mail or email, of filings, rulings  
10 and notices of Project milestones, such as the  
11 availability of intervenor funding. The lists  
12 are also used to inform parties of Project  
13 activities, such as comment periods, procedural  
14 conferences, technical conferences and public  
15 statement hearings.

16 Q. Has the Siting Board issued press releases or  
17 conducted mailings concerning the Project?

18 A. Yes. After the Siting Board issued a letter to  
19 the Applicant indicating that the Application  
20 was in compliance with certain regulations, the  
21 Siting Board conducted a Public Statement

CASE 16-F-0062

CONSUMER SERVICES PANEL

1       Hearing (PSH). A press release was issued by  
2       the Siting Board in advance of the PSH. In  
3       addition, a letter and factsheet describing the  
4       Project was mailed to approximately 150  
5       municipal and elected officials, agencies, and  
6       community-based organizations in the Project  
7       area. Lastly, on September 26, 2018, the Siting  
8       Board directed the Applicant to publish a copy  
9       of the Notice of Informational Forums and Public  
10      Statement Hearings in four local newspapers in  
11      the Project Area and to mail a copy of the  
12      Notice to the stakeholder list, including host  
13      and adjacent landowners to ensure awareness of  
14      the opportunities for public comment.

15    Q.   Besides the development and implementation of  
16          the PIP plan, are there other ways for the  
17          public to be involved in an Article 10 process?

18    A.   Yes. Applicants are required at several stages  
19          in the Article 10 process to provide funds to be  
20          used by parties that participate in the Article  
21          10 process. The funds, known as "intervenor

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 funds" are collected by assessing a fee on the  
2 Applicant. The fee, as set forth by PSL §163(4)  
3 and §164(6), varies depending on the stage of  
4 the project: applicants submitting a PSS are  
5 assessed a fee equal to \$350 for each megawatt  
6 (MW) of generating capacity of the project with  
7 a cap of \$200,000. When an application is  
8 filed, a fee of \$1,000 per 1 MW generation  
9 capacity is assessed on the applicant, with a  
10 cap of \$400,000. Additional fees may be  
11 assessed if the applicant makes revisions to the  
12 application requiring additional scrutiny or to  
13 ensure an adequate record for the Siting Board's  
14 review. Upon filing the PSS and Application,  
15 the Applicant submitted intervenor fees of  
16 \$36,190 and \$105,885, respectively.

17 Q. How do the intervenor funds ensure public  
18 participation in the process?

19 A. The intervenor funds can be used to help defray  
20 expenses incurred by municipalities and local  
21 parties that participate in the scoping process

CASE 16-F-0062

CONSUMER SERVICES PANEL

1           and in the proceeding to consider the  
2           application. The funds can be used to pay for  
3           expert witnesses, consultants and legal fees.

4    Q.    Have intervenor funds been assessed and awarded  
5           in this proceeding?

6    A.    Yes. The host towns of Greenwood and West Union  
7           were awarded pre-application and application  
8           stage funding. A citizens group called Citizens  
9           for Maintaining Our Rural Environment was also  
10          awarded application stage funding. The  
11          intervenors have been granted awards to ensure  
12          their constituents are represented in the  
13          Article 10 process and that the Siting Board has  
14          a complete record on which base their decision  
15          regarding the facility.

16   Q.    Will there be additional public involvement and  
17          education requirements during the certification  
18          and compliance stages of the Article 10 process?

19   A.    Yes. There are public involvement procedures  
20          identified in the Project Application regarding  
21          notifying the public of project milestones and

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 site activities (such as blasting), as well as  
2 development and implementation of a complaint  
3 resolution plan. In addition, the Proposed  
4 Certificate Conditions, including, but not  
5 limited to Clauses 13, 55, and 121 include  
6 requirements that the Applicant is required to  
7 meet regarding public notifications regarding  
8 construction activities and complaint resolution  
9 procedures. These conditions will ensure that  
10 complaints regarding the facility are handled  
11 consistently and that the public will continue  
12 to receive information about the project.  
13 They're reasonable for a project of this type  
14 and should be adopted by the Siting Board.

15 Q. Have there been public comments submitted to the  
16 Siting Board regarding the proposed Project?

17 A. Yes. There have been approximately 155 public  
18 comments submitted by 67 people throughout the  
19 process to date, starting in 2016, and  
20 continuing through the beginning of 2019.

21 Q. In what format has the Siting Board received

CASE 16-F-0062

CONSUMER SERVICES PANEL

1           comments?

2    A.    Some comments have been sent in by mail, some by  
3           email and some were provided during the PSH held  
4           by the Siting Board on October 17, 2018, at the  
5           Hornell City Hall.

6    Q.    Are copies of these comments kept for public  
7           review?

8    A.    Yes, the comments can be found in the  
9           Department's DMM system, on the Department's  
10          website, under the Eight Point Wind case file.

11   Q.    Can you characterize the nature of the comments?

12   A.    The commenters were roughly split between one-  
13          third supporting the Project and two-thirds  
14          opposing the Project.  However, it should be  
15          noted that many comments received in the pre-  
16          application stage of the Project focused on the  
17          Town of Hartsville's wind law and the pros and  
18          cons of wind turbines in the Town.  Given that  
19          the Town passed a resolution not to host wind  
20          turbines and the Applicant withdrew its proposal  
21          to construct any portion of the Project in

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 Hartsville, those comments are not relevant to  
2 the case at this stage.

3 Q. What type of comments did the Siting Board  
4 receive from people in support of the Project?

5 A. Many comments referred to the economic benefits  
6 to the local area, particularly potential tax  
7 relief, provided by the Project. Supporters  
8 noted that this is an economically depressed  
9 area and that future opportunities for  
10 industrial and agricultural growth are very  
11 slim. They stated that landowners have few  
12 options to retain property that has been in  
13 their families for generations and residents  
14 have had to auction off cattle, equipment and  
15 property due to taxes. Commenters believe that  
16 homeowners have been bearing the brunt of the  
17 tax burden in the area and the Project will  
18 provide relief and allow landowners to obtain  
19 additional income to help pay bills.  
20 Supporters also stated that the Project will  
21 provide funds for schools, equipment and

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 infrastructure improvements for local  
2 municipalities. In addition, commenters stated  
3 that the Project will provide new temporary and  
4 permanent jobs for electricians, tradesmen, etc.  
5 during and after construction. The commenters  
6 noted that the money earned from the jobs will  
7 be recirculated in to the community and provide  
8 associated benefits for local hotels, businesses  
9 and restaurants.

10 Q. Beyond economic benefits, were there other  
11 reasons some commentators support the Project?

12 A. Yes. Many supporters pointed out the need to  
13 move towards clean energy and away from fossil  
14 fuels. Commenters noted that wind energy does  
15 not produce emissions, require fracking or  
16 result in oil spills. They also believe that the  
17 Applicant and agencies have carefully reviewed  
18 the possible environmental impacts of the  
19 Project and will take steps to mitigate any  
20 risks. Lastly, a few people noted that  
21 landowners should have the right to manage their

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 land however they choose, including allowing  
2 wind turbines on their property.

3 Q. What type of comments did the Siting Board  
4 receive from people opposed to the Project?

5 A. The majority of comments in opposition to the  
6 Project were regarding environmental concerns,  
7 health concerns, and financial and community  
8 impacts. Overall, the commenters' position is  
9 that the negative impacts on the community far  
10 outweigh any short-term financial benefits in  
11 the form of reduced taxes and a temporary boost  
12 to the local economy, stating that these are not  
13 worth the long-term impacts to human health and  
14 wildlife, disruption of the natural beauty of  
15 the area and reduced property values.

16 Q. What comments did the Siting Board receive about  
17 public health concerns regarding this Project?

18 A. Many comments were made about the impact of  
19 noise, infrasound, vibration, and shadow flicker  
20 on the health of residents and animals within a  
21 certain radius of the turbines. The commenters

CASE 16-F-0062

CONSUMER SERVICES PANEL

1       note that wind project developers discount the  
2       health effects of wind turbines and put people  
3       in harm's way. Commenters cited reports  
4       regarding health impacts associated with "wind  
5       turbine syndrome" including visual, sonorous,  
6       and psychological impairment and note that  
7       symptoms can range from dizziness, to sleep  
8       disturbance, depression, and anxiety to cardiac  
9       problems. Several dairy farmers expressed  
10      concerns about potential impacts on cattle,  
11      including shortened life expectancy and reduced  
12      milk production. In particular, commenters  
13      stated concerns about infrasound, noting that it  
14      has been used a weapon by the military and more  
15      studies are needed to explore the full impacts  
16      on human health. They noted that projects like  
17      this one should be put on hold pending more  
18      information including the World Health  
19      Organization report on standards. The  
20      commenters note that setbacks need to be set at  
21      appropriate distances to ensure the health,

1 safety and welfare of the residences in the  
2 area. They also pointed out that wind turbines  
3 planned in Long Island were being sited 30 miles  
4 offshore and Steuben County residents should be  
5 allowed the same consideration as downstate  
6 communities. Lastly, in addition to wind  
7 turbine syndrome, several residents noted  
8 concerns about the potential impact of  
9 construction activities, such as digging and  
10 setting concrete, on their wells. Commenters  
11 mentioned concerns about water quality if the  
12 concrete and rebar from the base of turbines  
13 leach contaminates into the ground water.

14 Q. Did the Applicant address the concerns about  
15 potential public health impacts associated with  
16 industrial wind turbines?

17 A. Exhibit 2 of the Application discusses potential  
18 public health and safety risks specific to wind  
19 power, such as tower collapse, blade failure,  
20 ice throw and shadow flicker, but indicates that  
21 potential impacts will be mitigated by siting

CASE 16-F-0062

CONSUMER SERVICES PANEL

1           and setback requirements. Exhibits 15, 19, 23,  
2           and 35 provide more in-depth evaluation of  
3           health, noise, and electromagnetic field  
4           concerns. In addition, Exhibits 31 and 32  
5           describe laws, ordinances and regulations to  
6           address setbacks, turbine heights, etc.

7    Q.    Can you be more specific about the public  
8           comments the Siting Board received regarding  
9           environmental impacts of this Project?

10   A.    Residents expressed concern that the turbines  
11           will have negative impacts on wildlife,  
12           particularly bird and bat populations. Several  
13           residents have noted the presence of eagles in  
14           the Project area. Additionally, commenters have  
15           stated that there are wetlands in the vicinity  
16           of the Project that provide a feeding ground for  
17           eagles and other birds. One commenter stated  
18           that the bat and avian studies were completed in  
19           a location that is no longer in the  
20           Project/Study Area and should be redone. Others  
21           have noted that the use of industrial wind farms

CASE 16-F-0062

CONSUMER SERVICES PANEL

1       will displace wildlife and contribute to  
2       deforestation. Lastly, commenters stated that  
3       there are several wind projects planned in  
4       region and expressed concern about the  
5       cumulative impacts of multiple large-scale wind  
6       projects in the same area.

7    Q.   Did the Applicant address concerns about  
8       potential environmental impacts associated with  
9       industrial wind turbines?

10   A.   Exhibit 2 of the Application provided a summary  
11       discussion of the anticipated environmental  
12       impacts associated with the construction and  
13       operation of the Facility. The Application  
14       explained several potential impacts regarding  
15       the area's ecology, air, ground and surface  
16       water, and wildlife and habitat. The  
17       Application states approximately 30 acres will  
18       be permanently displaced due to Project  
19       components and the site has been designed to  
20       avoid sensitive resources such as wetlands to  
21       the maximum extent possible. Further, the

CASE 16-F-0062

CONSUMER SERVICES PANEL

1        Applicant states that measures have been  
2        identified to minimize potential impacts that  
3        cannot be avoided. In-depth discussions  
4        regarding these topics are contained within the  
5        exhibits of the Application, specifically  
6        Exhibits - 17, and 21-23.

7    Q.    What comments did the Siting Board receive  
8        regarding potential financial and community  
9        impacts regarding this Project?

10   A.    Several commenters noted that the rural, bucolic  
11        nature of the area and its aesthetic beauty may  
12        be impacted by the proposed wind farm.  
13        Specifically, commenters have noted that the  
14        large wind turbines would cause significant  
15        visual impacts, disrupt the peace and  
16        tranquility of the area, and ruin an area with  
17        scenic vistas and unspoiled environmental  
18        treasures. The consequences would include  
19        negative impacts on tourism and property values.  
20        Commenters note that tourists come to the area  
21        to view wildlife and woodlands, enjoy the

CASE 16-F-0062

CONSUMER SERVICES PANEL

1       silence and peaceful surroundings and see the  
2       stars in the clear night skies and the presence  
3       of 600-ft tall turbines would be detrimental.  
4       In addition, several commenters were concerned  
5       about the potential health impacts and the  
6       possibility of well contamination as a result of  
7       construction and operation of the facility could  
8       have an impact on property values and the  
9       ability to sell in the future. Lastly, there  
10      were additional concerns about the impacts on  
11      emergency frequencies and the risks to public  
12      health if they are disrupted, as well as  
13      possible disruptions to flight path for Medevac  
14      emergencies, military training, and hot air  
15      balloon festivals in the area.

16    Q.   Were there other concerns expressed regarding  
17          community impacts?

18    A.   Yes. A few commenters noted that the Project  
19          has disrupted the community before being built  
20          since it is pitting landowners who will benefit  
21          monetarily from leasing their land (the

CASE 16-F-0062

CONSUMER SERVICES PANEL

1        "participants") against those who will not  
2        benefit because of the negative impacts of the  
3        Project (the "non-participants"). Given that  
4        the participants will make money from the  
5        Project, commenters felt that any properties  
6        imposed upon by the Project (including non-  
7        participating landowners) should be financially  
8        compensated. Other commenters noted that  
9        Applicant should be taxed at full industrial  
10       rates instead of using a PILOT program. Lastly,  
11       one commenter noted that decommissioning funds  
12       should be put into an escrow account or bonds in  
13       the event that the Applicant is not capable of  
14       paying these costs ten to twenty years in the  
15       future. Q.       Did the Applicant address the  
16       concerns about potential financial and community  
17       impacts associated with industrial wind  
18       turbines?

19    A.    The Application evaluated different aspects of  
20       community and socioeconomic impacts of the  
21       Project. Exhibit 2 summarized the review of

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 cultural, historic and recreational resources,  
2 as well as impacts on visual resources,  
3 transportation and communications. These issues  
4 were evaluated further in Exhibits 20, 24-27,  
5 and 31.

6 Q. What comments did the Siting Board receive about  
7 the "need" for this Project?

8 A. Several commenters expressed doubts about  
9 whether renewable energy is needed in the area  
10 since Steuben County has reliable electric  
11 power.

12 Q. What other concerns did the Siting Board receive  
13 about the use of wind technology?

14 A. Several commenters stated that the intermittent  
15 nature of wind will require the use of back-up  
16 power when the wind power is off-line. In  
17 addition, they stated that wind turbines only  
18 generate approximately 22 percent capacity in  
19 New York. Additional concerns were expressed  
20 about the subsidies provided to wind farms,  
21 which, they argue residents will pay for in the

CASE 16-F-0062

CONSUMER SERVICES PANEL

1 form of higher taxes.

2 Q. Did the Applicant address concerns about the  
3 need for the Project and specifically wind  
4 turbines?

5 A. Yes. Exhibit 8 of the Application looked at  
6 electric modeling and estimated production,  
7 pricing and greenhouse gas emissions.

8 Q. Did Department Staff review public comments  
9 received by the Siting Board with regard to the  
10 Eight Point Wind Project?

11 A. Yes. Staff reviewed comments received through  
12 various means such as DMM filings, letters to  
13 the Siting Board and the PSH. Staff analyzed  
14 the case record as a whole, including the public  
15 comments, when developing our testimony  
16 regarding various topical areas in the case.

17 Q. Does this conclude your testimony at this time?

18 A. Yes, it does.

BEFORE THE  
STATE OF NEW YORK  
SITING BOARD ON ELECTRIC GENERATION  
AND THE ENVIRONMENT

---

In the Matter of

Eight Point Wind

Case 16-F-0062

January 22, 2019

---

Prepared Testimony of:

Andrew C. Davis,  
Utility Supervisor  
Office of Electric, Gas & Water  
Environmental Certification &  
Compliance Section

State of New York  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

DAVIS

1 Q. Please state your name and business address.

2 A. Andrew C. Davis, Three Empire State Plaza,  
3 Albany, New York 12223.

4 Q. By whom are you employed and in what capacity?

5 A. I am employed by the New York State Department  
6 of Public Service (Department) as a Utility  
7 Supervisor in the Office of Electric, Gas &  
8 Water in the Environmental Certification and  
9 Compliance Section (Staff).

10 Q. Please describe your education and work  
11 experience.

12 A. My education and work experience are reflected  
13 in the attached *Curriculum Vitae* identified as  
14 Exhibit\_\_(ACD-1). That document also lists the  
15 cases where I have previously provided testimony  
16 to the Public Service Commission (Commission)  
17 and the New York State Siting Board on Electric  
18 Generation and the Environment (Siting Board).

19 Q. What is the purpose of your testimony?

20 A. My testimony will provide analysis of certain  
21 environmental and land use impacts associated

CASE 16-F-0062

DAVIS

1 with the Eight Point Wind Generating Facility  
2 (the Facility) proposed by Eight Point Wind, LLC  
3 (the Applicant), a subsidiary of NextEra Energy  
4 Resources, LLC.

5 Q. Are you sponsoring and/or relying upon any  
6 Exhibits as part of your testimony?

7 A. Yes. I have relied on the Application,  
8 supplements, and associated documents. I am  
9 sponsoring specific exhibits \_\_\_\_ (ACD-2) - an  
10 information request response; and \_\_\_\_ (ACD-3) a  
11 map published by NYS Department of Environmental  
12 Conservation. In addition, I am recommending  
13 proposed compliance filing criteria and  
14 Certificate Conditions that are in exhibits more  
15 directly sponsored by the Staff Policy Panel's  
16 testimony.

17 Q. As part of your analysis, what components of  
18 Eight Point Wind's Application (the Application)  
19 and its supplements did you review?

20 A. I specifically reviewed Exhibit 3 - Location of  
21 Facilities; Exhibit 4 -- Land Use; Exhibit 9 -

CASE 16-F-0062

DAVIS

1 Exhibit 11 - Preliminary Design Drawings  
2 (Facilities Lighting Plan); Alternatives;  
3 Exhibit 13 - Real Property; Exhibit 15 - Public  
4 Health and Safety (Shadow Flicker); Exhibit 20 -  
5 - Cultural Resources; Exhibit 24 -- Visual  
6 Impacts; Exhibit 31 - Local Laws and Ordinances;  
7 and Exhibit 32 - State Laws and Regulations.

8 Q. Would you please summarize your testimony?

9 A. My testimony will: identify resource impacts not  
10 fully addressed by the Application; propose and  
11 or support measures to avoid, reduce, minimize  
12 or mitigate certain adverse impacts; and will  
13 make recommendations for consideration by the  
14 Siting Board in reaching its determination as to  
15 whether, and upon what conditions, to grant a  
16 Certificate of Environmental Compatibility and  
17 Public Need (the Certificate).

18 Q. Does the Application adequately identify the  
19 location of proposed Project facilities?

20 A. The Application identifies the location of  
21 proposed major generating facilities and

CASE 16-F-0062

DAVIS

1 ancillary facilities within the Towns of  
2 Greenwood and West Union, Steuben County, in  
3 various figures and drawings throughout the  
4 several volumes of the Application and  
5 supplements. I note, however, that the location  
6 of the proposed telecommunications  
7 interconnection to Frontier Telecomm has not  
8 specifically been identified (as addressed  
9 further below). Associated (and non-  
10 jurisdictional Article VII) transmission and  
11 communications facilities subject to review  
12 pursuant to Public Service Law Article VII are  
13 indicated as extending northerly from the  
14 generating facility's site through the Towns of  
15 Greenwood, Hartsville and Hornellsville, also in  
16 Steuben County, to the existing New York State  
17 Electric & Gas (NYSEG) Bennett substation,  
18 located in Hornellsville south of the City of  
19 Hornell.

20 In addition, the Application identifies a new  
21 fiber optic telecommunications line that would

CASE 16-F-0062

DAVIS

1 extend outside of the Project Area approximately  
2 1-mile, to be built by Frontier Communications.  
3 Staff requested information regarding the  
4 location, installation method, franchise rights,  
5 and other approvals needed. The response  
6 provided by Eight Point indicated that the line  
7 would be installed on existing poles, and that  
8 mapping of the proposed fiber line was being  
9 prepared. (See Ex.\_\_(ACD-2) Eight Point's  
10 response to DPS-16.) I note that the location  
11 map of the proposed telecommunications line  
12 described in that document has not been provided  
13 to date. Eight Point Wind should provide the  
14 location map figure and explain the design with  
15 its rebuttal testimony so that the Siting Board  
16 can make appropriate findings regarding the  
17 interconnection facility and cumulative impacts.

18 Q. Does the Application address land uses at the  
19 Facility site?

20 A. Yes, Exhibit 4 provides information as generally  
21 required by the applicable regulations.

CASE 16-F-0062

DAVIS

1 Q. Will the Project have adverse effects on any  
2 existing land uses?

3 A. Yes. There will be some short-term effects on  
4 agricultural uses due to construction phase  
5 impacts including topsoil stripping, access  
6 interruptions, crop losses; and potential for  
7 longer-term effects due the modest reductions in  
8 productive agricultural area due to the  
9 Facility's development of access roads, turbine  
10 sites, meteorological tower placement, and  
11 overhead electric line placements.  
12 There will be conversion of forest land to other  
13 open uses and cover types. Electric generating  
14 uses, including access roads, wind turbine  
15 sites, and electric collection line corridors  
16 are proposed changes in use associated with the  
17 proposed development and operation of the major  
18 generating facility.  
19 The Facility will also have the potential to  
20 affect use and enjoyment of residential  
21 dwellings, given the extent of shadow flicker

CASE 16-F-0062

DAVIS

1 expected at 38 identified residences that may  
2 experience in excess of 30 minutes of shadow  
3 flicker daily (as reviewed at Application  
4 Exhibit 15, Appendix 15-1 - Shadow Flicker  
5 Report; Appendix D - Shadow Flicker Modeling  
6 Results - Worst-Case Hours per day: Discrete  
7 Points, Table D-1). Some of the receptors are  
8 potentially screened to some extent by  
9 vegetation or are reportedly un-occupied  
10 structures.

11 Q. Are there avoidance or minimization measures  
12 that can reduce the degree of shadow flicker  
13 exposures?

14 A. The Application provides discussion of potential  
15 mitigation measures to address complaints  
16 related to flicker exposure, including  
17 installation of window shades or landscape  
18 vegetation. There is no consideration in the  
19 Application or its accompanying proposed  
20 Certificate Conditions of monitoring or active  
21 controls to preclude exposures exceeding 30

1 minutes daily to avoid or minimize such  
2 disturbances, including the peaceful use and  
3 enjoyment of property.

4 Q. Why limit exposure to shadow flicker to 30  
5 minutes daily?

6 A. Exposure to wind turbine shadow flicker has been  
7 characterized as an annoyance where it exceeds  
8 30 minutes daily or 30 hours annually. (National  
9 Regulatory Research Institute, for the National  
10 Association of Regulatory Utility Commissioners  
11 (NARUC), *Put It There! - Wind Energy & Wind-Park*  
12 *Siting and Zoning Best Practices for States*,  
13 2012; available at  
14 [http://nrri.org/download/2012-03-put-it-there-](http://nrri.org/download/2012-03-put-it-there-wind-energy-and-wind-park-siting-and-zoning-best-practices-and-guidance-for-states/)  
15 [wind-energy-and-wind-park-siting-and-zoning-](http://nrri.org/download/2012-03-put-it-there-wind-energy-and-wind-park-siting-and-zoning-best-practices-and-guidance-for-states/)  
16 [best-practices-and-guidance-for-states/](http://nrri.org/download/2012-03-put-it-there-wind-energy-and-wind-park-siting-and-zoning-best-practices-and-guidance-for-states/)).

17 Q. Are the land use impacts identified potentially  
18 significant?

19 A. Yes. These agricultural use impacts are  
20 proposed to occur on properties of participating  
21 landowners who will otherwise benefit from terms

CASE 16-F-0062

DAVIS

1 of easements and payments for use of the sites.  
2 Best management practices including the New York  
3 State Department of Agriculture and Markets  
4 *Guidelines for Agricultural Mitigation for Wind*  
5 *Power Projects*, as most recently revised (April  
6 19, 2018) and strict application of these  
7 provisions under review by a qualified, on-site  
8 Agricultural Inspector, will be appropriate for  
9 minimizing the long-term effects on agricultural  
10 uses of the Facility site parcels.

11 The residential use impositions on non-  
12 participating properties, including shadow  
13 flicker (and noise effects), are use impacts on  
14 properties that are not part of the Facility  
15 site and involve non-participant landowners who  
16 do not stand to benefit directly from the  
17 easements associated with the Facility sites.

18 Appropriate siting and impact controls to  
19 minimize impacts of wind turbine operations on  
20 those receptors are important aspects of the  
21 proposed facilities.

CASE 16-F-0062

DAVIS

1 Q. What design alternatives do you recommend to  
2 reduce land use effects?

3 A. Final micro-siting of turbines, access roads and  
4 other Facility locations, and use of appropriate  
5 technologies, should be implemented in the final  
6 Facility design to further avoid and minimize  
7 adverse effects on uses of properties. The  
8 adoption of controls on the daily maximum shadow  
9 flicker exposure at non-participating receptors  
10 will minimize adverse effects to the extent  
11 practicable.

12 Q. Has the Applicant made appropriate showings  
13 regarding the requirements of Exhibit 13 - Real  
14 Property?

15 A. The Application, Exhibit 13, provides  
16 appropriate information regarding real property  
17 interests in the Facility site.

18 Q. Does the Application provide an analysis of  
19 potential cultural resource impacts from the  
20 proposed Facility?

21 A. Yes. The Application as supplemented provides

CASE 16-F-0062

DAVIS

1 an assessment of potential cultural resources  
2 including, historic properties and cemeteries  
3 reviewed for architectural or historic  
4 significance, archeological resources based on  
5 known sites, as well consideration of survey  
6 work at the Facility site, including site walk-  
7 over, and test pit excavation and review. The  
8 Application, Exhibit 20, and associated  
9 appendices and attachments, provides information  
10 on the Applicant's surveys and analysis of  
11 results. The historic architectural survey  
12 includes an inventory of structures and  
13 buildings identified by a cultural historian as  
14 being 50 years or older, with notes summarizing  
15 considerations including building architectural  
16 style, features, current integrity, and  
17 identification of potential based on relevant  
18 criteria for whether structures and buildings  
19 warrant consideration of eligibility for being  
20 listed on the State and National Register of  
21 Historic Places (NRHP).

CASE 16-F-0062

DAVIS

1 Q. Would the proposed construction and operation of  
2 the Facility result in any adverse effects on  
3 cultural resources?

4 A. Yes. The introduction of wind turbines and  
5 meteorological tower(s) will represent visual  
6 (and audible) changes to the landscape setting  
7 of several properties which are listed or  
8 eligible for listing on the NRHP.

9 Q. Have historic resource impacts been established  
10 as a consequence of the proposed Facility  
11 development?

12 A. As of the date of submittal of this testimony,  
13 the State Historic Preservation Office (SHPO)  
14 has not issued any determinations as to impacts  
15 on historic resources for the present Facility  
16 proposal. SHPO has requested an avoidance plan  
17 for two archeologic sites identified in the  
18 Applicant's Archeologic Surveys, by  
19 correspondence dated January 31, 2018. SHPO  
20 advises that no response has been received to  
21 date. Thus, this matter is open and no final

CASE 16-F-0062

DAVIS

1 determinations have been made.

2 Based on review of the Application, the two  
3 sites identified in the January 2018  
4 correspondence, while located within the wind  
5 Project Area, appear to be associated with the  
6 location of the major electric transmission  
7 facility proposed by Eight Point Wind in its  
8 associated PSL Article VII Application in Case  
9 18-T-0202, and, thus, are not directly  
10 associated with the major electric generating  
11 facilities under consideration in this  
12 proceeding. The sites are historic period  
13 archeologic sites representing 19<sup>th</sup> century  
14 farmsteads. If avoidance is not achieved, some  
15 degree of additional evaluation and resource  
16 recovery during the final design and compliance  
17 process is likely appropriate.

18 Q. Has a determination been made as to potential  
19 adverse effects of the proposed major electric  
20 generating facilities on historic resources?

21 A. Not to date. My expectation, based on over 30

CASE 16-F-0062

DAVIS

1        years of experience in review of cultural  
2        resources and consultations with SHPO, and  
3        particularly recent experience with large wind  
4        turbine developments, there is likely to be an  
5        adverse effect determination for historic  
6        resources based on the scale of the wind  
7        turbines, and the visual changes to the rural  
8        landscape settings hosting the wind energy  
9        project. An offset mitigation plan to provide  
10       benefits to historic resources in the Project  
11       area is likely to be recommended by the SHPO.  
12       Furthermore, there are standard resource  
13       protection measures that should be adopted as  
14       conditions associated with issuance of a  
15       Certificate, including: precluding construction  
16       in any areas that have not been reviewed and  
17       approved for archeologic impact avoidance;  
18       measures for stopping work and investigating any  
19       unanticipated archeologic or historic  
20       archeologic resources identified during  
21       construction, including discovery of human

CASE 16-F-0062

DAVIS

1 remains; and presentation of a final offset  
2 mitigation plan for adverse effects on the  
3 landscapes comprising the broad settings of  
4 historic architectural resources.

5 Q. What are you recommending specifically?

6 A. My recommendations are that the Siting Board  
7 could reach appropriate findings as to the  
8 probable nature of impacts on cultural  
9 resources, and require as Certificate  
10 Conditions: that results of final consultation,  
11 pursuant to NHPA §106 (or Parks, Recreation and  
12 Historic Preservation Law, §14.09 in the absence  
13 of a NHPA §106 review) be provided when  
14 available; that any specific requirements  
15 regarding resource avoidance, protection or  
16 recovery adopted through the NHPA §106 process  
17 be addressed in compliance filings and final  
18 design plans; and that appropriate construction  
19 measures be implemented.

20 Q. Are those the only Certificate Conditions  
21 concerning cultural resources you recommend the

CASE 16-F-0062

DAVIS

1           Siting Board consider?

2    A.    No. The appropriate Cultural Resources  
3           Protection Measures, which are included as  
4           Clause 31 of the Proposed Certificate  
5           Conditions, should be adopted. These include  
6           measures for avoidance of archaeological sites  
7           identified within the Facility site; adoption of  
8           a Final Unanticipated Discovery Plan, and  
9           development and implementation of a Final  
10          *Cultural Resources Mitigation and Offset Plan*,

11       Q.    Have you reviewed the visual impact  
12           assessment for the proposed Facility?

13    A.    Yes, I reviewed Application Exhibit 24, and  
14           associated Appendices and analysis including the  
15           Visual Impact Assessment and Historic Resources  
16           Visual Assessment.

17    Q.    Does the Application address potential visual  
18           effects of the proposed Facility?

19    A.    Yes. Application Exhibit 24 and supporting  
20           documents including a Visual Impact Assessment  
21           (VIA) (Application, Volume 5, Appendix 24-1).

CASE 16-F-0062

DAVIS

1 Viewshed mapping depicts the extent of  
2 facilities visibility throughout the study area;  
3 photo-simulations demonstrate the probable  
4 appearance of the Facility as viewed from  
5 several viewpoints representing a range of  
6 landscape settings, distance zones, and  
7 landscape positions occurring throughout the 10-  
8 mile study area; ratings of contrast and  
9 narrative descriptions provide discussion and  
10 analysis of the nature of visibility, user  
11 groups and likely viewers of the associated  
12 facilities of the Project from the viewpoints,  
13 and characterization of impacts are provided.

14 Q. Will the proposed Facility result in adverse  
15 visual impacts?

16 A. The proposed Facility will include up to 31 wind  
17 turbines reaching up to nearly 600 feet in  
18 height. These tall structures will be visible  
19 throughout a large area of the study area  
20 depending on local topography and tree cover, as  
21 documented in the VIA presented in the

CASE 16-F-0062

DAVIS

1       Application. Several visually-sensitive  
2       receptor locations, including locations listed  
3       or eligible for listing on the National Register  
4       of Historic Places, will have views of the wind  
5       turbines. The Application indicates that two  
6       different turbine models will be used.

7    Q.   How would use of two turbine models affect  
8       visual resource considerations?

9    A.   Most wind farms use, and many municipal wind  
10       laws require, one turbine model be used  
11       throughout the project site, to provide a high  
12       degree of uniformity in visual appearance of the  
13       overall field of turbines in a given project.  
14       The Applicant has indicated that it has selected  
15       two turbines from two different manufacturers to  
16       be deployed at the Facility site. Thus, there  
17       is likely to be a degree of dissimilarity among  
18       the overall field of turbines deployed. Turbine  
19       appearance differences and details have not been  
20       provided, so the degree of difference in  
21       appearance cannot be assessed at this time. The

CASE 16-F-0062

DAVIS

1        Application characterizes the degree of  
2        difference as minor, and suggests that by  
3        placing the turbines in clusters or groups using  
4        only one of the two designs imparts a degree of  
5        consistency of appearance. The type of details  
6        that would potentially appear different (nacelle  
7        shapes and dimensions, blade lengths and shapes)  
8        are, however, likely to be evident at foreground  
9        and middle-ground distances.

10    Q.    What operational effects are represented in the  
11        Application?

12    A.    Since the larger model of wind turbines exceed  
13        499 feet in height, they will all need to be  
14        marked with aviation hazard lighting, including  
15        two flashing warning lights mounted on each of  
16        the turbine nacelles.

17    Q.    Are these red or white flashing lights?

18    A.    The Applicant should request use of red lights,  
19        rather than white lights which would have  
20        greater degree of visibility at night.

21    Q.    Is there any alternative to flashing warning

CASE 16-F-0062

DAVIS

1 lights during all hours of darkness?

2 A. The Application also describes the mitigation

3 measure of using radar-activated aircraft

4 detection lighting controls. This technology

5 allows the turbine hazard lighting to normally

6 be turned off, and only be turned on when

7 activated by radar sensors detecting aircraft

8 approaching and passing nearby or over the

9 Facility. Staff recommends that this measure

10 should be a requirement for any Certificate

11 granted by the Siting Board at this location.

12 This is the only significant reduction measure

13 that I am aware of that can be applied for

14 general visibility of the Facility, albeit

15 limited to night-time hours, and visual impacts

16 located at the majority of important receptor

17 locations spread throughout the projected

18 viewshed area. Other options are likely to be

19 offset measures. The Applicant has agreed to

20 evaluate the use of radar-activated lighting

21 controls pursuant to Clause 55(e) of its

1 proposed Certificate Conditions.

2 Q. Are the conclusions reached in the VIA supported  
3 by the analysis as presented?

4 A. The VIA presents a reasonable depiction and  
5 characterization of the likely appearance of the  
6 proposed generating Facility from a range of  
7 viewpoints.

8 Q. What other visual resource issues will result  
9 from project siting, construction and operation?

10 A. While not a significant adverse visual resource  
11 effect, the visibility of above-ground electric  
12 collection lines is an impact that would be  
13 avoided if all of the proposed collection lines  
14 were proposed to be located underground. There  
15 is one location where this involves areas of  
16 public view from roadways, including at NYS  
17 Route 248 in the Town of West Union along Marsh  
18 Creek. Staff discussed consideration of  
19 underground installation at this section of the  
20 collection system, and the Applicant provided  
21 some information regarding the engineering

CASE 16-F-0062

DAVIS

1 limitations associated with underground  
2 installation at that location.

3 Q. What, if any, design alternatives do you  
4 recommend to reduce the visual and cultural  
5 resource impacts and effects of the proposed  
6 Facility?

7 A. As described above, the Applicant should  
8 continue consideration of underground  
9 installation of the collection lines at Marsh  
10 Creek and NYS Route 248 in the final design  
11 phase. Furthermore, Staff recommends  
12 consideration of elimination of turbine T-15  
13 located south of Route 248. This turbine will  
14 loom large above a wide lake-like location on  
15 Marsh Creek, creating a stark visual contrast  
16 with the existing landscape, due to the height  
17 of the turbine and the repetitive rotational  
18 motion of the turbine blades above the  
19 predominantly static landscape. Marsh Creek is  
20 the only sizable water body in the Visual Study  
21 Area, thus it comprises the majority of the area

CASE 16-F-0062

DAVIS

1 included in the Open Water zone as delineated in  
2 the Viewshed Similarity zones used to  
3 characterize the Project area landscape. As  
4 indicated in the Application, Marsh Creek  
5 includes public accessibility for recreational  
6 uses via shoreline Public Fishing Rights (PFR)  
7 acquired by the NYS Department of Environmental  
8 Conservation (NYSDEC). The Application,  
9 however, discounts the potential visibility from  
10 areas of public access, incorrectly asserting  
11 that "the activity [shoreline access  
12 recreational fishing] takes place on the eastern  
13 shore facing west in the opposite direction.  
14 The turbines are located behind viewers where  
15 visibility is blocked by the hill" (Application  
16 Vol. 5; Appendix 24-1 - Visual Impact  
17 Assessment; p. 51). As indicated in the map  
18 published by NYSDEC and provided in proposed  
19 Exhibit\_\_(ACD-3), NYSDEC maintains Public  
20 Fishing Rights at both shores of Marsh Creek  
21 (a.k.a. Cryder Creek) along NYS Route

CASE 16-F-0062

DAVIS

1           248.Exhibit\_\_\_\_(ACD-3) is a map of Cryder Creek  
2           (also known as Marsh Creek in upper reaches)  
3           Public Fishing Rights held by New York State  
4           Department of Environmental Conservation.  
5           (Source:  
6           [http://www.dec.ny.gov/docs/fish\\_marine\\_pdf/cryde](http://www.dec.ny.gov/docs/fish_marine_pdf/cryder)  
7           [rcreek.pdf](http://www.dec.ny.gov/docs/fish_marine_pdf/cryder) .) Recreational access from roadside  
8           areas of Route 248 would correspond with the  
9           Facility appearance for Viewpoint VP17 as  
10          depicted in the VIA (Application Vol. 5;  
11          Appendix 24-1; Visual Impact Assessment;  
12          Attachment 2 - Simulations; VP17 Route 248,  
13          Marsh Creek - West Union; Proposed Conditions).  
14          I further note that the Application identifies  
15          this location as NYS Regulated Wetland RX-2,  
16          designated as a class II wetland. The wetland is  
17          identified in the Application studies as wetland  
18          FA-W-4. (See Application Appendix 22-2, Wetlands  
19          Delineation Report; Figure 6, Page 29 of 46).  
20          The Application identifies functions and values  
21          associated with each delineated wetland.

CASE 16-F-0062

DAVIS

1 Wetland FA-W-4 (DEC Wetland RX-2) is noted by  
2 the applicant's analysis as having a full range  
3 of wetlands functions and benefits, including  
4 habitat and water quality benefits, but also  
5 providing recreation and scientific values,  
6 uniqueness and heritage values, and visual and  
7 aesthetic qualities. (Application Appendix 22-  
8 12, Wetlands Functions and Benefits Analysis,  
9 pg. 27.) The Application acknowledges that  
10 wetland FA-W-4 is unique in that it is the only  
11 wetland assessed for the proposed Facilities  
12 that provides public access and recreational  
13 opportunities; this recreational value is noted  
14 as a principal value for this site within the  
15 Study Area (Id., pg. 43). This unique value is  
16 echoed for Educational and Scientific value (pg.  
17 44) and Visual Quality and Aesthetics (pg. 45).  
18 For these reasons, DPS recommends that visual  
19 impact mitigation be implemented at this  
20 location, as described above.  
21 As discussed above, other visual impact

CASE 16-F-0062

DAVIS

- 1 minimization and mitigation measures should  
2 include requirements to use radar-activated  
3 aircraft hazard lights and other lighting  
4 controls should be adopted. Also, as discussed  
5 above, offset measures for historical cultural  
6 resources impacts are under consideration by the  
7 SHPO through its pending §106 National Historic  
8 Preservation Act review process (or §14.09  
9 process in the absence of a NHPA §106 review).
- 10 Q. What visual impact mitigation measures does the  
11 Application identify as viable?
- 12 A. The Application provides statements regarding  
13 measures that would be implemented to reduce  
14 visual impacts in the landscape at VIA p. 66.  
15 These measures include some that are based on  
16 best management practices, and others that are  
17 standard wind turbine designs (e.g., non-  
18 reflective surface finish; tubular turbine  
19 towers design; no advertising or logos on wind  
20 turbines).
- 21 Q. Does Staff agree with the Applicant's visual

1           impact "mitigation" measures?

2    A.   Staff recommends that these measures are readily

3           available; some measures are standard features

4           on modern turbines. Other measures that are

5           generally applied include decommissioning and

6           removal of facilities at end of useful life, as

7           otherwise generally required by local laws and

8           PSL Article 10 regulations; use of appropriate

9           lighting controls, as described below, will be

10          appropriate pursuant to compliance filing

11          recommendations by Staff; and other measures

12          should be adopted as requirements of any Siting

13          Board grant of a Certificate.

14          Other measures require additional consideration.

15          Exterior lighting is proposed for the collection

16          substation site, the Operation and Maintenance

17          (O&M) Building, and at each wind turbine. Staff

18          generally advises against motion-detection

19          lighting controls. Staff recommends that an

20          exterior lighting design be specified to avoid

21          off-site lighting effects, by: use of task

CASE 16-F-0062

DAVIS

1        lighting as appropriate to perform specific  
2        tasks with manual switching, rather than using  
3        photo-sensitive or motion-detecting (which the  
4        Applicant has agreed to utilize pursuant to  
5        proposed Certificate Condition 55(d)), on/off  
6        switches that are susceptible to false operation  
7        due to movement of wind-blown debris and  
8        vegetation, or wild animal movement near the  
9        site or along fence-lines. Lighting should be  
10       designed to provide safe working conditions at  
11       appropriate locations. Full cutoff fixtures  
12       with no drop-down optical elements should be  
13       required for area lighting at the O&M site and  
14       at outdoor storage areas to avoid both the  
15       spread of illumination and the creation of  
16       glare. A lighting specification detail and plan  
17       and profile arrangement should be required to be  
18       submitted in site plan compliance documents for  
19       final review and approval pursuant to 16 NYCRR  
20       Parts 1002.2 and 1002.3. Certificate Condition  
21       55 is proposed to address these recommendations

CASE 16-F-0062

DAVIS

1 through Facility design and final site planning  
2 and compliance filing review.

3 Q. Does the Application provide an analysis of  
4 local legal provisions applicable to the  
5 proposed Facility, as required under 16 NYCRR  
6 §1001.31?

7 A. The Application complies with the requirements  
8 of Exhibit 31. The Application provides a  
9 review and listing of local laws, procedural and  
10 substantive provisions, and indicates that all  
11 substantive requirements have been addressed by  
12 the proposed development.

13 Q. What is Staff's recommendation regarding local  
14 laws?

15 A. The Application addresses the required showings  
16 for Exhibit 31 and provides information  
17 regarding local building code conformance and  
18 indicates that the Applicant can fund  
19 consultants to provide assistance with building  
20 plan reviews and approvals to the Towns pursuant  
21 to Host Community Agreements (provided that

CASE 16-F-0062

DAVIS

1           intervenor funding is not used for this purpose,  
2           or the parties' road use agreements).

3    Q.    Does the Application address compliance with  
4           relevant New York State laws?

5    A.    Exhibit 32 adequately addresses State Laws  
6           applicable to the proposed Facility.

7    Q.    Does this conclude your pre-filed direct  
8           testimony regarding impacts of the proposed  
9           Eight Point Wind Project at this time?

10   A.    Yes, generally, although I also provide  
11           testimony in conjunction with the Staff Policy  
12           Panel, including supporting specific recommended  
13           Certificate Conditions appropriate for  
14           requirements that should be associated with any  
15           Certificate issued by the Siting Board.

BEFORE THE  
STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of  
  
Eight Point Wind, LLC  
  
Case 16-F-0062  
  
January 22, 2019

---

Prepared Testimony of:

Jeremy Flaum  
Utility Analyst 3  
Office of Electric, Gas and  
Water

State of New York  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

FLAUM

1 Q. Please state your name, employer, and business  
2 address.

3 A. My name is Jeremy Flaum. I am employed by the  
4 New York State Department of Public Service  
5 (Department). My business address is Three  
6 Empire State Plaza, Albany, New York 12223.

7 Q. Mr. Flaum, what is your position with the  
8 Department?

9 A. I am employed as a Utility Analyst 3 in the  
10 Environmental Certification and Compliance  
11 Section of the Office of Electric, Gas and  
12 Water.

13 Q. Please briefly describe your educational  
14 background and professional experience.

15 A. I graduated from the State University of New  
16 York College at Cortland in 2003 with a Bachelor  
17 of Science degree in Geology. I also received a  
18 Master of Science degree in Environmental  
19 Management from the University of Maryland,  
20 University College, in 2008. I joined the  
21 Department in 2009. Prior to joining the

CASE 16-F-0062

FLAUM

1 Department, I held Geologist positions at two  
2 environmental consulting firms where I performed  
3 field investigations, oversight, and data  
4 analysis for multiple environmental remediation  
5 sites.

6 Q. Please describe your responsibilities with the  
7 Department.

8 A. My primary responsibilities include evaluating  
9 environmental impacts and construction  
10 feasibility issues for electric and gas  
11 transmission facilities under Article VII and  
12 electric generating facilities under Article 10  
13 of the Public Service Law (PSL). Additionally,  
14 I have reviewed utility property site  
15 contamination investigation and remediation  
16 (SIR) matters and provided recommendations for  
17 SIR cost recovery in utility rate cases before  
18 the Public Service Commission of the State of  
19 New York (Commission).

20 Q. Have you provided testimony in previous  
21 proceedings before the New York State Board on

CASE 16-F-0062

FLAUM

1 Electric Generating Siting and the Environment  
2 (Siting Board)?

3 A. Yes, I provided testimony regarding geologic and  
4 water resource impacts of proposed major  
5 electric generation wind energy facilities in  
6 Case 14-F-0490. I also testified as part of the  
7 Staff Policy Panel for that case.

8 Q. Have you provided testimony in any other  
9 proceedings as a member of Department Staff?

10 A. Yes. I have testified before the Commission as  
11 part of Department Staff's SIR Panels for  
12 numerous rate cases, including, most recently:  
13 Cases 18-E-0067 and 18-G-0068, Orange and  
14 Rockland Utilities, Inc., and Cases 17-E-0459  
15 and 17-G-0460, Central Hudson Gas and Electric  
16 Corporation (Central Hudson). I have also  
17 testified before the Commission regarding the  
18 water quality issues and environmental impacts  
19 of proposed major electric transmission projects  
20 in Cases 08-T-0034 and 10-T-0139.

21 Q. Please summarize the scope of your testimony.

1 A. I will present findings regarding the impacts of  
2 the proposed Project facilities on geologic,  
3 surface water and groundwater resources within  
4 the Project study area and provide  
5 recommendations for minimization and mitigation  
6 of impacts to geologic and drinking water  
7 resources.

8 Q. Are you sponsoring any exhibits with your  
9 testimony?

10 A. No.

11 Q. Briefly summarize the geologic characteristics  
12 of the Project area.

13 A. Based on information provided in Exhibit 21 of  
14 the Application, the Preliminary Geotechnical  
15 Investigation Report included as Appendix 21-2  
16 of the Application, the Desktop Geotechnical  
17 Study included as Appendix 21-6 of the  
18 Application, and publicly available information  
19 and mapping, surficial soils within the Project  
20 area are primarily glacial till, particularly  
21 along upland areas. Additionally, portions of

1       the Project study area, particularly lowland  
2       areas, are comprised of glacial outwash and  
3       recent alluvium deposits. The underlying  
4       bedrock is primarily interbedded shale,  
5       siltstone, and sandstone. The Project area is  
6       characterized as having a low seismic risk and  
7       there is no documented evidence of karst bedrock  
8       features.

9    Q.   Are there any constraints to siting and  
10       construction of Project facilities associated  
11       with the existing soils and bedrock?

12   A.   Yes. As indicated in the Desktop Geotechnical  
13       Study, soils in the Project area are generally  
14       characterized as moderately to highly corrosive  
15       to steel and concrete and highly susceptible to  
16       frost action. Soils that are highly susceptible  
17       to frost action present a significant risk for  
18       displacement, instability, and degradation of  
19       turbine foundations and other Project components  
20       within the upper three to four feet of the  
21       surficial soils and can present challenges in

1 restoration of soil surfaces.

2 Q. Should additional geotechnical investigations be  
3 performed prior to final design and construction  
4 of the Facility?

5 A. Yes. As required by the Applicant's proposed  
6 Certificate Condition 29, the Company should  
7 perform pre-construction detailed final  
8 geotechnical investigations that include soil  
9 borings at each of the proposed turbine  
10 locations. This will ensure that soil and  
11 shallow bedrock conditions are fully  
12 characterized, and appropriate mitigation  
13 measures can be developed for each foundation.

14 Q. What mitigation measures could be utilized to  
15 address soil corrosivity?

16 A. Generally, protective coatings may be applied to  
17 steel supports and structures to minimize risks  
18 of corrosion. Similarly, additives may be  
19 included in concrete mixtures to prevent  
20 dissolution and degradation of concrete  
21 foundations from effects of acidic soils. These

CASE 16-F-0062

FLAUM

1 mitigation measures should be included in the  
2 final foundation designs, as needed, based on  
3 the results of the final geotechnical  
4 investigations.

5 Q. Should mitigation measures be implemented to  
6 minimize risks of displacement, instability, and  
7 degradation of turbine foundations and other  
8 Project components located in soils highly  
9 susceptible to frost action?

10 A. Yes. Turbine foundations and any buried  
11 collection lines should be located at depths  
12 below the frost zone and constructed on a  
13 compacted layer of well-drained structural fill  
14 material that is less susceptible to frost  
15 action than the native soils. Steel monopoles  
16 for overhead electric lines should be embedded  
17 at depths below the frost zone.

18 Q. Do you have any recommendations for the scope of  
19 final geotechnical investigations?

20 A. Yes. The final geotechnical investigations  
21 should confirm the suitability of existing soils

CASE 16-F-0062

FLAUM

1       for all turbine sites and identify all locations  
2       where highly corrosive soils or soils with a  
3       high frost risk, and soils with high  
4       shrink/swell potential require appropriate  
5       mitigation measures. The investigations should  
6       also confirm whether blasting operations will be  
7       required in areas of shallow bedrock.  
8       Additionally, the final geotechnical report  
9       should characterize soils and shallow bedrock  
10      conditions in locations where horizontal  
11      directional drilling (HDD) is proposed.

12    Q.   Why do you recommend that the Applicant  
13          characterize geologic conditions in areas where  
14          HDD is proposed.

15    A.   According to the Exhibit 21 of the Application,  
16          HDD is proposed at several road and State-  
17          protected stream crossing locations. During  
18          drilling operations, there is a risk of  
19          inadvertent releases of drilling fluids, an  
20          occurrence commonly referred to as frac-out.  
21          Although drilling fluids are generally comprised

CASE 16-F-0062

FLAUM

1 of benign materials, inadvertent releases into  
2 wetlands or surface water bodies may have  
3 temporary negative environmental impacts. Due  
4 to the extremely fine-grained and adhesive  
5 nature of the constituent materials of drilling  
6 muds, frac-outs may be difficult to contain,  
7 cause temporary increases in turbidity, and  
8 potentially smother benthic organisms as fine-  
9 grained materials settle. Characterization of  
10 the soil and shallow bedrock conditions at the  
11 HDD locations will enable a more complete  
12 analysis of the feasibility of HDD installation  
13 and facilitate a comprehensive site-specific  
14 frac-out risk analysis.

15 Q. Has the Applicant provided a plan for response  
16 and handling of inadvertent releases of drilling  
17 fluids?

18 A. Yes, the Draft Inadvertent Return Plan was  
19 provided as Appendix 21-1 to the Application.  
20 However, as noted in the Application, a final  
21 and complete identification of all HDD locations

- 1           has not yet been completed. A detailed and  
2           site-specific frac-out plan should be developed  
3           once a Balance of Plant contractor is engaged  
4           and final HDD locations are identified.  
5           Accordingly, a final, site-specific Frac-Out  
6           Risk Assessment and Contingency Plan should be  
7           included in the Site Engineering and  
8           Environmental Plan (SEEP), submitted as a  
9           Compliance Filing for review and approval by the  
10          Siting Board prior to the commencement of  
11          construction. The specifications for the SEEP  
12          are attached as Exhibit \_\_ to the testimony of  
13          the Staff Policy Panel.
- 14    Q.    Are there any drinking water resources within  
15          the Project area?
- 16    A.    Yes. There are several public and private water  
17          supply wells in the Project area, including  
18          several locations where Project facilities are  
19          proposed to be constructed in close proximity to  
20          existing water supply wells.
- 21    Q.    Could construction and operation of the Project

1           have a negative impact on these water supplies?

2    A.   Construction activities may have temporary  
3           negative impacts on well water quality,  
4           particularly if appropriate setback distances  
5           are not implemented for ground intrusive  
6           activities.

7    Q.   Does the Applicant propose a minimum setback  
8           distance from public or private drinking water  
9           wells?

10   A.   Yes, the Applicant's proposed Certificate  
11           Condition 52 states that no turbines shall be  
12           sited within 100 feet of an existing water  
13           supply well.  Additionally, where any collection  
14           lines or access roads are located within 100  
15           feet of an existing active water supply well,  
16           the condition would require that pre- and post-  
17           construction water quality testing be provided  
18           for such wells.  Proposed Certificate Condition  
19           52 further states that if impacts are confirmed  
20           by a qualified third-party, a new well will be  
21           constructed more than 100 feet from a collection

1 line or access road.

2 Q. Do you agree with the Applicant's proposal?

3 A. Partially. I agree that water quality testing

4 on existing water supply wells within 100 feet

5 of proposed linear facilities is appropriate.

6 However, the proposed wind turbine setback of

7 100 feet from existing wells does not adequately

8 minimize potential impacts to drinking water

9 resources, particularly if blasting or pile

10 driving is required for Facility construction.

11 However, the Applicant's proposed Certificate

12 Condition 27(f) establishes a turbine setback of

13 1.5 times turbine height from non-residential

14 structures, which appropriately mitigates the

15 risks.

16 Q. Do you assert that a drinking water well should

17 be characterized as a non-residential structure?

18 A. Yes. Therefore, the required setback of

19 turbines from public and private drinking water

20 wells would be 1.5 times the turbine height.

21 Q. Are the drinking water well setback distances

CASE 16-F-0062

FLAUM

1 required by the proposed Certificate Conditions  
2 27(f) and 52 adequate?

3 A. Yes. The proposed setbacks from collection  
4 lines and access roads are consistent with the  
5 New York State Department of Health (NYSDOH)  
6 requirements for minimum separation distances to  
7 protect water wells from contamination. The  
8 NYSDOH requirements for minimum separation  
9 distances for protection of water wells are  
10 included in Table 1 of 10 NYCRR Part 5, Subpart  
11 5-1 Standards for Water Wells - Appendix 5B.  
12 Further, the proposed setback of turbines from  
13 existing water wells is generally consistent  
14 with the setbacks established by the Siting  
15 Board in Case 14-F-0490, which required that  
16 turbines be located at least 550 feet from non-  
17 residential structures.

18 Q. Do you recommend that the Applicant coordinate  
19 with or otherwise notify other water supply well  
20 owners/operators?

21 A. Yes. During the final design phase of the

1 Project, the Certificate Holder should contact  
2 all well owners/operators within the Project  
3 area in order to survey the exact locations of  
4 the wells. The actual locations of water supply  
5 wells should be shown on maps included in the  
6 SEEP.

7 Q. Are there existing oil and/or gas wells located  
8 within the vicinity of the Project?

9 A. Yes. As shown on Figure 4-2 of the Application,  
10 there are numerous mapped oil and gas well  
11 locations within the Project area. Most of  
12 these are concentrated near the center of the  
13 Project area, between turbine 15 to the south,  
14 turbine 14 to the east, and turbine 9 to the  
15 west. However, several mapped oil and gas wells  
16 are also scattered throughout the entire Project  
17 area.

18 Q. Are the oil and gas wells within the Project  
19 area active?

20 A. While publicly available information indicates  
21 that some of these wells are active, most of the

1 wells are identified as either plugged and  
2 abandoned or having an unknown status. In  
3 general, it seems that most of the wells are not  
4 active.

5 Q. Should the project developer attempt to identify  
6 the status of those wells with an unknown  
7 status?

8 A. Yes, prior to construction the Applicant should  
9 attempt to locate and identify the status of  
10 existing wells within the Project area. These  
11 efforts could include discussions with  
12 landowners and correspondences with the well  
13 owner/operator, where such contact information  
14 is available, along with field surveys performed  
15 prior to construction.

16 Q. Has the Applicant proposed any setbacks from  
17 existing oil and gas wells and associated  
18 infrastructure?

19 A. Yes, the Applicant's proposed Certificate  
20 Condition 27(c) states that turbines will be  
21 sited at least 1.1 times the turbine tip blade

1 height from existing active gas and oil wells,  
2 unless waived by the landowner and well  
3 operator.

4 Q. Do you agree with the proposed setback?

5 A. Yes, the proposed setbacks would adequately  
6 minimize risks of damage to the existing wells  
7 from construction and operation of the Facility.

8 Q. Has the Applicant identified procedures that  
9 would be followed if oil and gas impacted soils  
10 are encountered during Facility construction?

11 A. Yes. The Applicant's proposed Certificate  
12 Condition 149 identifies procedures that could  
13 be implemented if petroleum impacted soils are  
14 encountered.

15 Q. Do you agree with the procedures required by the  
16 proposed condition?

17 A. Yes, the proposed procedures are consistent with  
18 the requirements of State regulations for  
19 handling and disposing of contaminated soils  
20 pursuant to Chapter IV, Subchapter B of Title 6  
21 of the New York Codes, Rules and Regulations.

CASE 16-F-0062

FLAUM

1 Q. Does this conclude your testimony?

2 A. Yes it does.

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

BEFORE THE  
STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of  
  
Eight Point Wind, LLC  
  
Case 16-F-0062  
  
January 22, 2019

---

Prepared [REDACTED] Testimony  
of:

Daniel S. Gadomski  
Utility Analyst I  
Office of Market and  
Regulatory Economics

State of New York  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

Gadomski

1 Q. Please state your name and business address.

2 A. My name is Daniel Gadomski. I am employed by  
3 the New York State Department of Public Service  
4 (Department). My business address is Three  
5 Empire State Plaza, Albany, New York 12223

6 Q. What is your position with the Department?

7 A. I am a Utility Analyst 1 Economist in the Office  
8 of Market and Regulatory Economics.

9 Q. Please briefly state your educational background  
10 and professional experience.

11 A. I received a Bachelor of Arts Degree in  
12 Economics from the State University of New York  
13 at Albany in 2014. I have been employed with  
14 the Department since June 2014. My current  
15 responsibilities at the Department include  
16 examining and testifying regarding compensation  
17 and benefits issues for various rate case  
18 proceedings, analyzing socioeconomic impacts for  
19 Public Service Law (PSL) Article 10 siting of  
20 electric generating facilities, and  
21 participating on Department Staff teams tasked  
22 with overseeing utility management audits.

23 Q. Have you previously testified before the New  
24 York State Public Service Commission

CASE 16-F-0062

Gadomski

1 (Commission) or the State of New York Board on  
2 Electric Generation Siting and the Environment  
3 (Siting Board)?

4 A. Yes. I testified on compensation and benefits  
5 issues in Cases 16-G-0058 and 16-G-0059, KeySpan  
6 Gas East Corporation, d/b/a National Grid, and  
7 The Brooklyn Union Gas Company, d/b/a National  
8 Grid NY; Case 16-W-0130, Suez Water NY; Case 16-  
9 G-0257, National Fuel Gas Corporation; Case 16-  
10 W-0259, New York American Water Company; Case  
11 16-G-0369, Corning Natural Gas; Cases 17-E-0238  
12 and 17-G-0239, Niagara Mohawk Power Corporation  
13 d/b/a National Grid; Cases 17-E-0459 and 17-G-  
14 0460, Central Hudson Gas & Electric Corporation;  
15 and Cases 18-E-0067 and 18-G-0068, Orange and  
16 Rockland Utilities, Inc.

17 Q. In your testimony, will you refer to, or  
18 otherwise rely upon, any information produced  
19 during the discovery phase of this proceeding?

20 A. Yes. I will refer to, and have relied upon,  
21 several responses to Staff Information Requests  
22 (IRs). These responses are included in  
23 Exhibit\_\_(DSG-1).

24 Q. Are you sponsoring any other exhibits?

1 A. Yes. I am also sponsoring Exhibit\_\_(DSG-2) and  
2 (DSG-3).

3 Q. Please briefly describe these exhibits.

4 A. Exhibit\_\_(DSG-2) contains the results of the  
5 JEDI model sensitivity analysis I performed.  
6 Exhibit\_\_(DSG-3) contains a benchmarking  
7 analysis comparing job estimates for renewable  
8 energy projects on a jobs-per-MW basis.

9 Q. What is the purpose of your testimony?

10 A. The purpose of my testimony is to provide the  
11 Siting Board with an analysis of the estimated  
12 employment impacts of the Eight Point Wind  
13 Energy Facility (the Project or the Facility),  
14 as presented in Exhibit 27 of Eight Point Wind,  
15 LLC's (the Applicant) Application.

16 Q. What socioeconomic effects are required to be  
17 addressed in Exhibit 27 by 16 NYCRR §1001.27?

18 A. This regulation requires that Exhibit 27 include  
19 an estimate of the onsite labor impacts, the  
20 direct impacts experienced by the companies  
21 engaged in the construction and operation of the  
22 Facility; indirect local revenue and supply  
23 chain impacts, the impacts on demand for goods  
24 and services in industry sectors that supply or

1 otherwise support the companies engaged in  
2 construction and operation; induced impacts, the  
3 impacts of changes in household income resulting  
4 from the Project; incremental school district,  
5 municipal, public authority, or utility  
6 operating and infrastructure costs; annual taxes  
7 or payments; and, equipment or training  
8 deficiencies in local emergency response  
9 capacity.

10 Q. What portion of Exhibit 27 does your testimony  
11 focus on?

12 A. The direct, indirect, and induced job impacts  
13 associated with the construction and ongoing  
14 operational phases of the Project.

15 Q. How did the Applicant estimate the job impacts  
16 of constructing and operating the Facility?

17 A. The Applicant utilized the National Renewable  
18 Energy Laboratory's (NREL) Jobs and Economic  
19 Development Impact (JEDI) model. Project-  
20 specific data is input into the model, which  
21 then uses state-specific multipliers to  
22 calculate direct, indirect, and induced job and  
23 economic impacts associated with both the  
24 construction and operational phases of a power

1 generation project's development.

2 Q. What is the outcome of the Applicant's use of  
3 the JEDI model to predict job and economic  
4 impacts for the Facility?

5 A. The Applicant's use of the JEDI model estimates  
6 the Project will result in an estimated 338  
7 total statewide jobs during the construction  
8 phase of the Project. The Applicant's use of  
9 the JEDI model also estimates that 16 total jobs  
10 will be created during the ongoing annual  
11 operation of the Facility.

12 Q. Do you have any concerns with regard to the job  
13 estimates that result from the Applicant's use  
14 of the JEDI model?

15 A. Yes. I have concerns with the non-robust nature  
16 of the indirect and induced job estimates that  
17 are produced by the JEDI model.

18 Q. Has Staff has previously argued that only  
19 reasonably precise estimates of job creation  
20 should be included in the weighing of the  
21 benefits and costs of a proposed generation  
22 facility?

23 A. Yes. In Case 12-E-0577, on pages 19-20 of the  
24 Notice Soliciting Comments on Staff Report

1        issued May 16, 2014, Staff stated that large  
2        macroeconomic models are not designed to capture  
3        the benefits of an individual project that might  
4        have a relatively small impact on the statewide  
5        economy, but a substantially larger impact on  
6        the local economy. Staff goes on to state that  
7        it is also very likely that the estimates of  
8        impacts of changes to the overall economy are  
9        well within the margin of error of such models.  
10      Thus, Staff recommends that such unreliable  
11      induced job estimates should not be relied upon  
12      and that only the direct economic development  
13      impacts unique to the local community be counted  
14      as a benefit of the Project.

15    Q.   Does the Commission's January 21, 2015 Order in  
16          Case 14-M-0101 Establishing a Benefit Cost  
17          Analysis Framework discuss the inclusion of Non-  
18          Energy Benefits (NEBs), such as job impacts, in  
19          the benefit cost analysis of a proposed project?

20    A.   Yes. On page 20 of that Order, the Commission  
21          notes that "[t]he utilities and customer  
22          representatives vigorously oppose reflecting  
23          these non-operational NEBs in the BCA Framework.  
24          They point out that NEBs can result in costs as

1 well as benefits, and argue that impacts on  
2 jobs, for example, could actually result in  
3 lower levels of employment if increased utility  
4 costs reduce economic activity generally. Such  
5 job losses, they say, would offset any job gains  
6 that might be realized through employment  
7 increases at DER providers. They also claim  
8 NEBs are speculative and cannot be accurately  
9 valued." The Commission then goes on to  
10 conclude on page 20 of that Order that "[w]here  
11 operational NEBs cannot be monetized generally  
12 or their value cannot be deduced through  
13 location-specific or project-specific analysis,  
14 they may be reflected on a qualitative basis."

15 Q. What are you recommending in this regard?

16 A. It is Staff's interest to not have a largely  
17 uncertain estimate of job impacts unreasonably  
18 factor into in the overall evaluation of the  
19 benefits and costs associated with this, or any,  
20 proposed generation facility. Only those  
21 components of the job impact analysis that are  
22 reasonably robust should be given material  
23 weight in the overall evaluation of the Project  
24 by the Siting Board.

1 Q. Does the JEDI Model, relied on by the Applicant,  
2 present a sufficiently robust analysis of the  
3 indirect and induced job impact estimates?

4 A. No. The JEDI model has several limitations,  
5 many of which are enumerated on NREL's JEDI  
6 model website itself at:

7 ([https://www.nrel.gov/analysis/jedi/limitations.](https://www.nrel.gov/analysis/jedi/limitations.html)  
8 [html](https://www.nrel.gov/analysis/jedi/limitations.html)). These limitations include: results are

9 an estimate, not a precise forecast; results  
10 reflect gross impacts and not net impacts;  
11 results are based on approximations of  
12 industrial input-output relationships, namely  
13 they are dependent on the accuracy of the  
14 multipliers used; results are based on the  
15 assumption that all inputs are used in fixed  
16 proportions and respond perfectly elastically;  
17 and, results are dependent on the accuracy and  
18 appropriateness of the project description.

19 Q. What is the significance of the JEDI model only  
20 reflecting gross impacts and not net impacts?

21 A. By only capturing positive job impacts, the JEDI  
22 model fails to recognize that a wind facility  
23 has the potential to cause job losses as well as  
24 job gains.

1 Q. In what way does a wind facility have the  
2 potential to cause job losses as well as job  
3 gains?

4 A. According to a peer reviewed article by  
5 researchers who work at the National  
6 Laboratories, which produced the input-output  
7 multiplier based JEDI Model, "[e]stimates  
8 derived from input-output modeling and project-  
9 level case studies...are subject to several well-  
10 known criticisms. Both approaches, when applied  
11 at a local level, typically focus on project-  
12 specific gross impacts and may not reflect the  
13 full net impact resulting from a given project  
14 or set of projects. For example, local economic  
15 development losses associated with the possible  
16 displacement of other local energy sources or  
17 with increased electricity rates due to wind  
18 development are often not considered."  
19 (<https://pubag.nal.usda.gov/download/56364/PDF>).

20 Q. Please explain further.

21 A. In much the same way that a wind or any other  
22 generating facility has the potential to cause  
23 indirect and induced job gains, it also has the  
24 potential to cause indirect and induced job

1 losses. As defined above, indirect and induced  
2 impacts are the impacts of changes in jobs  
3 resulting from spending on the Project and from  
4 changes in income resulting from the Project;  
5 thus, indirect and induced jobs are jobs that  
6 are created or lost by businesses and households  
7 having more or less income to spend in the  
8 economy. In this case, the number of indirect  
9 and induced jobs created is based on the  
10 multipliers that are used in the JEDI model. A  
11 multiplier indicates the relationship between  
12 the number of direct, indirect, and induced jobs  
13 created and the cost of the Project.

14 Q. Explain how indirect or induced jobs are  
15 impacted.

16 A. The over-market costs of a wind facility, and  
17 renewable generation in general, mean that such  
18 a facility requires a subsidy to operate in the  
19 market. That subsidy is paid for through the  
20 acquisition of Renewable Energy Credits (RECs)  
21 by the New York State Energy Research and  
22 Development Authority (NYSERDA) through a  
23 Renewable Energy Standard (RES) solicitation  
24 that is ultimately funded by utility ratepayers

1 through a surcharge on their bills. Thus, the  
2 construction and operation of renewable  
3 generation leads to an increase in the retail  
4 price of electricity and ultimately the  
5 ratepayers' bills. The money that ratepayers  
6 use to pay those higher bills leads to a loss of  
7 indirect and induced jobs because the ratepayers  
8 otherwise do not have that money to spend in the  
9 economy that would then indirectly create jobs  
10 in other industries.

11 Q. How could an economic impact model better  
12 reflect the indirect and induced job losses  
13 resulting from a wind facility?

14 A. A model's structure should reflect the  
15 relationship between the higher retail price of  
16 electricity that ratepayers pay and the number  
17 of indirect and induced job losses. Similarly,  
18 the model structure should capture the  
19 displacement of another generator made  
20 unnecessary by the renewable energy project.  
21 The positive-only job impact limitation imposed  
22 by the JEDI model fails to consider how changes  
23 in the retail price of electricity or the  
24 closure or cancellation of other power plants in

1           the State caused by the construction of a wind  
2           facility could lead to negative job impacts.

3    Q.   Have the net job impacts of a renewable energy  
4           generation previously been modelled?

5    A.   Yes.   The New York Solar Study, published by  
6           NYSERDA in 2012, is an example of a model that  
7           considers the net benefits of a renewable  
8           generating facilities  
9           ([https://www.nyserda.ny.gov/About/Publications/S](https://www.nyserda.ny.gov/About/Publications/Solar-Study)  
10          [olar-Study](https://www.nyserda.ny.gov/About/Publications/Solar-Study)).   The purpose of the New York Solar  
11          Study was to evaluate the costs and benefits of  
12          increasing the use of photovoltaics (PV) in New  
13          York State to 5,000 MW by 2025.   The employment  
14          impacts of this policy on New York's economy  
15          were developed using a Regional Economic Models  
16          Inc. Policy Insight (REMI PI+) model.   Not only  
17          was the REMI model used to estimate the direct  
18          installation and operating and maintenance jobs  
19          associated with 5,000 MW of PV, it was also used  
20          to estimate the impact of a reduced need for  
21          conventional power plants as well as increased  
22          electricity rates.   In fact, the Solar Study  
23          shows that in the outer years following  
24          completion of the renewable projects, negative

1 indirect job impacts largely offset the positive  
2 indirect job impacts, as shown in Figure 42 on  
3 page 6-32 of the Solar Study. More  
4 specifically, Tables 47, 51, and 55 of the Solar  
5 Study show that the negative indirect job  
6 impacts (e.g., increased electric rates due to  
7 solar subsidy) in the outer years can offset the  
8 positive indirect jobs in the early years.

9 Q. Can the results of the New York Solar Study's  
10 analysis of the installation of 5,000 MW of PV  
11 statewide be used to inform the analysis of the  
12 job impacts associated with a single renewable  
13 energy project?

14 A. Unfortunately, it would be difficult to  
15 accomplish in practice. As the Solar Study  
16 demonstrates, when examined in aggregate,  
17 renewable facilities represent a large supply  
18 and will have a material impact on other  
19 suppliers, electricity prices, and potential job  
20 losses. The aggregate negative impacts are just  
21 the sum of the negative impacts of each  
22 individual renewable energy facility. But in  
23 practice, an attempt to make a top-down  
24 allocation of the overall indirect impacts from

1 a statewide model to an individual facility  
2 would be very imprecise. As indicated in the  
3 Staff Report on Dunkirk's repowering (Case 12-E-  
4 0577), it would be very likely that the  
5 allocated estimates of the indirect and induced  
6 impacts would be well within the margin of error  
7 of the statewide model. Also, the indirect and  
8 induced impacts on the statewide economy might  
9 be reflective of substantially larger and  
10 smaller impacts on the various local economies  
11 in which the proposed facilities are located.

12 Q. Has the implementation of the New York State  
13 Clean Energy Standard (CES) policy already  
14 considered the potential negative job impacts of  
15 the development of clean energy technologies,  
16 including an increase in the retail price of  
17 electricity and the displacement of other  
18 generators?

19 A. Yes. The CES Study ([https://www.nyserda.ny.gov/-](https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Standard/Clean-Energy-Standard-White-Paper-Cost-Study-Report.pdf)  
20 [/media/Files/Programs/Clean-Energy-](https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Standard/Clean-Energy-Standard-White-Paper-Cost-Study-Report.pdf)  
21 [Standard/Clean-Energy-Standard-White-Paper-Cost-](https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Standard/Clean-Energy-Standard-White-Paper-Cost-Study-Report.pdf)  
22 [Study-Report.pdf](https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Standard/Clean-Energy-Standard-White-Paper-Cost-Study-Report.pdf)) references other studies that  
23 looked at negative job impacts of the  
24 development of clean energy technologies. Among

1       the studies reviewed was the New York Solar  
2       Study discussed above. The studies that were  
3       reviewed examined the direct as well as the  
4       indirect and induced job impacts of clean energy  
5       technologies. Just because such job impacts  
6       were considered at the aggregate level does not  
7       make it unnecessary for the job impacts to be  
8       evaluated for each individual Article 10  
9       project.

10    Q.   Please explain.

11    A.   While an aggregated analysis will indicate  
12       whether developing a certain number of MWs will  
13       be beneficial overall to the State, it will not  
14       indicate whether each and every individual  
15       project is beneficial in and of itself. A  
16       separate jobs impacts analysis is conducted for  
17       each individual project to determine whether it  
18       is beneficial and cost effective on its own. If  
19       a project is not beneficial, it may be necessary  
20       for the State to look to another project to  
21       further its clean energy goals in a more  
22       beneficial cost-effective manner.

23    Q.   Why should potential negative job impacts of the  
24       development of clean energy technologies,

1 including an increase in the retail price of  
2 electricity and the displacement of other  
3 generators, be considered as part of this  
4 proceeding?

5 A. All job impacts of the development of a given  
6 clean energy project, whether positive or  
7 negative, must be reviewed and presented to the  
8 Siting Board in order to build a sufficient  
9 record for each project.

10 Q. Are the job impact estimates provided by the  
11 Applicant driven by the input values the  
12 Applicant entered into the JEDI model?

13 A. Yes. I compared the results of the JEDI model  
14 when using all default values to the results of  
15 the Applicant's analysis. The results of the  
16 sensitivity analysis can be found in  
17 Exhibit\_\_\_\_(DSG-2).

18 Q. How would the results of the JEDI model change  
19 if the model were run with the default input  
20 data provided with the model?

21 A. As shown in Exhibit\_\_\_\_(DSG-2), direct jobs  
22 during construction would be reduced from 103 to  
23 67. The direct jobs during the operational  
24 phase are not sensitive and would remain at 6.

1 Q. What is the rationale for changing the default  
2 input data in the JEDI model?

3 A. The default data used in the model reflects  
4 industry averages and nationwide information, is  
5 typically not provided for specific states, and  
6 is not updated on a regular basis. Therefore,  
7 users are encouraged to incorporate location-  
8 and project-specific data into the model to  
9 produce better, more meaningful results for  
10 their specific respective projects.

11 Q. Did the Applicant input its own project specific  
12 data into the JEDI model?

13 A. Yes. The Applicant modified the labor costs to  
14 "adversely impact (increase or decrease) the  
15 total number of constructions workers so that  
16 there was a decrease in the total number of  
17 construction workers to be consistent with  
18 NextEra's estimates and avoid overstating the  
19 Project's expected impacts. Decreasing the wage  
20 rates when decreasing the total labor costs  
21 would have over-stated the number of jobs  
22 expected to be associated with the Project. The  
23 Applicant also made adjustments to the local  
24 shares for engineering and related services to

1 reflect the percent use of New York staff in the  
2 project", as stated in the response to IR DPS-  
3 22, included in Exhibit\_\_\_\_(DSG-1).

4 Q. Did you perform another sensitivity analysis of  
5 the Applicant's use of the JEDI model?

6 A. Yes. I compared the results of the JEDI model  
7 when using only the default labor cost, and when  
8 only using the default local share values, to  
9 the values when using only the default to the  
10 results of the Applicant's analysis. The  
11 results of this sensitivity analysis can be  
12 found in Exhibit\_\_\_\_(DSG-2).

13 Q. Please describe those results.

14 A. The Applicant's labor cost and local share  
15 values had a material impact on the number of  
16 direct construction jobs estimated. Exhibit  
17 DSG-2 illustrates how the Applicant's  
18 modifications affect the direct and  
19 indirect/induced job results of the model.

20 Q. The Applicant indicated in response to DPS-22  
21 that decreasing the total labor costs when  
22 holding the wage rate constant would result in  
23 the JEDI model calculating a (lower) total  
24 number of jobs. Do you agree with this?

1 A. No. As shown in Exhibit\_\_\_\_(DSG-2), when either  
2 holding the local shares constant at the default  
3 level, or when holding the local shares constant  
4 at the percentages as changed by the Applicant,  
5 reducing the labor costs, while holding the wage  
6 rate constant results in an increase in the  
7 total number of jobs. The dramatic increase in  
8 the construction jobs is only partially offset  
9 by a reduction in the indirect turbine and  
10 supply chain jobs.

11 Q. Why might the Applicant's changes to the model  
12 inputs have resulted in such impacts?

13 A. In addition to reducing the labor costs input  
14 into the model, the Applicant also, to a greater  
15 extent, shifted the labor costs between various  
16 categories of labor. The Applicant moved labor  
17 costs away from management/supervision and  
18 miscellaneous categories and into foundation,  
19 erection and electrical categories. The impact  
20 in the reallocation of labor costs across these  
21 categories appears to have more than offset the  
22 overall reduction in the total amount of labor  
23 costs input into the JEDI model. Regardless,  
24 when then applied to a modified local labor cost

1 percentage, the resultant number of direct  
2 construction period jobs appears to match up  
3 closely with "a construction worker estimate  
4 consistent with NextEra's expectations." This  
5 raises the question as to why the Applicant used  
6 the JEDI model at all if it was modified in such  
7 a manner to produce an estimate based upon  
8 exogenous expectations.

9 Q. Should any of the indirect job estimates from  
10 the various JEDI model runs summarized in  
11 Exhibit\_\_\_\_(DSG-2) be relied upon?

12 A. No. There is a lot of uncertainty associated  
13 with the indirect and induced job estimates from  
14 the JEDI model as the indirect and induced jobs  
15 created by spending ratepayer money on the  
16 Project will be offset by indirect and induced  
17 job losses created by diverting the money from  
18 other uses by ratepayers or displacing another  
19 renewable generator. Given the lack of any  
20 information on the net creation of indirect or  
21 induced jobs, the Applicant's indirect and  
22 induced jobs estimates as calculated by the JEDI  
23 model should not be given any weight by the  
24 Siting Board.

1 Q. Is there other information available that can be  
2 reviewed to assess the reasonableness of the  
3 Applicant's direct jobs estimate?

4 A. Yes. The Applicant submitted a bid in response  
5 to a NYSERDA' RES solicitation, which included  
6 an estimate of the number of New York State  
7 construction jobs as part of the economic  
8 benefits section. This information was provided  
9 in response to DPS-23.

10 Q. How many short-term New York State construction  
11 jobs did the Applicant estimate the Project  
12 would create, as reported in the NYSERDA bid  
13 proposal?

14 A. In its bid proposal, the Applicant estimated  
15 that the Project would create [Begin  
16 Confidential] [End Confidential] New York  
17 State jobs during the construction phase of the  
18 Facility, through its first three years of  
19 operation. The Applicant's New York State-  
20 specific construction jobs estimate as taken  
21 from its NYSERDA bid proposal [Begin  
22 Confidential] [End Confidential]  
23 [End Confidential]  
24 and a job estimate in this range is reasonable

1       since a NYSERDA bid proposal estimate likely  
2       relies on the Applicant's experience as well as  
3       actual contractor quotes and is the estimate  
4       that the Applicant is willing to invest money  
5       on.

6   Q.   Would you expect a NYSERDA solicitation response  
7       and the socioeconomic analysis for an Article 10  
8       proceeding to contain the same short-term job  
9       estimates?

10  A.   Yes. Both the NYSERDA response and the  
11       socioeconomic analysis for an Article 10  
12       proceeding require the provision of a project's  
13       short-term New York State job creation estimate.  
14       All else equal, this should result in the best  
15       estimate of the expected number of short-term  
16       jobs being provided for both responses.

17  Q.   Does the Applicant have an incentive to be more  
18       conservative with the short-term estimate it  
19       provides for its NYSERDA solicitation response?

20  A.   Yes. The bid proposal form requires that bidders  
21       provide a detailed verification plan to  
22       demonstrate their claims. A NYSERDA contract  
23       includes a penalty for overestimating New York  
24       State jobs and requires the filing of an

1 economic benefits report to verify the creation  
2 of those jobs.

3 Q. Did you benchmark the Eight Point Wind jobs  
4 estimates against other New York State wind  
5 projects?

6 A. Yes. The results of my benchmarking analysis  
7 can be found in Exhibit\_\_\_\_(DSG-3).

8 Q. Please describe the information that went into  
9 the table in Exhibit\_\_\_\_(DSG-3).

10 A. The Eight Point Wind jobs per MW values were  
11 first and foremost compared to similar values  
12 for other New York State renewable energy  
13 projects that were calculated from the  
14 Preliminary Scoping Statement (PSS) and/or the  
15 Applications of these projects, submitted as  
16 part of their respective ongoing Article 10  
17 proceedings. Similar calculations were also  
18 made with the information from the Solar Study,  
19 discussed above, as well as from The Workforce  
20 Opportunity of Offshore Wind in New York report  
21 ([https://www.nyserda.ny.gov/-](https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/17-25t-Workforce-Opportunity-Study.pdf)  
22 [/media/Files/Publications/Research/Biomass-](https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/17-25t-Workforce-Opportunity-Study.pdf)  
23 [Solar-Wind/Master-Plan/17-25t-Workforce-](https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/17-25t-Workforce-Opportunity-Study.pdf)  
24 [Opportunity-Study.pdf](https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/17-25t-Workforce-Opportunity-Study.pdf)), conducted by NYSERDA and

1 filed in Case 18-E-0071.

2 Q. How do the Applicant's job impact estimates for  
3 the Facility fare in the comparison?

4 A. The Applicant's direct construction job impact  
5 estimate appears to be slightly on the higher  
6 side as compared with the other projects on a  
7 job per MW basis. In comparison, the  
8 sensitivity of the Applicant's JEDI model  
9 analysis developed using all default values for  
10 the JEDI model inputs produces a direct  
11 construction job estimate which is slightly on  
12 the low side as with other projects on a jobs  
13 per MW basis. These two estimates suggest a  
14 reasonable range for direct construction job  
15 impacts. Also, the Eight Point Wind direct  
16 operational phase jobs in the table associated  
17 with these two estimates appear to be reasonably  
18 in line. Finally, while on a jobs per MW  
19 basis, the table indicates that the Applicant's  
20 induced and indirect estimates are only somewhat  
21 higher than those presented in the other Article  
22 10 proceedings, as compared on a per MW basis to  
23 the induced and indirect job estimates  
24 calculated as part of the NY Solar Study, the

1        Applicant's induced and indirect job estimates  
2        are clearly too high, and thus, should not be  
3        relied upon by the Siting Board.

4    Q.    Do you have any other recommendations?

5    A.    Yes.    If the Project is ultimately constructed,  
6        monitoring of actual socioeconomic impacts  
7        should be undertaken.    I recommend that the  
8        Applicant be required to file with the Siting  
9        Board, within one year after the Project becomes  
10       operational, a tracking of the actual number of  
11       jobs and the actual earnings and output created  
12       during the construction and operation phases of  
13       the Project, as well as the actual tax payments  
14       to local jurisdictions made during the course of  
15       the Project.

16   Q.    Why are you proposing this recommendation?

17   A.    This after-the-fact tracking will allow Staff,  
18        the relevant Stakeholders, and the Siting Board  
19        to assess the accuracy of the estimated direct  
20        job impacts and will also enable Staff and the  
21        Siting board to ascertain the reasonableness of  
22        job impact estimates for other future major  
23        electric generation projects.

24   Q.    Has the Applicant agreed to make this filing?

CASE 16-F-0062

Gadomski

1 A. Yes. Proposed Certificate Condition 72 requires  
2 that this filing will be made.

3 Q. Is the parent Company, NextEra, also proposing a  
4 new transmission line project in western New  
5 York?

6 A. Yes, in Case 18-T-0202.

7 Q. Does this present any vertical market power  
8 issues?

9 A. Yes. NextEra wants to own (regulated)  
10 transmission as well as market-priced generation  
11 in New York, contrary to the Commission's policy  
12 of having regulated utilities divest their  
13 generation (except for limited, cost-based  
14 generators) which could create perverse  
15 incentives which might be difficult (if not  
16 impossible) to overcome. The vertical market  
17 power issues raised here will be addressed by  
18 the Commission in the Company's PSL Section 68  
19 proceeding, Case 18-E-0765, or its Article VII  
20 proceeding, Case 18-T-0202.

21 Q. How could vertical market power impact your  
22 analysis in this proceeding?

23 A. Vertical market power could result in higher  
24 retail prices which would leads to a negative

1 impact on indirect jobs.

2 Q. What do you recommend regarding jobs estimates  
3 in this case?

4 A. For the direct jobs estimates, a number in the  
5 range of the Applicant's 103 direct construction  
6 jobs estimate provided in its Application, to  
7 the 67 direct job estimates from the JEDI model  
8 sensitivity using all default input would be  
9 reasonable in that they compare favorably with  
10 other NYS job estimates. Also, the Applicant's  
11 ongoing, direct operational jobs estimate of 6  
12 direct operational jobs appears to be reasonable  
13 as compared to other wind projects, as shown in  
14 Exhibit\_\_(DSG-2). However, given the uncertain  
15 nature of the Applicant's indirect and induced  
16 job estimates, those estimated induced and  
17 indirect job figures should not be factored in  
18 as a benefit.

19 Q. Does this conclude your testimony at this time?

20 A. Yes.

21

BEFORE THE  
STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of  
  
Eight Point Wind LLC  
  
Case 16-F-00062  
  
March 5, 2019

---

Prepared Corrected Testimony of:

Miguel Moreno-Caballero  
Utility Engineering Specialist 3  
(Acoustics)  
Office of Electric, Gas, and  
Water

State of New York  
Department of Public Service  
One Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

MORENO-CABALLERO

1 Q. Will you please state your name, employer, and  
2 business address?

3 A. My name is Miguel Moreno-Caballero and I am  
4 employed by the New York State Department of  
5 Public Service (DPS or the Department), located  
6 at Three Empire State Plaza, Albany, New York,  
7 12223.

8 Q. Mr. Moreno what is your position at the  
9 Department?

10 A. I am a Utility Engineering Specialist 3  
11 (Acoustics) in the Environmental Certification  
12 and Compliance section of the Office of  
13 Electric, Gas and Water (Staff).

14 Q. Please summarize your educational background and  
15 professional experience.

16 A. I attended the Pontifical Xaverian University in  
17 Bogota, Colombia and received a Bachelor of  
18 Science degree in Civil Engineering in 1986.  
19 Thereafter, I continued my education at  
20 Universidad del Norte in Barranquilla, Colombia  
21 and graduated with a Master in Business  
22 Administration in 1992. I have accumulated more

CASE 16-F-0062

MORENO-CABALLERO

1       than 20 years of experience in the field of  
2       acoustics and noise control. I owned and  
3       operated my own business in Colombia, South  
4       America for about 13 years, where I worked as an  
5       acoustical consultant and acoustical contractor.  
6       I designed and built noise abatement solutions  
7       for emergency generators, industrial machinery,  
8       HVAC equipment, and interior acoustical designs  
9       for indoor spaces. I obtained extensive  
10      experience in noise control including noise  
11      surveys and computer simulations of aircraft  
12      noise for two international airports.  
13      After my arrival to the United States, I was  
14      employed as a Senior Acoustical Consultant by an  
15      acoustical consultant firm in Washington D.C.,  
16      from October 2005 until May 2008. There, I  
17      analyzed sound surveys and performed computer  
18      noise modeling for roadways and highways and  
19      designed mitigation measures such as barriers  
20      and selected building envelope specifications  
21      for environmental noise control. I also  
22      designed noise control solutions for mechanical

1 equipment and interior acoustics for indoor  
2 spaces for a variety of projects. From May 2008  
3 to June 2009, I was employed by an acoustical  
4 consultant company in Manhattan and worked for  
5 several acoustical and noise control projects  
6 including data centers and corporate projects.  
7 I joined the Department in November 2013. My  
8 duties include reviewing Public Service Law  
9 (PSL) Article VII and Article 10 pre-  
10 applications, applications, environmental noise  
11 assessments, noise surveys and mitigation  
12 measures. I also review sound collection  
13 protocols and witness sound measurements to  
14 ensure compliance with Certificate Conditions.  
15 I am a full-member of the Institute of Noise  
16 Control Engineering and an Associate member of  
17 the Acoustical Society of America.

18 Q. Mr. Moreno, which projects have you reviewed  
19 under PSL Article 10 and Article VII  
20 regulations?

21 A. Under Article VII regulations, I have reviewed  
22 the applications for the following certified

CASE 16-F-0062

MORENO-CABALLERO

1 cases: New York Power Authority, Case 13-T-0515;  
2 DMP New York, Inc., Williams Field Services  
3 Company LLC, Cases 13-T-0538 and 13-T-0350; PSEG  
4 Power New York, Inc. Case 15-F-0040; and  
5 Consolidated Edison Company of New York, Inc.,  
6 Case 13-T-0586. Although currently pending or  
7 uncertified, I also reviewed environmental noise  
8 assessments for the following Article VII  
9 projects: West Point Partners LLC, Case 13-T-  
10 0292; Poseidon Transmission, LLC, Case 13-T-  
11 0391; In the Matter of Alternating Current  
12 Transmission Upgrades - Comparative Proceeding,  
13 Case 13-E-0488; Vermont Green Line Devco, LLCI,  
14 Case 16-T-0260; and Niagara Mohawk Power  
15 Corporation, Case 15-T-0305. I am currently  
16 working on numerous PSL Article 10 proceedings  
17 (and some potentially affiliated Article VII  
18 filings) regarding wind generating facilities at  
19 various stages including the following projects:  
20 Cassadaga Wind, LLC, Case 14-F-0490 already  
21 certified by the New York State Board on  
22 Generation siting and the Environment (Siting

CASE 16-F-0062

MORENO-CABALLERO

1 Board); Lighthouse Wind, LLC, Case 14-F-0485;  
2 Baron Winds, LLC, Case 15-F-0122; Galloo Island,  
3 Case 15-F-0327; Bull Run Energy, LLC, Case 15-F-  
4 0377; Eight Point Wind, LLC, Case 16-F-0062;  
5 Atlantic Wind, LLC -Deer River-, Case 15-F-0267;  
6 Canisteo Wind Energy, LLC, Case 16-F-0205; Case  
7 16-F-0267;; Number Three Wind LLC, Case 16-F-  
8 0328;; Heritage Wind LLC, Case 16-F-0546;  
9 Bluestone Wind, LLC, Case 16-F-0559; Alle-Catt  
10 Wind Energy, LLC, 17-F-0282 and Atlantic Wind,  
11 LLC, -Mad River-, Case 16-F-0713. I am also  
12 assigned on multiple PSL Article 10 proceedings  
13 (and some potentially affiliated Article VII  
14 filings) regarding solar generating facilities  
15 at various stages including the following  
16 projects: Mohawk Solar, LLC, Case 17-F-0182;  
17 Hecate Energy Albany 1, LLC and Hecate Energy  
18 Albany 2, LLC, Case 17-F-0617; and Hecate Energy  
19 Greene County 1, LLC, Hecate Energy Greene 2,  
20 LLC, and Hecate Energy Greene County 3, LLC,  
21 Case 17-F-0619.

22 Q. Are you sponsoring or relying upon any other

1 exhibits?

2 A. Yes. I am sponsoring Exhibit\_\_(MMC-1); through  
3 Exhibit\_\_(MMC-13).

4 Q. Please briefly described those exhibits.

5 A. Exhibit\_\_(MMC-1) contains the document entitled  
6 "Guidelines for Community Noise," World Health  
7 Organization, 1999 (WHO 1999) which I will refer  
8 to as "WHO-1999",  
9 Exhibit\_\_(MMC-2) contains a link to download the  
10 document entitled "Guidelines and  
11 Recommendations" which I will refer to as WHO-  
12 2009.

13 Exhibit (MMC-3) contains and executive summary  
14 of the most recent guidelines from the World  
15 Health Organization (WHO) regional office for  
16 Europe entitled "Environmental Noise Guidelines  
17 for the European Region" published in October  
18 2018 which I will refer to as "WHO-2018-ES".

19 Exhibit (MMC-4) contains the most recent  
20 guidelines from the World Health Organization  
21 (WHO) regional office for Europe entitled  
22 "Environmental Noise Guidelines for the European

1       Region" published in October 2018 which I will  
2       refer to as as "WHO-2018".  
3       Exhibit\_(MMC-5), contains a study entitled  
4       "Massachusetts Study on Wind Turbine Acoustics.  
5       Prepared for: Massachusetts Clean Energy Center  
6       and Department of Environmental Protection.  
7       Submitted by RSG Inc. Report 2.18.2016," which I  
8       will refer to as MA-STUDY-2016 in my testimony.  
9       Exhibit (MMC-6) contains my notes on Figure 26,  
10      Page 68 of the MA-STUDY-2016.  
11      Exhibit (MMC-7) contains the proposed  
12      certificate Conditions on noise and vibration  
13      that I am recommending for this Project.  
14      Exhibit\_\_(MMC-8) contains a Sound Testing  
15      Compliance Protocol that I have developed and am  
16      proposing for this project which I will refer to  
17      as DPS-Protocol.  
18      Exhibit\_\_(MMC-9) contains Table 2 of a reference  
19      called "Percentiles of Normal Hearing-Threshold  
20      Distribution Under Free-Field Listening  
21      Conditions in Numerical Form". Kenji Kurakata,  
22      Tazu Mizunami, and Kuzama Matsushita. Acoust.

CASE 16-F-0062

MORENO-CABALLERO

1       Sci. & Tech. 26, 5 (2005), which I will refer to  
2       as KURAKATA-2005  
3       Exhibit\_\_(MMC-10) contains a drawing showing the  
4       turbines proposed for this project and the  
5       locations of non-participating residences  
6       differentiated to indicate the short-term noise  
7       levels reported in the Application.  
8       Exhibit (MMC-11) contains an alternative to the  
9       certificate conditions that I am presenting for  
10      consideration including both a red-line and a  
11      clean version.  
12      Exhibit (MMC-12) contains a red line comparison  
13      between certificate conditions proposed by the  
14      Applicant and my proposed Certificate  
15      Conditions.  
16      Exhibit (MMC-13) contains my preliminary  
17      comments and edits on the protocols presented in  
18      the Application.  
19    Q.   Mr. Moreno, what is your role under PSL Article  
20          10 regulation review?  
21    A.   Under Article 10, my duties include the review  
22          of preliminary scoping statements, stipulations

CASE 16-F-0062

MORENO-CABALLERO

1       and applications as they relate to the noise  
2       assessments and avoidance or minimization of  
3       environmental noise impacts from major electric  
4       generation facilities. My role regarding wind  
5       generating projects consists of the review of  
6       sections of the Application related to noise  
7       impact assessments from construction and  
8       operation of the facilities which includes pre-  
9       construction ambient noise surveys, analysis of  
10      existing or potential future prominent tones,  
11      noise modeling parameters, assumptions and  
12      results, amplitude modulation, low-frequency  
13      noise, infrasound, potential for hearing damage,  
14      indoor and outdoor speech interference,  
15      interference with the use of outdoor public  
16      facilities and public areas, community complaint  
17      potential or annoyance, and the potential for  
18      interference with technological, industrial or  
19      medical activities that are sensitive to  
20      vibration or infrasound. In addition, my role  
21      also includes the review of applicable noise  
22      standards and guidelines, local regulations on

1 noise, design goals for the facilities, noise  
2 abatement measures, complaint and resolution  
3 plans for noise from construction and operation  
4 of the facility, and proposed post-construction  
5 noise evaluations and compliance for conformance  
6 with certificate conditions.

7 Q. Why is the noise expected to be generated from  
8 the Eight Point Wind LLC Project (Project) an  
9 important issue for the Siting Board to consider  
10 in this proceeding?

11 A. Public Service Law §164 and the implementing  
12 regulations, 16 NYCRR 1001.19, require an  
13 applicant for a Certificate of Environmental  
14 Compatibility and Public Need (Certificate), to  
15 provide certain information concerning the noise  
16 and vibration impacts of the construction and  
17 operation of a facility. In addition, the  
18 various noise levels expected from a major  
19 electric generating facility, including a wind  
20 generating facility like this Project, are  
21 important factors in determining the nature of  
22 the probable environmental impacts of the

1 construction and operation of the proposed  
2 facility and whether it avoids or minimizes  
3 environmental impacts to the maximum extent  
4 practicable.

5 Q. Can you please describe the different labels  
6 such as  $L_{eq}$ , and the  $L_{90}$ , often used to describe  
7 noise levels?

8 A. Noise levels frequently fluctuate over a wide  
9 range and over time, so different sound  
10 descriptors have been developed to describe  
11 sound pressure levels over a period of time.  
12 The " $L_{eq}$ " is the equivalent-continuous sound  
13 pressure level of a noise source. It is the  
14 single sound pressure level that, if constant  
15 over a specified time period, would contain the  
16 same sound energy as the actual monitored sound  
17 that varies in level over the measurement  
18 period. Guidelines for noise are sometimes  
19 expressed in terms of maximum noise levels  
20 specifying the period of time over which the  
21 measurements are taken. For example, 45 dBA  $L_{eq}$   
22 (8 hours) means that the noise levels evaluated

1        during 8 hours have an energy average equivalent  
2        to a constant level of 45 dBA.

3    Q.    What is a percentile level?

4    A.    The Ln is the percentile level, where n is any  
5        number between 0 and 100. The number designated  
6        by n corresponds to the percentage of the  
7        measurement time period by which the stated  
8        sound level has been exceeded. (See, James P.  
9        Cowan, Handbook of Environmental Acoustics, J.  
10       Wiley [1994], p. 41). For instance, the L90 is  
11       the sound level that is exceeded 90 percent of  
12       the time, usually regarded as the "residual  
13       level" or the background noise without the  
14       source in question or discrete sound events  
15       (Cowan, p. 41).

16   Q.    What does the designation "dBA" mean?

17   A.    "dB" is a designation for "decibel" which is  
18        equivalent to a tenth of a "Bell" (a unit named  
19        after Alexander Graham Bell). A Bell is too  
20        large to describe the acoustic environment and  
21        for that reason was broken into tenths or  
22        "decibels." (Cowan, p. 41). The "A" letter after

1       the "dB" designation denotes one of the most  
2       common weighting networks in acoustics and noise  
3       control. The human ear does not sense all  
4       frequencies in the same manner, and the human  
5       ear does not hear sounds at different  
6       frequencies the same way a typical microphone in  
7       a sound level meter does. (Cowan p. 36). For  
8       that reason, the "A-weighted" scale was  
9       developed and is comprised of a series of  
10      corrections applied to the sound levels measured  
11      by a sound level meter at all frequencies of the  
12      human audible spectra to resemble human hearing.  
13      (Cowan p. 31). Although the normal hearing range  
14      in humans goes from 20 Hertz up to 20,000 Hertz,  
15      humans are more sensitive to sound with  
16      frequencies between 200 Hertz and 10,000 Hertz  
17      (Cowan p. 36) and for that reason the greatest  
18      corrections are applied to the low frequencies.  
19      (e.g. minus 57 dB at 16 Hertz). In addition, we  
20      hear the sound levels between 500 Hertz and  
21      4,000 Hertz similar to the way it is perceived  
22      by a sound level meter microphone and for that

1 reason the corrections are lower ranging from  
2 minus 3.2 dB at 500 Hertz up to 1.0 dB at 4,000  
3 Hertz. After all corrections are applied to each  
4 frequency sound level, the individual  
5 contributions to the dBA level are added up and  
6 the result is noted as "overall," "broadband,"  
7 "dBA" or "dBA-weighted" noise level.

8 Q. Does the proposed Project avoid or minimize the  
9 adverse environmental noise impacts to the  
10 maximum extent practicable?

11 A. No. While the Project as proposed does provide  
12 for some mitigation and avoidance of impacts, I  
13 believe that potential adverse environmental  
14 noise impacts from operation of the facility  
15 have not been avoided or minimized to the  
16 maximum extent practicable.

17 Q. Please explain your general impressions of the  
18 Content of the Application for this project and  
19 a summary of your findings.

20 A. I find that the design of the Project as  
21 originally proposed will most likely comply with  
22 the most relevant thresholds and criteria at

1       most receptors, but not all. I also note that  
2       the computer noise modeling did not use Noise  
3       Reduction Operations (NROs) to demonstrate  
4       conformance with design goals at most receptors  
5       which I think is not only a good approach during  
6       the design phase but should be maintained during  
7       the Siting process. However, this does not mean  
8       that I agree with all the content of the  
9       Application. In fact, I disagree with some of  
10      the assumptions in the Application such as  
11      interpreting computer sound results with the ISO  
12      9613-2 Standard as the maximum hourly levels of  
13      the project, the introduction of corrections to  
14      the CONCAWE calculations to match the results  
15      with the ISO 9613-2, the evaluation of sound  
16      levels at 1.5 meters exclusively which may be  
17      appropriate only for one-story residences but  
18      not for residences with two or more stories,  
19      among others. In addition, the World Health  
20      Organization released new guidelines in October  
21      of 2018, after the Application was filed, with  
22      specific recommendations to address wind turbine

1 noise and with potential implications that I  
2 consider important to be considered by the  
3 Siting Board.

4 Q. What are the most important findings from your  
5 review of WHO-2018 as related to this project?

6 A. One of the most important findings is that WHO-  
7 2018 withdrew the outdoor short-term  
8 recommendation of not exceeding 45 dBA-Leq-8-  
9 hour during the nighttime that it had  
10 recommended in 1999. WHO-1999 was the basis for  
11 recommending the Siting Board that this short-  
12 term limit be applied to Cassadaga Wind LLC in  
13 Case 14-F-0490. In addition, WHO-2018 ( p. 9)  
14 recommends a lower outdoor-to-indoor noise  
15 reduction provided by the residential buildings  
16 than the one that was assumed in 1999 for  
17 transportation noise sources, as well as  
18 maintaining the indoor noise levels as  
19 recommended in 1999. Furthermore, the new  
20 recommendation from WHO-2018 is protective not  
21 only of the nighttime period but of the daytime  
22 and evening time periods as well and more

1           importantly it may require a lower long-term  
2           nighttime noise limit than as recommended in  
3           2009 which was also the basis for recommending  
4           the Siting Board adopting a long-term goal for  
5           Cassadaga Wind. After analyzing the  
6           recommendations of WHO-1999, WHO-2009, and the  
7           WHO-2018 independently, I recommend that the  
8           short term 45 dBA-Leq-8-h is not the most  
9           protective among all the three guidelines and  
10          that a shorter limit, on the order of 42-dBA  
11          should be adopted so that all three WHO  
12          guidelines and recommendations are met and that  
13          the potential adverse effects from the facility  
14          are minimized.  
15          Further I have identified a few turbines that  
16          should be either re-located or eliminated from  
17          consideration so that the adverse effects are  
18          reduced on the most impacted receptors.  
19          In addition, I do not find the post-construction  
20          compliance monitoring protocol presented in the  
21          Application as appropriate to demonstrate that  
22          the adverse effects from the facility were in

1 fact avoided or minimized to the most extent  
2 practicable and for that reason I am  
3 recommending a different protocol for  
4 consideration. Details of my findings are  
5 presented in this testimony.

6 Q. What are your general impressions of the  
7 Certificate Conditions proposed by the  
8 Applicant.

9 A. The Proposed Certificate Conditions presented by  
10 Eight Point Wind are similar to those applied by  
11 the Siting Board in Case 14-F-0490, Cassadaga  
12 Wind. I will be explaining the changes that I  
13 consider important and some recommendations for  
14 simplification of the Certificate Conditions,  
15 and post-construction noise testing.

16 Q. Please explain the first recommendation about  
17 the Certificate Conditions proposed by the  
18 Applicant for Eight Point Wind?

19 A. I note an insertion of a provision in  
20 Certificate Condition 65 (d) specifying that  
21 "[r]evised sound modeling shall not incorporate  
22 more than 3 dBA of the available NROs." As I

1       will discuss in my testimony, NROs should not be  
2       used in a compliance filing to demonstrate  
3       conformance with relevant criteria and  
4       conditions that the Siting Board may impose on  
5       Eight Point Wind, but rather as a contingency  
6       mitigation option to be used after construction.  
7       For that reason, this provision should be  
8       replaced by one specifying that NROs shall not  
9       be used for demonstrating conformance with the  
10      Order in compliance filings.

11    Q.   Do you disagree with any other proposed  
12       Certificate Conditions?

13    A.   Yes. Certificate Condition 77 states: "The  
14       Certificate Holder shall evaluate in a  
15       Compliance Filing which of the four alternate  
16       turbine locations, if any, are necessary to be  
17       employed in the following order of preference,  
18       Alternate Turbine 1, Alternate Turbine 4,  
19       Alternate Turbine 2, and Alternate Turbine 3. If  
20       an alternate turbine location is deemed  
21       necessary, the Certificate Holder will select  
22       Alternate Turbine locations 1 and/or 4, then

1        2...."     This condition should be modified  
2        consistent with my recommendations that the  
3        Applicant 1) eliminates Turbine #10 and use  
4        ALT1 instead, which will reduce the impacts on  
5        receptors 327 and 329; 2) eliminates Turbine #5  
6        and use ALT2, which will reduce the impacts on  
7        receptors 692 and 325; 3) eliminates ALT3 from  
8        consideration, as its use would burden  
9        receptors 456 and 454; and 4) eliminates Turbine  
10       #20 and use adjacent turbine ALT4, which will  
11       reduce the impacts on receptors 771 and 522. All  
12       these recommendations are proposed to decrease  
13       the noise levels on the most impacted receptors,  
14       with short-term sound levels predicted between  
15       43 and 44 dBA which are depicted in red and  
16       orange colors in the Figure included in Exh MMC-  
17       10. I will be explaining further in my testimony  
18       why the sound levels at these receptors should  
19       be reduced.

20    Q.    Do you have any other comments on the proposed  
21       certificate conditions?

22    A.    Yes, all the changes that I am proposing on the

1 certificate conditions proposed by the Applicant  
2 can be seen in exhibit MMC-12 but I will be  
3 discussing most of them at the end of my  
4 testimony. However, I would like to start with a  
5 discussion regarding the short-term noise limits  
6 included in Certificate Condition 74 (a)  
7 proposed by the Applicant in light of the most  
8 recent recommendations by the World Health  
9 Organization. The most recent guideline, WHO-  
10 2018, states: "[t]he current environmental noise  
11 guidelines for the European Region supersede the  
12 [WHO Guidelines for Community Noise] (CNG) from  
13 1999 (p. 28). Nevertheless, the [Guideline  
14 Development Group] GDG recommends that all CNG  
15 indoor guideline values and any values not  
16 covered by the current guidelines (such as  
17 industrial noise and shopping areas) should  
18 remain valid."  
19 What this means is that the 45 dBA-Leq-8-h  
20 outdoor from WHO-1999 was replaced with a new  
21 recommendation that is potentially more  
22 protective than the previous WHO-1999 guideline

1       for the nighttime and that the WHO-1999 indoor  
2       recommendation of 30 dBA-Leq-8-h nighttime was  
3       retained. I note that in 1999 the 45 dBA-Leq-8-  
4       h outdoor recommendation was based on the  
5       addition of an assumed 15-dBA outdoor-to-indoor  
6       noise reduction to the 30-dBA-Leq-8-h nighttime  
7       indoor recommendation ( $30+15=45$ ). The outdoor-  
8       to-indoor noise reduction is provided by the  
9       exterior building components (e.g. exterior  
10      walls, windows and roofs).

11    Q.   Why is that a concern?

12    A.   The concern is whether residences could provide  
13       a 15-dBA noise reduction against wind turbine  
14       noise so that they can be exposed to a maximum  
15       outdoor noise level of 45-dBA-Leq-8-h and still  
16       comply with a 30-dBA-Leq-8-h indoor  
17       recommendation from WHO-1999. While good  
18       quality construction may provide more than 15-  
19       dBA reduction with the windows closed, it may  
20       not be able to provide such reduction with the  
21       windows open or partially open. The rule-of-  
22       thumb is that a light-weight residence may

1 provide about 10 dBA outdoor-to-indoor reduction  
2 with the windows open.

3 Q. What are the implications for this case?

4 A. According to the WHO-2018 (p.9) and other  
5 references, the outdoor-to indoor noise  
6 reductions against wind turbine noise with the  
7 windows open are between 10 dBA and 12 dBA, not  
8 15 dBA. If a residence provides only a 10 dBA  
9 to 12 dBA noise reduction with the windows open,  
10 it should not be exposed to more than 40 dBA to  
11 42 dBA outdoor during the nighttime so that the  
12 indoor recommendation of 30 dBA-8-h can be met.

13 Q. What is your conclusion?

14 A. WHO-2018 shows that an outdoor limit of 45 dBA  
15 during the nighttime may not be sufficiently  
16 protective if residents have open windows, a  
17 condition that may occur during the summer and  
18 as a result outdoor limits should be between 40  
19 dBA to 42 dBA Leq-8-hour and not 45 dBA-Leq-8-h  
20 so that the indoor recommendations from WHO-1999  
21 of 30 dBA-Leq-8-h can be met. As I will explain  
22 later in my testimony the short-term limit

1           should also be lower than 45 dBA-Leq for other  
2           reasons.

3    Q.   What are the findings of your review of the  
4           short-term outdoor impacts on noise sensitive  
5           receptors for Eight Point Wind?

6    A.   The Application included computer noise modeling  
7           by using the ISO-9613-2 propagation model with  
8           no meteorological correction by using the  
9           maximum broadband (overall) sound power levels  
10          from the turbines under consideration as  
11          stipulated for the project. Other assumptions  
12          included the use of a ground factor G of 0.5 and  
13          a correction of 2 dBA added to the results and a  
14          height of evaluation of 1.5 meters for sound  
15          sensitive receptors that represents the height  
16          of the human ears above the ground. The  
17          interpretation of the results in the Application  
18          is that they correspond to the maximum 1-hour  
19          sound levels from the Facility (1-hour and 8-  
20          hour) at sensitive sound receptors that could  
21          occur in a year.

22   Q.   Do you agree with that interpretation?

1 A. No, I do not. I think that the actual maximum  
2 short-term sound levels could be greater than  
3 those calculated with those assumptions.

4 Q. Do you have any evidence supporting that?

5 A. Yes, in my review of studies concerning accuracy  
6 of the ISO-9613-2 model I found one where the  
7 use of the ISO-9613-2 sound propagation model  
8 with similar assumptions and input values to the  
9 ones that were used in the Application, resulted  
10 in about a 3-dBA underprediction of the Leq-1-  
11 hour noise descriptor for one out of six 1-hour  
12 samples and one out of the two highest sound  
13 pressure levels that were modeled and measured.

14 Q. What is the study you refer to and which is the  
15 section that shows the underprediction?

16 A. The study is entitled "Massachusetts Study on  
17 Wind Turbine Acoustics" (Ex. MMC-5) which was  
18 prepared for the Massachusetts Clean Energy  
19 Center and Department of Environmental  
20 Protection. The findings relevant to this case  
21 are shown on Figure 26, page 68, and is included  
22 as Ex. MMC-5. The figure has three graphs and

CASE 16-F-0062

MORENO-CABALLERO

1       the one at the bottom shows a correlation  
2       between sound pressure levels estimated at a  
3       receptor located 330 meters (1,083 feet)  
4       downwind from the turbines as obtained with the  
5       ISO-9613-2 sound propagation model and a ground  
6       factor of G 0.5 plus a 2-dBA correction added to  
7       the results. The figure correlates the  
8       estimates to the sound pressure levels that were  
9       measured after monitoring the 1-hour Leq-dBA  
10      noise descriptor for six hours at that receptor.  
11      This can easily be observed in Ex. MMC-6 where I  
12      have included my notes on top of the relevant  
13      graph. As it can be seen from the graph in one  
14      out of the six hours, the sound pressure levels  
15      using computer noise modeling were 3 dBA lower  
16      than as measured after monitoring (43 dBA as  
17      opposed to 46 dBA). The 3-dBA underestimate  
18      occurred for one of the two highest sound  
19      pressure levels. This also shows that although  
20      the addition of 2 dBA to the ISO 9613-2 results  
21      improves the accuracy of the estimates, it is  
22      not sufficient for one out of two samples at the

1 maximum sound power levels. In this case a  
2 correction of 5 dBA, not 2 dBA, is needed to  
3 estimate the actual maximum 1-hour sound levels.

4 Q. You mentioned earlier in your testimony that the  
5 Massachusetts Study (MA-Study) used the same or  
6 similar input values to the ones used for Eight  
7 Point Wind. What are the differences and how  
8 are those differences relevant to this case?

9 A. There are two differences. The first is that  
10 the receptor in the MA-Study was evaluated at  
11 330 meters (1,083 feet) from the turbine but the  
12 setbacks for Eight Point Wind are 1,400 feet.  
13 Despite the differences, the findings are still  
14 applicable to this case. In fact, I would  
15 expect that the discrepancies would grow for  
16 receptors at distances greater than 1,083 feet  
17 and not decrease as research has found that the  
18 underpredictions with the ISO-9613-2 model are  
19 higher for more distant receptors. The second  
20 difference is that the MA-Study evaluated sound  
21 receptors at 1 meter above the ground while the  
22 Application evaluated receptors at 1.5 meters

1       above the ground. Such difference may not be  
2       relevant. While a height of evaluation of 1.5  
3       meters may be appropriate for one-story  
4       residences, it will not be appropriate for  
5       residences with two or more stories. This is  
6       because two-story residences should be evaluated  
7       about 4 meters above the ground to estimate  
8       levels at the second floor. For two-story  
9       houses the predicted sound levels may be higher  
10      (about 1.5 dBA for the closest receptors). At  
11      this time there is no information in the  
12      Application about whether the most impacted  
13      receptors are one or two-story residences, but  
14      this is something that should be considered for  
15      the final design and for postconstruction  
16      compliance sound tests.

17    Q.   What do you recommend?

18    A.   I recommend that all non-participating receptors  
19       with sound levels exceeding 40 dBA-Leq-1-h as  
20       forecasted with the ISO 9613-2 model, be  
21       investigated to confirm that in fact they  
22       correspond to single-story houses. Otherwise,

1       the preconstruction and postconstruction sound  
2       impacts should be evaluated at 4 meters as  
3       recommended by the reference cited in WHO-2009  
4       (Section 1 of Annex I of the European Directive  
5       2002/49/EC of June 25, 2002).

6   A.   How could a 3-dBA underprediction in the Leq-1-  
7       hour noise levels affect the accuracy of the  
8       prediction of the Leq-8-h noise descriptor?

9   Q.   It depends on how many times an underprediction  
10       of 3-dB occurs in an eight-hour period. If, in  
11       the best case, this occurs only once, the  
12       underprediction of the Leq-8-h could be only  
13       half of a decibel, but if the worst case occurs  
14       during the eight-hours, the underprediction of  
15       the Leq-8-h could be 3 dBA. If it occurs half of  
16       the time, it will result in an underprediction  
17       of approximately 2 dBA.

18   Q.   If the actual sound levels after construction  
19       could be higher than predicted in the  
20       Application how is this relevant?

21   A.   Sound pressure levels in the initial design are  
22       estimated to be as high as 44 dBA-Leq-1-hour at

1 four non-participant receptors and greater than  
2 42 dBA-Leq-1-hour at nine non-participating  
3 receptors without the use of NROs in computer  
4 modeling. In the worst case, if a 3-dBA  
5 underprediction occurs for eight consecutive  
6 hours, the maximum noise levels could exceed the  
7 regulatory limit proposed by the Applicant and  
8 as explained before, that would not comply with  
9 an indoor recommendation of 30 dBA if the  
10 windows are open.

11 Q. You mentioned earlier in your testimony that the  
12 3-dBA underprediction occurred for one out of  
13 the two highest sound levels for a receptor  
14 located downwind from the turbines. Is it  
15 possible that a receptor could be located  
16 downwind from the closest turbine for eight  
17 consecutive hours during any time of the day in  
18 a year, when the turbines are generating the  
19 highest sound power levels?

20 A. Yes, it is possible.

21 Q. Can such exceedance be mitigated after the  
22 Project becomes operational?

1 A. Yes, a 3 dBA underprediction can be mitigated by  
2 applying NROs on the closest turbine(s).

3 Q. If it can be mitigated by applying NROs what is  
4 the concern?

5 A. The concern is that the mitigation that may be  
6 needed could be higher. For instance, if sound  
7 limits are 42 dBA or lower as previously stated  
8 in my testimony and if an underprediction of 3  
9 dBA occurs, the total noise reduction at the  
10 most impacted receptors could be as high as 5  
11 dBA. (44 dBA maximum impact plus 3 dBA  
12 underprediction minus 42 dBA proposed regulatory  
13 limit equal to 5 dBA). In addition, if the non-  
14 participating receptor is a two-story house, the  
15 sound levels at the second floor could be about  
16 1.5 dBA greater than as estimated (45.5 dBA  
17 rather than 44 dBA). In that case the noise  
18 reduction at the receptor could be as high as  
19 6.5 dBA.

20 Q. Is that feasible?

21 A. For some turbine models it may be feasible but  
22 not for all. Documentation about NROs for the

1 turbines considered for the project are not  
2 provided in the Application.

3 For those wind turbine models for which it is  
4 not feasible, the only mitigation option would  
5 be a shutdown for the periods when the sound  
6 limits are exceeded. Both NROs and shutdowns  
7 reduce the energy production making the Project  
8 less efficient.

9 Q. What is your recommendation?

10 A. My recommendation is that NROs should not be  
11 used for computer noise modeling to demonstrate  
12 conformance with relevant criteria and that  
13 minimization measures should be provided during  
14 design for the most impacted receptors.

15 Q. What is your conclusion about the analysis of  
16 short-term impacts and Certificate Conditions.

17 A. Short-term regulatory limits should be lower  
18 than those set for Cassadaga Wind and may need  
19 to be as low as 42-dBA-8-h-nighttime to comply  
20 with the indoor recommendations of WHO-1999.  
21 NROs should not be used for computer noise  
22 modeling to demonstrate conformance with

1       relevant criteria but rather be left as  
2       contingent mitigation options as  
3       underpredictions and discrepancies between  
4       computer noise modeling and post-construction  
5       actual sound levels are likely to occur.

6   Q.   What are your recommendations for participating  
7       receptors.

8   A.   I also recommend reducing the regulatory limit  
9       for participating receptors, from 55 dBA as  
10      ordered for Cassadaga Wind to 52 dBA-Leq-8-h) on  
11      the basis that the difference between the short-  
12      term limits and the long-term limits may be as  
13      low as 2 dBA and not 5 dBA as assumed for  
14      Cassadaga. This is based on an identified  
15      threshold of 50 L<sub>night</sub> in WHO-2009 for zero risk  
16      of cardiovascular disease. Participating  
17      receptors should be aware that indoor noise  
18      levels with the windows open, or partially open,  
19      may be higher than as recommended by WHO-1999  
20      and may need to close their windows to reduce  
21      the potential for annoyance or sleep  
22      disruptions. Currently the Application shows

1       that the maximum Leq-1-h sound levels at  
2       participating receptors are predicted to be 48  
3       dBA, five dBA below the 52 dBA Leq-8-h  
4       regulatory limit that I am recommending.

5   Q.   Do you have any concerns with long-term sound  
6       levels as proposed by the Applicant?

7   A.   In Cassadaga Wind, the Siting Board imposed  
8       Certificate Condition 80(b), which includes a  
9       sound limit of 40 dBA L(night-outside), annual  
10      equivalent continuous average nighttime sound  
11      level from the Facility outside any existing  
12      permanent or seasonal non-participating  
13      residence, and a limit of 50 dBA L(night-  
14      outside), annual equivalent continuous average  
15      nighttime sound level from the Facility outside  
16      any existing participating residence. Although  
17      the clause is included in the Certificate  
18      Conditions proposed by Eight Point Wind this is  
19      not included in the protocol for post-  
20      construction noise evaluations.

21   Q.   Do you agree with excluding testing of the  
22      Lnight-outside regulatory limit from the scope

1 of the compliance testing protocol?

2 A. No, I do not. I consider that the 40 dBA  
3 L(night-outside) for non-participating receptors  
4 which is based on the recommendations of WHO-  
5 2009 is potentially more protective than the 45  
6 dBA (dBA) Leq (8-hour) WHO-1999 recommendation  
7 and therefore should be evaluated at the most  
8 critical locations after the Project is built.  
9 Alternatively, the Project should be designed  
10 for a lower short-term limit as previously  
11 stated.

12 Q. Is the WHO-2009 still applicable?

13 A. Yes. As stated in the most recent guideline  
14 (WHO-2018) "the current guidelines complement  
15 the [WHO Night Noise Guidelines] (NNG) from  
16 2009."

17 Q. Has the Application included computer noise  
18 modeling and calculations showing that the  
19 design complies with the 40 dBA-Lnight  
20 recommendation of WHO-2009 for non-participating  
21 receptors?

22 A. Yes. The Application shows that the maximum

1           impact will be 40-dBA at non-participating  
2           receptors. Also, that a maximum level of 45-dBA  
3           Lnight will not be exceeded at non-participating  
4           receptors.

5    Q.    Do you have any issues regarding how the Lnight  
6           levels were calculated and if so, could you  
7           please describe what those issues are?

8    A.    Yes. The calculations of the Lnight include  
9           corrections on an hourly basis so that the  
10          results with the ISO 9613-2/CONCAWE method never  
11          exceed the Leq-1-hour calculated with the ISO  
12          9613-2 at the particular wind speed that occurs  
13          during each hour.

14   Q.    Please explain.

15   A.    The Application adopted two methods for  
16          prediction of future operational noise levels  
17          from the Project called the ISO-9613-2 and the  
18          CONCAWE. The ISO-9613-2 method uses the ISO  
19          9613-2 propagation standard with no  
20          meteorological corrections to estimate the  
21          short-term sound levels and the CONCAWE method  
22          uses the ISO 9613-2 propagation standard in

1 conjunction with the CONCAWE meteorological  
2 correction. As stipulated, both use the ISO-  
3 9613-2 propagation standard but without the ISO  
4 meteorological correction (Cmet). Instead, the  
5 CONCAWE approach adds a meteorological  
6 correction that is used in the original CONCAWE  
7 propagation standard to the hourly calculation  
8 of ISO-9613-2 components for estimates of long-  
9 term sound impacts.

10 Q. Are the ISO-9613-2 input values and assumptions  
11 the same for both methods.

12 A. No, they are not. The formulas are the same,  
13 but the input values and assumptions used in the  
14 studies are different. The ISO 9613-2, for  
15 estimates of maximum short-term noise levels, is  
16 calculated with a ground factor G 0.5 but uses a  
17 ground factor of G 1 when used in conjunction  
18 with the CONCAWE meteorological correction for  
19 long-term estimates. In simple terms, a G  
20 factor of 1 represents a better ground effect  
21 that results in lower noise levels at receptors.  
22 Then the CONCAWE meteorological correction is

1       calculated which can be either positive or  
2       negative, in other words, it can be added or  
3       subtracted to the ISO 9613-2 calculation  
4       components in an hourly basis. Further  
5       calculations of about 8,760 hours in a year are  
6       conducted to arrive to an estimate of the long-  
7       term energy-based average sound level  $L_{\text{night}}$  at  
8       a particular receptor. The CONCAWE  
9       meteorological corrections can be either  
10      positive or negative because there are  
11      atmospheric conditions that are favorable and  
12      others that are unfavorable for propagation of  
13      noise. In other words, it may increase or  
14      decrease the sound levels at a particular  
15      receptor.

16    Q.   What is the issue with the estimates of long-  
17          term sound levels?

18    A.   The problem is that for every hour that the sum  
19          of the ISO-9613-2 with  $G=1$  and the CONCAWE  
20          meteorological correction exceeds the sound  
21          levels estimated with the ISO-9613-2 standard  
22          with  $G=0.5$  and maximum sound power levels, a

1 correction is applied to match the ISO-9613-2  
2 results. In other words, this is done so that  
3 the level never exceeds the ISO-9613-2 short-  
4 term estimates.

5 Q. Is this approach reasonable?

6 A. In my opinion it is not. I have not found any  
7 peer reviewed publication or standard that calls  
8 for this. The correction also seems to be based  
9 on the Applications' assumption that predictions  
10 of the 1-hour-Leq sound levels with the ISO  
11 9613-2 and no meteorological correction  
12 (Cmet) correspond to the maximum sound levels  
13 that can actually be measured, but as I  
14 explained before the MA-Study contains evidence  
15 showing that this is not the case. For one out  
16 of six 1-hour-Leq samples (and one of the two  
17 highest) the measurements exceeded the  
18 predictions by three decibels. Therefore,  
19 regardless of the assumptions and input values  
20 used in the CONCAWE calculations, corrections  
21 should not be applied to reduce the predictions  
22 with the CONCAWE to match the ISO-9612-2  $G=0.5$

1        calculations because, as the evidence supports,  
2        the actual measured sound levels can be up to 3  
3        dBA higher than the estimates achieved by using  
4        computer noise modeling.

5    Q.    You mentioned earlier in your testimony that you  
6        disagree with applying corrections to the  
7        CONCAWE method to match the ISO-9613-2 results.  
8        What is your opinion about the calculation with  
9        CONCAWE meteorological corrections presented in  
10       the Application and do you propose an  
11       alternative?

12   A.    The review of calculations of long-term  
13        estimates is complicated. In fact, the  
14        supporting data is in two spreadsheets that  
15        contain about 390,000 data cells each.  
16        However, the raw data without any corrections,  
17        shows 1-h-Leq sound levels 1 to 2 dBA above the  
18        ones predicted with the ISO-9613-2. In other  
19        words, about 45 dBA to 46 dBA Leq-1-h, not 43 to  
20        44 dBA for the most impacted receptors. I think  
21        the unadjusted data results are closer to  
22        maximum 1-hour Leq levels that it may occur.

1       Based on the information submitted by the  
2       Applicant, the differences between the short-  
3       term and the long-term calculations with  
4       corrections for sensitive receptors is between 2  
5       and 11 dBA. I consider it practical to analyze  
6       whether the differences make sense. One of the  
7       most practical approaches is to make an estimate  
8       of the  $L_{night}$  based on the difference between  
9       the maximum 1-hour sound power level generated  
10      by a turbine in a year and the yearly energy-  
11      average of all sound power levels generated by  
12      the same wind turbine in a year based on the  
13      statistics of wind speed for a site and the  
14      turbine selected for a project. Basically, this  
15      acknowledges that the main factor for the  
16      generation of noise is the wind magnitude at the  
17      hub height and ignores other variables that may  
18      affect the sound levels at a receptor such as  
19      wind direction and cloud coverage during the  
20      nighttime. For this project I see that the  
21      difference between the maximum sound power  
22      levels and the equivalent nighttime sound power

1           levels during the nighttime time is about 3 dBA.  
2           Essentially, if the facility does not want to  
3           exceed the 40 dBA L<sub>night</sub> WHO-2009  
4           recommendation, the turbines should not produce  
5           more than 43 dBA short-term sound levels at  
6           receptors at the maximum sound power levels.  
7           Therefore, I consider that using a difference of  
8           3 dBA is more appropriate than a higher  
9           difference. In this case, if the facility  
10          doesn't want to exceed the long-term  
11          recommendation of WHO-2009 equivalent to 40 dBA  
12          L<sub>night</sub>, it should not exceed a short-term level  
13          of 43 dBA. This again shows the need for  
14          considering short-term sound limits lower than  
15          the 45 dBA-Leq-8-hour recommended by WHO in  
16          1999.

17    Q.    If for some reason a L<sub>night</sub> of 40 dBA is  
18           exceeded at a particular receptor, is it  
19           possible to provide mitigation?

20    A.    Yes, but as I explained before, there is a  
21           concern about accuracies because of the  
22           correction applied to the CONCAWE results to

1 match with the ISO 9613-2 results (between 1 and  
2 2 dBA according to the Application) and also  
3 there is no certainty about whether the  
4 receptors are single or two-story residences.  
5 This again shows that the NROs should not be  
6 used in the design but rather being considered  
7 as a contingent mitigation option.

8 Q. Are there any other concerns?

9 A. Yes, the NROs are more effective if they are  
10 needed to reduce exceedances to a short-term  
11 noise limit rather than a long-term limit. In  
12 fact, when a short-term limit is exceeded, the  
13 NRO will only be applied during the periods of  
14 times when the short-term sound levels are  
15 exceeded, most likely at the highest sound power  
16 levels of generation. But for long-term sound  
17 limits this works differently.

18 Q. Please explain.

19 A. Noise reduction operations are more effective at  
20 high wind speeds, but they could be zero at  
21 medium and low wind speeds. Therefore, the noise  
22 reduction achieved at the receptor is lower than

1       the noise reduction applied on the turbines. For  
2       instance, if a 2-dBA noise reduction is needed  
3       at a receptor a higher NRO would need to be  
4       applied on the closest turbines (about 3 dBA).  
5       There is no NRO sound information provided for  
6       the turbine selected for this project, but I  
7       estimate that the noise reductions needed at the  
8       turbines can be approximately 1-2 dBA higher  
9       than the noise reduction needed at a receptor.  
10      If the NRO is applied only to one turbine and  
11      not to other closer turbines the NRO may need to  
12      be even higher. This is another cause of concern  
13      specially because although the long-term limits  
14      that were imposed by the Siting Board in the  
15      Cassadaga Wind case are included in the  
16      Certificate Conditions proposed by the Applicant  
17      for Eight Point Wind, evaluation of the Lnight  
18      descriptor is not included in the protocol for  
19      post-construction evaluations. What this also  
20      means is that if the long-term sound levels are  
21      only modeled by computer, there will be no  
22      measurements to demonstrate whether the facility

1           exceed the long-term recommendation of 40 dBA  
2           Lnight from WHO-2009.

3    Q.    Is there any other alternative?

4    A.    Yes. One is to measure the Lnight as I have  
5           proposed in the DPS-Protocol to address such  
6           measurements. Alternatively, the long-term  
7           limits may be eliminated from post-construction  
8           compliance measurements provided a lower short-  
9           term limit is adopted and NROs are not used in  
10          computer noise modeling. Since NROs are only  
11          effective at high wind speeds and might not be  
12          applied to all relevant turbines, this short-  
13          term regulatory limit should be conservatively  
14          estimated.

15   Q.    Do you have any recommendation for that short-  
16          term limit?

17   A.    My best estimate at this time is that that limit  
18          should be 42 dBA Leq so that the long-term  
19          recommendation of WHO-2009 and the interior  
20          noise levels could also comply with the indoor  
21          recommendations of WHO-1999 when windows are  
22          open or partially opened.

1 Q. You mentioned at the beginning of your testimony  
2 that the new recommendation of WHO in WHO-2018  
3 includes consideration of the daytime periods as  
4 well, not only about the nighttime period.  
5 Please explain.

6 A. Yes, the new guidelines propose the Lden noise  
7 descriptor which considers the daytime, evening  
8 time, and nighttime noise levels.

9 Q. Do those guidelines address specifically the  
10 potential health impacts from wind turbine  
11 noise?

12 A. Yes. Recently, the WHO released the WHO-2018  
13 guidelines for noise which include consideration  
14 of Wind Turbine Noise. The WHO-2018 guidelines  
15 found that adverse health effects (such as  
16 annoyance) are associated with a level  
17 equivalent to 45 dBA Lden. Therefore, the  
18 recommendation is that sound levels from wind  
19 turbines should be lower than 45 dBA Lden in a  
20 year.

21 Q. What is the Lden?

22 A. The Lden is another noise descriptor equivalent

1 to a yearly energy-based average with no  
2 penalties applied to the daytime period, a 5-dBA  
3 penalty applied to the evening period, and a 10  
4 dBA penalty applied to the nighttime period.

5 Q. How are the daytime, evening time and nighttime  
6 periods defined?

7 A. The definitions for all these periods of time in  
8 a day may be different for Europe, the United  
9 States, and other countries. For example, the  
10 "nighttime period" in Europe spans from 11 p.m.  
11 up to 7 a.m. the following morning, or from  
12 10:00 p.m. to 6:00 am the following day (8-  
13 hour), while in United States "nighttime period"  
14 spans from 10 p.m. up to 7 a.m. (9-hour). In  
15 addition, the "daytime period" in Europe spans  
16 from 7 a.m. up to 7 p.m. or from 6:00 a.m. to  
17 6:00 p.m. (12-hour) (WHO-2018, p. 9) while in  
18 United States "daytime" spans from 7 a.m. to 6  
19 p.m. (11-hour). The "evening time" in Europe  
20 goes from 7 p.m. to 11:00 p.m. or from 6:00 p.m.  
21 to 10:00 p.m. (4-hour) while in the United  
22 States "evening time" spans from 6 p.m. up to

1        10:00 pm. Despite the differences in timing  
2        definitions, the effects on the Lden noise  
3        descriptor may be minimal and may result in  
4        numbers that are quite similar with differences  
5        in the order of a few decimal points.

6    Q.    If a sound source is constant during the day  
7        time, evening time, and nighttime (as defined in  
8        the United States), how many decibels should  
9        that noise source be in order not to exceed the  
10       45-dBA Lden recommendation?

11   A.    That sound source should have a constant average  
12        sound pressure level lower than 38.2 dBA Leq  
13        during the daytime (Lday), evening time (Leve),  
14        and nighttime (Lnight) in a year so that after  
15        all the penalties are applied it does not equal  
16        or exceed the 45 dBA Lden WHO-2018  
17        recommendation. In other words, the daytime,  
18        evening time, and nighttime average sound  
19        exposure in a year should be about 6.8 dBA lower  
20        than 45-dBA Lden WHO-2018 or equivalently 38.2  
21        dBA.

22   Q.    Are there any other corrections to be applied?

1     A.     Possibly. For instance, it is technically  
2           feasible to include the periods of time when the  
3           noise sources are not generating noise in the  
4           calculation of the Lden in a year. The effect  
5           of not including any noise from the noise  
6           sources (wind turbines in this case) during  
7           these periods depends on the percentage of the  
8           year the turbines are not generating and  
9           producing noise, but they may result in an extra  
10          allowance that could be approximately 1.1 dBA  
11          for a noise source that is not generating sound  
12          for approximately 15% of the time in a year.  
13          That being said, the sound should be lower than  
14          39.3 dBA for the yearly average of the Ldaytime,  
15          Levening, and the Lnight ( $38.2+1.1=39.3$ ). These  
16          levels, when combined with the percentage of  
17          time that noise source is not generating noise  
18          and after the 5- and 10-dBA penalties are  
19          applied to the evening time and the nighttime  
20          (respectively), will result in a Lden of 45 dBA.  
21     Q.     How does a noise level of 39.3 dBA Leq in a year  
22           equate to a maximum short-term threshold such as

1       the Leq-11-hour(daytime), 4-hour(evening time),  
2       9-hour(nighttime).

3     A.   As explained for the Lnight descriptor the  
4       difference between the long-term and the maximum  
5       short-term levels depend on the statistical  
6       distribution of wind speed magnitudes at the  
7       site and the turbine model selected for the  
8       Project. Assuming that the difference is 3  
9       dBA, a 39.3 dBA average in a year during the  
10      daytime would approximately equate to a short-  
11      term level of 42.3 dBA Leq during the daytime.  
12      For a noise source that is constant in time the  
13      average for the daytime and evening time periods  
14      should be the same. Therefore, in my opinion,  
15      the regulatory short-term limit for the daytime  
16      and evening time should also be about 42 dBA so  
17      that the 45 dBA Lden recommendation is met.

18    Q.   These are estimates for a noise source that is  
19       constant in time. Are they applicable to wind  
20       turbine noise that is not constant in time?

21    A.   Yes, they are. The Netherlands has regulations  
22       that use the Lden and the Lnight noise

1 descriptors. The limits have been set at 47-dBA  
2 Lden and 41-dBA Lnight since 2011, a difference  
3 of 6 dBA between the two noise descriptors. See,  
4 Wind Farm Noise Measurements Assessment and  
5 Control Colin H. Hansen, Con J. Doolan and  
6 Kristy L. Hansen. (p.41) Wiley. 2017.

7 Q. What are the implications?

8 A. In order to comply with the WHO-2018  
9 recommendation of 45 dBA Lden, a wind generating  
10 facility should not exceed a level of 39 dBA Leq  
11 in a year during the daytime, evening time and  
12 nighttime. A 39 dBA Lnight is 1 dB lower than  
13 the Lnight of 40 dBA recommended by WHO in 2009.  
14 This again would translate to a short-term limit  
15 of about 2 dBA to 4 dBA greater. In other  
16 words, a short-term level of 41 dBA to 43 dBA. I  
17 would recommend 42 dBA in this case, which is an  
18 average between those two levels.

19 Q. If the short-term regulatory limit is kept at  
20 45 dBA, by how many decibels could the new WHO-  
21 2018 recommendation be exceeded?

22 A. The Lden could be around 48-dBA, exceeding the

1 new recommendation by about 3 dBA.

2 Q. Can that be mitigated and how?

3 A. Yes, by applying NROs to the closest turbines or  
4 eliminating some from the design. If NROs are  
5 applied, they need to be greater than the noise  
6 reduction needed at the receptor. I note however  
7 that the Application does not state whether NROs  
8 are available for the turbines considered for  
9 the Project and the maximum noise reduction that  
10 can be achieved. Also, there is no information  
11 attached that includes the sound power levels  
12 for NROs.

13 Q. What are the short-term sound results included  
14 in the Application?

15 A. The Application provided tables with short-term  
16 sound impacts using the Leq-1-h noise  
17 descriptor. There are no receptors with short-  
18 term levels exceeding 45-dBA-Leq-1-hour sound  
19 levels.

20 Q. How many receptors may exceed a short-term sound  
21 limit of 42 dBA-Leq-1-h?

22 A. There are 9 non-participating receptors with

1 short-term levels exceeding a 42-dBA-Leq-1-hour  
2 sound levels.

3 Q. Are there any issues related to low frequency  
4 sounds from the wind turbines in the Compliance  
5 Protocol proposed by the Applicant?

6 A. Yes. In case 14-F-0490 the Siting Board adopted  
7 Certificate Condition 80 (c) which requires the  
8 facility to "[c]omply with a maximum noise limit  
9 of 65 dB Leq at the full octave frequency bands  
10 of 16, 31.5, and 63 Hertz outside of any non-  
11 participant residence existing as of the  
12 issuance date of this Certificate in accordance  
13 with Annex D of ANSI standard S12.9-2005/Part 4  
14 (Sounds with strong low-frequency content)."  
15 That condition, although proposed by the  
16 Applicant for Eight Point Wind is not included  
17 in the protocol for post-construction noise  
18 testing.

19 Q. What does Annex D of the ANSI Standard say?

20 A. Section D.2 of Annex D in ANSI S12.9-2005 Part  
21 4, entitled "Sounds with strong low-frequency  
22 content," states "[g]enerally, annoyance is

1       minimal when octave-band sound pressure levels  
2       are less than 65 dB at 16, 31.5 and 63-Hz mid-  
3       band frequencies."

4    Q.   What is your recommendation for this case?

5    A.   Post-construction monitoring of low frequency  
6       sounds is protective of annoyance to low  
7       frequency sounds and perceptible vibrations and  
8       for that reason should be adopted for Eight  
9       Point Wind as it was for Cassadaga Wind. This  
10      is reflected in Exhibit\_\_(MMC-8), the DPS-  
11      Protocol.

12   Q.   What is your opinion about Amplitude Modulation  
13      for this project.

14   A.   The Certificate Conditions designated as 75(e)  
15      by Eight Point relates to the way complaints  
16      from Amplitude Modulation are handled.

17   Q.   Please explain the concept of amplitude  
18      modulation and the Application's analysis and  
19      conclusions related to amplitude modulation.

20   A.   In simple terms, amplitude modulation is a  
21      repetitive sound that occurs with a frequency of  
22      about one second or less. This is commonly

1 described as a repetitive "swish" or "thump"  
2 associated with turbine operation. "Recent  
3 evidence suggests that at times this 'swish' can  
4 become more of a pronounced 'thump,' leading to  
5 complaints from wind farm neighbors" (UK-2016,  
6 p. 1)." The interval of measurement has to be a  
7 fraction of a second (one tenth), to allow the  
8 problem to be described and analyzed. Once the  
9 amplitude modulation is properly measured, the  
10 amplitude modulation depth can be estimated. In  
11 simple terms the amplitude modulation depth is  
12 the number of decibels the amplitude of sound  
13 fluctuates from peak to trough.

14 Q. Can amplitude modulation be predicted at this  
15 time, before the Project is built, and what is  
16 the recommendation of the UK-2016 document for  
17 decision makers such as the Siting Board?

18 A. One of the main findings of the UK document 2016  
19 is that amplitude modulation cannot be predicted  
20 at this time "[t]he prevalence of unacceptable  
21 AM has not been evaluated as part of this study,  
22 and current state of the art is that the likely

1 occurrence cannot be predicted at the planning  
2 stage. That does not preclude future research  
3 to determine the likelihood of AM occurring  
4 coming forward, and the development of a risk  
5 based evaluation, or similar. Due to the lack  
6 of ability to predict AM occurring on a site,  
7 and the reported difficulties in applying  
8 Statutory Nuisance provisions to control AM on  
9 existing sites, it is likely that the default  
10 position for a decision maker would be to apply  
11 the condition on all sites unless evidence is  
12 presented to the contrary." (Id. at 4).

13 Q. If amplitude modulation cannot be predicted at  
14 this time, what can be done to identify the  
15 problem should it occur?

16 A. Since amplitude modulation cannot be predicted  
17 at the planning stages for the proposed Project,  
18 the important issue is to address how amplitude  
19 modulation will be evaluated and how the impacts  
20 will be mitigated if they occur.

21 Q. What are the options for mitigation of amplitude  
22 modulation?

1 A. The UK 2016 document states in section 4.5.29,  
2 pages 71 and 72 "[w]ith current technologies,  
3 mitigation in most cases will likely be achieved  
4 through pitch control of the turbine blades, or  
5 in the worst case the switching off of one or  
6 more turbines during periods of unacceptable  
7 AM."

8 Q. Do you have any recommendations for Compliance  
9 testing?

10 A. Yes, I do. In Case 14-F-0490 the Siting Board  
11 adopted Certificate Condition 72 requiring the  
12 Applicant to perform two compliance tests: one  
13 during "leaf-on" conditions; and another one  
14 with "leaf-off" conditions. For Cassadaga Wind  
15 DPS Staff did not propose a compliance protocol.  
16 Absent of any alternatives, the Siting Board  
17 adopted the protocol presented by the Applicant.  
18 The Applicant here has proposed addressing the  
19 complaints and testing the Facility with  
20 protocols that were filed with the Application.  
21 I have objections to the protocols which are  
22 presented in my testimony and in Exhibit\_\_(MMC-

1           13) with edits and comments on the most relevant  
2           issues discussed herein. This does not address  
3           the parts that a compliance protocol should have  
4           but that in my opinion are missed. In general,  
5           I do not recommend the adoption of the Protocols  
6           as presented in the application as it will not  
7           properly evaluate whether the facility as  
8           designed and as built will in fact avoid,  
9           offset, or minimize, the adverse environmental  
10          noise or vibration impacts upon the local  
11          community for the duration of the certificate.  
12    Q.    Are you recommending a Protocol for  
13          postconstruction noise evaluations?  
14    A.    Yes. The protocol is included in Exhibit MMC-8.  
15    Q.    Are there any differences between the  
16          Certificate Conditions Staff is recommending for  
17          noise and vibrations and the Certificate  
18          Conditions proposed by the Applicant as related  
19          to Compliance Filings?  
20    A.    Yes. All the differences can be seen in a red-  
21          line comparison included in Exhibit\_\_(MMC-12).  
22          In Certificate Condition 65(c)(i) I am including

1 edits to fix typos related to the standards used  
2 to report sound power levels from the turbines.  
3 In Certificate condition 65 (c)(ii) I am  
4 including minor edits. In certificate condition  
5 65 (d) I am recommending insertions as follows:  
6 first, I am expanding the requirements for  
7 revised computer modeling to allow the Applicant  
8 flexibility in case they want to introduce  
9 changes in revised modelling provided these  
10 changes result in more conservative results.  
11 Second, as explained in my testimony, I also  
12 recommend that NROs not be used in the design,  
13 to demonstrate conformance with any limit  
14 imposed by the Siting Board as a compliance  
15 filing requirement. For that reason, I am  
16 proposing changes requiring the Applicant not to  
17 use NROs in the compliance filings. Third, I am  
18 introducing edits to require the Applicant to  
19 confirm that the sensitive receptors with sound  
20 results approaching any noise limits of the  
21 final Order are in fact single-story residences.  
22 If they are found to be two-story buildings or

1 more, the sound levels should be evaluated at 4  
2 meters, not at 1.5 meters. Forth, I am  
3 recommending incorporating my recommendations  
4 for elimination of turbines and the use of some  
5 already identified alternative locations in  
6 replacement of the text proposed by the  
7 Applicant for Certificate Condition 77 (c).  
8 Fifth, in certificate Condition 65 (d) (i) I am  
9 recommending requiring the Applicant to evaluate  
10 the new recommendations from WHO-2018 consisting  
11 of noise levels lower than 45 dBA Lden. As an  
12 alternative to this, I am recommending lower  
13 short-term regulatory limits as shown in my  
14 alternate proposed Certificate Condition 74(a)  
15 in Exh MMC-11. Sixth: Although the recommended  
16 decision for Cassadaga refers to a 50 dBA  
17 (Lnight-outside) for boundary lines I agree in  
18 having Certificate Condition 65 (d) (iii)  
19 expressing this requirement by using a short-  
20 term limit for this compliance filing at  
21 boundary lines. That is because it is practical  
22 to generate sound contour drawings with the ISO

1 model for boundary lines with the sound turbines  
2 at maximum power levels but not feasible to  
3 generate yearly noise contours with the CONCAWE  
4 meteorological correction.

5 Q. Are there any differences between the  
6 Certificate Conditions Staff is recommending for  
7 noise and vibrations and the Certificate  
8 Conditions proposed by the Applicant as related  
9 to Postconstruction Compliance Evaluations?

10 A. Yes. In Certificate Condition 66, and as  
11 explained in my testimony, I am recommending  
12 adopting the Sound Testing Compliance Protocol  
13 presented by DPS in Exh-8 and not the Protocol  
14 presented by the Applicant. Should the Siting  
15 Board order any changes to the certificate  
16 conditions recommended by DPS or the Applicant I  
17 am recommending in Certificate Condition 66,  
18 requiring the Applicant to reflect those changes  
19 exclusively in the Protocol which should be  
20 filed as indicated in my proposed Certificate  
21 Condition 66. For the reasons explained above, I  
22 am also recommending eliminating Certificate

1 Condition 66 (a) proposed by the Applicant.

2 Since the protocol presented by Staff already  
3 contains all the elements included in  
4 Applicant's Certificate Condition 66(b), 66(c),  
5 and 66(d), I am recommending the elimination of  
6 those provisions.

7 Q. Please explain what is the next change that you  
8 recommend.

9 A. Certificate Condition 68 proposed by the  
10 Applicant reads "[i]f the results of the first  
11 or the second Sound Compliance test performed by  
12 the Certificate Holder or any tests performed by  
13 DPS, upon reasonable notice to the Certificate  
14 Holder and following the Protocol approved in  
15 the Compliance Filing for the tests to be  
16 performed by the Certificate Holder, and after a  
17 reasonable period has elapsed for discussions  
18 between DPS and the Certificate Holder's  
19 acoustical consultant has elapsed, (...) indicate  
20 that the Facility (...)"

21 I disagree with this condition. First, the  
22 Applicant and DPS Staff should not follow the

1        protocol presented by the Applicant as this  
2        protocol is insufficient. Second, I recommend  
3        that if the Siting Board decides to grant a  
4        Certificate to Eight Point any post-construction  
5        monitoring should be conducted by following the  
6        Sound Testing Compliance protocol presented by  
7        DPS and attached to this testimony as  
8        Exhibit\_\_(MMC-8).

9    Q.    Are there any differences between the  
10        Certificate Conditions Staff is recommending and  
11        the Certificate Conditions proposed by the  
12        Applicant as related to regulatory noise limits  
13        to the facility?

14    A.    Yes. Based on my discussions in my testimony, I  
15        am recommending in Certificate Condition 74(b)  
16        the facility also be required to demonstrate  
17        compliance with the new WHO guidelines of 45-dBA  
18        Lden for any existing permanent or seasonal non-  
19        participating residence by post-construction  
20        noise testing after the facility is built.  
21        Alternatively, if the Siting Board decides not  
22        to impose a certificate condition of 45 dBA

1       Lden, 40 dBA L(night) or both, I recommend  
2       reducing the short-term regulatory noise limit  
3       from 45 dBA Leq (8-hour) to 42 dBA Leq (8-hour)  
4       for any existing participating receptors and  
5       from 55 (dBA) Leq (8-hour) to 52 (dBA) Leq (8-  
6       hour) for any existing non-participating  
7       receptors. This option is reflected in my  
8       alternate conditions included in Exh-11. In  
9       addition, I'm recommending that the noise  
10      descriptor for the 65-dB Leq low-frequency noise  
11      limit included in Certificate Condition 74(d) be  
12      clarified as 65 dB Leq-1-hour. This is  
13      consistent with the requirements for compliance  
14      filings for Cassadaga and also with the noise  
15      descriptor used in Certificate Condition 65 (d)  
16      (iv) proposed by the Applicant.

17    Q.   Are there any differences between the  
18          Certificate Conditions Staff is recommending and  
19          the Certificate Conditions proposed by the  
20          Applicant as related to complaints from noise  
21          and vibration from the facility?

22    A.   Yes. I am proposing an insertion in Certificate

- 1 Condition 75(c) to clarify that the  
2 notifications required in this clause relate to  
3 the Applicant. In addition, I recommend that  
4 complaints be reported monthly during the first  
5 three years of operation and quarterly after  
6 that rather than monthly during the first full  
7 year of commercial operations as adopted for  
8 Cassadaga. If no noise or vibration complaints  
9 are received, I also recommend requiring the  
10 Certificate Holder to submit a letter to the  
11 Secretary indicating that no complaints were  
12 received during the reporting period rather than  
13 excepting the Applicant of any filings if no  
14 noise or vibration complaints are received.
- 15 Q. Are there any differences between Certificate  
16 Conditions proposed by Staff and the Applicant  
17 as related to complaints from Amplitude  
18 Modulation (AM) from the Project?
- 19 A. Yes. Given the discrepancies that could occur  
20 between computer noise modeling and actual post-  
21 construction noise measurements I recommend that  
22 complaints related to Amplitude Modulation be

CASE 16-F-0062

MORENO-CABALLERO

1        investigated if measured or modeled sound levels  
2        at the location(s) being evaluated exceed 40 dBA  
3        L1hr, rather than based on modeled levels  
4        exceeding 40 dBA L1hr exclusively as ordered for  
5        Cassadaga Wind. In addition, I recommend edits  
6        on the clause related to Amplitude Modulation as  
7        ordered for Cassadaga. The edits are consistent  
8        with the discussion on page 60 of the  
9        Cassadaga's Order that states "[t]he RD also  
10       adopted a restriction on the Facility's  
11       production of amplitude modulated sounds, such  
12       as complaints of swishing or thumping type  
13       sounds. Should such amplitude modulated sounds  
14       be found to exceed a noise level of 45 dBA for  
15       more than 5 percent of the evaluation period,  
16       the Certificate Holder would be required to  
17       implement minimization measures." Consequently  
18       the 10% has been changed to 5%. In addition, I  
19       consider that the time frame of evaluation of  
20       Amplitude Modulation should be clearly  
21       specified. I am proposing a time frame of  
22       evaluation of 8-hours which I consider is

1        appropriate. The text "amplitude modulation  
2        depth is 5 dB or lower for a minimum of 90% any  
3        hour" is confusing. First, I think that the 90%  
4        was set as the complement of the 10% indicated  
5        in the same clause. Therefore the 90% should be  
6        95%. Second, the text should be referring to the  
7        penalty for Amplitude Modulation which is set at  
8        the beginning of the same clause. For that  
9        reason, I am proposing edits so that the  
10       Application of the AM penalty makes sense and is  
11       consistent with the intent expressed in the  
12       discussion of the order and the first portion of  
13       this clause.

14    Q.    Is there any other way to address potential  
15       issues with amplitude modulation sound?

16    A.    Yes, by reducing the sound limits to which the  
17       AM penalty is applied. The UK-2016 document  
18       recommended amplitude modulation penalties  
19       between 3 and 5 dBA. The 3-dBA penalty is  
20       applied if an AM depth of 3 dBA occurs while a 5  
21       dBA penalty is applied if an AM depth greater  
22       than 5 dBA occurs. If the short-term goals and

1 limits are reduced to 42 dBA or lower an  
2 amplitude modulation penalty may not be needed.

3 Q. Are there any advantages when doing this?

4 A. Yes. There is no need to measure amplitude  
5 modulation. This clause could be eliminated as I  
6 am proposing in my alternative to my proposed  
7 certificate condition 75(e) in Exhibit\_\_(MMC-  
8 11). As I previously said, the short-term limit  
9 should be 42 dBA to meet the WHO recommendations  
10 of 1999, 2009, and 2018 and at that level, the  
11 AM penalty may not be longer necessary.

12 Q. Is there any other change recommended to the  
13 Certificate Conditions proposed by the  
14 Applicant?

15 A. Yes. Certificate Condition 75(f) is edited to  
16 reflect that any re-testing should follow the  
17 provisions included in DPS Sound Testing  
18 Compliance Protocol, including section 10 of the  
19 protocol. Given that the protocol is limited to  
20 testing a few residential positions within the  
21 first year of operation, these provisions should  
22 apply to any re-test required in response to

1           legitimate complaints from any sensitive  
2           receptors existing as of the date of the Order.

3    Q.   What are your final recommendations about the  
4           proposed facility.

5    A.   The design should keep the noise reduction  
6           operations as a contingency option to mitigate  
7           any discrepancies between predicted and actual  
8           sound levels. Should sound levels after  
9           construction exceed relevant criteria or any  
10          Certificate conditions imposed by the Siting  
11          Board at the non-participating or participating  
12          receptors, then NROs should be applied as  
13          necessary on relevant turbines to bring noise  
14          levels back into compliance.

15   Q.   Are there any mitigation measures that could be  
16          implemented if a non-conformance operational  
17          situation is found?

18   A.   Yes. NROs are the most practical mitigation  
19          measure that could be implemented after the  
20          Project is built provided they are sufficient to  
21          mitigate any actual exceedances.

22   Q.   Did you identify the Certificate Conditions that

1           you are recommending for this Project?

2    A.   My recommended Certificate conditions set forth  
3           below are included in Exhibit\_\_(MMC-7) and an  
4           alternative is included in Exhibit\_\_(MMC-11).

5    Q.   Are those conditions based on your testimony and  
6           the record in this case?

7    A.   Yes.

8    Q.   Does the proposed Facility avoid or minimize  
9           environmental impacts to the maximum possible  
10          extent?

11   A.   No. I believe that the potential adverse  
12          environmental noise impacts from operation of  
13          the facility have not been avoided or minimized  
14          to the maximum extent practicable. I also  
15          believe that additional minimizations measures  
16          such as elimination or relocation of turbines  
17          need to be explored. As stated at the beginning  
18          of my testimony my recommendations to reduce the  
19          impacts on the most impacted receptors are that  
20          the Applicant 1) eliminates Turbine #10 and use  
21          ALT1, which will reduce the impacts on  
22          receptors 327 and 329; 2) eliminates Turbine #5

1       and use ALT2, which will reduce the impacts on  
2       receptors 692 and 325; 3) eliminates ALT3 from  
3       consideration, as its use would burden  
4       receptors 456 and 454; and 4) eliminates Turbine  
5       #20 and use adjacent turbine ALT4, which will  
6       reduce the impacts on receptors 771 and 522.

7    Q.   What is your recommendation to the Siting Board  
8       regarding granting a Certificate to the  
9       Applicant in light of the environmental noise  
10      impacts?

11   A.   My recommendation as related to adverse  
12       environmental noise and vibration effects is  
13       that the Project should be approved subject to  
14       the Certificate Conditions, the post-  
15       construction protocol, and the regulatory limits  
16       that I am recommending for this project so that  
17       the adverse environmental noise effects of the  
18       operation of the Facility are minimized or  
19       avoided to the maximum extent practicable using  
20       verifiable measures. The Applicant should  
21       present updated computer noise modeling results  
22       including the elimination and relocation of

1        turbines as I previously described to  
2        demonstrate that the adverse operational noise  
3        impacts have been minimized or avoided to the  
4        maximum extent practicable. The final computer  
5        model should determine whether additional  
6        turbines need to be relocated or eliminated in  
7        order to comply with relevant thresholds and  
8        criteria as recommended in this testimony. In  
9        addition, the Applicant's proposed certificate  
10       conditions and Postconstruction Compliance  
11       Protocol is not sufficient to demonstrate that  
12       the Facility will in fact avoid, offset or  
13       minimize the impacts upon the most sensitive  
14       receptors to the maximum extent practicable  
15       using verifiable measures. Further, I recommend  
16       adoption of DPS- Staff proposed certificate  
17       conditions on noise and protocol for  
18       demonstration of compliance after construction,  
19       if the project is finally approved. The  
20       Applicant should also present updated computer  
21       noise modeling results as a compliance filing if  
22       any change is introduced to the design such as

CASE 16-F-0062

MORENO-CABALLERO

1 different turbine model or turbine locations,  
2 any changes on the list of receptors including  
3 any changes on participation status, to  
4 demonstrate that the adverse operational noise  
5 impacts have been minimized or avoided to the  
6 maximum extent practicable before a final design  
7 can be approved and construction can begin.

8 Q. Does this conclude your testimony at this time?

9 A. Yes.

BEFORE THE  
STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of  
  
Eight Point Wind LLC  
  
Case 16-F-0062  
  
January 22, 2019

---

Prepared Testimony of Staff  
Policy Panel:

Andrew Davis  
Utility Supervisor  
Office of Electric, Gas, and  
Water

Jeremy Flaum  
Utility Analyst 3  
Office of Electric, Gas, and  
Water

Erin O'Dell-Keller  
Chief  
Call Center & Outreach and  
Education  
Office of Consumer Services

State of New York  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

STAFF POLICY PANEL

1 Q. Please state the names, employer, and business  
2 address of the Staff Policy Panel (the SPP or  
3 Panel).

4 A. Our names are Andrew Davis, Jeremy Flaum, and  
5 Erin O'Dell-Keller. We are employed by the New  
6 York State Department of Public Service  
7 (Department). Our business address is Three  
8 Empire State Plaza, Albany, New York 12223.

9 Q. Have the members of the SPP provided pre-filed  
10 direct testimonies and exhibits in this  
11 proceeding and are your credentials provided in  
12 those respective testimonies?

13 A. Yes.

14 Q. Is the Panel sponsoring any exhibits to  
15 accompany or support your testimony?

16 A. Yes, we are sponsoring two exhibits.  
17 Exhibit\_\_(SPP-1) is the Energy to Lead, 2015 New  
18 York State Energy Plan and Exhibit\_\_(SPP-2) is  
19 Staff's proposed Site Engineering and  
20 Environmental Practices (SEEP) Specifications,  
21 which we recommend be included as an attachment  
22 to any Certificate Conditions issued by the New  
23 York State Board on Electric Generation Siting

CASE 16-F-0062

STAFF POLICY PANEL

1           and the Environment (Siting Board) in this  
2           proceeding.

3    Q.    Please summarize the scope of the Panel's  
4           testimony.

5    A.    We are presenting Department Staff's overall  
6           recommendations on whether the Siting Board can  
7           make the required findings pursuant to Article  
8           10 of the Public Service Law (PSL) under Section  
9           168 necessary to grant a Certificate of  
10          Environmental Compatibility and Public Need  
11          (Certificate) to construct and operate the  
12          Facility. We are also providing Staff's  
13          recommendations on the Certificate Conditions  
14          proposed by the Applicant in this proceeding  
15          that should be considered by the Siting Board if  
16          a Certificate is issued.

17   Q.    What findings does PSL §168 require prior to the  
18          Siting Board granting a Certificate?

19   A.    The Siting Board shall not grant a Certificate,  
20          either as proposed or modified, without making  
21          explicit findings on the nature of the probable  
22          environmental impacts of the construction and  
23          operation of a major electric generation

CASE 16-F-0062

STAFF POLICY PANEL

1 facility, including the cumulative environmental  
2 impacts of the facility and the related  
3 interconnection facilities, impacts to ecology,  
4 air, ground and surface water, wildlife, and  
5 habitat; impacts to public health and safety;  
6 impacts to cultural, historic, and recreational  
7 resources, including aesthetics and scenic  
8 values; and impacts to transportation,  
9 communication, utilities and other  
10 infrastructure (the probable environmental  
11 impacts). Moreover, the Siting Board may not  
12 grant a Certificate for the construction and  
13 operation of a major electric generating  
14 facility, either as proposed or modified, unless  
15 the Siting Board determines that the facility is  
16 a beneficial addition or substitution for  
17 electric generation capacity of the State; the  
18 construction and operation of the facility will  
19 serve the public interest; and the adverse  
20 environmental effects of the construction and  
21 operation of the facility will be minimized or  
22 avoided to the maximum extent practicable. If  
23 the Siting Board finds that the facility results

CASE 16-F-0062

STAFF POLICY PANEL

1       in or contributes to a significant and adverse  
2       disproportionate environmental impact in the  
3       community in which the facility would be  
4       located, it must also find that the Applicant  
5       has avoided, offset or minimized the impacts  
6       caused by the facility upon the local community  
7       for the duration that the Certificate is issued  
8       to the maximum extent practicable using  
9       verifiable measures. The Siting Board must also  
10      find that the facility is designed to operate in  
11      compliance with applicable state and local laws  
12      and regulations, all of which shall be binding  
13      on the Applicant, except that the Siting Board  
14      may elect not to apply, in whole or in part, any  
15      local ordinance, law, resolution or other action  
16      or any regulation issued thereunder, or any  
17      local standard or requirement which would be  
18      otherwise applicable, if it finds that, as  
19      applied to the proposed facility, such is  
20      unreasonably burdensome in view of the existing  
21      technology or the needs of or costs to  
22      ratepayers whether located inside or outside of  
23      such municipality. Finally, in making its

CASE 16-F-0062

STAFF POLICY PANEL

1       determinations, the Siting Board shall consider  
2       the state of available technology; the nature  
3       and economics of reasonable alternatives; the  
4       environmental impacts found; the impact of  
5       construction and operation of related  
6       interconnection facilities; the consistency of  
7       the construction and operation of the facility  
8       with the energy policies and long-range  
9       objectives contained in the most recent state  
10      energy plan; the impact on community character;  
11      whether the facility would affect communities  
12      that are disproportionately impacted by  
13      cumulative levels of pollutants; and such  
14      additional social, economic, visual or other  
15      aesthetic, environmental and other  
16      considerations deemed pertinent.

17    Q.   Please describe Staff's review of the  
18          Application and subsequent filings in this case.

19    A.   In order to develop our positions, Staff  
20          reviewed the Application, supplements to the  
21          Application, discovery responses and the  
22          proposed Certificate Conditions stipulated to by  
23          Staff and filed by the Applicant on January 16,

CASE 16-F-0062

STAFF POLICY PANEL

1           2019.

2    Q.   How were the proposed Certificate Conditions  
3           developed?

4    A.   Following the Chair's completeness determination  
5           and filing of the Application, as supplemented,  
6           the Applicant issued a Notice of Settlement in  
7           this case in an effort to address proposed  
8           Certificate Conditions. Through a series of  
9           meetings and other communications, the proposed  
10          Certificate Conditions were developed and  
11          eventually stipulated to by a number of the  
12          parties in this case, including Staff.  
13          Thereafter, the Applicant filed the proposed  
14          Certificate Conditions. With a few exceptions,  
15          noted below and in detail in Staff's pre-filed  
16          testimony regarding Noise, Economic Impacts, and  
17          Visual Impacts, Staff supports the proposed  
18          Certificate Conditions as filed. With respect  
19          to those issue where Staff disagrees with the  
20          proposed Certificate Conditions we are filing  
21          testimony supporting our changes and  
22          modifications. Any issues not specifically  
23          discussed in Staff testimony are not disputed by

CASE 16-F-0062

STAFF POLICY PANEL

1       Staff. Thus, Staff recommends that the Siting  
2       Board could make findings in those areas without  
3       further recommendation or modification to the  
4       proposed Certificate Conditions.

5    Q.   Does the Panel advise that the Application, as  
6       amended, and including all related supplemental  
7       filings and proposed Certificate Conditions, and  
8       pre-filed direct testimonies and exhibits,  
9       provides sufficient detail on the nature of the  
10      probable environmental impacts of the  
11      construction and operation of the Facility, for  
12      the Siting Board to render a determination?

13   A.   Yes. The Application, as presented by the  
14      Applicant, did not provide sufficient detail on  
15      the nature of the probable environmental impacts  
16      of the construction and operation of the  
17      Facility, or mitigation measures to address  
18      adverse impacts. However, the Application,  
19      supplements, and discovery responses, combined  
20      with the pre-filed direct testimonies and  
21      exhibits and recommendations of Staff and  
22      involved state agencies, provide sufficient  
23      detail on the nature of the probable

CASE 16-F-0062

STAFF POLICY PANEL

1 environmental impacts of the Project, and the  
2 proposed Certificate Conditions impose  
3 reasonable controls that, if adopted and  
4 enforced, would enable the Siting Board to make  
5 the required findings that environmental impacts  
6 are minimized to the maximum extent practicable.

7 Q. Does the Panel recommend that the Siting Board  
8 make a finding that the Project provides a  
9 beneficial addition or substitution for electric  
10 generation capacity of the State?

11 A. Yes. Staff recommends that the Siting Board  
12 find that the Project will result in a modest  
13 beneficial addition of electric generation  
14 capacity in the State that will not displace  
15 other existing efficient generation.

16 Q. Does Staff recommend that the Siting Board make  
17 a finding that construction and operation of the  
18 Facility would serve the public interest?

19 A. Yes, but only if the Siting Board imposes the  
20 modifications and conditions presented in the  
21 proposed Certificate Conditions, and additional  
22 modifications that are proposed by Staff to  
23 minimize the environmental and other adverse

CASE 16-F-0062

STAFF POLICY PANEL

1 impacts of the Project and to enable the other  
2 required findings as recommended by Staff.

3 Q. Please elaborate on these proposals.

4 A. The Applicant's estimates of electric energy  
5 market impacts, as provided in Exhibit 8 of its  
6 Application, are consistent with Staff estimates  
7 in the analysis performed by and contained in  
8 the Engineering Panel's pre-filed direct  
9 testimony. An illustration of wholesale energy  
10 market benefits is provided by environmental  
11 emission impacts in the form of carbon dioxide  
12 (CO<sub>2</sub>) reductions as shown in Exhibit 8, Table 8-  
13 1 of the Application. If the Siting Board  
14 imposes the modifications and conditions  
15 presented in the proposed Certificate Conditions  
16 and additional modifications that are proposed  
17 by Staff, the Project could comply with the host  
18 Towns' land use restrictions and plans and could  
19 provide additional income for local property  
20 owners, additional real property tax revenues  
21 for the local taxing jurisdictions, short-term  
22 construction jobs, and some long-term operation  
23 and maintenance jobs. As discussed further

CASE 16-F-0062

STAFF POLICY PANEL

1 below, the Project would also modestly  
2 contribute towards the goals of the Regional  
3 Greenhouse Gas Initiative (RGGI).

4 Q. Does Staff recommend that the Siting Board make  
5 a finding that the adverse environmental effects  
6 of the Facility's construction and operation are  
7 minimized or avoided to the maximum extent  
8 practicable?

9 A. Yes, but only if the Siting Board imposes the  
10 modifications and conditions presented in the  
11 proposed Certificate Conditions and additional  
12 modifications that are proposed by Staff as  
13 necessary to minimize the environmental and  
14 other adverse impacts of the Project and to  
15 enable the other required findings as  
16 recommended by Staff. As initially proposed by  
17 the Applicant, we were of the opinion that the  
18 Project did not minimize or avoid, to the  
19 maximum extent practicable, adverse  
20 environmental impacts. However, with the  
21 proposed Certificate Conditions, which among  
22 other things, propose measures to avoid,  
23 minimize or mitigate impacts to wildlife,

CASE 16-F-0062

STAFF POLICY PANEL

1 geology and water resources; impacts to land  
2 uses including agricultural lands; cultural and  
3 historic resources; and cumulative impacts to  
4 the environment, along with additional  
5 modifications that are proposed by Staff (with  
6 respect to recreational, noise, visual and  
7 shadow flicker impacts), we believe the Siting  
8 Board could make the required findings. These  
9 conditions also include specific requirements  
10 for the filing, review and approval of final  
11 construction plans; traffic control plans;  
12 grading details; access road designs; and  
13 environmental monitoring which will ensure that  
14 the Facility is constructed in a safe and  
15 responsible manner. With respect specifically  
16 to setbacks, the Project's setbacks, as proposed  
17 in Clause 27 of the Proposed Certificate  
18 Conditions conform with local laws and Siting  
19 Board policy as articulated in Case 14-F-0490.

20 Q. Does Staff recommend that the Siting Board make  
21 a finding that the Applicant has avoided, offset  
22 or minimized the impacts caused by the Project  
23 upon the local community to the maximum extent

CASE 16-F-0062

STAFF POLICY PANEL

1 practicable using verifiable measures?

2 A. Yes, but only if the Siting Board imposes the  
3 conditions filed by the Applicant, with the  
4 modifications and additional conditions proposed  
5 by Staff, as necessary to minimize the  
6 environmental and other adverse impacts of the  
7 Facility, and to enable the other required  
8 findings as recommended by Staff. As initially  
9 proposed by the Applicant, we do not believe the  
10 proposed Facility avoids, offsets or minimizes  
11 impacts upon the local community to the maximum  
12 extent practicable using verifiable measures.  
13 However, with the Certificate Conditions  
14 recommended by the Applicant, as modified to  
15 reflect the recommendations of Staff, we believe  
16 the Siting Board could make the required  
17 findings.

18 Q. Does Staff recommend that the Siting Board make  
19 a finding that the Facility is designed to  
20 operate in compliance with applicable State laws  
21 and regulations?

22 A. Yes, but only if the Siting Board adopts the  
23 proposed Certificate Conditions. In addition,

CASE 16-F-0062

STAFF POLICY PANEL

1       the following must be demonstrated in final  
2       Facility design and construction plans and  
3       compliance filings: protection of archeological  
4       resources; conformance with water quality  
5       standards and permitting standards for State-  
6       protected water bodies and State-regulated  
7       wetlands; an approved Stormwater Pollution  
8       Prevention Plan to demonstrate conformance with  
9       State Pollution Discharge Elimination Standards;  
10      and compliance with provisions addressing  
11      incidental take of a threatened species at 6  
12      NYCRR Part 182 and development of a net  
13      conservation benefit plan

14    Q.   Does Staff recommend that the Siting Board make  
15          a finding that the Project is designed to  
16          operate in compliance with applicable local laws  
17          and regulations?

18    A.   Yes.  As indicated in Exhibit 31 of the  
19          Application, the proposed Project is designed to  
20          comply with all substantive local laws and  
21          regulations.  This includes compliance with  
22          setback requirements as contained in the Wind  
23          Laws of the Towns of Greenwood and West Union.

CASE 16-F-0062

STAFF POLICY PANEL

1 Q. Does Staff recommend that the Siting Board elect  
2 not to apply any provisions of any local laws?

3 A. No. The Applicant has not at this time made a  
4 request that any provisions of local law be  
5 waived by the Siting Board so there is no reason  
6 to consider any waivers. In the event that the  
7 Applicant requests any such waivers through the  
8 course of this proceedings, they will need to be  
9 evaluated.

10 Q. Does Staff recommend that the Siting Board make  
11 a finding that the Facility provides consistency  
12 with energy policies and long-range objectives  
13 contained in the most recent state energy plan?

14 A. Yes, the Facility would provide benefits  
15 consistent with the State's policies regarding  
16 energy generation and more specifically,  
17 renewable energy generation. It would also help  
18 the State meet its regional greenhouse gas  
19 emissions goals.

20 Q. What is New York's current policy on renewable  
21 energy?

22 A. On page 112 of The Energy to Lead, 2015 New York  
23 State Energy Plan (State Energy Plan), a goal is

CASE 16-F-0062

STAFF POLICY PANEL

1       stated that 50% of the electricity consumed in  
2       the State should be generated by renewable  
3       sources by 2030 (50% by 2030). The State Energy  
4       Plan is included as Exhibit\_\_(SPP-1).

5    Q.   Are there any State specific policies, plans or  
6       programs currently enacted to effectuate this  
7       goal of 50% consumption from renewable energy by  
8       2030?

9    A.   Yes, in Case 15-E-0302, Proceeding on Motion of  
10       the Commission to Implement a Large-Scale  
11       Renewable Program and a Clean Energy Standard,  
12       Order Adopting a Clean Energy Standard (issued  
13       August 1, 2016), the Commission establishes a  
14       Clean Energy Standard (CES) designed to  
15       encourage consumer-initiated clean energy  
16       investments; supports new renewable generation  
17       resources through regular solicitation of  
18       renewable energy credits (RECs) and obligates  
19       load serving entities to provide retail  
20       customers with increasing amounts of electricity  
21       from new renewable generation sources; supports  
22       the maintenance of certain at-risk facilities;  
23       maximizes the value of potential new offshore

CASE 16-F-0062

STAFF POLICY PANEL

1 wind resources; and supports the preservation of  
2 existing at-risk nuclear zero-emissions  
3 attributes to serve retail customers.

4 Q. Does the Project, as proposed by the Applicant,  
5 contribute to the goals as effectuated through  
6 the Renewable Energy Standard?

7 A. Yes. As proposed, the energy for this Project  
8 will be generated within the State of New York.  
9 The Project's renewable attributes will likely  
10 be sold to New York's load serving entities and  
11 energy from the Project will be delivered for  
12 consumption by New York customers.

13 Q. Is New York a member of any regional cap and  
14 trade system aimed at reducing greenhouse gas  
15 emissions?

16 A. Yes, New York is a member of RGGI which is a  
17 regional marketplace that limits CO<sub>2</sub> emissions  
18 through a cap and trade program.

19 Q. Does the Project help the State of New York  
20 contribute to a regional marketplace for  
21 greenhouse gas emissions reductions?

22 A. Yes, the direct benefits of CO<sub>2</sub> emissions  
23 reductions are realized through the broader

CASE 16-F-0062

STAFF POLICY PANEL

1 regional marketplace that New York participates  
2 in through RGGI.

3 Q. Based on the Application, do there appear to be  
4 socioeconomic benefits associated with the  
5 proposed Project?

6 A. Yes, but according to the pre-filed direct  
7 testimony of Mr. Gadomski, there is a great deal  
8 of uncertainty associated with the Applicant's  
9 indirect and induced jobs estimates, especially  
10 given that these estimates are gross and not net  
11 estimates and do not reflect any offsetting  
12 negative impacts. Thus, Mr. Gadomski testifies  
13 that only the Applicant's direct, and not its  
14 indirect and induced, jobs estimates should be  
15 considered as benefits.

16 Q. Does the Panel recommend any additions to the  
17 proposed Certificate Conditions?

18 A. Yes, we recommend that Staff's Site Engineering  
19 and Environmental Plan (SEEP) Specifications,  
20 included as Exhibit\_\_(SPP-2), be attached as an  
21 appendix to the proposed Certificate Conditions  
22 and that the Siting Board include them as part  
23 of any Certificate. Further, we recommend the

CASE 16-F-0062

STAFF POLICY PANEL

1 additional modifications previously identified  
2 and discussed in detail in the testimonies of  
3 Staff witnesses Moreno-Caballero and Davis in  
4 order to minimize the environmental and other  
5 adverse impacts of the Project, specifically  
6 related to Noise, Economic Impacts, and Visual  
7 Impacts.

8 Q. Please describe the SEEP Specifications  
9 document.

10 A. The SEEP Specifications are a set of guidelines  
11 for final engineering, construction, and  
12 environmental plans and details that should be  
13 required as a compliance filing for Siting Board  
14 review and approval prior to construction and  
15 operation of the Facility. The purpose of the  
16 SEEP Specifications is to establish a single  
17 filing that would satisfy the requirements of  
18 numerous individual compliance filings needed  
19 for construction, and to create a single package  
20 of plans and details for contractors and  
21 regulatory agencies. The component parts may be  
22 submitted sequentially based on construction  
23 phasing (see 16 NYCRR 1000.2(i)) or other

CASE 16-F-0062

STAFF POLICY PANEL

1 rational basis subject to demonstration.

2 Q. Please explain why the Panel recommends that the  
3 Siting Board adopt the proposed Certificate  
4 Conditions with Staff's proposed additional  
5 modifications.

6 A. The Proposed Certificate Conditions reflect  
7 extensive consultation amongst Parties to  
8 identify conditions that would avoid, minimize  
9 or mitigate environmental and other adverse  
10 impacts of the Project. These consultations  
11 resulted in agreements on conditions with  
12 respect to several issues, including: bat  
13 impacts and wind turbine curtailment practices;  
14 decommissioning requirements; siting and  
15 construction protocols to minimize impacts  
16 associated with existing gas and oil  
17 infrastructure;; conditions for facility  
18 vegetation management; measures to avoid and  
19 protect known archeological resources, and  
20 responsive measures in the event of  
21 unanticipated discovery of additional  
22 archeological sites; details of protective  
23 measures for construction impacts on protected

CASE 16-F-0062

STAFF POLICY PANEL

1 streams and regulated wetlands; measures for  
2 long-term monitoring of wind turbine operational  
3 effects on bird and bat species; offset measures  
4 for impacts on wetlands and threatened bat  
5 species; standards applicable to final exterior  
6 lighting to minimize off-site lighting effects  
7 and glare; and many other measures. In  
8 addition, many of the proposed Certificate  
9 Conditions are administrative, or standard  
10 construction conditions and in the expert  
11 opinions of Staff are reasonable for any major  
12 electric wind generation project. The Facility,  
13 as proposed here and modified pursuant to the  
14 proposed Certificate Conditions and the  
15 additional modifications recommended by Staff,  
16 would avoid or minimize the potential for the  
17 Project to result in adverse impacts in the  
18 following areas: Land Use, Visual Resources,  
19 Cultural Resources, Wetlands and Aquatic  
20 Resources, Terrestrial Ecology and Rare Species,  
21 Topography, Geology, Soils and Groundwater,  
22 Transportation and Communication, Noise, and  
23 Magnetic Fields. Further, the proposed

CASE 16-F-0062

STAFF POLICY PANEL

1 Certificate Conditions are consistent with  
2 Siting Board policy and precedent set in Case  
3 14-F-0490, with modifications to reflect  
4 Project-specific concerns, and include  
5 requirements for pre- and post-construction  
6 environmental and engineering surveys,  
7 construction monitoring and compliance measures,  
8 and adherence to setback requirements contained  
9 in the Wind Laws of the Towns of Greenwood and  
10 West Union. The proposed Certificate  
11 Conditions, including Staff's proposed  
12 additional modifications, are supported by the  
13 record of this proceeding. Where these  
14 conditions address a risk or an impact that  
15 would not have otherwise been addressed by the  
16 Application and Supplement thereto, they are  
17 discussed in testimony filed by DPS Staff  
18 witnesses. To the extent that those provisions  
19 were included in the Application and Supplement,  
20 they are not in controversy and, as they are  
21 consistent with Siting Board practice, should be  
22 adopted.

23 Q. Is there anything else the Siting Board should

CASE 16-F-0062

STAFF POLICY PANEL

- 1           consider in rendering its determination?
- 2    A.    If the Siting Board issues a Certificate, it
- 3           should at a minimum adopt all of the proposed
- 4           Certificate Conditions to the extent agreed to
- 5           by Parties, and as modified by the
- 6           recommendations of Staff, including many
- 7           provisions for compliance filings to be
- 8           submitted for review and approval pursuant to 16
- 9           NYCRR §1002.2 and §1002.3; and information
- 10          reports documenting compliance, submitted
- 11          pursuant to 16 NYCRR §1002.4. Further, any
- 12          grant of a Certificate should include delegation
- 13          of inspection and stop-work authority to
- 14          appropriate Department Staff to enforce the
- 15          environmental, engineering, public safety and
- 16          public interest requirements in those
- 17          Certificate Conditions.
- 18    Q.    Does this conclude the Panel's testimony at this
- 19          time?
- 20    A.    Yes it does.

BEFORE THE  
STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of  
  
Eight Point Wind Energy LLC  
  
Case 16-F-0062  
  
January 22, 2019

---

Prepared Testimony of:

Jeremy Rosenthal  
Utility Analyst (Environment)  
Electric Gas and Water

State of New York  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

ROSENTHAL

1 Q. Please state your name and business address.

2 A. Jeremy Rosenthal, Three Empire State Plaza,  
3 Albany, New York 12223.

4 Q. By whom are you employed and in what capacity?

5 A. I am employed by the New York State Department  
6 of Public Service (Department) as a Utility  
7 Analyst (Environment) 3 in the Office of  
8 Electric Gas and Water, Environmental  
9 Certification and Compliance Section.

10 Q. Mr. Rosenthal, please state your educational  
11 background and professional experience.

12 A. I received a Master of Public Administration  
13 from the State University New York at Albany;  
14 Rockefeller College of Public Affairs and Policy  
15 in May 2005 with concentrations in Government  
16 Fiscal Management and Environmental Management  
17 and Policy. My undergraduate degree is a  
18 Bachelor of Arts in Environmental Sciences from  
19 the State University of New York, Plattsburgh  
20 received May 1993. Before joining the  
21 Department, I worked for four years as an  
22 Environmental Analyst at the New York State  
23 Department of Environmental Conservation. In  
24 2009, I joined the Department's Office of Energy

CASE 16-F-0062

ROSENTHAL

1 Efficiency and the Environment and was assigned  
2 to work on the Energy Efficiency Portfolio  
3 Standard, the Environmental Disclosure Program,  
4 and related issues. In 2016, I transferred to  
5 my current position in the Office of Electric  
6 Gas and Water, Environmental Certification and  
7 Compliance section. My primary responsibilities  
8 include evaluating the environmental impacts  
9 associated with siting, construction and  
10 operation of gas and electric transmission and  
11 electric generation facilities filed under  
12 Article VII and Article 10 of the Public Service  
13 Law (PSL).

14 Q. Have you testified before the New York State  
15 Public Service Commission (Commission) or the  
16 New York state Board on Electric Generation  
17 Siting and the Environment (Siting Board)?

18 A. I am currently involved in the review of over a  
19 dozen PSL Article 10 cases before the Siting  
20 Board and affiliated PSL Article VII cases  
21 before the Commission. In 2017, I testified  
22 before the Siting Board regarding Exhibit 22 -  
23 Terrestrial Ecology and Wetlands - in Cassadaga  
24 Wind, LLC(Cassadaga) Case 14-F-0490.

CASE 16-F-0062

ROSENTHAL

1 Q. Please describe your role in this case and the  
2 purpose of your testimony.

3 A. I am responsible for reviewing Eight Point Wind,  
4 LLC's (the Applicant) Application and evaluating  
5 the probable environmental impacts from the  
6 construction and operation of the proposed wind  
7 project (the Project) to terrestrial ecology,  
8 wetlands, and streams. My testimony will focus  
9 on the potential impacts of the Project on avian  
10 and bat species, including an evaluation of  
11 proposed actions to minimize and mitigate  
12 impacts to those species, as well as wetlands  
13 impacts.

14 Q. In your testimony, will you refer to, or  
15 otherwise rely upon, any information produced  
16 during the discovery phase of this proceeding?

17 A. Yes. I will refer to several source documents  
18 as referenced in Exhibit\_\_(JR-1) which are,  
19 generally, journal articles related to the  
20 impacts of wind energy facilities to bats. I am  
21 also submitting a spread sheet analysis of the  
22 cost of curtailment, referenced as Exhibit\_\_(JR-  
23 2).

CASE 16-F-0062

ROSENTHAL

1 Q. Could the Project add to cumulative bat  
2 mortality from wind facilities in New York  
3 State?

4 A. Yes. Without adequate avoidance or minimization  
5 measures the Project could contribute to bat  
6 mortality, particularly with regard to migratory  
7 bats as explained below.

8 Q. Why are you concerned about impacts to migratory  
9 bats in particular?

10 A. The majority of bat mortality at wind farms is  
11 attributable to migratory bat species. Frick,  
12 W.F. et al. 2017 forecasts that impacts from the  
13 current level of wind turbines in North America,  
14 in the absence of adequate minimization  
15 measures, could "drastically reduce population  
16 size and increase the risk of extinction" for  
17 migratory bats.

18 Q. Should measures be taken at the Project site to  
19 minimize impacts to migratory bats?

20 A. Yes. Initially I note that while migratory bats  
21 are considered species of greatest conservation  
22 need in New York State, they are not listed as  
23 "threatened" or "endangered", and thus are not a  
24 "protected" species.

1 Q. Why is that significant?

2 A. By not being listed as "endangered" or  
3 "threatened," there is no required Net  
4 Conservation Benefit Plan (NCBP) for migratory  
5 bats. NCBPs are only required for "take" of  
6 "endangered" or "threatened" species like the  
7 Northern Long Eared Bat (NLEB). Furthermore,  
8 the Applicant's proposed NLEB mitigation plan,  
9 as described in the Application, is not designed  
10 to benefit migratory bats.

11 Q. Has the Siting Board previously adopted NCBP for  
12 migratory bats?

13 A. Yes. The Siting Board in Case 14-F-0490  
14 (Cassadaga) in the Order Granting Certificate of  
15 Environmental Compatibility and Public Need,  
16 with Conditions, acknowledged on page 55 that  
17 potential impacts to migratory bats with the  
18 rationale that "[w]ith respect to bat species  
19 that are not listed as threatened or endangered,  
20 we are required to find that impacts to those  
21 species will be minimized or avoided to the  
22 maximum extent practicable. A final Net  
23 Conservation Benefit Plan designed for NLEB will  
24 also benefit non-NLEB species."

CASE 16-F-0062

ROSENTHAL

1 Q. Please describe Cassadaga's NCBP?

2 A. The NCBP in Cassadaga ultimately resulted in  
3 telemetry studies of the NLEB on Long Island.

4 Q. Do you believe that this NCBP assisted in  
5 studying migratory bats?

6 A. No. The NLEB telemetry studies identified the  
7 location of several roost trees used by the NLEB  
8 on Long Island. The telemetry work did not  
9 study migratory bats or their use of habitat and  
10 was, therefore, not relevant to migratory tree  
11 bats.

12 Q. What recommendations do you propose to protect  
13 bats, including migratory bats?

14 A. I recommend that the operation of the proposed  
15 Project include a curtailment regime that  
16 adequately minimizes impacts to all vulnerable  
17 bat species including migratory bats.

18 Q. What do you mean by a curtailment regime?

19 A. A curtailment regime is the management of wind  
20 turbines such that the conditions under which  
21 turbine blades are permitted to spin is  
22 constrained. Cut-in refers to the lowest wind  
23 speed at which turbine blades are permitted to  
24 spin.

CASE 16-F-0062

ROSENTHAL

1 Q. Did the Applicant propose a curtailment regime  
2 with a cut-in speed in its Application?

3 A. Yes. The Applicant, in Section 1001.22 of the  
4 April 2018 Supplement to the Application for a  
5 Certificate of Environmental Compatibility and  
6 Public Need, proposes to curtail turbine  
7 operations "30 minutes before sunset to 30  
8 minutes after sunrise, every day during the  
9 period from July 1 through October 1; when  
10 ambient air temperature is 50 degrees Fahrenheit  
11 or greater; and when wind speed is less than 5.0  
12 meters per second (m/s)."

13 Q. Has the Siting Board previously adopted a cut-in  
14 speed?

15 A. Yes. The Siting Board set a cut-in speed of 5.0  
16 meters-per-second (m/s) in Case 14-F-0490  
17 (Cassadaga). In Cassadaga, the Siting Board  
18 ultimately determined that a cut-in speed of 5.0  
19 m/s was appropriate with additional mitigation.

20 Q. Do you agree with the cut-in speed adopted by  
21 the Siting Board in Cassadaga?

22 A. The decision to adopt a 5.0 m/s cut-in speed  
23 resulted in a curtailment regime that according  
24 to the record in Cassadaga (TSP-4) had the

1 potential to lower migratory bat mortality by  
2 approximately 60 percent without any benefit of  
3 mitigation, when a higher curtailment regime  
4 could have lowered mortality by up to nearly  
5 ninety percent. Without the ability to ensure  
6 the benefits of mitigation, however, migratory  
7 bats should receive a higher level of  
8 protection.

9 Q. Why should migratory Bats receive a higher level  
10 of protection?

11 A. As I previously indicated, they do not benefit  
12 from any NCBP.

13 Q. Does that cut-in speed provide minimization to  
14 the greatest extent practicable?

15 A. I do not believe so. As supported by Gruver and  
16 Bishop-Boros 2015 included in Exhibit\_\_(JR-2),  
17 the effectiveness of curtailment at any one wind  
18 facility is variable, however, increases in cut-  
19 in speeds strongly trend towards decreased bat  
20 mortality. A cut-in speed of 5.0 m/s, for  
21 example, may provide a 50% reduction in bat  
22 fatalities. Whereas, a cut-in speed of 6.9 m/s  
23 could reduce fatalities by nearly 90%.

24 Q. Why do higher cut-in speeds protect more

1           migratory bats?

2    A.    Over three quarters of bat mortality that occurs  
3           at wind facilities is to migratory tree bat  
4           species.  These bats tend to fly when the wind  
5           is blowing at higher speeds compared to other  
6           species.  Increasing cut-in speeds affords those  
7           species greater protection.

8    Q.    Has a cut-in speed above 5.0 m/s been adopted by  
9           other governing bodies?

10   A.    Yes.  A 6.0 m/s cut-in speed is the curtailment  
11           requirement in neighboring Vermont as presented  
12           in Vermont Agency of Natural Resources Fish and  
13           Wildlife Bat-Wind Guidelines, September 2016.

14   Q.    Does a 6.0 m/s cut-in speed achieve total  
15           avoidance of bat mortality?

16   A.    I don't believe so.  A 6.0 m/s curtailment  
17           regime will not achieve what is considered  
18           complete or total avoidance for migratory bats  
19           or the NLEB.  While a cut-in speed of 6.9 m/s  
20           could achieve total avoidance for impacts on the  
21           NLEB, if the Siting Board approves a lower cut-  
22           in speed, the Applicant should also be required  
23           to provide NCBP for the NLEB.

1 Q. Have you considered the increased costs  
2 associated with higher cut-in speeds?

3 A. Yes, based on information provided in the  
4 Application I was able to make a desktop  
5 evaluation of the costs associated with  
6 curtailment in relation to estimated Project  
7 revenues. As illustrated in Exhibit\_\_JR-1 the  
8 costs of curtailment are small in comparison to  
9 revenues: A cut-in speed of 5.0 m/s would result  
10 in an approximate 0.3% reduction of total  
11 revenues; a cut-in speed of 5.5 m/s would  
12 result in an approximate 0.5% reduction of total  
13 revenues; a cut-in speed of 6.0 m/s would result  
14 in an approximate 1.0% reduction of total  
15 revenues; a cut-in speed of 6.5 m/s would result  
16 in an approximate 1.5% reduction of total  
17 revenues; and a cut-in speed of 6.9 m/s would  
18 result in an approximate 2.2% reduction of total  
19 revenues

20 Q. What curtailment regime do the proposed  
21 Certificate Conditions presented by the  
22 Applicant provide for?

23 A. Proposed Certificate Condition 33(i) provides  
24 for a curtailment regime of 5.5 m/s.

CASE 16-F-0062

ROSENTHAL

1 Q. Is the proposed cut-in speed preferable to the  
2 5.0 m/s cut-in speed initially proposed in the  
3 Application?

4 A. As discussed above, a cut-in speed of 5.5 m/s  
5 would afford increased protection to more  
6 species of bats than the Siting Board's  
7 previously proposed 5.0 m/s cut-in speed.

8 Q. Is a cut in speed of 5.5 m/s consistent with the  
9 recommendations that you have made in other  
10 cases.

11 A. I advocated for higher cut-in speeds in  
12 Cassadaga. However, in light of the Cassadaga  
13 decision a cut in speed of 5.5 m/s as proposed  
14 in Certificate Condition 33(i) represents an  
15 incremental step toward more sustainable wind  
16 facilities with lower bat fatalities.

17 Q. Does a 5.5 m/s cut-in speed achieve total  
18 avoidance of bat mortality?

19 A. No. As indicated full avoidance would require a  
20 6.9 m/s cut-in speed for the NLEB. A 5.5 m/s  
21 curtailment regime will not achieve what is  
22 considered complete or total avoidance for  
23 migratory bats or the NLEB. While higher cut-in  
24 speeds are technically possible the 5.5 m/s

CASE 16-F-0062

ROSENTHAL

1       agreed upon in the Proposed Certificate  
2       Conditions represents an incremental benefit to  
3       bat populations in New York State beyond what  
4       was originally proposed by the Applicant and as  
5       such were reached as agreeable through  
6       negotiation.

7    Q.   Should the curtailment regime remain constant  
8       throughout the life of the Project?

9    A.   Not necessarily, changes in bat populations can  
10       occur over time and new technologies to minimize  
11       impacts may develop as well. Accordingly, I  
12       recommend that a plan to evaluate bat  
13       populations, minimization efforts, and potential  
14       modifications to operations every five years  
15       should be developed by the Applicant and be  
16       submitted for Department Staff's review and  
17       acceptance as required by Proposed Certificate  
18       Condition 57 for the Siting Board's  
19       consideration.

20   Q.   Is it reasonable to expect the Applicant to  
21       agree to an unknown future cost that could arise  
22       from future curtailment regime modification?

23   A.   The concern of incurring unknown future costs is  
24       legitimate. The cost uncertainty should be

CASE 16-F-0062

ROSENTHAL

1 addressed through language as proposed in  
2 Proposed Certificate Condition 57 for the Siting  
3 Board's consideration. Specifically, the  
4 facility owner should not be subject to adopting  
5 future curtailment or other bat mortality  
6 reduction methods that are costlier than the  
7 curtailment regime initially adopted.

8 Q. Should a method for verifying compliance be part  
9 of a curtailment regime?

10 A. Yes. A curtailment regime should include a  
11 means to verify compliance. The Applicant  
12 should be required to develop and submit a  
13 verification method, subject to Department's  
14 Staff's review and acceptance, as required by  
15 Proposed Certificate Condition 32.

16 Q. Are there any other minimization efforts that  
17 you recommend for reducing mortality to  
18 migratory bats?

19 A. Yes. A 2018 article by Christian C. Voight and  
20 others contained in Exhibit\_\_(JR-2) found that  
21 migratory bats appear to be attracted to red  
22 lights. They further speculate that aviation  
23 lighting on top of wind turbines may be related  
24 to migratory bat mortality and that lighting

CASE 16-F-0062

ROSENTHAL

1 choices could lessen impacts. Accordingly, I  
2 recommend, subject to Federal Aviation  
3 Administration (FAA) approval, that the facility  
4 use an aircraft detection lighting system to  
5 minimize the presence of red lights in the night  
6 sky. The article also identifies lighting  
7 closer to the infrared range as more "bat  
8 friendly." If the FAA permits such lighting  
9 options, I recommend their use.

10 Q. Has the Applicant agreed to this measure?

11 A. Yes. Proposed Certificate Condition 56 requires  
12 use of such lighting if approved by the FAA.

13 Q. Have you considered impacts that the Project  
14 will have upon wetlands.

15 A. The project in my opinion reasonably avoids and  
16 minimizes impacts to wetlands from an ecological  
17 perspective. The Applications states in Table  
18 22-11 that wetland impacts will total 4.137  
19 Acres, with only 0.047 acres being permanently  
20 impacted and 4.09 temporarily impacted during  
21 construction. These impacts will be mitigated as  
22 the result of Clauses 35 and 36 of the Proposed  
23 Certificate Conditions, which requires the  
24 filing of a mitigation plan. Additionally, it is

CASE 16-F-0062

ROSENTHAL

1           my understanding that DPS Staff identified  
2           impacts to wetland RX-2 based upon visual  
3           impacts to a recreational resource, discussed in  
4           the Direct Testimony of Andrew Davis.

5   Q.   Does this conclude your testimony at this time?

6   A.   Yes.

BEFORE THE  
STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of  
  
Eight Point Wind LLC  
  
Case 16-F-0062  
  
January 22, 2019

---

Prepared Engineering Panel  
Testimony of:

Craig Bury  
Assistant Engineer (Electrical)  
Office of Electric Gas & Water

John Cary  
Utility Engineering Specialist 2  
Office of Electric Gas & Water

John Quackenbush  
Engineering Specialist 2  
Office of Electric, Gas and  
Water

State of New York  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223-1350

CASE 16-F-0062

ENGINEERING PANEL

1 Q. Will the first member of the Engineering Panel  
2 (Panel) please state your name, employer, and  
3 business address?

4 A. My name is John Cary, I am employed by the New  
5 York State Department of Public Service  
6 (Department), located at Three Empire State  
7 Plaza, Albany, New York, 12223-1350.

8 Q. Mr. Cary, what is your position with the  
9 Department?

10 A. I am employed as an Engineering Specialist 2 in  
11 the Bulk Electric Systems Section within the  
12 Office of Electric, Gas and Water.

13 Q. Please provide a summary of your educational and  
14 professional experience.

15 A. I graduated from Western New England College  
16 with a Bachelor of Science degree in Electrical  
17 Engineering in May 1999. I worked for the  
18 USFILTER Corporation, as a systems control  
19 engineer from May 1999 to April 2000; I worked  
20 for the Department of Defense, as an Electrical  
21 Engineer in the Precision Munitions Division

CASE 16-F-0062

ENGINEERING PANEL

1 from May 2000 to April 2004; and worked for  
2 Barbera Homes, as a Project Manager from April  
3 2004 to March 2012. I received my Intern  
4 Engineering Certificate from the State of New  
5 York in December of 2012 and have been employed  
6 by the Department since March 2012.

7 Q. Please describe your current duties with the  
8 Department.

9 A. My current duties include the review and  
10 evaluation of electric utility Capital budgets  
11 and Operations and Maintenance (O&M)  
12 expenditures in rate case proceedings and the  
13 review and evaluation of Public Service Law  
14 (PSL) Article VII and Article 10 applications.  
15 I am also a member of the Department's General  
16 Electric Multi-Area Production Cost Modeling  
17 Simulation (GE-MAPS) team where I use GE-MAPS to  
18 evaluate generation project impacts within the  
19 Scope of PSL Article 10 Proceedings.

20 Q. Have you previously testified before the Public  
21 Service Commission (Commission) or the New York

CASE 16-F-0062

ENGINEERING PANEL

1 State Board on Electric Generation Siting and  
2 the Environment (Siting Board)?

3 A. Yes, I have testified before the Commission in  
4 Case 17-E-0459, involving Central Hudson Gas &  
5 Electric Corporation's rates and services;  
6 Matter 15-00262, involving electric rates and  
7 charges submitted by the Long Island Power  
8 Authority and Service Provider, PSEG Long Island  
9 LLC. I have also testified before the Siting  
10 Board in Case 14-F-0490, regarding the Cassadaga  
11 Wind, LLC's application for a Certificate of  
12 Environmental Compatibility and Public Need  
13 (Certificate) for its wind facility under  
14 Article 10 of the PSL.

15 Q. Will the next member of the Panel please state  
16 your name, employer, and business address?

17 A. My name is Craig Bury I am employed by the  
18 Department, located at Three Empire State Plaza,  
19 Albany, New York, 12223-1350.

20 Q. Mr. Bury, what is your position with the  
21 Department?

CASE 16-F-0062

ENGINEERING PANEL

1 A. I am an Assistant Electrical Engineer in the  
2 Bulk Electric Systems Section in the Office of  
3 Electric, Gas and Water.

4 Q. Please provide a summary of your educational and  
5 professional experience.

6 A. I earned a Bachelor of Science Degree in  
7 Electrical Engineering from Rensselaer  
8 Polytechnic Institute in 1999. I also earned a  
9 Master of Science Degree in Electrical  
10 Engineering from Union College in 2006. In  
11 addition, I have over 14 years of engineering  
12 experience in the electric power industry,  
13 including over six years at the Department.  
14 I am also pursuing my Professional Engineering  
15 License in Electrical Power Engineering.

16 Q. Please describe your current duties at the  
17 Department.

18 A. My duties include the technical analysis of  
19 utility rate case filings, with a focus on the  
20 examination of capital infrastructure projects,  
21 budgets and O&M expenses, and the review and

CASE 16-F-0062

ENGINEERING PANEL

1           analysis of transmission siting applications  
2           under Article VII of the PSL and generator  
3           siting applications under Article 10 of the PSL.  
4           I also attend New York Independent System  
5           Operator (NYISO) System Operations and System  
6           Protection Advisory Subcommittee meetings,  
7           providing subsequent summary reports to a  
8           Department Staff.

9    Q.    Have you ever testified before the Commission?

10   A.    Yes, I testified before the Commission in Con  
11           Edison of New York Cases 13-E-0030 and 13-S-  
12           0032; New York State Electric & Gas Corporation  
13           Cases 15-E-0283; and Orange and Rockland Utility  
14           Inc. Cases 14-E-0493, and 18-E-0067.

15   Q.    Will the next member of the Panel please state  
16           your name, employer, and business address?

17   A.    My name is John Quackenbush and I am employed by  
18           the Department, located at Three Empire State  
19           Plaza, Albany, New York, 12223-1350.

20   Q.    Mr. Quackenbush what is your position with the  
21           Department?

CASE 16-F-0062

ENGINEERING PANEL

1 A. I am an Engineering Specialist 2 in the  
2 Environmental Certification and Compliance  
3 section of the Office of Electric, Gas and  
4 Water.

5 Q. Please summarize your educational background and  
6 professional experience.

7 A. I attended Hudson Valley Community College in  
8 Troy, New York and received an individual study  
9 associate degree, as well as an Associate in  
10 Applied Science degree in civil engineering  
11 technology. Thereafter, I continued my  
12 education at the State University of New York  
13 Polytechnic Institute, formerly known as the  
14 State University of New York Institute of  
15 Technology in Utica, New York and graduated with  
16 a Bachelor of Science degree in civil  
17 engineering technology. I was employed at CHA  
18 Consulting, Inc. (formerly Clough, Harbour, &  
19 Associates LLP) as a Design and Drafting  
20 Technician from 2000 until November 2006. In  
21 February 2007, I joined the Department Staff of

CASE 16-F-0062

ENGINEERING PANEL

1 Electric Distribution Section in the Office of  
2 Electric, Gas and Water as a Utility Engineer,  
3 where I performed utility inspections to assess  
4 electric distribution infrastructure conditions,  
5 investigated various electric utility customer  
6 reliability complaints, and reviewed utility  
7 reliability reports. Since October 2009, I have  
8 worked as an Engineering Specialist 2 in the  
9 Environmental Certification and Compliance  
10 section of the Office of Electric, Gas and  
11 Water. My duties include reviewing site plans,  
12 proposed major electric generating,  
13 transmission, and distribution facilities  
14 locations and utility routes, construction  
15 practices, and environmental control plans for  
16 various projects, including review of PSL  
17 Article VII and Article 10 applications.

18 Q. Mr. Quackenbush, have you previously testified  
19 before the Commission or the Siting Board?

20 A. Yes. I have testified before the Commission and  
21 the Siting Board in several cases regarding

CASE 16-F-0062

ENGINEERING PANEL

1 proposed electric infrastructure upgrades,  
2 electric power transmission routes, the siting  
3 of electric generation plants, electric rates,  
4 and research and development programs. Some  
5 representative cases include the matter of  
6 Hudson Transmission Partners, LLC Case 08-T-0034  
7 in which I provided analyses of its proposed  
8 electric upland route in Manhattan, the  
9 constructability of the route, proposal of  
10 alternative routes, and construction practices.  
11 Additionally, I reviewed routing and  
12 constructability issues pertaining to the  
13 granting of a Certificate through a Joint  
14 Proposal for the Champlain Hudson Power Express,  
15 Inc., in Case 10-T-0139. Furthermore, I have  
16 testified before the Siting Board regarding the  
17 decommissioning plan of the Cassadaga Wind, LLC  
18 Article 10 project in Case 14-F-0490. Lastly,  
19 although currently pending before the Siting  
20 Board or the Commission, I am reviewing and  
21 analyzing routing and construction methods for

CASE 16-F-0062

ENGINEERING PANEL

1           ongoing PSL Article VII and Article 10 projects  
2           regarding major electric, wind and solar  
3           generation projects at various pre-application  
4           and application stages. My primary role  
5           regarding major wind and solar electric  
6           generation projects involves review of  
7           facilities regarding proposed setback distances,  
8           preliminary design drawings, and proposed  
9           general construction practices including  
10          assembly and foundation work, electric  
11          collection lines and related transmission lead  
12          installations, access ways, and any associated  
13          building facilities. Also, I review the  
14          potential impacts related to transportation due  
15          to general construction and delivery activities  
16          during wind turbine and solar installations;  
17          additionally, I review the various site  
18          restoration and decommissioning proposals of  
19          Article 10 Projects.

20    Q.    Is the Panel sponsoring any Exhibits?

21    A.    No.

CASE 16-F-0062

ENGINEERING PANEL

1 Q. Please describe the scope of the Panel's  
2 testimony.

3 A. The reviewed Eight Point Wind, LLC's (the  
4 Applicant) proposed facility (Project) and its  
5 potential effects on the electric system,  
6 electric system production modeling, consistency  
7 with New York State energy planning, effect on  
8 communications, electric interconnection,  
9 electric and magnetic fields, general  
10 construction and installation methods, and the  
11 proposed decommissioning and site restoration  
12 plan. We will discuss our review of each of  
13 these topic areas, as well as any issues we may  
14 have identified and provide Staff's  
15 recommendations to the Siting Board.

16 Q. Please give a brief description of the proposed  
17 facility.

18 A. The Eight Point Wind Energy Center will consist  
19 of 31 wind turbines located in the towns of  
20 Greenwood and West Union in Steuben County, New  
21 York, and will have a maximum generating

1 capability of approximately 101.8 MW.

2 Q. Please discuss the Panel's review of the  
3 Project's effects on the electric system.

4 A. We reviewed the Applicant's proposal as outlined  
5 in the Application Exhibit 5, as well as the  
6 Project System Reliability Impact Study (SRIS),  
7 completed as part of the NYISO's Large Facility  
8 Interconnection Process.

9 Q. What is the purpose of the SRIS?

10 A. An SRIS study is performed to determine the  
11 impact of proposed electric facilities on the  
12 reliability of the transmission system based on  
13 applicable regional design standards. The  
14 Applicant's SRIS evaluated thermal, voltage,  
15 stability, short circuit and transfer limit  
16 impacts of the proposed electric generation  
17 facility on the existing electric system.

18 Q. What were the NYISO's findings on the SRIS?

19 A. The SRIS analysis showed that the Project does  
20 not cause any significant adverse impact to New  
21 York's bulk electric transmission system.

CASE 16-F-0062

ENGINEERING PANEL

1 Q. Does the Panel have any concerns with the  
2 proposed Project's impact on the electric  
3 system?

4 A. We do not. The NYISO approved the SRIS in  
5 February of 2017, and the results presented in  
6 the SRIS report indicate that the Project will  
7 not adversely impact the reliability of New  
8 York's bulk electric transmission system.

9 Q. Please discuss the Panel's review of the  
10 Electric System Production Modeling for the  
11 Project.

12 A. We evaluated the reasonableness of forecasted  
13 economic and environmental impacts from  
14 commercial operation of the Facility as proposed  
15 by the Applicant, measured relative to a  
16 business as usual Base Case (with the Facility  
17 not in-service) for the year 2019. We focused  
18 our review on annual and monthly capacity factor  
19 forecasts for the facility, New York Control  
20 Area (NYCA) wholesale energy price impacts, NYCA  
21 air emission impacts, and how the Project could

CASE 16-F-0062

ENGINEERING PANEL

1       affect generation from existing must-run zero  
2       emission resources located in the NYCA, such as  
3       other renewables, large hydroelectric plants,  
4       and nuclear plants. In general, this review was  
5       conducted by analyzing the forecast impacts that  
6       the Applicant included in its Exhibit 8-  
7       Electric System Production Cost Modeling report  
8       and comparing those results to impacts estimated  
9       through our own internal analysis, using GE-  
10       MAPS. This comparison enabled us to determine  
11       the reasonableness of the Applicant's impact  
12       estimates.

13    Q.   Please describe the findings from your review.

14    A.   After running our own simulation model and  
15       comparing our forecasts to the Applicant's we  
16       found that, with respect to energy price  
17       impacts, both our own internal analysis as well  
18       as the Applicant's modeling forecasted a  
19       decrease in statewide wholesale energy market  
20       prices. In accordance with the Commission's  
21       recognition in Case 14-M-0101, Proceeding on

1        Motion of the Commission in Regard to Reforming  
2        the Energy Vision, Order Establishing the  
3        Benefit Cost Framework, (issued January 21,  
4        2016) that these are price suppression impacts  
5        that would not be considered in a societal  
6        benefit cost analysis, we consider energy price  
7        impacts to assess the reasonableness of  
8        simulation modeling.

9        We further found that both the Applicant's and  
10       our internal modeling showed forecast emission  
11       reductions for NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub> with the Project  
12       in service, as would be expected. Staff's  
13       internal analysis estimated annual reductions  
14       for NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub> emissions of 21 tons, 1  
15       ton, and 98,940 tons, respectively. The  
16       Applicant's analysis estimated reductions for  
17       NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub> emissions of 70 tons, 10 tons,  
18       and 92,119 tons, respectively.

19    Q.    Can you explain these differences?

20    A.    The differences between the Applicant and  
21       Staff's emission forecasts are not unexpected or

CASE 16-F-0062

ENGINEERING PANEL

1           unreasonable as there are inherent differences  
2           in the Production Modeling software and the  
3           respective electric system topology databases  
4           used. Finally, with respect to the effect of  
5           the Project on annual operation of must run zero  
6           emission resources, both the Applicant's and our  
7           own internal modeling showed that the addition  
8           of the proposed facility would have a de  
9           minimis impact on the dispatch of must run  
10          generation in the State.

11   Q.   Does the Panel have any concerns with respect to  
12          the Electric System Production Modeling?

13   A.   No. Overall, we believe that the Electric  
14          System Production Modeling provided by the  
15          Applicant is reasonable. The findings of our  
16          internal analysis are in line with the  
17          Applicant's, and we do not have any concerns.  
18          We believe the applicant has adequately met the  
19          requirements for Exhibit 8 of the PSL Article 10  
20          regulations.

21   Q.   What is the Panel's position on the proposed

CASE 16-F-0062

ENGINEERING PANEL

1 Project's consistency with energy planning in  
2 New York State?

3 A. As discussed in Exhibit 10 of the Application,  
4 the proposed wind energy facility aligns with  
5 the State's energy planning objectives and  
6 goals. The Facility will increase the State's  
7 renewable energy generation capacity, which will  
8 help advance the objectives of the New York  
9 State Energy Plan (SEP), the Clean Energy  
10 Standard (CES), the Reforming the Energy Vision  
11 (REV) initiative, and the Regional Greenhouse  
12 Gas Initiative (RGGI). The energy generated by  
13 the Facility will help to achieve the CES and  
14 SEP goals of 50 percent of electricity consumed  
15 in New York being generated by renewable by 2030  
16 (50x30) and reducing statewide greenhouse gas  
17 emissions by 40 percent from 1990 levels by  
18 2030. The Project would also contribute to the  
19 regional marketplace for greenhouse gas  
20 emissions reductions through the State's  
21 participation in RGGI. The Facility would

CASE 16-F-0062

ENGINEERING PANEL

1 further support REV initiatives by providing  
2 several other benefits to the State's energy  
3 position such as supporting fuel diversity,  
4 regional requirements for energy capacity,  
5 reliability and resiliency, and market  
6 animation, competition, and innovation. We  
7 believe the Applicant has provided sufficient  
8 evidence to meet the requirements of the PSL  
9 Article 10 regulations in this regard and that  
10 this new wind generation facility will serve to  
11 aid the State in meeting its energy objectives,  
12 and its construction is consistent with  
13 established state energy planning.

14 Q. Please discuss the Panel's review of the  
15 proposed Project's effect on communications.  
16 A. Our review of Exhibit 26 looked at what impacts  
17 the Project may have on existing broadcast  
18 communication sources in the areas surrounding  
19 the Project. Article 10 regulations require the  
20 Applicant to identify all existing communication  
21 sources within a two-mile radius of the Project

CASE 16-F-0062

ENGINEERING PANEL

1 site. Communication sources reviewed included  
2 AM/FM radio, television, telephone, microwave  
3 transmission, emergency services,  
4 municipal/school district services, public  
5 utility services, Doppler/weather radar  
6 (NEXRAD), air traffic control, armed forces,  
7 GPS, LORAN and amateur radio.

8 Q. Does the Panel have any concerns with the  
9 Project's effect on communications?

10 A. No. We believe the Applicant has adequately  
11 addressed the requirements of PSL Article 10  
12 with regard to evaluating the Project's effects  
13 on communications. The Applicant should,  
14 however, continue to monitor any communications  
15 impacts through construction and operation of  
16 the Project and seek to address any unexpected  
17 adverse impacts that may arise.

18 Q. Please describe the Applicant's proposal for the  
19 Project's electric interconnection.

20 A. The proposed electric interconnection will  
21 consist of a 115-kV electric generator lead line

CASE 16-F-0062

ENGINEERING PANEL

1 running from the Facility's collector substation  
2 a distance of 16.5 miles, to Point of  
3 Interconnection (POI) at New York State Electric  
4 and Gas Corporation's (NYSEG's) Bennett  
5 Substation Steuben county. The proposed  
6 generator lead line and associated POI  
7 substation infrastructure are being reviewed as  
8 part of a separate PSL Article VII proceeding  
9 currently before the Commission in Case 18-T-  
10 0202. Therefore, a full review of the electric  
11 interconnection and its impacts will be  
12 conducted in that proceeding. In this case,  
13 however, we sought to determine the practicality  
14 of the proposal for interconnecting the  
15 generator, and whether there were any  
16 significant cumulative effects that might arise  
17 between the generator and the electric  
18 interconnection.

19 Q. Does the Panel have any concerns with the  
20 proposed Project's electric interconnection?

21 A. We believe that for the purposes of our review

CASE 16-F-0062

ENGINEERING PANEL

1 of the Project, the Applicant's proposal for the  
2 generator electric interconnection is  
3 reasonable. The PSL Article VII Application was  
4 filed in Case 18-T-0202 on March 29, 2018 and  
5 DPS will carefully review the impacts of the  
6 generator lead transmission line. Full review  
7 and consideration of the electric  
8 interconnection will be conducted in the pending  
9 PSL Article VII matter.

10 Q. Please discuss the Panel's review of electric  
11 and magnetic fields.

12 A. As indicated by the Applicant, electromagnetic  
13 fields (EMFs) are generated by the operation of  
14 Facility components such as the turbine  
15 generator, electrical collection lines, and  
16 transformers. The Applicant provided details on  
17 EMFs generated by the Facility in the  
18 Application's Exhibit 35, as well as the  
19 original EMF study included as Appendix 35-1 and  
20 a subsequent revision included as Attachment AA.

21 Q. Please describe the EMF study performed by the

CASE 16-F-0062

ENGINEERING PANEL

1 Applicant.

2 A. The Applicant hired Sargent and Lundy, LLC to  
3 perform an EMF study on the proposed Project.

4 While EMFs are generated by the substation  
5 transformer and the turbine generators, the  
6 effects are assumed to be negligible due to  
7 adequate separation from the public and  
8 wildlife, therefore, only EMF levels for  
9 segments of the 115 kV transmission circuit and  
10 34.5 kV underground and overhead circuits were  
11 estimated by the consultant using a Corona and  
12 Field Effects software program.

13 Q. Please describe the results of this study.

14 A. The proposed Facility consists of buried 34.5 kV  
15 collection lines, above ground 34.5 kV  
16 collection lines and a portion of the 115-kV  
17 generator lead transmission line that is  
18 contained in the Project area. The EMF study  
19 modeled the strength and locations of electric  
20 and magnetic fields for six unique right-of-way  
21 segments defined by unique circuit

CASE 16-F-0062

ENGINEERING PANEL

1 configurations and spacing requirements. The  
2 maximum calculated Electric Field strength was  
3 0.55 kilovolts per meter (kV/m) measured at the  
4 edge of the 100-foot Right-of-way for the  
5 segment consisting of the 115-kV generator  
6 transmission lead line. The maximum calculated  
7 magnetic field strength was 103.5 milli-Gauss  
8 (mG) measured at the edge of the 100-foot right-  
9 of-way for the segment consisting of the  
10 overhead 115 kV transmission line with wood H-  
11 frames.

12 Q. Is Staff satisfied with the results from this  
13 EMF study.

14 A. Yes. Staff concurs with the Applicant that,  
15 while EMFs will be generated by the operation of  
16 Project's components, the strength of these  
17 fields will not be significant at any of the  
18 measurement locations required by PSL Article 10  
19 regulations. We find that the magnetic field  
20 strength estimates for the transmission and  
21 collection circuits evaluated in this study are

CASE 16-F-0062

ENGINEERING PANEL

1 consistent with estimates for similar  
2 transmission and collection circuits provided in  
3 previous PSL Article 10 EMF studies.

4 Q. Please list and describe what was provided  
5 regarding the Applicant's proposed  
6 Decommissioning and Site Restoration Plan.

7 A. Exhibit 29 of the Application includes a general  
8 description of performance criteria and the  
9 Applicant's decommissioning and restoration  
10 plan. Additionally, Appendix 29-1 of the  
11 Application describes specific activities  
12 associated with site restoration and  
13 decommissioning efforts; and associated costs of  
14 these tasks are included as part of a  
15 preliminary decommissioning and site restoration  
16 estimate.

17 Q. Does the Panel recommend any modifications to  
18 the Applicant's decommissioning and site  
19 restoration proposal?

20 A. In general, the plan as presented provides  
21 adequate descriptions of activities associated

CASE 16-F-0062

ENGINEERING PANEL

1 with decommissioning and site restoration  
2 activities and presents an acceptable proposal  
3 for providing estimates to the Siting Board in a  
4 timely manner. However, the plans as presented  
5 in the Application include an offset of  
6 decommissioning costs associated with scrap  
7 value from Project components. The Panel  
8 recommends that salvage value assumptions should  
9 be removed from the decommissioning and site  
10 restoration estimate. Additionally, Exhibit 29  
11 as initially filed does not include specificity  
12 regarding its commitment to providing financial  
13 assurance instruments to support decommissioning  
14 and site restoration costs. The Panel  
15 recommends use of letters of credit as the form  
16 of financial assurance regarding decommissioning  
17 and site restoration. Finally, the Panel  
18 disagrees with the cited amount and length used  
19 for calculating the estimate for reclamation of  
20 proposed access roads as presented in Appendix  
21 29-1. The panel recommends modifications to

CASE 16-F-0062

ENGINEERING PANEL

1           this assumption, which will be discussed below.

2           It should be noted that some of the issues  
3           listed in this response have been resolved and  
4           will be further explained in the upcoming  
5           sections.

6    Q.    Why is the Panel concerned about the use of  
7           salvage and resale value as part of the  
8           Applicant's decommissioning plan?

9    A.    While some of the Facility components may have  
10          scrap value, there is no guarantee that the  
11          value will cover the cost of decommissioning at  
12          the time of salvage. Thus, there is no way to  
13          be sure what the value of the equipment will be  
14          at the time of decommissioning and for that  
15          matter whether it will be enough to cover the  
16          costs of removal.

17   Q.    Why is that a problem?

18   A.    Removing the estimated scrap and resale value  
19          from the Applicant's final decommissioning plan  
20          would ensure financial security in the case that  
21          re-sale of components becomes problematic or

CASE 16-F-0062

ENGINEERING PANEL

1 scrap prices fluctuate. Also, if the net-  
2 decommissioning costs (which is the  
3 decommissioning and restoration estimated cost  
4 less the salvage value) result in an inadequate  
5 amount to cover decommissioning, then this  
6 reserve will not account for the Towns' efforts  
7 regarding the time, work, management of  
8 activities, and costs involved in the recovery  
9 of the salvage income. The Towns can be spared  
10 this potential future concern if the Applicant  
11 establishes financial assurance in the full  
12 amount of the final decommissioning and site  
13 restoration estimate. Staff disagrees that the  
14 burden of managing decommissioning and site  
15 restoration activities (which equates to a major  
16 construction management task) should be placed  
17 at the local level. Instead, this burden should  
18 be placed solely on the Applicant, who stands to  
19 benefit financially if the Project is  
20 constructed. Through settlement negotiations,  
21 however, the Applicant has accepted Staff's

CASE 16-F-0062

ENGINEERING PANEL

1 recommendation to remove salvage value from its  
2 decommissioning and site restoration estimate.  
3 Our recommendation has therefore been accepted  
4 as reasonable.

5 Q. How will the decommissioning and site  
6 restoration estimate be presented as a  
7 Compliance Filing?

8 A. Prior to construction, and upon finalization of  
9 the Project layout and selection of wind turbine  
10 models, the Applicant will submit a  
11 decommissioning and site restoration estimate  
12 (without the inclusion of salvage value) to the  
13 Secretary as a Compliance Filing, as detailed in  
14 Clause 20 of the Proposed Certificate  
15 Conditions, filed as proposed Ordering Clauses  
16 for the Project. It should be noted, however,  
17 that itemized costs included in the estimate of  
18 the *Final Decommissioning Plan* should not be  
19 substantially different than those presented in  
20 Table 1 of Appendix 29-1 of the Application.  
21 Additionally, the Panel does not agree with the

CASE 16-F-0062

ENGINEERING PANEL

1 presented road reclamation estimate presented in  
2 Appendix 29-1. This will be addressed in the  
3 forthcoming discussions.

4 Q. Has this agreement to remove salvage value from  
5 the decommissioning and site restoration  
6 estimate been verified in the Project record?

7 A. Yes; all aspects of the above noted concept are  
8 reflected and detailed in Clause 20 of the  
9 Proposed Certificate Conditions filed as  
10 proposed Ordering Clauses for the Project.

11 Q. It is noted above that the Panel recommends use  
12 of letters of credit as the form of financial  
13 assurance regarding decommissioning and site  
14 restoration. Please expand on this  
15 recommendation.

16 A. Letters of credit are the preferred form of  
17 financial assurance because, in Staff's  
18 experience, the benefit of a letter of credit is  
19 its ease of use and certainty or assurance that  
20 the holder (in this case the Towns) can recover  
21 the dedicated funds from the bank directly.

CASE 16-F-0062

ENGINEERING PANEL

1 Q. Why are letters of credit the "preferred"  
2 financial instrument?

3 A. Under other assurance agreements, there could be  
4 a delay in the disbursement of funds to the  
5 Towns. It is not prudent to delay  
6 decommissioning while disputing a bond or other  
7 form of financial insurance with a third-party  
8 holder.

9 Q. Has the Siting Board and/or the Commission  
10 adopted letters of credit for other projects?

11 A. Yes. In fact, the Siting Board's conditional  
12 approval of the recent Cassadaga Wind, LLC  
13 project required, among other things, the use of  
14 letters of credit for the decommissioning  
15 reserve, which did not include any project  
16 salvage value to offset costs; this was the  
17 first case to come before the Siting Board under  
18 the new PSL Article 10 in Case 14-F-0490.

19 Q. During settlement negotiations, was agreement  
20 reached regarding the use of letters of credit  
21 for financial assurance for the decommissioning

CASE 16-F-0062

ENGINEERING PANEL

1 and site restoration estimate?

2 A. Yes. The Applicant has agreed to provide  
3 letters of credit in the final decommissioning  
4 and site restoration estimate (no offset for  
5 projected salvage value is permitted in the  
6 calculation of the estimate). It is recommended  
7 that the letters of credit be held by the Towns  
8 of Greenwood and West Union. The letters of  
9 credit should remain active for the life of the  
10 Project, until it is decommissioned, as adjusted  
11 every fifth year in consultation with the Towns  
12 and Staff. The Towns of Greenwood and West  
13 Union shall hold the letters of credit with each  
14 letter representing that portion of the  
15 respective Town's decommissioning cost.

16 Q. Is the recommended agreement to provide letters  
17 of credit as the financial assurance instruments  
18 memorialized in the Project record?

19 A. Yes, details regarding the use of letters of  
20 credit are included in proposed Certificate  
21 Clause 20 of the Proposed Certificate Conditions

CASE 16-F-0062

ENGINEERING PANEL

1 filed as proposed Ordering Clauses for the  
2 Project.

3 Q. Why is the Panel recommending that the  
4 respective host Towns hold the letters of  
5 credit?

6 A. The Towns are the entities that would be most  
7 impacted if decommissioning does not occur when  
8 it should. The Towns should be empowered to  
9 draw on the financial assurance funds if the  
10 Applicant or owner (at the time) defaults  
11 regarding decommissioning and site restoration  
12 activities.

13 Q. Does the Panel recommend a Standby Trust?

14 A. Yes.

15 Q. Why does the Panel recommend a Standby Trust?

16 A. In the absence of establishing a Standby Trust,  
17 if the Siting Board were to draw on the letters  
18 of credit, the money would go into the State  
19 Treasury rather than toward decommissioning and  
20 site restoration, an event that would be  
21 irrevocable and unusable for removing the

CASE 16-F-0062

ENGINEERING PANEL

1 components associated with the Project.

2 Q. Are there any other issues you wish to raise  
3 regarding the Applicant's proposed  
4 decommissioning and site restoration plan?

5 A. Yes. The cited amount and length used for  
6 calculating the estimate for reclamation of  
7 proposed access roads as presented on page 12 of  
8 Appendix 29-1 of the Application will need to be  
9 reviewed as part of the Compliance process. It  
10 is noted there that the Applicant assumes  
11 approximately 60% of roads would be reclaimed in  
12 the event of decommissioning at \$5.75 per foot.  
13 In Staff's experience, the minimum amount  
14 required for road restoration is based on the  
15 estimated quantity of gravel to be removed and  
16 other activities associated with restoration  
17 such as geotextile fabric removal, etc.  
18 Additionally, the total estimate should assume  
19 that all roads proposed for the Project will  
20 require restoration.

21 Q. What does the Panel recommend regarding the

CASE 16-F-0062

ENGINEERING PANEL

1           reclamation of access roads estimate?

2    A.    The Panel recommends that the road restoration  
3           estimate be subject to review in the Final  
4           Decommissioning Plan required to be filed  
5           pursuant to Clause 20 of the Proposed  
6           Certificate Conditions.

7    Q.    Does this conclude the Panel's testimony at this  
8           time?

9    A.    Yes.

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

629

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

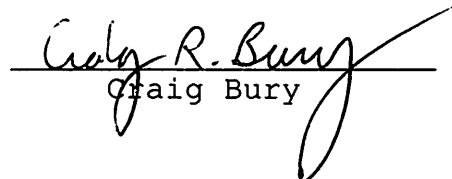
STATE OF NEW YORK     )  
                              )   ss:  
COUNTY OF ALBANY     )

Craig Bury, being duly sworn, deposes and says:

1. I, Craig Bury, am employed as an Assistant Engineer (Electrical) in the Office of Electric, Gas, and Water by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

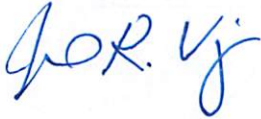
2. I, Craig Bury, previously prepared written testimony labeled "Prepared Testimony of Staff Engineering Panel" which was filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, Craig Bury, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

  
Craig Bury

Sworn to before me this 8th day of March, <sup>2019</sup>~~2018~~.

Notary information  
signature/stamp



JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified in Albany County  
Commission Expires November 13, 2020

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

631

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                                  ) ss:  
COUNTY OF ALBANY     )

John Cary, being duly sworn, deposes and says:

1. I, John Cary, am employed as a Utility Engineering Specialist 2 in the Office of Electric, Gas, and Water by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

2. I, John Cary, previously prepared written testimony labeled "Prepared Testimony of Staff Engineering Panel" which was filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, John Cary, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

---

John Cary

Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

Notary information  
signature/stamp

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

633

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                              ) ss:  
COUNTY OF ALBANY     )

Andrew C. Davis, being duly sworn, deposes and says:

1. I, Andrew C. Davis, am employed as a Utility Supervisor (Environmental Certification and Compliance) in the Office of Electric, Gas, and Water by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

2. I, Andrew C. Davis, previously prepared written testimony labeled "Prepared Testimony of Andrew C. Davis" and the "Staff Policy Panel," as well as associated exhibits, which were filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, Andrew C. Davis, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.



Andrew C. Davis

Sworn to before me this 8th day of March, 2019.



Notary information  
signature/stamp

JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified in Albany County  
Commission Expires November 13, 2020



NEW YORK STATE  
PUBLIC SERVICE COMMISSION

635

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                              ) ss:  
COUNTY OF ALBANY     )

Jeremy Flaum, being duly sworn, deposes and says:

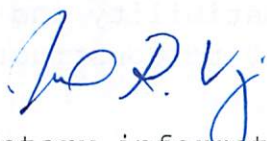
1. I, Jeremy Flaum, am employed as a Utility Analyst 3 (Environmental Certification and Compliance) in the Office of Electric, Gas, and Water by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

2. I, Jeremy Flaum, previously prepared written testimony labeled "Prepared Testimony of Jeremy Flaum" and the "Staff Policy Panel," as well as associated exhibits, which were filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, Jeremy Flaum, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

  
\_\_\_\_\_  
Jeremy Flaum

Sworn to before me this 8th day of March, <sup>2019</sup>~~2018~~.



Notary information  
signature/stamp

JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified in Albany County  
Commission Expires November 13, 2020



NEW YORK STATE  
PUBLIC SERVICE COMMISSION

637

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

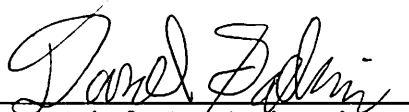
STATE OF NEW YORK     )  
                              ) ss:  
COUNTY OF ALBANY     )

Daniel S. Gadomski, being duly sworn, deposes and says:

1. I, Daniel S. Gadomski, am employed as a Utility Analyst 1 in the Office of Market and Regulatory Economics by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

2. I, Daniel S. Gadomski, previously prepared written testimony labeled "Prepared Testimony of Daniel S. Gadomski" as well as associated exhibits, which were filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, Daniel S. Gadomski, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

  
Daniel S. Gadomski

Sworn to before me this 8th day of March, 2019.

*JOK Yf*

Notary information  
signature/stamp

JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified in Albany County  
Commission Expires November 13, 2020

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

639

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                              ) ss:  
COUNTY OF ALBANY     )

Lorna Gillings, being duly sworn, deposes and says:

1. I, Lorna Gillings, am employed as a Utility Consumer Assistance Specialist 4 in the Office of Consumer Services by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

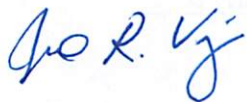
2. I, Lorna Gillings, previously prepared written testimony labeled "Consumer Services Panel," and associated exhibits, which were filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, Lorna Gillings, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

  
Lorna Gillings

Sworn to before me this 8th day of March, ~~2018~~<sup>2019</sup>.

Notary information  
signature/stamp



JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified in Albany County  
Commission Expires November 13, 2020

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

641

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

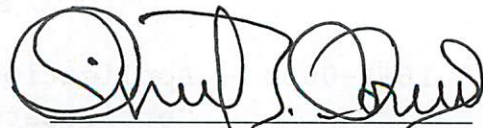
STATE OF NEW YORK     )  
                              ) ss:  
COUNTY OF ALBANY     )

Miguel Moreno-Caballero, being duly sworn, deposes and  
says:

1. I, Miguel Moreno-Caballero, am employed as a Utility  
Engineering Specialist 3 (Acoustics) in the Office of Electric,  
Gas, and Water by the New York State Department of Public  
Service, and I am appearing as a witness in this case on behalf  
of New York State Department of Public Service.

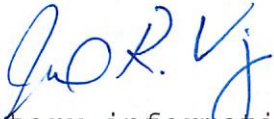
2. I, Miguel Moreno-Caballero, previously prepared  
written testimony labeled "Prepared Testimony of Miguel Moreno-  
Caballero," and associated exhibits, which were filed under this  
case number with the Secretary of the Public Service Commission  
on January 22, 2019, with corrections proposed to the testimony  
on March 5, 2019.

3. I, Miguel Moreno-Caballero, hereby affirm that the  
testimony identified above is true and correct to the best of my  
knowledge, information and belief. I affirm that the written  
testimony, as corrected, is the same testimony I would give  
orally if I appeared in person at a hearing scheduled in this  
case. I adopt that testimony as my sworn testimony in this  
proceeding.



Miguel Moreno-Caballero

Sworn to before me this 8th day of March, <sup>2019</sup>~~2018~~.



Notary information  
signature/stamp

JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified In Albany County  
Commission Expires November 13, 2020

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

643

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                              ) ss:  
COUNTY OF ALBANY     )

Erin O'Dell-Keller, being duly sworn, deposes and says:

1. I, Erin O'Dell-Keller, am employed as a Chief in the  
Office of Consumer Services by the New York State Department of  
Public Service, and I am appearing as a witness in this case on  
behalf of New York State Department of Public Service.

2. I, Erin O'Dell-Keller, previously prepared written  
testimony labeled "Consumer Services Panel," and the "Staff  
Policy Panel," and associated exhibits, which were filed under  
this case number with the Secretary of the Public Service  
Commission on January 22, 2019.


3. I, Erin O'Dell-Keller, hereby affirm that the  
testimony identified above is true and correct to the best of my  
knowledge, information and belief. I affirm that the written  
testimony is the same testimony I would give orally if I  
appeared in person at a hearing scheduled in this case. I adopt  
that testimony as my sworn testimony in this proceeding.



Erin O'Dell-Keller

Sworn to before me this 8th day of March, <sup>2019</sup>~~2018~~.

Notary information  
signature/stamp

  
JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified in Albany County  
Commission Expires November 13, 2020

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

645

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

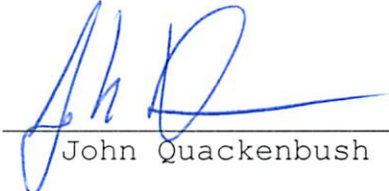
STATE OF NEW YORK     )  
                                      )   ss:  
COUNTY OF ALBANY     )

John Quackenbush, being duly sworn, deposes and says:

1. I, John Quackenbush, am employed as an Engineering Specialist 2 (Environmental) in the Office of Electric, Gas, and Water by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

2. I, John Quackenbush, previously prepared written testimony labeled "Prepared Testimony of Staff Engineering Panel" which was filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, John Quackenbush, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

  
\_\_\_\_\_  
John Quackenbush

Sworn to before me this 8th day of March, <sup>2019</sup>~~2018~~.

*J.R.V.*

Notary information  
signature/stamp

JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02VI6272274  
Qualified in Albany County  
Commission Expires November 13, 2020

NEW YORK STATE  
PUBLIC SERVICE COMMISSION

647

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                              )   ss:  
COUNTY OF ALBANY     )

Jeremy Rosenthal, being duly sworn, deposes and says:

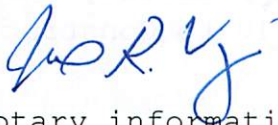
1. I, Jeremy Rosenthal, am employed as a Utility Analyst (Environment) in the Office of Electric, Gas, and Water by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

2. I, Jeremy Rosenthal, previously prepared written testimony labeled "Prepared Testimony of Jeremy Rosenthal" as well as associated exhibits, which were filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, Jeremy Rosenthal, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

  
\_\_\_\_\_  
Jeremy Rosenthal

Sworn to before me this 8th day of March, 2019, 2018.



Notary information  
signature/stamp

JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02V16272274  
Qualified in Albany County  
Commission Expires November 13, 2020



NEW YORK STATE  
PUBLIC SERVICE COMMISSION

649

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                                  )   ss:  
COUNTY OF ALBANY     )

John Cary, being duly sworn, deposes and says:

1. I, John Cary, am employed as a Utility Engineering Specialist 2 in the Office of Electric, Gas, and Water by the New York State Department of Public Service, and I am appearing as a witness in this case on behalf of New York State Department of Public Service.

2. I, John Cary, previously prepared written testimony labeled "Prepared Testimony of Staff Engineering Panel" which was filed under this case number with the Secretary of the Public Service Commission on January 22, 2019.

3. I, John Cary, hereby affirm that the testimony identified above is true and correct to the best of my knowledge, information and belief. I affirm that the written testimony, is the same testimony I would give orally if I appeared in person at a hearing scheduled in this case. I adopt that testimony as my sworn testimony in this proceeding.

  
\_\_\_\_\_  
John Cary

Sworn to before me this 12th day of March, 2019.

Notary Information

signature/stamp

*g.oxley*

JESSICA R. VIGARS  
Notary Public, State of New York  
No. 02V16272274  
Qualified in Albany County  
Commission Expires November 13, 2020

**NEW YORK STATE BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

In the Matter of the Application of

Eight Point Wind LLC

Case No.: 16-F-0062

for a Certificate of Environmental Compatibility  
and Public Need Pursuant to Article 10 to  
Construct a Wind Energy Facility.

---

**DIRECT TESTIMONY OF  
BRIANNA DENONCOUR AND CARL J. HERZOG**

Division of Fish and Wildlife  
New York State Department of Environmental Conservation

January 22, 2019

Case No. 16-F-0062

DENONCOUR & HERZOG

1 **WITNESS INTRODUCTION**

2 **Q. Will the first witness please state her name, employer, title and business**  
3 **address?**

4 A. My name is Brianna Denoncour. I have been employed by the New York State  
5 Department of Environmental Conservation (NYSDEC or Department) in the Division of  
6 Fish and Wildlife, Bureau of Ecosystem Health (f/k/a Habitat) as a Wildlife Biologist and  
7 Avian Ecologist for approximately 13 years. I currently work in the NYSDEC Central  
8 Office, Albany, New York.

9 **Q. Will the first witness please describe her educational background and**  
10 **professional certifications?**

11 A. Please see a copy of my resume marked as NYSDEC-DH-1.

12 **Q. Will the second witness please state his name, employer, title and business**  
13 **address?**

14 A. My name is Carl J. Herzog. I have been employed by the Department in the Bureau  
15 of Wildlife as a Wildlife Biologist and mammal expert for approximately 8 years. I  
16 currently work in the NYSDEC Central Office, Albany, New York.

17 **Q. Will the second witness please describe his educational background and**  
18 **professional certifications?**

19 A. Please see a copy of my resume marked as NYSDEC-DH-2.

20 **Q. Will the panel please describe your collective responsibilities at the**  
21 **Department?**

22 A. As Wildlife Biologists, we are responsible for programmatic oversight for the  
23 State's statutory and regulatory Rare, Threatened and Endangered (RTE) Species  
24 programs. In this capacity, we oversee the implementation of Article 11 of the  
25 Environmental Conservation Law (ECL) (Article 11), and its implementing regulations set  
26 forth in Part 182 of Title 6 of the Official Compilation of Codes, Rules and Regulations of  
27 the State of York (6 NYCRR) (Part 182). Included in this oversight is the review of Article  
28 11 permit applications, as well as compliance with the requirements of Article 11 for  
29 projects reviewed under Article 10 of the Public Service Law (PSL Article 10), and the  
30 Department's assessment of potential and realized impacts to birds and bats at wind and  
31 solar energy projects.

32 **Q. Will the first witness please summarize her experience regarding RTE species,**  
33 **and review of proposed wind energy projects?**

34 A. I coordinate the Department's review of potential impacts that major wind and solar  
35 energy development projects have on wildlife and terrestrial habitats, including State-listed  
36 birds, bats, grasslands, and forests. This is for projects reviewed under PSL Article 10 as  
37 well as those reviewed under the State Environmental Quality Review Act (SEQRA). I  
38 have reviewed several proposed wind energy projects that included an Incidental Take  
39 Permit (ITP) application for impacts to State-listed threatened or endangered species  
40 pursuant to Part 182. To date, one Article 10 Certificate has been issued by the New York  
41 State Board on Electric Generation Siting and the Environment (Siting Board) containing  
42 conditions pursuant to Part 182 for incidental take of a State-listed species (Cassadaga

43 Wind LLC, Certificate of Environmental Compatibility and Public Need, Case 14-F-0490,  
44 January 17, 2018). I worked on and provided testimony in the Cassadaga PSL Article 10  
45 proceeding. I have also been involved in developing protocols for conducting surveys  
46 targeting listed breeding and wintering grassland bird species, and I drafted and oversaw  
47 the release and implementation of the *Guidelines for Conducting Bird and Bat Studies at*  
48 *Commercial Wind Energy Projects* (2009, revised 2016). I am currently serving as an  
49 expert witness on behalf of the Department for several other PSL Article 10 proceedings  
50 concerning impacts to State-listed RTE species.

51 **Q. Will the second witness please summarize his experience regarding rare,**  
52 **threatened and endangered species, and review of proposed wind farm projects?**

53 A. As the mammal specialist for NYSDEC's Wildlife Diversity section, I am the  
54 Department's primary staff resource for developing and conducting bat population surveys,  
55 developing and implementing management strategies and plans, reviewing all manner of  
56 development project proposals to assess potential for impacts to protected bats, and  
57 identifying and developing bat research. I participate in United States Fish and Wildlife  
58 Service working groups charged with implementing the U.S. National White-nose  
59 Syndrome Response Plan.

60 **Q. What is the purpose of your testimony?**

61 A. The purpose of our testimony is to provide an overview of the State's RTE Species  
62 program, and, specifically, how State regulations and responsibilities regarding the  
63 protection of wildlife should be applied to assessing, avoiding, minimizing, and mitigating

64 the impacts of commercial wind energy projects on the mortality of bats. Our testimony  
65 will: 1) provide background regarding the biology and behavior of bats; 2) summarize  
66 existing literature regarding the impact of wind projects on bats; and 3) summarize the  
67 existing post-construction monitoring data that demonstrates the scale of bat mortality for  
68 New York State wind projects. In addition, our testimony will focus on the take, as defined  
69 in Part 182, of the northern long-eared bat (*Myotis septentrionalis*) (NLEB), a federally-  
70 and State-listed threatened species. We are advised by Department Counsel that the RTE  
71 species program, with its attendant statutory and regulatory authority, applies to the Eight  
72 Point Wind Energy Facility (Project), as proposed, and to the Siting Board's deliberations  
73 and required findings pursuant to PSL Article 10. Accordingly, our testimony discusses  
74 how the Siting Board must apply the State's statutory and regulatory RTE species program  
75 to ensure the Project's compliance with Article 11 and its implementing regulations in Part  
76 182, and how the Siting Board should apply Article 11 and Part 182 to its deliberations and  
77 required findings under PSL Article 10 should it decide to approve the Project.

78 **Q. What information has provided the basis for your testimony?**

79 A. Our testimony is based on the Project application (Application), specifically Exhibit 22  
80 and supporting Appendices, filed with the Siting Board on November 29, 2017 by Eight  
81 Point Wind LLC (Applicant), a supplemental filing on April 16, 2018 and the proposed  
82 certificate conditions submitted by the Applicant on January 16, 2019. We have reviewed  
83 all the above-referenced materials in the context of ensuring that the Application and

84 Project meet the requirements of Article 11 and Part 182, as well as the potential for adverse  
85 impacts to currently unprotected species.

86 **OVERVIEW OF THE BIOLOGY AND BEHAVIORS OF BATS**

87 **Q. Can you identify the species of bats that are found in New York State?**

88 A. Yes. There are nine species of bats widely accepted as being present in New York  
89 for at least some portion of the year. These are as follows: 1) the hoary bat (*Lasiurus*  
90 *cinereus*); 2) the silver-haired bat (*Lasionycteris noctivagans*); 3) the eastern red bat  
91 (*Lasiurus borealis*); 4) the little brown bat (*Myotis lucifugus*); 5) the big brown bat  
92 (*Eptesicus fuscus*); 6) the tri-colored bat (*Perimyotis subflavus*); 7) NLEB (*Myotis*  
93 *septentrionalis*); 8) the Indiana bat (*Myotis lucifugus*); and 9) the eastern small-footed bat  
94 (*Myotis leibii*).

95 **Q. Are there certain bat species present in New York State that are of**  
96 **conservation concern?**

97 A. All New York State resident bat species, except for the big brown bat, have been  
98 designated as species of conservation concern, and are considered Species of Greatest  
99 Conservation Need (SGCN) (NYSDEC 2015<sup>1</sup>). Of these, the Indiana bat and NLEB have  
100 also been granted protection under federal and State endangered species statutes because  
101 of this conservation concern. Further, the tri-colored and little brown bats are currently

---

<sup>1</sup> A list of references relied upon for this testimony is attached hereto as NYSDEC-DH-3.

102 under review by federal and State authorities to determine if endangered species protection  
103 is warranted.

104 **Q. Please describe the biology and behavior of New York's bat species.**

105 A. All bat species found in New York State are exclusively insectivorous. The vast  
106 majority of their diets are composed of flying insects that are consumed at night. These  
107 bats exhibit one of two general strategies for dealing with those months when flying insects  
108 are not available in the State. Most hibernate throughout the cooler months. Some species  
109 fly south seeking a warmer climate. Some individuals in the latter group are resident in  
110 lands to our north in the warm months and pass through New York State as they fly south  
111 for winter.

112 Mating for all New York State bat species is believed to take place mostly in late  
113 summer and fall, with an unknown amount occurring during hibernation. Young are born  
114 the following spring when bats return to their warm-weather habitats. Once the young are  
115 capable of flight bats typically switch to their late summer/fall behavior patterns that are  
116 presumed to be largely centered on mating and preparation for winter. Bats are  
117 promiscuous breeders and they are known to travel great distances in the late summer and  
118 fall as they engage in this behavior.

119 **BAT MORTALITY FROM WIND TURBINES**

120 **Q. Please describe the current understanding of bat mortality from the operation**  
121 **of wind turbines in North America?**

122 A. Various attempts have been made to quantify the number of bats typically killed at  
123 wind turbine sites in North America (Arnett, et al. 2008; Cryan 2011; Hayes 2013; Huso  
124 and Dalthorp, 2014). Zimmerling and Francis (2016) evaluated data collected between  
125 2002 and 2013, finding Ontario had the highest bat fatality rate of any Canadian province,  
126 and estimated 31,115 bats are killed annually in Ontario alone, based on 2013 installed  
127 wind energy capacity. A low-end estimate of annual bat fatalities at North American wind  
128 turbine facilities placed the number at several hundred thousand bats per year (Hein and  
129 Schirmacher 2016), and some published estimates are significantly larger (Hayes 2013,  
130 Smallwood 2013). These numbers likely underestimate the current level of mortality since  
131 the wind energy industry has grown significantly since they were generated. Wind turbines  
132 are the single greatest known source of mortality for several bat species in North America  
133 (Cryan 2011; O'Shea, et al. 2016), and the impacts wind energy development are having  
134 on all species of bats have been cause for concern for more than a decade (Kunz, et al.  
135 2007).

136 It is unlikely that current populations of the most commonly killed species can  
137 sustain this level of mortality (Zimmerling and Francis 2016). A recent study predicts a  
138 population decline of 90% for the most commonly killed species, hoary bat, in the next 50  
139 years even if fatality rates remained at 2014 levels, and that this level of decline is likely  
140 applicable to the other most commonly killed bat species as well (*Frick, et al.* 2017).  
141 Without immediate action to reduce fatalities caused by wind turbines, one or more

142 additional bat species in New York State is likely to experience population declines to such  
143 a degree that protection under Article 11 and Part 182 would be warranted.

144 The impacts of wind energy development to bats are widespread, predictable, and  
145 largely avoidable (Hayes 2013; Arnett, et al. 2016; O'Shea, et al. 2016). Most bats are  
146 killed on nights with low wind speeds during the late summer and fall (Arnett 2008; Arnett,  
147 et al. 2011; Cryan, et al. 2014). Implementing actions to reduce, and in some cases avoid,  
148 potentially catastrophic impacts to bat species will allow for a greater potential build out  
149 of installed wind energy capacity without unduly harming wildlife resources of the State.

150 **Q. Is there specific information available regarding the impacts of operating wind**  
151 **turbines on bat mortality in New York State?**

152 A. Yes. In accordance with NYSDEC's *Guidelines for Conducting Bird and Bat*  
153 *Studies at Commercial Wind Energy Projects* (NYSDEC 2016) some wind project  
154 developers have been conducting post-construction monitoring surveys at operating wind  
155 projects in New York State. NYSDEC has been compiling the data from each of the  
156 surveys and analyzing the results to determine bat mortality rates in New York State. (See  
157 Table 2 - Recent post-construction studies used to calculate bat fatalities in New York  
158 State, reproduced in the attached NYSDEC-DH-3).

159 **Q. Please describe the results of these surveys and your conclusions?**

160 A. Post-construction fatality studies have been conducted at most wind energy projects  
161 in New York State. The majority of turbine-caused fatalities are comprised of three species  
162 of bats: hoary bat, silver-haired bat, and eastern red bat, known as migratory tree bats

163 (Figure 1- Percentage of turbine-related bat mortality in New York State by species, 2009-  
164 2016 and Table 1- Estimates of cumulative fatalities of each species of bat from 2000 to  
165 2011 for all regions combined in the USA and Canada).

166 Based on an evaluation of post-construction studies conducted in New York State  
167 and southern Ontario, Canada in recent years we found that the mean bat fatality rate for  
168 all species combined is 6.7 bats per Megawatt (MW) of generating capacity per year (yr)  
169 (Table 2-Recent post-construction studies used to calculate bat fatalities in New York  
170 State). This is comparable with what has been documented elsewhere in the Northeast  
171 (Hein, et al 2013).

172 Based on 2018 installed wind energy capacity of 1899.4 MW, an estimated 12,700  
173 individual bats are killed annually at wind projects in New York (Table 3-Estimated bat  
174 fatality by species in New York State, based on 2018 installed wind energy capacity). This  
175 number is expected to increase as development of the industry continues, as in 2016 an  
176 estimated 4,000-5,900 MW of on-shore wind generating capacity was expected to be  
177 installed in the state by 2030 (NYSDPS 2016). At this installed capacity, an estimated  
178 26,800-39,500 bats are expected to be killed by turbines in New York State annually by  
179 2030 (based on the current fatality rate of 6.7 bats/MW/yr).

180 **NORTHERN LONG-EARED BAT**

181 **Q. You mentioned previously that NLEBs are afforded State regulatory**  
182 **protections. Can you provide more detail regarding those protections?**

183 A. The NLEB is protected as a threatened species under Article 11 and its  
184 implementing regulations in Part 182.

185 **Q. Can you describe the distribution of the NLEB in New York State?**

186 A. Yes. Data collected by NYSDEC and the New York State Department of Health  
187 demonstrate that the range of the species in New York State includes forested habitats in  
188 all New York counties outside of New York City and in most municipalities of the State.  
189 Furthermore, its presence in known bat hibernation sites in the State is similarly  
190 widespread. The population declines for NLEB due to white-nose syndrome (WNS) have  
191 been considerable, but because the primary impact of the disease is during hibernation we  
192 believe that the overall distribution of NLEB in New York is likely not changed.

193 **Q. Can you provide further detail regarding the protection of the NLEB?**

194 A. Yes. NLEB was common in New York State only a decade ago. The species was  
195 listed as threatened by the United States Fish and Wildlife Service (USFWS) on April 2,  
196 2015 due to documented widespread population declines of over 90% because of WNS.  
197 WNS is a disease that was first recognized in 2007 and which has killed hibernating bats  
198 in eastern North America in unprecedented numbers. NLEB also became listed as a  
199 threatened species under Article 11 and Part 182 because of the federal listing.

200 The USFWS adopted a rule on January 14, 2016 under Section 4(d) of the Federal  
201 Endangered Species Act that allows for most forms of incidental take of this species  
202 (including the direct take of NLEB that would result from operation of wind turbine  
203 facilities) without the need for a federal permit (Federal Register, 2016). Note, though,

204 that in adopting this rule USFWS is not saying that take of NLEB at wind turbine facilities  
205 is unlikely. Indeed, in the biological opinion that accompanied the rule, USFWS estimated  
206 the widespread take of NLEB at wind turbine facilities within the species' range (USFWS  
207 2016).

208 New York State law has no provision like Section 4(d) of the federal law. Pursuant  
209 to Article 11 and Part 182, any expected take of NLEB in New York would require a permit  
210 issued by NYSDEC and an associated mitigation plan to achieve a net conservation benefit  
211 for the species. While the Department would not itself issue a permit pursuant to Article  
212 11 and Part 182 for a project subject to a PSL Article 10 proceeding, the same requirements  
213 to achieve a net conservation benefit for the species, still apply to such projects, including  
214 to the Project in the instant proceeding.

215 **Q. What do we know about the susceptibility of NLEB to being killed at wind**  
216 **turbine facilities?**

217 A. Arnett and Baerwald (2013) estimated that wind energy facilities in the United  
218 States and Canada killed between 1,175 and 2,433 NLEBs from 2000 to 2011. Post-  
219 construction studies have demonstrated that the species has been killed by wind turbines in  
220 New York State, including studies performed after the significant population declines  
221 resulting from WNS.

222 **Q. What is the estimated magnitude of the threat to NLEBs from on-shore wind**  
223 **turbine facilities in the State?**

224 A. To estimate the magnitude of this threat, we followed the approach suggested by  
225 USFWS for estimating the take of NLEB at wind turbine facilities (USFWS 2016), using  
226 data specifically from studies performed at New York State and nearby Canadian wind  
227 turbine facilities. To begin with, we examined post-construction monitoring studies with  
228 reported species composition data in the post-WNS era (after 2008) from sites in New York  
229 State and nearby Wolfe Island, Ontario to determine the percentage of bats that were  
230 identified as NLEB (Table 2 - Recent post-construction studies used to calculate bat  
231 fatalities in New York State). A total of 1,744 carcasses were reported, of which 7  
232 individuals (0.40% of the total) were identified as NLEB.

233 Next, we estimated the all-species rate of bat fatalities. Studies from New York  
234 State and Wolfe Island, Ontario that reported overall bat fatality estimates as bats per MW  
235 of generating capacity, corrected for searcher efficiency and scavenging rates, were  
236 examined to determine a statewide average, all-species estimate of expected bat fatalities.  
237 These estimates were calculated using various analytical methods (See Jain, et al. 2007;  
238 Huso 2011; and Shoenfeld 2004) and sampling schemes that were designed in consultation  
239 with state, federal and provincial environmental resource agencies, and deemed sufficiently  
240 similar for developing an aggregate estimate. If a study reported multiple fatality estimates  
241 based on different search intervals or survey dates, we used an estimate based on the  
242 shortest search interval and greatest temporal coverage during that study. The collected  
243 fatality rates for each project were expressed as a combined total number of bats of all  
244 species per MW of nameplate capacity per year. A simple arithmetic mean of these

Case No. 16-F-0062

DENONCOUR &amp; HERZOG

245 estimates was calculated without the application of any weighting scheme, resulting in an  
246 estimated statewide average of 6.7 bats/MW/yr.

247 Finally, an estimate of the expected fatality rate of NLEB per MW of nameplate  
248 capacity per year was generated as a simple product of the two calculated rates:

249  $6.7 \text{ bats/MW/yr} \times 0.0040 \text{ NLEB/bat} = .027 \text{ NLEB/MW/yr}$

250 This yields an estimate of 2.7 NLEB/100MW/yr. This calculation is based on post-  
251 construction reports as provided to the Department, and until new or updated data become  
252 available, the NYSDEC will apply this estimate of take towards each on-shore wind turbine  
253 proposal in New York State. Relevant new studies or additional or updated data may be  
254 taken into consideration and the Department may identify a need to modify this take  
255 estimate accordingly. This calculation assumes no operational curtailment of the turbines  
256 under consideration.

257 **Q. How does the Applicant portray the risk to NLEB?**

258 A. The Applicant does not provide any estimates of NLEB take with no minimization  
259 measures in place. The Applicant does not provide an estimate of annual NLEB take;  
260 however the Applicant estimates a 35-year life-of-project NLEB take of 17.82, with  
261 curtailment at 5.0 meters per second (m/s) July 1 through September 30 (when  
262 temperatures are above 50 degrees Fahrenheit from one half hour before sunset to one half  
263 hour after sunrise). This estimate is slightly lower than it would be using the methods  
264 employed by the Department and described above.

265 **APPLICATION OF PART 182 TO THE PROJECT**

266 **Q. Does Part 182 apply to the Project?**

267 A. Yes. As previously mentioned in this testimony, NLEB is a State-listed threatened  
268 species. Based on the widespread nature of the distribution of NLEB in New York  
269 State during both winter and summer and demonstrated susceptibility of the species to be  
270 taken at wind turbine facilities, we conclude that all on-shore wind turbine facilities in New  
271 York State pose a threat to the species. Therefore, Part 182 applies to the Project.

272 **Q. Please summarize the application of Part 182 to the Project?**

273 A. Part 182 first requires that the Applicant avoid all impacts to listed species, in this  
274 case NLEB, to the extent practicable. If such impacts cannot be fully avoided based on a  
275 showing by the Applicant that full avoidance is impracticable, then the Applicant is  
276 required to minimize impacts to NLEBs to the maximum extent practicable. If impacts are  
277 demonstrated to be unavoidable, the Applicant must provide appropriate and effective  
278 mitigation, resulting in a net conservation benefit to NLEB, as discussed in more detail  
279 below.

280 **Q. What is the current state of knowledge regarding avoiding or minimizing bat**  
281 **mortality from wind turbines?**

282 A. Curtailing turbine operation, usually by “feathering” the blades to reduce rotation  
283 during the time periods when most fatalities have been documented to occur, is currently  
284 the only effective method to reduce bat mortality at wind energy projects.

285 With respect to all bat species, collectively considered, studies show that fatalities  
286 can be reduced by: (i) more than 80% when turbines are curtailed until wind speed reaches

287 at least 6.9m/s; (ii) up to 82% when turbines are curtailed at wind speeds below 6.5m/s  
288 (Arnett, et al. 2011); about 60% when turbines are curtailed at wind speeds below 6.0m/s  
289 (Martin, et al. 2017); and (iii) between 50-70% when turbine blades are curtailed at wind  
290 speeds below 5.5m/s (Baerwald, et al. 2009) (Figure 2-Observed reduction in bat fatalities  
291 with curtailment at projects in North America).

292 With respect to the NLEB specifically, curtailment is likely to be even more  
293 effective as a strategy for reducing fatalities. While there is no species-specific data on  
294 NLEB fatality rates that occur at curtailed turbines, it is a smaller bat than the tree bats and  
295 big brown bats which comprise most bats killed at turbines in New York State. Therefore,  
296 the Department assumes that curtailing turbine blades until wind speeds meet or exceed  
297 6.9m/s will be even more protective of NLEB than for tree bats. Applicants for wind energy  
298 projects can achieve complete avoidance of impacts to NLEB with curtailment at wind  
299 speeds below 6.9 m/s at the appropriate times.

300 Data from across North America reveal that most bats are killed on nights with low  
301 wind speed during the late summer and fall (Arnett 2008; Arnett, et al. 2011; Cryan, et al.  
302 2014). This is true in New York State as well, where 83% of all bats reported killed during  
303 post-construction studies we examined were found between July 1 and October 1  
304 (NYSDEC 2016a). Because the time when most bats are killed is relatively short (at night,  
305 from July to October) and when winds speeds (and thus energy production) are relatively  
306 low, implementing turbine curtailment during these periods can substantially reduce the

307 number of bat fatalities with a relatively small impact on potential electric generation  
308 output (Baerwald, *et al.* 2009; Arnett, *et al.* 2011; Martin, *et al.* 2017).

309 **Q. Is it your professional assessment that the application of similar turbine**  
310 **curtailment regimes for wind projects in New York State would result in the same**  
311 **reductions of impacts?**

312 A. Yes. As discussed previously, the bat species experiencing increased mortality  
313 because of operating wind energy projects are similar across the northeast of the United  
314 States. Further, the mortality rates of these species in New York State are consistent with  
315 the bat mortality rates across the Northeast. The Siting Board's and the Applicant's  
316 implementation of a turbine curtailment regime that is within the range discussed  
317 previously at a wind project operating in New York State will result in similar reduction in  
318 bat mortality as that seen at other wind turbine projects in the Northeast.

319 **Q. To what degree has turbine curtailment been adopted in New York State and**  
320 **the surrounding region?**

321 A. Some states and provinces have implemented turbine curtailment requirements for  
322 wind energy projects, including 5.5m/s from July 15 through September 30 in Ontario,  
323 Canada (OMNR 2011), 6.0m/s from June 1 through September 30 when temperatures are  
324 at or above 50 degrees Fahrenheit in Vermont (VTANR 2016), and 6.0m/s from April 15  
325 through September 30 one half hour before sunset until one half hour after sunrise when  
326 ambient air temperature is above 32 degrees Fahrenheit in Maine (MDIFW 2018).  
327 NYSDEC is aware of three operating projects in the State that have or are currently

328 implementing some curtailment, two permitted projects that will be required to curtail once  
329 they are constructed and operational, and several proposed projects that are discussing  
330 curtailment regimes with the Department.

331 **Q. Is it your testimony that the Siting Board should require a turbine curtailment**  
332 **regime at the Project in the certificate conditions?**

333 A. Yes. Currently only the Indiana bat and NLEB are afforded regulatory protection  
334 in New York State, but NYSDEC is charged with providing the people of New York State  
335 with the opportunity to enjoy all the benefits of the State's wildlife, now and in the future.  
336 Additionally, New York State's policy is to conserve, improve and protect its natural  
337 resources and environment. In addition to protecting NLEBs, a curtailment regime would  
338 also provide protections for other bat species.

339 The long-term presence of most of the bat species on the New York State landscape  
340 is uncertain, and the current rate of decline may soon warrant the protections granted with  
341 a status of State-endangered or State-threatened for many of them. Wind turbines are the  
342 greatest cause of mortality for the three species of migratory tree bats (hoary bat, silver-  
343 haired bat, eastern red bat). These three species are not greatly impacted by WNS, they are  
344 the most frequently killed species at wind turbines across the continent, and the knowledge  
345 and technology exist to slow the current rate of their decline in a way that is compatible  
346 with wind energy development.

347           Therefore, as discussed previously in our testimony, the Siting Board should adopt  
348   a turbine curtailment regime protective of both NLEB and all bat species given the  
349   significant impact that wind projects have on overall bat mortality.

350   **Q.       Can you describe in more detail what is required under Part 182 regarding**  
351   **avoidance of take of listed species, specifically NLEB?**

352   A.       The Department's preferred outcome in all cases is avoidance of adverse impacts  
353   to protected resources, including threatened and endangered species. Avoidance means  
354   that there are negligible impacts to listed resources and that applicants do not require  
355   permits to move forward with their projects. For the purposes of quantifying avoidance of  
356   direct impacts to NLEB at wind turbine facilities, avoidance will be achieved if, based on  
357   the best available information, the estimated level of NLEB take at the project is less than  
358   one NLEB every ten years.

359           For wind turbine projects, there are two potential avenues for impacts to NLEB.  
360   The project may be proposed within occupied habitat (*e.g.*, within 1.5 miles of known  
361   maternity roosts or five miles of hibernacula) and have the potential for indirect effects  
362   through the adverse modification of habitat; it may have direct effects on individual  
363   animals by killing or injuring animals during construction or through operation of the  
364   turbines; or both scenarios may apply. While indirect impacts caused by the adverse  
365   modification of habitat will not be applicable to every wind energy project, direct impacts  
366   resulting in the death or injury of individuals are potentially present at any proposed land-  
367   based wind project in New York State, including the Project.

- 368       • Direct Construction Impacts: Avoidance of impacts to occupied habitat is best met  
369       by siting the project outside of these sensitive locations. Avoidance of occupied  
370       habitat may also be accomplished by careful project design that precludes the  
371       potential for any impacts to forest habitat or hibernacula. A straightforward and  
372       reliable way to avoid the potential for direct take of animals during construction is  
373       to schedule activities having a significant risk of impact (e.g., tree-cutting) so that  
374       such activities only occur during the hibernation season (November 1 until April  
375       1).
- 376       • Direct Operational Impacts: NLEBs that fly through the project site may die or be  
377       injured by colliding with or being struck by some part of the turbine structure.  
378       Examination of the number of NLEBs found dead during post-construction  
379       monitoring efforts at existing wind energy projects has allowed the Department to  
380       calculate an expected level of mortality based on the nameplate generating capacity  
381       of a proposed wind project. This calculation, reviewed in detail above, assumes no  
382       curtailment of the turbines under consideration. NLEB fatalities used in that  
383       calculation were all documented outside of previously recognized occupied habitat  
384       and after the severe initial population declines associated with widespread  
385       distribution of WNS in New York State by 2009. NLEBs were formerly known to  
386       be present throughout all forested areas of New York State except for New York  
387       City.

388                   Therefore, the Department's default position is to apply this calculation to  
389                   assessing impacts to NLEB at all terrestrial-based wind energy projects unless  
390                   sufficient and appropriate site-specific studies are conducted to demonstrate that no  
391                   NLEB fly through the project area at any time the bats may be active. Such studies  
392                   must be sufficient in effort and duration to cover the project area and sample the  
393                   entire period of potential bat activity, with an emphasis on data collected between  
394                   July 1 and October 1. The Department is not aware of any such studies that have  
395                   been designed or executed to collect adequate data to satisfy a determination of  
396                   NLEB absence to meet this purpose.

397                   Currently, avoidance of direct impacts to NLEB during the period of  
398                   demonstrated greatest risk can best be accomplished through curtailing turbine  
399                   blade rotations, or "feathering," until wind speeds are equal to or greater than 6.9  
400                   m/s (the highest cut-in speed studied to date; Gruver and Bishop-Boros 2015;  
401                   Arnett, et al. 2013). Recent studies have shown that bat mortality (all species  
402                   combined) at existing turbines can be reduced by more than 80% when turbines are  
403                   curtailed until wind speed reaches at least 6.9m/s. While there is no species-specific  
404                   data on NLEB fatality rates that occur at curtailed turbines, it is reasonable to  
405                   assume that the benefit afforded by turbine curtailment to NLEB will be at least as  
406                   large as that experienced by bats of all species. Turbine curtailment would not be  
407                   necessary during half of the year because NLEB hibernate and are not active on  
408                   most of the New York State landscape between November 1 and April 1.

409           The Department will accept targeted seasonal turbine curtailment as full  
410           avoidance of take of NLEB when blades are curtailed until wind speed measured  
411           at hub height reaches at least 6.9m/s if the turbine curtailment regime is in place  
412           from July 1 to October 1 at times when the ambient temperature is 50 degrees  
413           Fahrenheit (10 degrees Celsius) or greater. Due to the nocturnal behavior of NLEB,  
414           the turbine curtailment would only need to be in place from ½ hour before sunset  
415           to ½ hour after sunrise. Therefore, the Department considers a proposal that curtails  
416           all turbines until local wind speed as measured at hub height is equal to or greater  
417           than 6.9m/s as achieving complete avoidance of take of NLEB, provided the turbine  
418           curtailment protocol is in place at all turbines from ½ hour before sunset to ½ hour  
419           after sunrise throughout the entire period of July 1 through October 1. Shorter  
420           periods of duration or curtailment at fewer than all turbines in a project would not  
421           accomplish avoidance. The Department notes that this curtailment regime will not  
422           achieve full avoidance of impacts to NLEB at sites that are less than one and a half  
423           (1.5) miles from a known maternity roost, sites less than five (5) miles from a  
424           known winter hibernaculum, sites where female NLEB have been captured in the  
425           project area or within one and a half (1.5) miles of the project area during the  
426           maternity season, or sites that have otherwise demonstrated spring or summer  
427           presence of NLEB.

428   **Q.     What other ecological benefits do the previously discussed avoidance measures**  
429   **provide?**

430 A. As explained previously, curtailment also reduces impacts to all migratory tree bat  
431 species. Curtailing wind turbines from operating at night during the time of year when the  
432 greatest number of fatalities have been documented is the best way to prevent further  
433 decline of migratory tree bats.

434 **Q. Can you describe in more detail what is required under Part 182 regarding**  
435 **minimization of take of listed species, specifically NLEB?**

436 A. If an applicant can demonstrate that full avoidance of direct impacts to NLEBs is  
437 impracticable, then appropriate minimization measures and mitigation are required under  
438 Part 182 to achieve a net conservation benefit to the species. Uncertainty about the success  
439 of proposed mitigation approaches is unavoidable and, as a result, every effort should be  
440 made to first minimize any direct impacts to NLEB. If full avoidance of impacts is  
441 demonstrated by an applicant to not be practicable, the Department will work with all  
442 parties on their respective proposals to first minimize direct impacts to the maximum extent  
443 practicable before mitigation is adopted. However, the burden is on the project proponent  
444 to propose and accomplish effective and successful minimization.

445 Minimization of impacts to occupied habitat can best be accomplished by:

- 446 1) Reducing as much as possible the amount of forested habitat that needs to be taken;  
447 and  
448 2) Moving any necessary forest clearing as far away from roost sites or hibernacula as  
449 possible.

450 Minimization of direct impacts to NLEB can best be accomplished by:

451 1) Conducting any necessary tree clearing in occupied habitat during the NLEB  
452 hibernation period of November 1 to April 1; and

453 2) Incorporating turbine curtailment during low wind speed conditions ( $\geq 5.5$  m/s) at  
454 the appropriate time of year (April 1 to October 1, but at least July 1 to October 1),  
455 time of day ( $\frac{1}{2}$  hour before sunset to  $\frac{1}{2}$  hour after sunrise), and temperature ( $\geq 50$   
456 degrees Fahrenheit (10 degrees Celsius)). This curtailment regime does not  
457 adequately minimize impacts to NLEB at sites with spring or summer presence of  
458 NLEB. For this project, the Siting Board should not accept any curtailment regime  
459 below 5.5 m/s as minimization of impacts to NLEB; specifically, in the case at  
460 hand, the Siting Board should only consider cut-in speeds at or above 5.5 m/s and  
461 below 6.9 m/s as minimization of impacts to NLEB. A cut-in speed of 5.5 m/s,  
462 implemented from July 1 until October 1, is estimated to reduce impacts to NLEB  
463 by 85%. In all cases, the burden is on the Applicant to demonstrate that the amount  
464 of minimization is at the greatest practicable level, meaning that the highest  
465 practicable cut-in speed must be implemented as minimization.

466 Any take that is anticipated to exceed one NLEB per ten years after minimization measures  
467 are accounted for must be mitigated to ensure achievement of a net conservation benefit to  
468 the species. The Applicant has agreed to implement curtailment at all turbines until wind  
469 speeds reach 5.5 m/s, from July 1 through October 1, from  $\frac{1}{2}$  hour before sunset until  $\frac{1}{2}$   
470 hour after sunrise, when air temperatures are equal to or greater than 50 degrees Fahrenheit  
471 (10 degrees Celsius). Not considering the presence of maternity roosts or hibernacula

472 within 1.5 and 5 miles, respectively, of the Project, this curtailment regime will reduce  
473 impacts to NLEB by 85% from the estimate as calculated by the method previously  
474 described in this testimony.

475 **Q. Can you describe in more detail what is required under Part 182 regarding**  
476 **potential mitigation options for unavoidable take of State-listed species that occurs**  
477 **after all practicable minimization measures are implemented, specifically NLEB?**

478 A. Under Part 182, the Department requires mitigation for projects that are reasonably  
479 expected to result in the take of listed species. The Department will calculate the number  
480 of NLEB for which mitigation is required by using the methodology described above and  
481 reducing that number as a function of the likely effectiveness of the minimization actions  
482 taken to reduce impacts. For the purposes of this assessment, an expected take of greater  
483 than one NLEB per ten years will require mitigation to ensure achievement of a net  
484 conservation benefit to the species.

485 The Part 182 standard for permit issuance requires that the project in total must  
486 provide a net conservation benefit to the impacted species. While the Department does not  
487 itself issue Part 182 permits for projects subject to PSL Article 10 review, this same  
488 standard applies to such projects, including to the Project in the instant proceeding. This  
489 means that the expected impacts to the affected species must be completely offset by  
490 proposed mitigation such that it is reasonable to expect that the species will be at least as  
491 stable as it was before the action was taken. To meet this requirement, if an applicant has  
492 demonstrated that full avoidance is impracticable and implemented all necessary and

493 appropriate minimization measures to the maximum extent practicable, then a mitigation  
494 measure must be reasonably expected to have a positive impact on the species and not just  
495 exceed the calculated loss of animals or habitat. Part 182 does not specifically speak to  
496 species-specific mitigation. If avoidance cannot practically be achieved, and an applicant  
497 and NYSDEC agree upon minimization measures to be implemented, the Department  
498 encourages a potential applicant to propose one or more mitigation measures that are likely  
499 to result in a net conservation benefit to the affected species. In general, a mitigation  
500 measure must either demonstrably and reliably reduces the impact of an existing threat to  
501 the species or proactively increases the productivity or abundance of the species or its  
502 habitat. For a mitigation measure to be accepted as meeting the definition of net  
503 conservation benefit, the implementation of the action should be reasonably expected to  
504 successfully provide the necessary benefits. Below we provide a description of mitigation  
505 actions that the Department is prepared to discuss and could potentially accept as mitigation  
506 for the take of NLEB. These descriptions do not necessarily preclude the Department from  
507 considering other, valid proposals for mitigation.

508 **Gating of known hibernacula:** The placement of well-designed, effective gates in  
509 appropriate locations that prevent human access to hibernation sites without compromising  
510 the ability of the bats to utilize these same sites is the most well-established method of  
511 effective mitigation. Human disturbance is a known threat at several hibernacula where  
512 NLEB overwinter. Gates can offset the impacts caused by the wind turbine project by  
513 reducing the impacts of human disturbance to hibernating bats. Calculation of the

514 conservation benefit conferred by gating a hibernaculum depends on the level of threat due  
515 to disturbance and the number of NLEB resident there. For sites with high threat of  
516 disturbance the Department would accept a calculated conservation benefit equal to 50%  
517 of the estimated number of resident NLEB. The Department has a list of potential sites  
518 and will work with applicants interested in pursuing this mitigation option.

519 **Identification of new maternity roosts or hibernacula near the project site:** To protect  
520 NLEB from other threats such as WNS, predation, development and human disturbance,  
521 the Department needs to know where the species is located. Studies that are successful in  
522 identifying previously unknown maternity roosts and hibernacula would be viewed by the  
523 Department as conferring conservation benefit to the species. For the purposes of  
524 determining the degree of benefit conferred by identifying a new maternity roost, the  
525 Department considers roosts to be typically viable for ten years. Given an average  
526 productivity of 0.5 pups per year, the identification of a new roost will allow the  
527 Department to protect the site from disturbance and can be used to offset the loss of up to  
528 five NLEB. A new roost is defined as any previously undocumented roost that is located  
529 greater than 150 feet from an already identified roost, i.e., roosts must be more than 150  
530 feet apart to be counted as separate locations. Each newly identified roost that is located  
531 within one and a half (1.5) miles of any proposed project component will increase the  
532 estimated take of NLEB for the Project by one.

533 For the purposes of determining the degree of benefit conferred by identifying a  
534 new hibernaculum, the Department will base the benefit provided on the number of NLEB

535 determined to use the hibernaculum. The Department will consider the identification of a  
536 new hibernaculum to offset the loss of up to 50% of the NLEB utilizing the hibernaculum  
537 at the time it is accepted as a mitigation measure.

538         It should be noted that, given the scarcity of NLEB on the landscape in many parts  
539 of the State, the Department recognizes that the ability to capture and successfully follow  
540 a female NLEB back to a roost or hibernaculum would require an uncertain amount of time  
541 and effort. Based on current data, on average it would generally take 59 mist net-nights in  
542 appropriate habitat at the appropriate time of year to capture a NLEB. Assuming NLEB  
543 occur at an even sex ratio, this estimate doubles to 118 mist net-nights to capture a female  
544 bat. Because the Department prefers mitigation to be targeted as closely as possible to the  
545 affected population, the Department encourages any efforts to find new occupied habitat  
546 to be implemented near the proposed project. If an applicant attempts to utilize this  
547 mitigation method but is unsuccessful in capturing any NLEB after **118 \* X mist net-**  
548 **nights** (where X is the minimum number of NLEB to be mitigated) distributed through the  
549 active season, and a minimum of 75% of the mist net nights occur from July 1 to October  
550 1, the Department will accept this as successful mitigation because it effectively  
551 demonstrates the absence of NLEB in the project area to be impacted.

552 **Identification of new maternity roosts or hibernacula at Department-identified**  
553 **priority landscapes:** As an alternative to attempting to capture bats within the project  
554 area, the Applicant could attempt to capture bats in areas identified by the Department as  
555 priority conservation concerns. Presently, the Department considers the identification of

556 hibernacula in Suffolk County on Long Island as an area of concern. This is an area where  
557 the concentration of NLEB is higher and capture of bats is expected to be more productive  
558 than average compared to elsewhere in the state. However, unlike above, mist net efforts  
559 that exceed **118 \* X mist net-nights** without the capture of a NLEB do not qualify as  
560 meeting the mitigation standard. In these landscapes, the absence of data at an offsite  
561 location does not demonstrate the absence of potential impacts from the project. The 150-  
562 foot buffer around newly identified roosts will be applied to roosts found on Long Island  
563 as it does to roosts found in the rest of the state, as described above.

564 **Protection of known roosts or hibernacula:** The placement of permanent conservation  
565 easements on private property to protect known roosts or hibernacula on private property  
566 from development may be considered mitigation. The best form of easement would provide  
567 a ¼ mile buffer around a roost or hibernaculum which would be consistent with the Federal  
568 4(d) rule. Successful protection will be considered to offset the loss of up to 5 NLEB per  
569 roost protected and up to 50% of the NLEB utilizing the hibernacula.

570 **PROPOSED CERTIFICATE CONDITIONS**

571 **Q. What would your recommended Proposed Certificate Conditions include with**  
572 **respect to impacts to NLEBs?**

573 A. Except as noted below, we support the following conditions set out in the proposed  
574 certificate filed by the Applicant on January 16, 2019 as follows: conditions 32-35,  
575 inclusive, and 79-82, inclusive. They capture the substance of the requirements of Part 182.  
576 We support condition 57 except that three years of post-construction monitoring is a

577 minimum number of years to properly characterize impacts and the condition should be  
578 modified to allow for additional post-construction monitoring to be determined in the post-  
579 construction monitoring plan. A letter of credit or other financial guarantee securing the  
580 Applicant's ability to execute such management, maintenance and monitoring for the 35-  
581 year life of the Project.

582 **Q. Subject to those exceptions, should the Siting Board ultimately issue a Certificate**  
583 **for the Project with conditions as set forth in the proposed Certificate Conditions filed**  
584 **by the Applicant on January 16, 2019, would the Project meet the requirements of**  
585 **Article 11 and Part 182?**

586 A. Yes.

587 **Q. Do you hold your opinions to a reasonable degree of scientific certainty?**

588 A. Yes, we do.

589 **Q. Does this conclude your direct testimony?**

590 A. Yes, it does.

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Facility.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF NEW YORK     )  
                                      ) ss:  
COUNTY OF ALBANY     )

Brianna Denoncour, being duly sworn, deposes and says:

1. I am employed as a Wildlife Biologist and Avian Ecologist by the New York State Department of Environmental Conservation (DEC), and I am appearing as a witness in Case No. 16-F-0062 on behalf of the DEC.

2. I previously prepared written testimony entitled Direct Testimony of Brianna Denoncour and Carl J. Herzog and exhibits labeled, NYSDEC-DH-1, Resume of Brianna Denoncour, NYSDEC-DH-2, Resume of Carl J. Herzog, NYSDEC-DH-3, List of References and List of Post-construction Studies, which were filed under Case No. 16-F-0062 with the Secretary of the New York State Board on Electric Generation Siting and the Environment on January 23, 2019.

3. I hereby affirm that the testimony and exhibits identified above are true and correct to the best of my knowledge, information and belief. I affirm that the written testimony is the same testimony I would give orally if I appeared in person at the hearing scheduled in these cases. I adopt that testimony as my sworn testimony in these proceedings.

  
Brianna Denoncour

Sworn to before me this 7th  
day of March 2019.

  
Notary Public - State of New York

COLLEEN A. McCARTHY  
Notary Public, State of New York  
Qualified in Albany County  
No. 02MC5046480  
Commission Expires July 7/17/2021

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

682

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Facility.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS


STATE OF NEW YORK     )  
                                      ) ss:  
COUNTY OF ALBANY     )

Carl J. Herzog, being duly sworn, deposes and says:

1. I am employed as a Biologist by the New York State  
Department of Environmental Conservation (DEC), and I am  
appearing as a witness in Case No. 16-F-0062 on behalf of DEC.

2. I previously prepared written testimony entitled  
Direct Testimony of Brianna Denoncour and Carl J. Herzog and  
exhibits labeled, NYSDEC-DH-1, Resume of Brianna Denoncour,  
NYSDEC-DH-2, Resume of Carl J. Herzog, NYSDEC-DH-3, List of  
References and List of Post-construction Studies, which were  
filed under Case No. 16-F-0062 with the Secretary of the New  
York State Board on Electric Generation Siting and the  
Environment on January 23, 2019.

3. I hereby affirm that the testimony and exhibits  
identified above are true and correct to the best of my  
knowledge, information and belief. I affirm that the written  
testimony is the same testimony I would give orally if I  
appeared in person at the hearing scheduled in these cases. I  
adopt that testimony as my sworn testimony in these proceedings.

  
Carl J. Herzog

Sworn to before me this 8<sup>th</sup>  
day of March 2019.

  
Notary Public - State of New York

MARK D. SANZA  
Notary Public, State of New York  
No. 02SA6010701  
Qualified in Albany County  
Commission Expires July 20, 2022

**NEW YORK STATE BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

In the Matter of the Application of

Eight Point Wind Project

Case No.: 16-F-0062

for a Certificate of Environmental Compatibility  
and Public Need Pursuant to Article 10 to  
Construct a Wind Energy Project.

---

**DIRECT TESTIMONY OF  
W. SCOTT JONES**

Regional Bureau of Ecosystem Health Manager  
Division of Fish and Wildlife  
New York State Department of Environmental Conservation

January 22, 2018

Case No. 16-F-0062

W. Scott Jones

1 **WITNESS INTRODUCTION**

2 **Q. Will you please state your name, employer, title and business location?**

3 A. My name is Scott Jones. I have been employed with the New York State  
4 Department of Environmental Conservation (NYSDEC) in the Division of Fish and  
5 Wildlife, as the Region 8 Manager of the Bureau of Ecosystem Health for the past 3 years.  
6 Prior to that I was employed as a Biologist 1 (Ecology) for approximately 15 years in  
7 NYSDEC's Region 8 headquarters in Avon, NY.

8 **Q. Will you please describe your educational background and professional**  
9 **certifications?**

10 A. Please see a copy of my resume marked as NYSDEC-CB-1.

11 **Q. What are your responsibilities in your position at the Department?**

12 A. In my position, I am responsible for programmatic oversight of the State's statutory  
13 and regulatory freshwater wetland program in NYSDEC Region 8 which includes Steuben  
14 County. In this capacity, I oversee the implementation of Article 24 of the Environmental  
15 Conservation Law (ECL) (Article 24 or Freshwater Wetlands Act) and associated State  
16 regulations, Article 15 of the ECL and associated State regulations, and, as applicable,  
17 State water quality standards applicable to projects under Section 401 of the federal Clean  
18 Water Act (CWA) and associated State regulations. Included in this oversight is my  
19 responsibility to ensure the proper delineation of State-regulated wetland boundaries.

20 **Q. Will you please summarize your experience regarding wetlands and review of**  
21 **proposed wind farm projects?**

Case No. 16-F-0062

W. Scott Jones

1 A. I have delineated several hundred wetlands and reviewed the permit applications  
2 that went with the delineations for activities in and near wetlands. I have reviewed several  
3 wind farm projects that required or will require compliancy with relevant statutory and  
4 regulatory requirements of an individual freshwater wetland permit under Article 24 or  
5 State water quality certificates under Section 401 of the CWA, or protection of waters  
6 permit under Article 15 in order to be constructed. These projects include those projects  
7 subject to Article 10 of the Public Service Law (PSL), and those which were reviewed  
8 pursuant to the State Environmental Quality Review Act (SEQR).

9 **Q. What is the purpose of your testimony today?**

10 A. The purpose of my testimony is to provide an overview of the Department's  
11 implementation of NYSDEC's (i) freshwater wetlands preservation and protection  
12 program in Article 24 and the associated regulations found at parts 663 and 664 of Title 6  
13 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6  
14 NYCRR) (Part 663 or 664), (ii) ECL Article 15, Title 5 and the associated regulations  
15 found at parts 608 of Title 6 of the Official Compilation of Codes, Rules and Regulations  
16 of the State of New York (6 NYCRR) (Part 608) and (iii) the Department's implementation  
17 of Section 401 of the CWA, and the associated regulations found at 6 NYCRR Parts 608,  
18 701, 702, 703, 704 and 750.

19 In that context, I will discuss: (i) the factors the Department considers in making  
20 regulatory determinations pursuant to the applicable statutes and regulations; (ii) how these  
21 factors apply to the Project; and (iii) whether the Project has met the applicable State

Case No. 16-F-0062

W. Scott Jones

1 standards. I am advised by Department Counsel that this wetlands program with its  
2 attendant statutory and regulatory authority, use and protection of waters program with its  
3 attendant statutory and regulatory authority, as well as State water quality standards, apply  
4 to the Eight Point Wind Project (Project) as proposed, and to the New York State Board on  
5 Electric Generation Siting and the Environment's (Siting Board's) deliberations and  
6 required findings pursuant to PSL Article 10. Accordingly, my testimony discusses how  
7 the Siting Board must apply the State's statutory and regulatory (i) wetlands program, (ii)  
8 protection of waters program and (iii) the CWA, as implemented by the above-referenced  
9 State regulations, to its deliberations under PSL Article 10 to ensure the Project's  
10 compliance therewith, should it decide to approve the Project.

11 **Q. What information has provided the basis for your testimony?**

12 A. My testimony is based on the Project application (Application) filed November 29,  
13 2017 by Eight Point Wind, LLC (Applicant), specifically Exhibits 22 and 23 and  
14 corresponding Appendices, including but not limited to Appendix 22-2 (Wetland and  
15 Waterbody Delineation Report) and Appendix 22-12 (Wetland Functions and Values  
16 Assessment), supplemental filings filed April 17, 2018 and August 13, 2018 and the  
17 proposed certificate conditions filed by the Applicant on January 16, 2019. I also  
18 conducted site visits of the project site on October 10 & 18, 2018, and November 7, 2018.  
19 I have reviewed all the above-referenced materials in the context of compliance with  
20 Article 24 and 6 NYCRR Parts 663 (Freshwater Wetlands Permit Requirements) and 664

Case No. 16-F-0062

W. Scott Jones

1 (Freshwater Wetlands Maps and Classification), ECL Article 15 (Protection of Waters) and  
2 Section 401 of the CWA and 6 NYCRR Parts 608, 701, 702, 703, 704 and 750.

3 **Q. Do you have any comments regarding the adequacy of the plans provided by the**  
4 **Applicant?**

5 A. The plans as submitted are adequate to complete a review consistent with the 6  
6 NYCRR Part 663 and 6 NYCRR Part 608 to determine if Article 24 and Article 15  
7 jurisdictions are applicable.

8 **HABITAT PROTECTION AND ECOSYSTEM HEALTH PROGRAMS**

9 **Q. Can you describe the Department's policy with respect to freshwater**  
10 **wetlands?**

11 A. As articulated in Article 24, the State's policy with regard to wetlands is to preserve,  
12 protect, and conserve freshwater wetlands and the benefits that wetlands provide, to  
13 prevent the despoliation and destruction of freshwater wetlands, and to regulate use and  
14 development of such wetlands to secure the natural benefits of freshwater wetlands,  
15 consistent with the general welfare and beneficial economic, social and agricultural  
16 development of the State. The Department must consider any proposed project that may  
17 impact regulated freshwater wetlands, or the associated regulated adjacent areas (being the  
18 area within 100 feet of a State-regulated wetland), considering this public policy.  
19 Accordingly, if the Department determines that a project with potential adverse impacts to  
20 freshwater wetlands does not satisfy an economic or social need and does not meet specific

Case No. 16-F-0062

W. Scott Jones

1 permit issuance standards, the Department may find that the project does not meet statutory  
2 and regulatory standards.

3 **Q. How is ECL Article 24 implemented?**

4 A. The Department's regulations contain the standards that implement the Freshwater  
5 Wetlands Act [*see, e.g.*, 6 NYCRR Parts 663 and 664]. Through Part 663, the Department  
6 has established procedures and standards to guide the review of permit applications for  
7 projects which propose to construct in, or adjacent to, freshwater wetlands. Part 664  
8 contains the mapping and classification standards and procedures of all wetlands protected  
9 under ECL Article 24.

10 **Q. Can you describe how a regulatory review of proposed activities within a**  
11 **State-regulated wetland, or the associated regulated adjacent area, is conducted?**

12 A. In general, the burden is on an applicant to demonstrate that any proposed activity  
13 within a State-regulated wetland, or the associated regulated adjacent area, will comply  
14 with implementing regulations (see above), and all other applicable laws and regulations  
15 (6 NYCRR § 663.5(a)).

16 **Q. In being consistent with the State's freshwater wetlands program, what**  
17 **information must an applicant provide for the Siting Board to conduct its review?**

18 A. I have been advised by Department Counsel that activities regulated by Article 10  
19 of the PSL do not require an Article 24 freshwater wetlands permit. However, the standards  
20 of Article 24 and its implementing regulations, including those in subdivision 6 NYCRR §  
21 663.5(e), must be applied by the Siting Board in determining whether to issue a certificate

Case No. 16-F-0062

W. Scott Jones

1 of environmental compatibility and public need pursuant to PSL Article 10. In order for  
2 the Department to conduct a technical review of any project that will occur, in part or in its  
3 entirety, within a State-regulated wetland, or the associated regulated adjacent area, an  
4 applicant must provide detailed project plans of sufficient scale, including, at minimum:  
5 (1) a delineated boundary for all wetlands on or near the project site; (2) the precise location  
6 of all temporary and permanent structures; and (3) the extent of all temporary and  
7 permanent disturbances, including clearing and grading. This information is not exhaustive  
8 – on a case-by-case basis, additional information may be required for the Siting Board, as  
9 well as the Department, to review the project and to make regulatory determinations,  
10 including whether the project has met State statutory and regulatory standards. Under the  
11 Department’s review process, once all the needed information has been submitted, the  
12 examination of the project continues with a consultation of the Department’s mapped  
13 regulatory wetlands, as well as those unmapped wetlands that meet state criteria for  
14 jurisdiction, and geographical information systems data to determine if a protected wetland  
15 is located within 100 feet of the proposed project. If a regulated wetland is likely located  
16 on or near the project, the Department then considers the proposed activities associated  
17 with the project in relation to the delineated boundary of the wetlands, the activities listed  
18 in 6 NYCRR § 663.4(d), and the standards set forth in 6 NYCRR § 663.5(e), before making  
19 an ultimate determination whether the project meets statutory and regulatory standards.

20 **Q. What do you mean by “delineated boundary” of a wetland?**

Case No. 16-F-0062

W. Scott Jones

1 A. A “delineated boundary” is a wetland boundary that Department Staff has  
2 determined will accurately represent the actual extent of the wetlands. This should not be  
3 confused with the extent of wetlands shown on the Department’s wetlands maps or on the  
4 National Wetlands Inventory Maps, which is a comprehensive master geodatabase of the  
5 nation’s wetlands maintained by the United States Fish and Wildlife Service. The  
6 Department’s wetlands maps approximate the extent of the wetlands and inform  
7 landowners, potential applicants, and the public regarding the approximate extent of  
8 wetlands regulated under Article 24. The maps were developed using 1970’s-era aerial  
9 photography and were not intended to depict actual wetlands boundaries to the extent  
10 provided by on-site inspection or delineation. In fact, I have seen many situations where  
11 the actual extent of wetlands was underestimated by the maps. Field inspections are always  
12 required for projects such as this to refine the approximations shown on wetlands maps and  
13 to accurately determine the extent of wetlands near proposed projects. A surveyed  
14 boundary of field-delineated wetlands must be included on project plans. Without such  
15 information on the precise location of wetlands, Department Staff cannot determine the full  
16 extent of proposed project impacts on identified State-regulated wetlands, or the associated  
17 regulated adjacent areas.

18 **Q. In general, what are the 6 NYCRR Part 663 standards applicable to proposed**  
19 **activities within a State-regulated wetland, or the associated regulated adjacent area?**

20 A. The standards under 6 NYCRR § 663.5(e) apply to determine if the proposed  
21 project meets regulatory standards. The first step in determining the applicable standards

1 is identifying which activity or activities apply to the proposed project (*see* activities list in  
2 6 NYCRR § 663.4(d)). This step will, in turn, determine which standards must be  
3 considered in the review of the project. This Project involves the construction of an  
4 industrial facility and, as such, is considered incompatible with a wetland and its functions  
5 and benefits (6 NYCRR § 663.4(d)(43)). Thus, pursuant to 6 NYCRR § 663.5(e), this  
6 Project must be reviewed in accordance with the weighing standards contained in 6  
7 NYCRR § 663.5(e)(2).

8 **Q. Can you describe the weighing standards?**

9 A. In general terms, the weighing standards require an applicant to first demonstrate  
10 that any activities in, and impacts to, a wetland and its adjacent area cannot be avoided  
11 entirely. If avoidance is impossible, impacts on the functions or benefits of a wetland must  
12 be minimized. Finally, any remaining loss of wetland acreage or function, or both, must be  
13 mitigated, unless it can be shown that the losses are inconsequential or that, on balance,  
14 economic or social need for the project outweighs the loss. The degree of balancing  
15 required is commensurate with the classification of an affected wetland and the severity of  
16 the remaining impacts. The higher the class of wetland or the greater the impact to a  
17 wetland or its adjacent area, the greater the burden upon an applicant to demonstrate an  
18 overriding need not to fully compensate for unavoidable impacts. The standards that must  
19 be demonstrated as set forth in the implementing regulations at 6 NYCRR § 663.5 are  
20 “compelling” need for Class I wetlands and “pressing” need for Class II wetlands. More  
21 specifically, the standards are organized into two tiers, varying according to the class of

1 the wetland. The first tier requires avoidance and minimization of impacts. For wetland  
2 Classes I, II, III and IV, the proposed activity must be compatible with the public health  
3 and welfare, be the only practicable alternative that could accomplish the applicant's  
4 objectives and have no practicable alternative on a site that is not a freshwater wetland or  
5 adjacent area. For wetland Classes I, II, and III, the proposed activity must minimize  
6 degradation to, or loss of, any part of the wetlands or adjacent areas and must minimize  
7 any adverse impacts on the functions and benefits that the wetland provides. For wetland  
8 Class IV, the proposed activity must make a reasonable effort to minimize degradation to,  
9 or loss of, any part of the wetland or its adjacent area. The second tier of conditions only  
10 applies once the first tier of conditions has been satisfied.

11 These conditions vary with the class of wetlands as follows:

12 Class I Wetlands: Class I wetlands provide the State's most critical wetland  
13 benefits. Alteration of a Class I wetland is acceptable only in the most unusual  
14 circumstances – only if a determination is made that the proposed activity satisfies a  
15 compelling economic or social need that clearly and substantially outweighs the loss of or  
16 detriment to the wetland benefits. (*See* 6 NYCRR § 663.5(e)(2)).

17 Class II Wetlands: Class II Wetlands provide important benefits. An alteration of  
18 a Class II wetland is acceptable only in limited circumstances. A proposed activity meets  
19 applicable standards, and the Department would issue a permit, only if the Department  
20 determines that the proposed activity satisfies a pressing economic or social need that

Case No. 16-F-0062

W. Scott Jones

1 clearly outweighs the loss of or detriment to the wetland benefits. (*See* 6 NYCRR §  
2 663.5(e)(2)).

3 Class III Wetlands: Class III Wetlands supply wetland benefits. An alteration of a  
4 Class III wetland is acceptable only after the exercise of caution and discernment. A  
5 proposed activity meets applicable standards, and the Department would issue a permit,  
6 only if the Department determines that the proposed activity satisfies a pressing economic  
7 or social need that outweighs the loss of or detriment to the wetland benefits. (*See* 6  
8 NYCRR § 663.5(e)(2)).

9 Class IV Wetlands: Class IV Wetlands provide some wildlife and open space  
10 benefits and may provide other benefits cited in the Freshwater Wetlands Act. Therefore,  
11 wanton or uncontrolled degradation or loss of Class IV wetlands is unacceptable. A  
12 proposed activity meets applicable standards, and the Department would issue a permit,  
13 only if the Department determines that the activity is the only practicable alternative which  
14 could accomplish the applicant's objectives. *See* 6 NYCRR § 663.5(e) (2).

15 **Q. Can you describe the criteria on which the Department bases its decision as to**  
16 **whether a project meets freshwater wetlands permitting standards?**

17 A. The regulations (6 NYCRR Part 663) provide a step by step process that requires  
18 projects to:

- 19 1) avoid wetland impacts by keeping all regulated activities landward of the regulated  
20 adjacent area;
- 21 2) minimize impacts by maximizing setbacks within the regulated adjacent area; *and*

1       3) provide mitigation for all unavoidable impacts to wetlands.

2       Once the Department reviews its mapped regulatory wetlands, as well as those unmapped  
3       wetlands that meet State criteria for jurisdiction and confirms the presence of a State-  
4       regulated wetland, the Department checks its classification sheet to determine if a particular  
5       wetland is a Class I, II, III, or IV. Based on the wetland class, the Department uses the  
6       appropriate weighing standards to determine whether a proposed project or activity meets  
7       applicable standards to issue a permit.

8       **Q. If it is determined that impacts to wetlands are unavoidable, what information**  
9       **must the Applicant provide regarding wetland mitigation to demonstrate compliance**  
10       **with Department's requirements?**

11       A. A plan that meets the regulatory requirements of 6 NYCRR § 663.5(g) and the  
12       Department's Guidelines on Compensatory Mitigation. For example, the plan must include  
13       the following details:

- 14       • A detailed location relative to proposed wetland impact areas and other state-  
15       jurisdictional freshwater wetlands;
- 16       • A Project construction timeline;
- 17       • Documentation of ownership of the mitigation site, or a conservation easement with  
18       participating landowners unless such an agreement can be shown to not be practical,  
19       in which case, a deed restriction may be employed;

- 1       • A monitoring plan including at least five years of monitoring, quarterly the first
- 2           year and twice per year thereafter. The monitoring may need to be extended if
- 3           problems arise;
- 4       • A commitment to maintain an 85% survival rate of tree and shrub plantings with
- 5           replacements in kind when the survival rate is not met; and
- 6       • An invasive species management plan.

7       **Q.     Are there other applicable standards that would apply to the Project?**

8       A.     Yes. The Project is subject to review as it relates to the Protection of Waters

9       program pursuant to Article 15, Title 5 of the ECL (6 NYCRR Part 608).

10       **ARTICLE 15 – NAVIGABLE WATERS AND PROTECTED STREAMS**

11       **Q.     Can you describe the Department’s policy with respect to protection of the**

12       **State’s waters?**

13       A.     Yes. The policy of New York State, set forth in Title 5 of ECL Article 15,

14       recognizes that New York is rich with valuable water resources, and directs us as

15       stewards of the environment to preserve and protect certain lakes, rivers, streams, and

16       ponds. These rivers, streams, lakes, and ponds are necessary for fish and wildlife habitat;

17       drinking and bathing; and agricultural, commercial and industrial uses. In addition, New

18       York's waterways provide opportunities for recreation; education and research; and

19       aesthetic appreciation. Certain human activities can adversely affect, even destroy, the

20       delicate ecological balance of these important areas, thereby impairing the uses of these

21       waters.

1   **Q. In being consistent with the State's Protection of Waters Program, what**  
2   **information must an applicant provide for the Siting Board to conduct its review?**

3   A. I have been advised by Department Counsel that activities regulated by Article 10 of  
4   the PSL do not require an ECL Article 15 protection of waters permit. However, the  
5   standards set forth in ECL Article 15 and its implementing regulations, including those in  
6   subdivision 6 NYCRR § 608.8 must be applied in determining whether to issue a  
7   certificate of environmental compatibility and public need pursuant to PSL Article 10.

8   **Q. How is ECL Article 15 implemented with respect to stream protection?**

9   A. To implement the policies set forth in ECL Article 15, NYSDEC created the  
10   Protection of Waters Program (*see* 6 NYCRR § 608) to prevent undesirable activities on  
11   water bodies by establishing and enforcing regulations that: (1) are compatible with the  
12   preservation, protection and enhancement of the present and potential values of the water  
13   resources; (2) protect the public health and welfare; and (3) are consistent with the  
14   reasonable economic and social development of the State. The objectives of the  
15   Department's Protection of Waters Program are to (i) minimize the disturbance of  
16   streams and water bodies and (ii) prevent unreasonable erosion of soil; increased turbidity  
17   of the waters; irregular variations in velocity; temperature and level of waters; the loss of  
18   fish and aquatic wildlife; the destruction of natural habitat; and the danger of flood or  
19   pollution. The activities regulated under this Program include but are not limited to the  
20   following regulatory provisions: modification or disturbance of the bed or banks of

Case No. 16-F-0062

W. Scott Jones

1 “protected streams” (6 NYCRR § 608.2) and excavation and fill in navigable waters or  
2 wetlands adjacent to and contiguous to the navigable waters (6 NYCRR § 608.5).

3 **Q. What are considered protected streams?**

4 A. Protected streams are defined in 6 NYCRR § 608.1(aa) as streams or portions of  
5 streams that have any of the following water quality classifications or standards (in  
6 declining order of water quality): AA, AA(T), AA (TS), A, A(T), A(TS), B, B(T),  
7 B(TS), C(T), or C(TS). The designation of “T” means that the waters provide habitat in  
8 which trout can survive and grow; “TS” means that the waters provide conditions in  
9 which trout eggs can be deposited, fertilized, develop, hatch, and grow.

10 **Q. What are the standards applicable to proposed activities that would impact**  
11 **State streams?**

12 A. Part 608.8 requires a determination that the proposed activity is in the public  
13 interest, in that the Applicant has shown that the proposal:

- 14 1) is reasonable and necessary;
- 15 2) will not endanger the health, safety, and welfare of the people of the State of New  
16 York; and
- 17 3) will not cause unreasonable, uncontrolled or unnecessary damage to the natural  
18 resources of the State, including soil, forests, water, fish, shellfish, crustaceans,  
19 and aquatic and land-related environment.

20 The State must consider the following factors in reviewing each proposal:

- 1           a. the environmental impacts of the proposal, including effects on fish and
- 2           wildlife habitat, water quality, hydrology, and watercourse and water body
- 3           integrity;
- 4           b. the adequacy of project design and construction techniques;
- 5           c. operational and maintenance characteristics;
- 6           d. safe commercial and recreational use of water resources;
- 7           e. the water dependent nature of a use;
- 8           f. the safeguarding of life and property; and
- 9           g. natural resource management objectives and values.

10   **Q.     Are there any other applicable State standards that apply to the Project?**

11   A.     Yes. The Project will require a Water Quality Certification pursuant to Section  
12   401 of the CWA. State water quality standards are set forth in 6 NYCRR § 608.9, with  
13   related regulations at 6 NYCRR Parts 701, 702, 703, 704 (Qualifications and Standards)  
14   and 750 (State Pollutant Discharge Elimination System (SPDES) Permits).

15   **Q.     What are the standards for issuing a Section 401 WQC?**

16   A.     Section 401 of the CWA requires that any applicant for a federal license or permit  
17   to conduct an activity that may result in a discharge into navigable waters must obtain a  
18   water quality certification from the State where the activity occurs. The standards for  
19   issuing a water quality certification are contained in 6 NYCRR § 608.9, with the burden  
20   placed on the applicant to demonstrate compliance with the following:

- 21       1) New York State effluent limitations and standards,

- 1        2) New York State water quality standards and thermal discharge criteria,  
2        3) New York State new source standards,  
3        4) New York State prohibited discharges, and  
4        5) other New York State regulations and criteria otherwise applicable.

5 These standards require that the certifying agency require compliance with the  
6 Department's water quality regulations set forth at 6 NYCRR Parts 701, 702, 703, 704  
7 and applicable provisions of Part 750. Other State regulations and criteria applicable to  
8 this Project include ECL Article 15, Title 5 and its implementing regulation at 6 NYCRR  
9 Part 663 (Freshwater Wetlands).

10 ENVIRONMENTAL IMPACT

11 **Q. Are there State-regulated wetlands within this Project's proposed boundary that**  
12 **will be adversely affected?**

A. No. The application indicates that the construction and operation phases of the project will not result in adverse impact to State-regulated Freshwater Wetlands within the Project Area or to their 100-foot regulated adjacent areas.

16 **Q. Will the Project, as proposed, involve activities regulated by ECL Article 24?**

17 A. Yes. As indicated above, there are NYSDEC regulated Freshwater Wetlands and 100-  
18 foot adjacent areas that will be indirectly affected by the Project.

19 **Q. Will the Project, as proposed, avoid State-regulated wetlands and adjacent**  
20 **areas?**

Case No. 16-F-0062

W. Scott Jones

1 A. The feeder line will cross regulated areas of Freshwater Wetlands RX-2 and RX-3  
2 by overhead, however the line will completely span the wetlands and the poles will be  
3 located beyond the regulated adjacent areas. Construction access will be via NYS Route  
4 248, therefore no clearing or ground disturbance will occur, resulting in essentially a non-  
5 jurisdictional activity.

6 **Q. Are there State-regulated waterbodies within the proposed Project site for**  
7 **the Project, as proposed?**

8 A. Yes. The Project site includes two streams that are classified C(T) or higher and  
9 protected under ECL Article 15: Bennetts Creek (and tributaries) and Marsh Creek (and  
10 tributaries). In addition, the Project site also includes 20 streams classified as C.

11 **Q. Can you describe the Project's negative impacts on State-regulated**  
12 **waterbodies?**

13 A. Yes. The Application indicates that the Project will result in approximately 3,701  
14 linear feet of temporary stream impacts. I understand this to mean a linear distance  
15 following the course of the stream bed. The Application also indicates that the Project  
16 will result in approximately 169 linear feet of permanent stream impacts. Direct impacts  
17 include: 1) the direct placement of fill in surface waters to accommodate road crossings,  
18 causing suspension of sediments and turbidity; 2) disturbance of stream banks and/or  
19 substrates resulting from buried cable installation; 3) an increase in water temperature  
20 and conversion of cover type due to clearing of vegetation; and 4) siltation and  
21 sedimentation due to earthwork, such as excavating and grading activities. These impacts

Case No. 16-F-0062

W. Scott Jones

1 directly and adversely affect the best usages of a stream, such as for fish propagation and  
2 survival, pursuant to 6 NYCRR § 701.8.

3 **Q. Has the Applicant demonstrated that the Project, as proposed, meets the**  
4 **permitting standards described above?**

5 A. Yes. To avoid and or minimize potential impacts, the Applicant has proposed to  
6 use overhead feeder lines across the Marsh Creek/freshwater wetland RX-2 and Bennetts  
7 Creek/freshwater wetland RX-3 complex; HDD installation of feeder lines beneath a  
8 C(T) tributary to Marsh Creek and C(TS) Bennetts Creek tributary; and overhead  
9 transmission lines to cross C(T) Fall Creek and C(TS) Rock Creek tributaries to Bennetts  
10 Creek. Based on the above, so long as the Project plan does not change in a manner that  
11 affects these streams, the Project would meets the permit standards of being: (1)  
12 compatible with the preservation, protection and enhancement of the present and  
13 potential values of the water resources; (2) protective of the public health and welfare;  
14 and (3) are consistent with the reasonable economic and social development of the state.

15 **Q. Does the Project, as proposed, meet the water quality standards, as**  
16 **referenced previously in your testimony?**

17 A. Yes. As discussed previously, the proposed Project meets ECL Article 15, Title 5  
18 standards, as well as other standards contained in Part 608.9. The Applicant is proposing  
19 to minimize impacts to protected streams by installing overhead transmission lines. This  
20 crossing method, along with appropriate construction Best Management Practices, will  
21 avoid water quality impacts. Some streams with a classification of C and D will be

Case No. 16-F-0062

W. Scott Jones

1 minimally impacted temporarily by construction of access roads, buried interconnect lines  
2 and wind turbines.

3 **Q. What are the standards for issuing a Section 401 WQC?**

4 A. The CWA requires that any applicant for a federal license or permit to conduct an  
5 activity that may result in a discharge into navigable waters must obtain a water quality  
6 certification from the State where the activity occurs. The standards for issuing a WQC are  
7 contained in 6 NYCRR § 608.9, with the burden placed on the applicant to demonstrate  
8 compliance with the following:

- 9 1) New York State effluent limitations and standards,  
10 2) New York State water quality standards and thermal discharge criteria,  
11 3) New York State new source standards,  
12 4) New York State prohibited discharges, and  
13 5) other New York State regulations and criteria otherwise applicable.

14 These standards mandate that the certifying agency require compliance with the  
15 Department's water quality regulations set forth at 6 NYCRR Parts 701, 702, 703, 704 and  
16 applicable provisions of Part 750.

17 **Q. Does the Project, as proposed, meet its statutory and regulatory burden under**  
18 **ECL Article 24, ECL Article 15 and Parts 663 and 608?**

19 A. Yes .

20 **Q. Does the Project, as proposed, meet the water quality standards, as referenced**  
21 **previously in your testimony?**

Case No. 16-F-0062

W. Scott Jones

1 A. Yes, provided the Project complies with the proposed Certificate Conditions  
2 referenced below, it does meet the requirements of ECL Article 24, Article 15 and Parts  
3 663 and 608. *See* 6 NYCRR § 608.9(a)(6).

4 **PROPOSED CERTIFICATE CONDITIONS**

5 **Q. What would your recommended Proposed Certificate Conditions include with**  
6 **respect to State-regulated freshwater wetlands?**

7 A. Based on the foregoing, to ensure compliance with the applicable State statutory  
8 and regulatory standards I previously described in my testimony, I concur that the proposed  
9 Certificate Conditions related to State-regulated freshwater wetlands, State protected  
10 waters and water quality standards agreed upon by the Department, the Department of  
11 Public Service and other parties participating in this proceeding on January 16, 2019, are  
12 adequate to minimize, mitigate and address any potential impacts. Should the Siting Board  
13 ultimately issue a Certificate for this Project, it should include these proposed Certificate  
14 Conditions to ensure the Project complies with ECL Article 15 and Article 24 and their  
15 implementing regulations.

16 **Q. Do you hold your opinions to a reasonable degree of scientific certainty?**

17 A. Yes, I do.

18 **Q. Does this conclude your direct testimony on these topics at this time?**

19 A. Yes, it does.

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Facility.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBIT

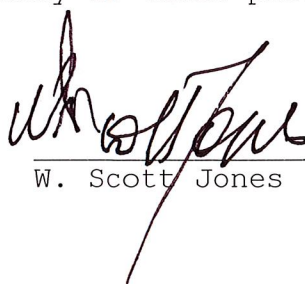
STATE OF NEW YORK                    )  
  ) ss:  
COUNTY OF LIVINGSTON            )

W. Scott Jones, being duly sworn, deposes and says:

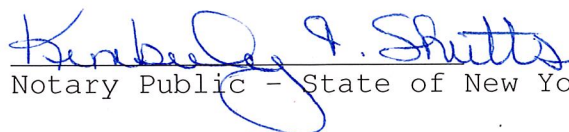
1. I am employed as a Supervisory Biologist by the New York State Department of Environmental Conservation (DEC), and I am appearing as a witness in Case No. 16-F-0062 on behalf of the DEC.

2. I previously prepared written testimony entitled Direct Testimony of W. Scott Jones and an exhibit labeled NYSDEC-CB-1, Resume of W. Scott Jones, which were filed under Case No. 16-F-0062 with the Secretary of the New York State Board on Electric Generation Siting and the Environment on January 23, 2019.

3. I hereby affirm that the testimony and exhibits identified above are true and correct to the best of my knowledge, information and belief. I affirm that the written testimony is the same testimony I would give orally if I appeared in person at the hearing scheduled in these cases. I adopt that testimony as my sworn testimony in these proceedings.

  
W. Scott Jones

Sworn to before me this 6th  
day of March 2019.

  
Notary Public - State of New York

**KIMBERLY T SHUTTS**  
**Notary Public, State of New York**  
Qualified in Livingston County  
Commission Expires March 14, 2022  
Registration No. 01SH4924364

NEW YORK STATE BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

---

In the Matter of

Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to construct a Wind Energy Project.

Case No. 16-F-0062

January 18, 2019

---

Prepared Testimony of:

Michael Saviola  
Associate Environmental Analyst  
New York State Department of  
Agriculture & Markets  
1530 Jefferson Rd.  
Rochester, NY 14623  
P: (585) 427-0221

*Albany Office:*  
10B Airline Dr.  
Albany, NY 12235  
P: (518) 457-1059

**Witness Introduction**

**Q:** Please state your name, employer and business address.

**A:** Michael Saviola, New York State Department of Agriculture and Markets (the Department), 1530 Jefferson Rd., Rochester, NY 14623.

**Q:** In what capacity are you employed by the Department?

**A:** I am an Associate Environmental Analyst in the Division of Land and Water Resources.

**Q:** Please summarize your educational background and professional experience.

**A:** I received B.S. and M.S. degrees in Natural Resources Management from the SUNY College of Environmental Science and Forestry in Syracuse, NY. Prior to working for the Department, I worked for several private consulting engineering firms. I also worked on the professional staff of the Westchester County Department of Planning and the Westchester County Soil and Water Conservation District, in which capacity I worked on a variety of projects designed to manage environmental and other impacts related to agricultural land. I began working for the Department approximately 13 years ago.

**Q:** Please describe your duties with the Department.

**A:** I specialize in agricultural land use issues. I am responsible, among other things, for reviewing the impact of a variety of major utility construction projects on agricultural resources. As relevant to this proceeding, I am responsible for evaluating the potential impact of generation and electric collection project infrastructure on agricultural lands. My primary responsibilities include the review, evaluation, and necessary follow-up (Certification and Compliance) pertaining to proposed commercial wind energy generating facilities, commercial solar electric generating facilities and high voltage

1 electric transmission line right-of way projects pursuant to Article 7 and Article 10 of the  
2 NYS Public Service Law. When reviewing these projects, I focus on identifying possible  
3 impacts to agricultural resources and the farming operations in the vicinity. When a  
4 proposed project appears to have a negative impact on agriculture, as a Statutory Party  
5 under Article 7 and Article 10, I advise the project applicant and/or approving  
6 Commission or Board of the possible alternatives, construction techniques, and  
7 mitigation measures that would reduce or eliminate such impacts.

8 **Q:** Do you have any professional certifications?

9 **A:** In addition to an advanced degree in Natural Resources Management, I have been  
10 certified by the International Erosion Control Association as a Professional in Erosion  
11 and Sediment Control, in-training status. I have also been certified by the North  
12 American Lake Management Society as a Certified Lake Manager.

13 **Q:** Have you testified before the Public Service Commission before?

14 **A:** Yes, I testified in Case numbers 11-T-0534, 13-T-0077, and 14-F-0490. I have also  
15 been an active participant in dozens of projects involving natural gas pipelines, and high  
16 voltage overhead electric transmission lines governed under Article VII of the NYS  
17 Public Service Law. On behalf of the Department, I have also been involved in the  
18 review of construction monitoring and restoration of nine commercial wind energy  
19 generation facilities in Western NY and the southern tier. I am also involved in the  
20 review of sixteen (16) other actively proposed wind energy projects, and sixteen (16)  
21 commercial solar electric generating facilities pursuant to Article 10 of the NYS Public  
22 Service Law.

23 **Exhibits Sponsored**

1   **Q:**     Are you sponsoring any exhibits?

2   **A:**     Yes.

3   **Q:**     Which exhibits are you sponsoring?

4   **A:**     I am sponsoring two exhibits, labeled for preliminary identification as exhibits DAM-1  
5             and DAM-2.

6   **Q:**     Please describe the first exhibit labeled DAM-1 for identification.

7   **A:**     The first exhibit is an Interrogatory/Document Request (IR) made by the Department on  
8             November 2, 2018 to the Applicant regarding the Golden Nematode Quarantine  
9             Restrictions. The applicant submitted responses to the request on November 12, 2018.  
10            According to the Applicant's response, there are no identified fields located in the Project  
11            Area that are subject to Golden Nematode quarantine restrictions.

12   **Q:**     Please describe the second exhibit labeled DAM-2 for identification.

13   **A:**     The second exhibit is a second Interrogatory/ Document Request (IR) made by the  
14             Department to the Applicant on November 8, 2018. This IR pertains to resource  
15             protection measures associated with the installation of the underground electrical  
16             collection system. The applicant submitted their response to the request on November  
17             19, 2018.

18                                   **Direct Testimony**

19  
20   **Q:**     What are your responsibilities in this proceeding?

21   **A:**     My responsibilities in this proceeding include reviewing the Article 10 Application and  
22             supporting pre-construction drawings and other documents submitted by the Applicant,  
23             Eight Point Wind, LLC during the phases of project review under Article 10. I visited

1 the proposed site of the project in the late winter/early spring of 2017 and attended the  
2 two public information meetings and Public Statement hearings held on October 17,  
3 2018. I also assisted in the preparation and review of two discovery requests (exhibits  
4 DAM-1 and DAM-2).

5 **Q:** What was the purpose of your review and evaluation in this proceeding?

6 **A:** To determine the nature and scope of potential impacts of the proposed project on  
7 agricultural land.

8 **Q.** What are the primary agricultural impacts associated with the construction of a  
9 commercial wind energy generation facility on agricultural lands?

10 **A.** The primary agricultural impact associated with the construction of a commercial wind  
11 energy generation facility is the permanent conversion of farmland to a non-agricultural  
12 use. This conversion is the result of the construction of access roads, the siting of wind  
13 turbines and, in some cases, the installation of overhead components of the electrical  
14 collection system. Construction and placement of pole structures for overhead electric  
15 collection and transmission lines in agricultural fields also constitutes a significant  
16 permanent impact to farm operations.

17 **Q.** How does the placement of structures impact the agricultural operation?

18 **A.** As dairy and cash crop farming operations become larger, the equipment used for  
19 planting and harvesting has become larger as to achieve efficiencies in crop production.  
20 Often, this equipment can include two pieces of harvesting or tillage equipment pulled by  
21 a tractor. As the size of the farming equipment has increased over the years, the turning  
22 radius for the equipment has also increased. The placement of pole structures and other

1 project related infrastructure in an agricultural field creates an obstacle which the farmer  
2 has to avoid during field cropping operations. Placement of utility structures and other  
3 project related infrastructure in agricultural fields can result in a loss of productive  
4 acreage as well as a decrease in field operation efficiency with the larger planting and  
5 harvesting equipment because of the increased turning radii required. Depending on the  
6 location, type and number of pole structures, guying wires at dead end structures and  
7 other project-related infrastructure such as junction boxes, access roads, turbine locations,  
8 crane pads and laydown areas, the loss of acreage available to farming, and the loss of  
9 farming efficiency can be significant.

10 **Q:** Have you reviewed the Applicant's proposed location for the proposed O&M building  
11 and laydown yard?

12 **A:** Yes. In the Spring of 2017 I observed the proposed location of the O&M building site.

13 **Q:** Please describe the suitability of this site for use as a temporary laydown yard and  
14 permanent O&M facility.

15 **A:** It is my opinion that the proposed site for the O&M facility on Town Line Road is an  
16 acceptable location to use for laydown and an O&M building.

17 **Q:** Please explain why?

18 **A:** The site is comprised mostly of Mardin and Oquaga soils. Although both are designated  
19 as Farmland of Statewide Importance, these soil types are constrained by a shallow  
20 depth to bedrock and a distinct drainage restrictive fragipan layer ranging from one to  
21 two feet below the ground surface. This field is likely a permanent grass hay field

1           because of the constraints described above. This is a preferred site compared to siting  
2           similar facilities on highly productive, well-drained rotation cropland.

3   **Q:**     Does the facility layout follow the Department's Guidelines for Agricultural Mitigation  
4           for Wind Power Projects?

5   **A:**     The layout and preliminary design of this project follows the Department's Guidelines for  
6           Agricultural Mitigation for Wind Power Projects with the exception of a few locations.

7   **Q:**     Are there underground collection lines you have concerns with regarding potential  
8           agricultural impacts?

9   **A:**     Yes.

10  **Q:**     Please describe the locations of underground collection line locations you have concerns  
11           about and what are your suggested changes and why?

12  **A:**     There is a section of Circuit 1A north of County Route 6, from T7 to T10 that crosses  
13           what appears to be a Christmas tree farm. The underground collection crosses the tree  
14           farm at Sta. 36+00 to Sta. 41+00. The Department, in its Construction Guidelines,  
15           recommends route avoidance for natural gas pipelines and other subsurface utility  
16           construction for all long-term agricultural crops. Therefore, the buried collection line  
17           should be routed around the tree farm located north of County Route 61. Similarly, this  
18           same type of routing occurs on Circuit 2A T12 to T11 at Sta. 4+00 to Sta. 8+00. The  
19           underground collection should be routed around the conifer plantation.

20  **Q:**     Are there any areas where underground collection could have an impact on engineered  
21           drainage features constructed on agricultural land?

1   **A:**     Yes. I have identified a diversion terrace along the underground collection at Circuit 2A  
2           T4 to T9 at approximately Sta. 34+50.

3   **Q:**     Please describe diversion terraces and indicate why they are relevant to this proceeding.

4   **A:**     Diversion terraces are engineered water management features intended to reduce soil  
5           loss, erosion and are intended to safely convey runoff from fields having steep slopes to a  
6           suitable outlet. They are grassed, berm-like structures typically installed along the  
7           contour of steep slopes. Diversion terraces are very common in this region of the State  
8           due to the hilly nature of the topography of the Allegheny Plateau. It is always best to  
9           completely avoid disturbance to diversion terraces because they can be very difficult to  
10          restore properly. The Department typically recommends that underground collection  
11          lines and natural gas pipelines be installed beneath diversion terraces via trenchless  
12          methods, or Horizontal Directional Drill (HDD). However, if diversion terraces are  
13          penetrated for the installation of underground collection, specialty repair techniques are  
14          required to restore these structures to retain the hydrologic integrity of the diversion. The  
15          Department has developed general specifications for diversion terrace crossing and repair  
16          which should be utilized during diversion terrace repair where applicable.

17   **Q:**     Are there other engineered water management features which are common within the  
18           Project Area?

19   **A:**     Yes, there is likely a substantial amount of subsurface drain tiles.

20   **Q:**     What are subsurface drain tiles and what are their relevance to farming?

**A:** In agriculture, tile drainage is a type of drainage system that removes excess water from soil below the surface. Too much subsurface water can be counterproductive to agriculture by preventing root development and inhibit the growth of crops. In addition, too much water can also limit access to the land, particularly by farm machinery, because vehicles and trailers tear up the wet ground and may become stuck due to overly saturated soil conditions. Field access matters because most modern agriculture depends on the use of large machinery—tractors and implements—to prepare the seedbed, plant the crop, carry out any cultivation and fertilizer/herbicide/pesticide applications during the growing season, and ultimately, to harvest the crop. Drain tiles allow access to fields earlier in the spring and remove excess “perched” groundwater which would otherwise inhibit crop growth and pose a soil rutting hazard. This region of the State is underlain by very dense, poorly drained glacial till soils. Drain tiles help to offset this condition by artificially draining fields which would otherwise be saturated and be in a much less workable condition. If drain tiles are severed via trenching during underground collection trenching and installation, they must be repaired immediately by a qualified agricultural drainage specialist in accordance with the Department’s drain tile repair illustration as contained in our Pipeline Right-of-Way Construction Guidelines. Due to nature of the soil types common in the project area and the known presence of subsurface drain tiles and “pattern-drain” systems present, we recommend that the Applicant develop a detailed Drain Tile Repair Plan specific to this Project and retain the services of a qualified agricultural drainage specialist during construction and site restoration.

**Q:** Are there any access roads you have concerns regarding potential agricultural impacts?

**A:** Yes, one.

1   **Q:**     Please describe the access road and turbine location you have a concern with and what is  
2             your suggested change and why?

3   **A:**     The access road leading to T13 should follow the field edge north of the proposed access  
4             road to avoid severing the northernmost portion of the field.  Moving the access road to  
5             follow the existing field edge would make it consistent with Department Guidelines.

6   **Q:**     Please describe the need for a designated, qualified, full time agricultural monitor and  
7             agricultural drainage specialists for projects of this nature.

8   **A:**     This project has the potential to impact a large amount of agricultural land.  This region  
9             of the southern tier of New York is comprised of highly glaciated soils having a very thin  
10            layer of topsoil, most of which is restricted by shallow depth to bedrock, or an apparent  
11            high water table due to the presence of fragipan restricted soils (Mardin and Volusia).  
12            These unique and complex soil characteristics will require the services of a qualified  
13            agricultural professional who has a degree or professional background in soil  
14            conservation, hydrology and/or agronomy.  I have been involved with similar wind  
15            projects where the Applicant's tried unsuccessfully to use terrestrial ecologists,  
16            transportation engineers or wetland consultants to serve in this role and in those cases,  
17            topsoil resource protection measures and agricultural restoration activities were  
18            significantly lacking.  They just don't have the same skillset needed to solve complex  
19            drainage issues in an agricultural setting.  For a project of this scale, you need the skillset  
20            of a full time, qualified agricultural monitor to assist the Project Environmental Monitor.

21   **Q:**     Did the Department prepare guidelines for Agricultural Mitigation for Wind Power  
22             Projects?

23   **A:**     Yes. They were updated in April of 2018.

1   **Q:**     What is the importance of these guidelines being followed by an applicant?

2   **A:**     It is important to follow the guidelines in order to reduce and/or eliminate impacts to  
3           agricultural lands to the fullest extent practicable. These guidelines were developed  
4           based upon the Department's experience with other utility-scale construction projects  
5           affecting farmlands. In order to reduce or eliminate adverse impacts to agricultural  
6           lands, the siting and routing of project infrastructure in relation to agricultural resources  
7           must be taken into account. In addition, soil resource protection measures during  
8           construction are outlined in the Department's Guidelines as are provisions for  
9           restoration and follow-up monitoring. Proper siting, soil resource protection during  
10          construction, agricultural restoration and follow-up monitoring are essential in order to  
11          reduce or eliminate project impacts on affected agricultural lands.

12   **Q:**     Does this conclude your testimony?

13   **A:**     Yes.

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

CASE 16-F-0062 - Application of Eight Point Winds LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Facility.

AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

STATE OF New York     )  
                              ) ss:  
COUNTY OF Monroe     )

I, Michael Saviola, being duly sworn, deposes and says:

1. I am employed as an Associate Environmental Analyst by the New York State Department of Agriculture & Markets, and I am appearing as a witness in this case on behalf of the Department of Agriculture & Markets.

2. I previously prepared, or supervised the preparation of, written testimony labeled Direct Testimony of Michael Saviola and exhibits labeled DAM-1 And DAM-2, which were filed under these case numbers with the Secretary of the New York State Board on Electric Generation Siting and the Environment on January 18, 2019.

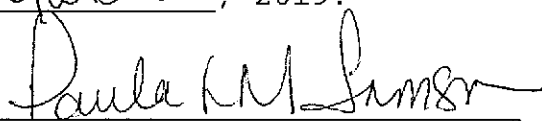
3. Upon review of these previously filed documents, I do not have any corrections that should be made to the previously filed testimony.

4. I hereby affirm that the testimony and exhibits identified above are true and correct to the best of my knowledge, information and belief. I affirm that the written

testimony is the same testimony I would give orally if I appeared in person at the hearing scheduled in these cases. I adopt that testimony as my sworn testimony in these proceedings.

  
Michael Saviola

Sworn to before me this 8<sup>th</sup> day of  
March, 2019.

  
Paula L. M. Samson

Notary information  
signature/stamp

PAULA L. M. SAMSON  
Notary Public, State of New York  
Monroe County - #01SA6034744  
Commission Expires 12/13/20 21

NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

CASE 16-F-0062 - Application of Eight Point Winds LLC for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Facility.

AFFIDAVIT AFFIRMING PREFILED EXHIBIT

STATE OF New York     )  
                              )   ss:  
COUNTY OF Albany     )

I, Tara B. Wells, being duly sworn, deposes and says:

1. I am employed as a senior attorney by the New York  
State Department of Agriculture and Markets.

2. I previously prepared a letter dated February 15, 2019  
submitted in response to Judge Mullany's request on or about  
January 25, 2019 with respect to concerns raised by the Lewis  
family regarding potential impacts on dairy farm operations.  
Said letter has been identified as Exhibit DAM-3.

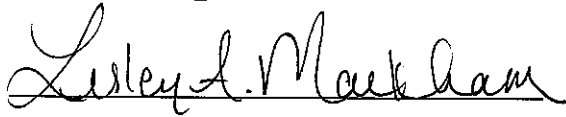
3. Upon review of the previously filed document, I do not  
have any corrections that should be made to the previously filed  
letter.

4. I hereby affirm that the exhibit identified above is  
true and correct to the best of my knowledge, information and  
belief. I affirm that the information contained within said

letter is the same today as it was on February 15, 2019 when the letter was drafted.

  
Tara B. Wells

Sworn to before me this 8<sup>th</sup> day of  
March, 2019.



Notary information  
signature/stamp

**LESLEY A. MARKHAM**  
Notary Public, State of New York  
Reg. No. 01MA4937109  
Qualified in Albany County  
Commission Expires July 11, 2022

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
0062  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-**

**PRE-FILED TESTIMONY OF:**

**DONALD LEWIS**

**1268 COUNTY ROUTE 84**

**REXVILLE, NY 14877**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1   **Q:    Please state your name and home address.**

2   A:    Donald Lewis, 1268 County Route 84, Rexville, NY, 14877. My home address is  
3       also my mailing address.

4   **Q:    Are you employed? If yes, by whom are you employed and in what**  
5       **capacity?**

6   A:    I am a dairy farmer and work at my residence.

7   **Q:    Please describe your educational background and identify any certifications**  
8       **you possess.**

9   A:    High school education. Lifelong dairy farmer.

10   **Q:    On whose behalf are you submitting this testimony?**

11   A:    I submit this testimony on behalf of myself, my wife, my son and daughters and  
12       my grandchildren. Also, on behalf of the affected public at large.

13   **Q:    Are you familiar with Eight Point Wind Project? And if so, how?**

14   A:    I reside within the project and will be gravely impacted by the turbines  
15       surrounding our homes and dairy barns.

16   **Q:    What is the purpose of your testimony?**

17   A:    The purpose of my testimony is to inform the Board of my concerns with the  
18       proposed project. My residence and dairy business will be impacted by this  
19       project.

20   **Q:    As part of your analysis what components did you review?**

21   A:    I reviewed the Shadow Flicker Report submitted by Eight Point Wind.

1   **Q:     Where is your home located in relation to the project?**

2   A:     I am receptor number 535. My son also resides within this project and he does  
3           not have a receptor number. His residence and our dairy barns are close to the  
4           turbine number 27.

5   **Q:     What impact, if any, will the project have on your residence?**

6   A:     We will have at least 3 turbines within ¼ mile of our property. More than half of  
7           our property will receive shadow flicker which is measured to a residence. As  
8           farmers, we spend most of our daylight hours outside. We will be affected more  
9           outside than in my home. This is shown in appendices 15-1. I am also concerned  
10          about the vibrations, pressures and noise that also are associated with wind  
11          turbines. With at least 10 turbines surrounding us and within close proximity to  
12          our residence, we will be negatively impacted.

13  **Q:     What impact, if any, will the project have on your dairy business?**

14  A:     As stated above, turbine #27 is located near our dairy barn. By our calculation it  
15          is between 1,000 to 1,100 feet from our dairy barn. His residence is  
16          approximately 1,200 feet from #27 turbine. His residence is not listed on the  
17          shadow flicker report submitted by Eight Point Wind project.

18  **Q:     To your knowledge does the Eight Point Wind Application identify or  
19          respond to your concerns as required by 16 NYCRR 1001.2(c)?**

20  A:     No. Myself, my wife and son spoke on 10/17/18 to voice our concerns of the  
21          impact of the turbines on our residence and our dairy business. We have also  
22          posted our concerns on the DPS website. I did host a meeting with concerned  
23          residents and Eight Point Wind representative David Gill and Ty Baccite. As a

1 group, we voiced our concerns of the negative impact of turbines in reference to  
2 noise, tremors, pressure, dairy business, residence, wetlands and wildlife impact.  
3 Our request was that they set back turbines from our property lines to provide  
4 some relief from the concerns listed above. They stated that there was not much  
5 room for error and the setbacks would not occur. To date, Eight Point Wind has  
6 not contacted us nor have they offered any compensation in order to  
7 accommodate us. The feasibility of this project depends on the use of our  
8 property for shadow and noise impact for which we have not been offered  
9 compensation nor given permission which I think is a trespass on property rights.

10 **Q: Are you a member of any organization to raise awareness of turbines impact**  
11 **in rural areas?**

12 A: Yes, I am a member of the not for profit organization called Citizens for  
13 Maintaining Our Rural Environment (CMORE).

14 **Q: Does this conclude your testimony?**

15 A. Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**DOUGLAS PICKERING  
967 COUNTY ROUTE 84  
REXVILLE, NY 14877**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT  
P.O. BOX 102  
CANISTEO, NY 14823**

1    **Q:     Please state your name and home address.**

2    A:     Douglas Pickering, 967 County Route 84, Rexville, NY, 14877. My home  
3           address is also my mailing address.

4    **Q:     Are you employed? If yes, by whom are you employed and in what**  
5           **capacity?**

6    A:     I am employed by MacKnight's Agway as a mill worker and forklift operator.  
7           Also, I am a farmer at my home residence. I raise cattle, chickens, pigs and goats.

8    **Q:     Please describe your educational background.**

9    A:     High school education.

10   **Q:     On whose behalf are you submitting this testimony?**

11   A:     I submit this testimony on behalf of myself, my wife, my daughter and my  
12           grandchildren..

13   **Q:     Are you familiar with Eight Point Wind Project? If so, how?**

14   A:     I reside within the project and will be gravely impacted by the turbines  
15           surrounding our homes and agricultural barns.

16   **Q:     What is the purpose of your testimony?**

17   A:     The purpose of my testimony is to inform the Board of my concerns with the  
18           proposed project. My residence and agriculture business will be impacted by this  
19           project.

20   **Q:     As part of your analysis what components did you review?**

21   A:     I reviewed the Shadow Flicker Report submitted by Eight Point Wind.

22   **Q:     Where is your home located in relation to the project?**

1 A: I am receptor number 512. My residence and barns are between turbines 24 and  
2 25.

3 **Q: What impact, if any, will the project have on your residence?**

4 A: We will have at least 3 turbines within ¼ mile of our property. More than ½ of  
5 our property will receive shadow flicker which is measured to a residence. As  
6 farmers, we spend most of our daylight hours outside. We will be affected more  
7 outside than in my home. This is shown in appendices 15-1. I am also concerned  
8 about the vibrations, pressures and noise that is also are associated with wind  
9 turbines. With at least 8 turbines surrounding us and within close proximity to  
10 our residence, we will be negatively and greatly impacted.

11 **Q: What impact, if any, will the project have on your agricultural business?**

12 A: As stated above, turbine #24 is located near our cattle barn and pasture. By our  
13 calculation it is between 1,100-1,200 feet from our cattle barn.

14 **Q: To your knowledge does the Eight Point Wind Application identify or  
15 respond to your concerns as required by 16 NYCRR 1001.2(c)?**

16 A: To date, Eight Point Wind has not contacted us nor have they offered any  
17 compensation in order to accommodate us. The feasibility of this project depends  
18 on the use of our property for shadow and noise impact for which we have not  
19 been offered compensation nor given permission which is trespass of property  
20 rights.

21 **Q: Are you a member of any organization to raise awareness of turbines impact  
22 in rural areas?**

Case No. 16-F-0062

DOUGLAS PICKERING

1     A:     Yes, I am a member of the not for profit organization called Citizens for  
2            Maintaining Our Rural Environment (CMORE).

3     **Q:     Does this conclude your testimony?**

4     A. Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**JULIA LEWIS**

**1268 COUNTY ROUTE 84**

**REXVILLE, NY 14877**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1    **Q:     Please state your name and home address.**

2    A:     Julia Lewis, 1268 County Route 84, Rexville, NY, 14877. My home address is also my  
3           mailing address.

4    **Q:     Are you employed? If yes, by whom are you employed and in what capacity?**

5    A:     I am a Pharmacist and work at the VA, Bath, NY.

6    **Q:     Please describe your educational background and identify any certifications you  
7           possess.**

8    A:     NYS licensed teacher (biology). Master's in Health Education. PharmD/Doctor of  
9           Pharmacy.

10   **Q:     On whose behalf are you submitting this testimony?**

11   A:     I submit this testimony on behalf of myself, my husband, my son and daughters and my  
12           grandchildren. Also, on behalf of the affected public at large.

13   **Q:     Are you familiar with Eight Point Wind Project? If so, how?**

14   A:     I reside within the project and will be gravely impacted by the turbines surrounding our  
15           homes and dairy barns.

16   **Q:     What is the purpose of your testimony?**

17   A:     The purpose of my testimony is to inform the Board of my concerns with the proposed  
18           project. My residence and dairy business will be impacted by this project.

19   **Q:     As part of your analysis what components did you review?**

20   A:     I reviewed the Shadow Flicker Report submitted by Eight Point Wind.

21   **Q:     Where is your home located in relation to the project?**

1 A: I am receptor number 535. My son also resides within this project and he does not have a  
2 receptor number. His residence and our dairy barns are close to the turbine number 27.

3 **Q: What impact, if any, will the project have on your residence?**

4 A: We will have at least 3 turbines within ¼ mile of our property. More than half of our  
5 property will receive shadow flicker which is measured to a residence. As a family of  
6 farmers, my family spends most our daylight hours outside. We will be affected more  
7 outside than in my home. This is shown in appendices 15-1. I am also concerned about  
8 the vibrations, pressures and noise that also are associated with wind turbines. With at  
9 least 10 turbines surrounding us and within close proximity to our residence, we will be  
10 negatively impacted.

11 **Q: What impact, if any, will the project have on your dairy business?**

12 A: As stated above, turbine #27 is located near our dairy barn. By our calculation it is  
13 between 1,000 to 1,100 feet from our dairy barn. My son's residence is approximately  
14 1,200 feet from #27 turbine. My son's residence is not listed on the shadow flicker report  
15 submitted by Eight Point Wind project.

16 **Q: To your knowledge does the Eight Point Wind Application identify or respond to**  
17 **your concerns as required by 16 NYCRR 1001.2(c)?**

18 A: Myself, my husband and son spoke on 10/17/18 to voice our concerns of the impact of  
19 the turbines on our residence and our dairy business. We have also posted our concerns  
20 on the DPS website. I did host a meeting with concerned residents and Eight Point Wind  
21 representative David Gill and Ty Baccite. As a group, we voiced our concerns of the  
22 negative impact of turbines in reference to noise, tremors, pressure, dairy business,  
23 residence, wetlands and wildlife impact. Our request was that they set back turbines from

1           our property lines to provide some relief from the concerns listed above. They stated that  
2           there was not much room for error and the setbacks would not occur. To date, Eight Point  
3           Wind has not contacted us nor have they offered any compensation in order to  
4           accommodate us. The feasibility of this project depends on the use of our property for  
5           shadow and noise impact for which we have not been offered compensation nor given  
6           permission which is trespass of property rights.

7   **Q:    Are you a member of any organization to raise awareness of turbines impact in**  
8           **rural areas?**

9   A:    Yes, I am a member of the not for profit organization called Citizens for Maintaining Our  
10       Rural Environment (CMORE).

11   **Q:    Does this conclude your testimony?**

12   A.    Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**KARL SCHNEIDER**

**1611 KEENAN ROAD**

**REXVILLE, NY 14877**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1   **Q:     Please state your name and home address.**

2   A:     Karl Schneider, 1611 Keenan Road, Rexville, NY, 14877. My home address is also my  
3           mailing address.

4   **Q:     Are you employed? If yes, by whom are you employed and in what capacity?**

5   A:     Yes, I am self-employed. I have had a business and a small farm located at the above  
6           address since 1982.

7   **Q:     Please describe your educational background.**

8   A:     I earned a Bachelor of Arts Degree (with Honors) from Monmouth University in Long  
9           Branch, New Jersey, in 1975.

10  **Q:     In what ways have you shown concern for and been involved in your community?**

11  A:     I have been New York certified as a first responder. I have been a fire fighter, fire chief,  
12           and vice-president of the West Union Fire Company. In addition, I have served as a Red  
13           Cross Disaster Volunteer.

14  **Q:     Why did you move to West Union, NY in 1982?**

15  A:     My primary reasons for choosing it as the site of my home and business are the beautiful  
16           tree-topped hills, the peace and quiet, the dark skies at night, and the great abundance of  
17           wildlife with frequent visits of bald eagles to my pond.

18  **Q:     What are your concerns regarding the proposed turbines?**

19  A:     My primary concerns are regarding turbines #16, #17, and #18. All three of these turbines  
20           would bathe my home and property with red flashing lights at night, wiping out the dark  
21           skies and disrupting sleep. Turbine #16 would visually impact my home and property.  
22           Since it would be situated atop a 100-foot tall hill, its effective height would be

1 approximately 700 feet, severely overshadowing them. In addition to visual impact, I'm  
2 concerned about tremors, vibrations, and noise. At an open house meeting at Canisteo  
3 Elementary School hosted by Eight Point Wind on June 29, 2016, I asked one of their  
4 engineers whether these turbines create tremors and noise. He told me that there have  
5 been no studies on land turbines of that height (600 feet). Therefore, tremors and noise –  
6 especially those possibly created by Turbine #16, since it is so near my home, are of  
7 grave concern. Also, #16 seems to be situated on a geological survey marker. Turbine  
8 #17, to be located to my east, would visually impact the view out my living room  
9 window. I am also concerned with flicker. Flicker would occur every day the turbine  
10 turns, exceeding the legal limit. Turbine #18, located to my home's southwest, would  
11 also cause visual impact to my kitchen and deck, as well as creating flicker.

12 **Q: What concerns do you have about the effect of the proposed turbines on your**  
13 **drinking water?**

14 A: At the meeting at the Canisteo Elementary on 6/29/16 (referred to in lines 24-27 above), I  
15 expressed concern about the artesian spring on my property that is the source of my  
16 drinking water. The company's engineer told me that the concrete piers would be no  
17 deeper than twenty feet; however, the attached exhibit, a schematic of the concrete pier,  
18 reveals that the actual depth is thirty-four feet. My concern is that Turbine #16's pier will  
19 disrupt the source of the artesian spring, destroying my water resources.

20 **Q: What further concerns do you have about the proposed turbine project?**

21 A: The effects of the proposed turbines mentioned above are such that, without my  
22 permission or any compensation, they would constitute trespass of visual effects, noise,  
23 tremors, light pollution, and flicker.

Case No. 16-F-0062

KARL SCHNEIDER

1    **Q:**     **Does this conclude your testimony?**

2        A.  Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**MARK T. BAUMAN**

**565 SAUNDERS ROAD**

**REXVILLE, NY 14877**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1    **Q:     Please state your name and home address.**

2    A:     Mark T. Bauman, 565 Saunders Road, Rexville, NY, 14877. My home address is also  
3           my mailing address.

4    **Q:     Are you employed? If yes, by whom are you employed and in what capacity?**

5    A:     I am self employed DBA Bauman Plumbing & Heating.

6    **Q:     Please describe your educational background and identify any certifications you  
7           possess.**

8    A:     High school education; Plumbing Apprenticeship; Master Plumber.

9    **Q:     On whose behalf are you submitting this testimony?**

10   A:     I submit this testimony on behalf of myself, my wife, my son, daughter, and my  
11          grandchildren. Also, any affected neighbors.

12   **Q:     Are you familiar with Eight Point Wind Project? If so, how?**

13   A:     My wife and I reside within the project and we will undoubtedly be impacted by the wind  
14          turbines surrounding our home and property.

15   **Q:     What is the purpose of your testimony?**

16   A:     The purpose of my testimony is to inform the Board of my concerns with the proposed  
17          wind project. My home and property that I worked and paid for will be negatively  
18          impacted by this project.

19   **Q:     As part of your analysis what components did you review?**

20   A:     I reviewed the Shadow Flicker Report submitted by Eight Point Wind.

21   **Q:     Where is your home located in relation to the Eight Point Wind Project?**

1 A: My home, business shop, and property are located at 565 Saunders Road, Rexville, NY  
2 14877. A receptor number was not assigned to our residence. This fact is very disturbing,  
3 considering the Shadow Flicker Report was based on the receptors assigned to  
4 residences.

5 **Q: What impact, if any, will the project have on your residence?**

6 A: Shadow flicker from Turbine #28 will affect us at our home. The vibration, noise, lights,  
7 and overall intrusion of surrounding turbines (10+) are a great concern to us. We are  
8 concerned with the overall impact on our neighborhood.

9 **Q: Are you a member of any organization to raise awareness of the impact of turbines**  
10 **in rural areas?**

11 A: Yes, I have attended meetings of Citizens for Maintaining Our Rural Environment  
12 (CMORE).

13 **Q: Does this conclude your testimony?**

14 A. Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**MICHAEL LAWRENCE ASLA**

**MICHAEL LAWRENCE AND ASSOCIATES PLC**

**8 LINDEN LANE**

**ESSEX JUNCTION, VT 05452**

1    **Q:     Please state your name and business address.**

2    A:     My name is Michael Charles Lawrence. My business is Michael Lawrence  
3           and Associates PLC. The business address is 8 Linden Lane, Essex  
4           Junction, Vermont 05452.

5  
6    **Q:     Who is your current employer and what position do you hold?**

7    A:     I am the owner and Principal Consultant of Michael Lawrence and  
8           Associates.

9  
10   **Q:     On whose behalf is your testimony being offered?**

11   A:     I am working for Citizens for Maintaining Our Rural Environment, Inc.  
12           ("CMORE").

13  
14   **Q:     What is the purpose of your testimony?**

15   A:     I was asked to review all testimony and Application documents relevant  
16           to the Visual Impact Assessment ("VIA") studies conducted by the  
17           Applicant, NextEra Energy Resources for its Eight Point Wind Energy  
18           Center and provide oral and written testimony on those materials.

19

1   **Q:     What are your background and qualifications?**

2   A:     I've been a landscape architect dealing with issues of aesthetics for the  
3           past forty-five years working on projects throughout the Northeast. I am  
4           enclosing my resume, Exhibit ML-1, which provides a list of projects that  
5           I've worked on over the years. I've provided written and oral testimony in  
6           the following cases:

7  
8           Frank J. Mercede and NJM Realty – Newfane, Vermont - Vermont Act  
9           250 District Board #4C0757-23B;

10  
11          Apple Hill Solar LLC – Bennington, Vermont - Vermont Public Utility  
12          Commission Certificate of Public Good No. 8454;

13  
14          Vermont Green Line Converter Station – New Haven, Vermont - Vermont  
15          Public Utility Commission Docket #8847;

16  
17          VTel Wireless – Calais, Vermont - Vermont Public Utility Commission  
18          Docket #8535;

19  
20          Denecker Car Dealership – Ferrisburgh, Vermont - Vermont Act 250  
21          District Board #9A0277-3;

1 SB Collins Interstate Service Facility – St. Albans, Vermont - Vermont  
2 Act 250 District Board #6F0243-10;  
3  
4 Orchard Road Solar Project – Middletown Springs, Vermont - Vermont  
5 Public Utility Commission Docket #16-0042-NMP;  
6  
7 Saddleback Ridge Wind Turbine Project – Carthage, Canton and Dixfield,  
8 Maine - Maine Department of Environmental Protection #L-25137-24-H-  
9 N;  
10  
11 Bowers Wind Project – Carroll Plantation and Kossuth Township, Maine -  
12 Maine Land Use Regulatory Commission #L-25800-24-A-N/#L-25800-  
13 TE-B-N/#L-25800-IW-C-N;  
14  
15 SunCommon Solar Project – Addison, Vermont - Vermont Public Utility  
16 Commission Docket #NM-6841;  
17  
18 Next Generation Solar Project – New Haven, Vermont - Vermont Public  
19 Utility Commission Docket #8523;  
20

1 SunCommon Solar Project – New Haven, Vermont - Vermont Public  
2 Utility Commission Docket #NM-6199;  
3  
4 Vermont All Sun Solar Project – Charlotte, Vermont - Vermont Public  
5 Utility Commission Docket #NMP-6314;  
6  
7 Vermont National Country Club - Vermont Environmental Court Docket  
8 #69-3-02;  
9  
10 Dairy Air Wind Project - Vermont Public Utility Commission Docket  
11 #8887;  
12  
13 Charlotte Solar Farm – Charlotte, Vermont - Vermont Public Service  
14 Board;  
15  
16 Walmart Bennington, Vermont - Vermont Act 250 District Commission  
17 #8B0079-10; Walmart St. Albans, Vermont - Vermont Act 250 District  
18 Commission #6F0583R-3-EB;  
19  
20 Walmart Newport, Vermont - Vermont Act 250 District Commission  
21 #7R0615-5;

1 Acorn Solar Project – Shoreham, Vermont - Vermont Public Utility

2 Commission Docket #17-4049; and

3

4 Eversource Energy – Seacoast Reliability Project - New Hampshire Site

5 Evaluation Committee Docket #2015-04.

6

7 **Q: Have you participated in proceedings in the State of New York**

8 **before?**

9 A: No.

10

11 **Q: Have your opinions been accepted by judiciatories familiar with the**  
12 **issues of aesthetics and the visual impacts of large energy projects on**  
13 **the landscape?**

14 A: Yes. I have testified in jurisdictions in Maine, New Hampshire and  
15 Vermont. In each of those jurisdictions opposing parties attempted to  
16 challenge my qualifications. I was never disqualified.

17

18 **Q: Have you been qualified in any case to provide testimony on wind**  
19 **turbine aesthetics and their visual impact on the landscape?**

20 A: Yes, in two cases in Maine and one in Vermont: Saddleback Ridge Wind  
21 Turbine Project – Carthage, Canton and Dixfield, Maine - Maine

1 Department of Environmental Protection #L-25137-24-H-N; Bowers  
2 Wind Project – Carroll Plantation and Kossuth Township, Maine - Maine  
3 Land Use Regulatory Commission #L-25800-24-A-N/#L-25800-TE-B-  
4 N/#L-25800-IW-C-N; and Dairy Air Wind – Holland, Vermont - Vermont  
5 Public Utility Commission Docket #8887.  
6

7 **Q: What material did you consult prior to this review?**

8 A: I consulted the reports entitled Next Era Energy - Eight Point Wind  
9 Energy Center – Case No. 16-F0062 - 1001.44 - Exhibit 24 - Visual  
10 Impacts, and the Next Era Energy Visual Impact Assessment - Eight Point  
11 Wind Energy Center – Towns of Greenwood and West Union – Steuben  
12 County, New York prepared by NextEra Energy Resources, Inc. and TRC  
13 Environmental Corporation (“TRC”) dated November 2017. The reports  
14 cited engineering plans, visibility maps, photo simulations and visual  
15 rating forms which I also reviewed.  
16

17 **Q: Did you visit the site of the proposed project?**

18 A: Yes, I visited the site on December 9<sup>th</sup> and 10<sup>th</sup>, 2018 in part to check the  
19 accuracy of the statements in the Next Era Energy reports.  
20

1   **Q:     Do you have any comments on the project after visiting the proposed**  
2           **project site?**

3   A:     Yes, I recorded my observations and combined them with a series of  
4           photographs and photo simulations depicting what the project will look  
5           like at the places where I took the photos and put them in a report. My full  
6           report is included as Exhibit ML-2.

7  
8   **Q:     Did you find any deficiencies in the Next Era Energy's Visual Impact**  
9           **Assessment ("VIA")?**

10  A:     Yes. In my professional opinion the VIA prepared for Next Era by the  
11           TRC Corporation ("TRC") does not accurately present the visual impact  
12           of the project as required by 16 NYCRR §1001.24.

13  
14  **Q:     Please describe the deficiencies you have identified in the Applicant's**  
15           **VIA.**

16  A:     My concerns can be broadly grouped into two categories:  
17           First, in my professional opinion, Next Era Energy's Visual Impact  
18           Analysis (TRA VIA Report) lacks information necessary to properly  
19           evaluate aesthetic impact. Their photographs and photo simulations are  
20           incomplete thus the report fails to provide an adequate and comprehensive  
21           description of the area's scenic character and beauty. As a result, the three-

1 person panel described in the Visual Impact Analysis evaluating the  
2 photographic images lacked the proper materials to come to realistic  
3 conclusions regarding the project's overall aesthetic impact on the  
4 landscape. I came to this conclusion after preparing additional exhibits to  
5 this testimony that show what the project will look like from many  
6 locations near the proposed project. The pictures I took differ from the  
7 pictures presented in the Applicant's VIA because my pictures  
8 demonstrate that the scale of the project elements will negatively  
9 transform most of the area's rural, bucolic character from almost all of its  
10 most scenic, open places.

11

12 The second broad concern I have is that the Applicant's VIA and the  
13 Application fail to set forth any plan for mitigating the major aesthetic  
14 impact Eight Point Wind will create. The project's fundamental problem is  
15 its structural elements are grossly out-of-scale with the natural and built  
16 elements in the existing rural environment. The large elements need to be  
17 mitigated so that the project does not spoil the pastoral sense of the  
18 environment. Major mitigation is necessary if non-participating observers  
19 such as CMORE members and tourists are ever to have the feeling that the  
20 project "fits" within in the existing rural context. While the Next Era

1 Energy Visual Impact Analysis describes thirteen mitigation measures,  
2 none address this issue.

3

4 **Q: What specific concerns do you have about the way TRC conducted its**  
5 **VIA for the Applicant?**

6 A: TRC's VIA communicates the quantitative side of the existing landscape  
7 and proposed project (i.e. how much is seen) in maps, percentages and  
8 charts, but fails to provide adequate information for a person unfamiliar  
9 with the area in Steuben County to fully understand the qualitative impact of  
10 the project (i.e. what the project will look like in the context of this  
11 particular landscape).

12

13 In order to describe EPW's appearance the TRC VIA provides eighteen  
14 photographs of the existing landscapes with corresponding photomontage  
15 or photo simulation images depicting the project. In order to predict how  
16 people will respond or react to the project, the TRC Report describes (on  
17 page 55) selecting three people (panelists) who study the before-after  
18 images and fill out a two-part rating form consisting of: 1. Nine Visual  
19 Elements; and 2. Eight Sensitivities. The photo viewpoints are described  
20 on pages 45-55 and the ratings are reported, averaged and compared on  
21 pages 56-58.

1           Of the eighteen viewpoint before and after photo simulations, five do not  
2           depict wind turbines but instead other facets of the project (e.g.  
3           transmission lines, electrical substations); and in several images viewers  
4           are not made aware that additional wind turbines are visible in the  
5           immediate vicinity (such as beside or behind the viewer). In addition,  
6           almost all photos are taken under gray skies.

7  
8           In my professional opinion, the eighteen images provided in the  
9           Applicant's VIA do not provide a representative sample of the beauty and  
10          variety of the landscape, especially the landscape most immediate (within  
11          one mile) to the project. The images in the Applicant's VIA are therefore  
12          insufficient to understand and evaluate its visual impact. The panelists  
13          reviewed only these eighteen images that the TRC report used to make  
14          conclusions regarding visual impact. It follows the findings of the  
15          Applicant's VIA are fundamentally flawed because they are based on  
16          insufficient data.

17  
18       **Q:     What is the basis of your conclusion that the eighteen images relied**  
19       **up by TRC do not provide a representative sample of the beauty and**  
20       **variety of the landscape?**

1     A:     To verify information presented in the TRC VIA Report, I traveled to the  
2           project site on Sunday, December 9<sup>th</sup> (sunny) and Monday, December 10<sup>th</sup>  
3           (cloudy). During my visit I observed many beautiful places, including a  
4           rolling landscape with a mix of wooded parcels, open meadows, pastures  
5           and croplands. The roads in the project area offer a wide variety of views  
6           and panoramic vistas in all three distance zones: Foreground (0-1/2 mile),  
7           Middleground (1/2 to 4 miles); and Background (4-10 miles).

8  
9           During my visit I photographed 96 places, 41 of which are included in my  
10          report (Exhibit ML-02). The locations I visited were based on TRC's  
11          Blade Tip Viewshed Analysis with Trees and Visual Resources. I visited  
12          areas the TRC report indicated to have potential project visibility. Most  
13          locations I visited lie within one mile of at least one proposed wind  
14          turbine. Based on my visit to the project site I drafted the report attached  
15          as Exhibit ML-02 to this testimony.

16  
17          The report in Exhibit ML-02 is part of my testimony and presents my  
18          comprehensive professional opinion concerning the likely visual impact of  
19          the Eight Point Wind Project. I personally verify the truth and accuracy of  
20          the information and conclusions contained in Exhibit ML-02. I further  
21          believe my report is an essential contribution to the record in this

1 proceeding. My report contains information that the Siting Board needs in  
2 order to make an informed decision about the visual impact of Eight Point  
3 Wind.

4

5 **Q: Do the findings in your report differ from the findings in the**  
6 **Applicant's VIA?**

7 A: Yes. After I prepared my photographic exhibits, I revisited the TRC VIA  
8 Report's Visual Impact Rating results (page 55-58) to better understand  
9 how they came to the conclusion that the project will not result or  
10 contribute to a significant and adverse disproportionate (aesthetic)  
11 environmental impact in this corner of Steuben County.

12

13 **Q: Why, in your professional opinion, did TRC come to a different**  
14 **conclusion about the visual impact of the NTW project?**

15 A: TRC's conclusion is based on a three-panel jury that reviewed and scored  
16 each photo simulation prepared by TRC under two major categories:

17

18 1. Visual Contrast - panelists judge nine individual factors that contribute  
19 to the project standing in visual contrast with the landscape presented from  
20 that viewpoint in that photo simulation.

21

1           2. Viewpoint Sensitivity - the panelists score eight factors that describe  
2           whether the viewpoint location and/or places in the view are listed on a  
3           visual resource register, whether few or lots of people visit, whether they  
4           view for a short or long time, whether the view is in a developed or  
5           undeveloped setting, whether it is a view that is similar to the region and  
6           whether water is present.

7  
8           In the TRC report, Panelists assigned a 0-3 (by half-points) score (range of  
9           7) to each of the nine factors in Category One, and the eight factors in  
10          Category Two. Factors were equally rated (low scores indicate that the  
11          project does not impact the beauty of the area, high scores indicate a  
12          strong negative impact).

13  
14          Critically, in my professional opinion, these categories should not carry  
15          equal weight. For instance; under the “1. Visual Contrast” heading,  
16          “*Project Scale/Spatial Dominance*” and “*Broken Horizon Line*” should  
17          carry more weight than “*Texture Contrast*”. And under “2. Viewpoint  
18          Sensitivity”, the factor “*Uniqueness of the Landscape Compared to the*  
19          *Region*” is given too much weight because it devalues beautiful places in  
20          Southwestern Steuben County simply because they are in the midst of  
21          similar beautiful places.

1 As noted earlier panelists rated individual photo simulations of views  
2 taken from eighteen places that were numbered VP1, 3, 5, 6, 8, 9, 10, 12,  
3 13, 14, 15, 17, 18, 19, 20, 22, 24, and 25 respectively.

4  
5 Of the eighteen, VP's 1, 6, 18, 24 and 25 (28% of viewpoints) do not even  
6 show wind turbines (VP6 shows turbine blades beyond the substation –  
7 however, the substation is the focus of the image), and are therefore  
8 irrelevant to the project's single largest source of visual impact.

9  
10 Most of the thirteen remaining images are deficient because they juxtapose  
11 the wind turbines against grey sky, which limits the visual contrast and  
12 impact.

13

14 **Q: Please describe any concerns you have about the 13 viewpoints**  
15 **analyzed by TRC and that include wind turbines.**

16 A: I studied each of the viewpoints presented by TRC and have the following  
17 concerns:

18 -VP3 County Road 61-Greenwood—TRC states that the distance to the  
19 project is 1.1 miles. However, left of the road in the image and outside the  
20 bounds of the photo, project turbine #2 is 0.9 mi. away. Judging and rating

1           this individual image ignores the reality that additional, closer turbines  
2           would be readily visible to an observer.

3  
4           -VP5 County Road 61-Greenwood—TRC says that the distance to the  
5           project is 1.2 miles. There is a 15-20 ft. tall evergreen plantation on the  
6           right of Rt 61 at this viewpoint that is screening additional, closer turbines.  
7           A few hundred feet down the road to the east, the wind turbines are visible  
8           on the right, the closest 0.4 mi. away.

9  
10          -VP8 Cemetery Hill Road - West Union—TRC focuses on a single wind  
11          turbine visible at 0.58 mi. But TRC's VIA does not communicate that a  
12          viewer turning left 90 degrees will see three additional wind turbines at  
13          0.54 mi., 0.9 mi., and 1.3 mi. Turning another 90 degrees brings at least  
14          four more wind turbines into view at distances ranging from 1-2 mi.

15  
16          -VP9 Cemetery Hill Road-West Union (Rexville) - In the Visual  
17          Sensitivity Rating, this scene receives the lowest score—zero from all  
18          panelists under the first three factors; *a. Within a Visual Resource, b. View*  
19          *of Other Visual Resource with Project and c. A Listed/Known Scenic*  
20          *Resource of Visual Quality.* This attractive distant hillside view with a few  
21          houses and barns across a small pond and wetland is in the crossroads

1 village of Rexville. Clearly, the wind turbine on the hilltop visually  
2 framed by the closer hills supersedes the natural beauty of the pond and  
3 becomes a focal point that dominates the scene. The scoring system has no  
4 way of accommodating the value of this modest, yet beautiful view to  
5 village residents.

6  
7 -VP10 County Road 60-West Union—Comparing this image with the  
8 View 22-A, 22-B and 22-C in my attached report (Exhibit ML-02)  
9 illustrates the inability of a 50mm lens to capture the wider beauty of the  
10 panorama actually visible. Knowledge beyond what the VP10 50mm lens  
11 photo simulation communicates is necessary to make reasonable aesthetic  
12 judgements and score the project's visual impact from this viewpoint.  
13 Different lighting conditions in the two sets of photos helps illustrate the  
14 striking effect atmosphere and time of day have on the view. In my  
15 professional opinion, the three panelists who scored VP10 lacked adequate  
16 information to give accurate assessments.

17  
18 -VP12 Lewis Road-West Union—The TRC VIA Report states that the  
19 nearest wind turbine is 0.81 mi. This is yet another example where an  
20 additional wind turbine is visible to the right, off the image at a distance of

1        0.9 mi. VP12 corresponds with View 33 in my report ML-02 which  
2        includes a panoramic view as well as additional wind turbines surrounding  
3        the viewpoint on three sides. Panelists evaluating the project's visual  
4        impact at this location need to be aware that the photo simulation they are  
5        looking at represents one of the five wind turbines that are visible within a  
6        mile of the viewpoint. It is unreasonable to evaluate the aesthetic impact  
7        of the project based on only one of the five visible turbines.

8  
9        -VP13 County Road 63-Jasper—The nearest wind turbines from this  
10       location are 4.4 mi. away, and difficult to discern before the gray, cloudy  
11       background. The wind turbines in this image follow the skyline against a  
12       long horizontal ridgeline. TRC VIA Report should have provided  
13       additional landscape images to the panelists showing the turbines in clear  
14       weather/sunrise/sunset. This additional information is reasonable and  
15       essential to make a fair judgment about the project's overall visual impact  
16       on the ridgeline.

17  
18       -VP14 Marsh Hill Wind Farm-Jasper—This viewpoint image's location is  
19       in the midst of a series of existing wind turbines 10 miles away from the  
20       Eight Point Project. The photo simulation illustrates how wind turbines in  
21       Distance Zones 1 and 2 dominate the view, drawing viewers' attention to

1 themselves, thus diverting it from the background (Distance Zone 3). The  
2 background here is an attractive natural vista of low rolling hills, sky and  
3 ridgelines, a wonderful vantage point to enjoy sunsets. The image  
4 represents a gray, cloudy day. The TRC VIA Report needed to include  
5 another image showing a clear atmosphere to help its Panelists understand  
6 the project's potential range of visual impacts from VP14.

7  
8 -VP15 Junction Route 248 and Route 417-Greenwood—This simulation is  
9 from nearby View-02 in my report (about 0.75 mi. north of VP15).  
10 Comparing them illustrates how beauty or lack of it in the fore and  
11 middleground (Distance Zones 1 & 2) either enhances or detracts from  
12 beauty in the background (Distance Zone 3) view.

13  
14 -VP17 Route 248, Marsh Creek-West Union—The image shows one wind  
15 turbine. However, an additional wind turbine about 1500 ft away is just  
16 outside the bounds of the photo.

17  
18 -VP19 Town Line Road-Greenwood/West Union—The TRC VIA Report  
19 Panelists gave this view of three wind turbines (the nearest at a distance of  
20 1.0 mi.) a score of mostly 3's (highest degree of negative visual impact).  
21 These scores illustrate why limiting the reviewers to one 50mm photo

1 simulation image that doesn't show nearby wind turbines might yield  
2 inappropriate ratings. Had the Panelists been aware of additional visible  
3 turbines at some of the other viewpoints, it is likely that those viewpoints  
4 would have received higher negative ratings.

5  
6 -VP20 County Road 22-Andover—This is another example of a photo  
7 simulation rendered over an image with a gray sky. An additional  
8 illustration with different atmospheric and lighting conditions would help  
9 panelists and anyone else attempting to evaluate before-after aesthetics be  
10 cognizant of the difference this factor makes in the project's vertical  
11 projection above and incongruence with the strong horizontal ridgeline.

12  
13 -VP22 County Road 22A-Independence— This is another example of a  
14 photo simulation rendered over an image with a gray sky. An additional  
15 illustration with different atmospheric and lighting conditions would help  
16 panelists and anyone else attempting to evaluate before-after aesthetics be  
17 cognizant of the difference this factor makes in the project's vertical  
18 projection into the sky (skyline), breaking the strong horizontal treetop  
19 line.

20

1   **Q:   Based on your above analysis of the Applicant’s viewpoint selection,**  
2           **what do you conclude about the accuracy of the Applicant’s VIA?**

3   A:   For the reasons described at length above and in my full report (Exhibit  
4           ML-02), I believe the TRC VIA Report dramatically understates the  
5           negative visual impact the project is likely to produce. The analysis  
6           included in my report shows the visual impact is significant, and that  
7           mitigation of the impact is likely to be difficult or impossible.

8  
9   **Q:   Has the Applicant and TRC proposed mitigating measures sufficient**  
10       **to mitigate or avoid the visual impact of the proposed project?**

11 A:   No. The TRC report admits that while it is difficult to mitigate the visual  
12       impact of wind turbines, it argues “careful siting” during the site design  
13       and layout process can help moderate visual impacts. This “careful siting”  
14       is described as adherence to so-called Best Management Practices (BMP)  
15       for siting wind farms to reduce visual impacts in the landscape citing  
16       thirteen mitigation efforts. Below I address the adequacy, or as the case  
17       may be, inadequacy, of each BMP adopted by the wind industry and  
18       purportedly implemented by the Applicant Eight Point Wind:

19  
20       1. Considered the character of the rolling topography in the vicinity. EPW  
21       has opted for a non-linear turbine configuration to be better suited to a

1        rolling terrain. Thirty-one extremely high (534 ft.—585 ft.) structures in  
2        the landscape is the central issue. These structures are visible in open areas  
3        because they're high. They can't be hidden by rearranging them. While  
4        other arrangements might be worse, the wind turbines in this arrangement  
5        are highly visible and highly impactful on the scenic quality of the area.

6  
7        2. Provided organized clusters of wind turbines grouped together and  
8        separated from dissimilar models to lessen the perceived contrasts in  
9        height or appearance. Proposed dissimilar models are few. Four out of 31  
10       proposed turbines are of the smaller GE 2.3 model. All turbines are the  
11       same color and same general design (single tower, three blades). The  
12       claim: "cluster design" reduces visual clutter and the potentially  
13       overwhelming presence of turbines. The photo simulations show the  
14       project exuding both a profound sense of visual clutter and an  
15       overwhelming presence.

16  
17       3. Kept multiple types of turbine types grouped together and separated  
18       from dissimilar models to lessen the perceived contrasts in height or  
19       appearance. Proposed dissimilar models are few. Four out of 31 proposed  
20       turbines are of the smaller GE 2.3 model. All turbines are the same color  
21       and same general design (single tower, three blades). Both turbine models

1           are huge and so out of scale with the natural elements in this landscape as  
2           to be overwhelming. It would be challenging to distinguish between the  
3           two models at various distances.

4  
5           4. Downsized the facility by using fewer, larger turbines to achieve  
6           desired power output in preference to using a greater number of smaller  
7           turbines. The applicant submitted this proposal for evaluation. The claim  
8           that another proposal might have been more detrimental to the aesthetics  
9           and scenic beauty of the area doesn't qualify as "mitigation".

10  
11          5. Use of non-reflective paints and coatings on wind turbines to  
12          reduce reflection and glare. This an insignificant mitigation measure  
13          regarding the significant issue; the massive (534 ft. and 585 ft.) structures  
14          that overwhelm this bucolic landscape.

15  
16          6. No commercial messages or symbols such as logos which add to the  
17          color contrast of wind turbines, particularly at shorter viewing distances.

18          Views 4, 5, 6, 7, 8, 9, 11, 12, 15, 17, 23, and 27 in my report show what  
19          the standard logo looks like on the wind turbines. Removing them is  
20          insignificant to the central issue – the visual impact of massively scaled

1 forms dominating the scale of the area's natural and man-made forms and  
2 incongruent with the rural scenic landscape views.

3  
4 7. Almost all electrical collection lines between the individual turbines and  
5 the substation are underground. Another effort that doesn't mitigate the  
6 core problem; the disproportionate size and scale of the wind turbines in  
7 comparison with the natural landscape and the negative visual effect on  
8 the beauty of that landscape.

9  
10 8. The O&M building and substation were strategically placed behind an  
11 existing row of trees to help reduce the visual impact from nearby roads.  
12 This effort doesn't go to the heart of the problem—size and scale of the  
13 project's dominant elements and its visual impact on the beautiful rural  
14 countryside.

15  
16 9. Use of shadow flicker impact model to improve turbine siting and  
17 reduce visual impacts. This effort doesn't deal with the main aesthetic  
18 issue—the change of landscape character from rural to industrial through  
19 the construction of the huge structures.

20

- 1        10. Anticipate minimizing nighttime lighting of the wind turbines to  
2        the maximum extent possible within the guidelines and requirements of  
3        the FAA. Lighting synchronized and if possible, radar activated to  
4        minimize hours of lighting required. This effort has no effect on the #1  
5        issue—daytime visibility of huge structures that are out of place in this  
6        human-scaled rural community.
- 7
- 8        11. Tubular towers provide a simplified profile with less complex  
9        surface characteristics and less reflectance. Not proposing a more  
10       complex tower does not constitute mitigation.
- 11
- 12       12. Minimal security lighting at substation and O&M building with  
13       directed or shielded lighting and lighting timers to minimize lighting  
14       impacts. This mitigation effort doesn't address the big problem—the wind  
15       turbines' negative impact the scenic beauty of the area.
- 16
- 17       13. Residences anticipated to experience shadow flicker from the Facility  
18       can reduce this exposure by vegetative screening and closing blinds or  
19       shades at the time of the flicker events. In some cases, the Applicant may  
20       work with landowners to provide blinds, screening or other mitigation  
21       measures to help reduce the impact of shadow flicker. This mitigation step

1 doesn't deal with the main issue—size and scale of the wind turbines spoil  
2 thousands of acres that enjoy natural scenic beauty.

3

4 **Q: In summary, in your professional opinion does the VIA completed by**  
5 **TRC contain enough information for the Siting Board to make**  
6 **required findings and determinations regarding the likely visual**  
7 **impact of Eight Point Wind on the surrounding community?**

8 A: No. Photographs in the TRC Visual Impact Analysis Report do not  
9 comprehensively describe the beauty inherent in most of the open areas in  
10 the vicinity of the project and the TRC VIA Report photo simulations  
11 often do not depict additional wind turbines visible from the place the  
12 photo was taken. As a result, the three-person panel that judged the project  
13 based on those images lacked the resources to make a fully informed  
14 decision, and their flawed assessment cannot be relied upon by the Siting  
15 Board.

16

17 **Q: Does your visual impact report, included as Exhibit ML-02 to this**  
18 **testimony, conclude that Eight Point Wind is likely to have a major**  
19 **negative visual impact on the region?**

20 A: Yes. The photographs presented in my report, Exhibit ML-02, more fully  
21 illustrate the deep beauty found throughout and beyond the proposed Eight

1 Point Wind Project construction area. The accompanying photo  
2 simulations in my report demonstrate that the thirty-one 534 or 585-foot-  
3 tall wind turbines spread out over thousands of acres will detract from that  
4 beauty and fundamentally change the character of the countryside.

5

6 **Q: In your professional opinion, will Eight Point Wind have a significant**  
7 **adverse impact on the aesthetic and scenic in and around the project**  
8 **area?**

9 A: Yes. In my professional opinion, the Eight Point Wind Project will  
10 drastically diminish the existing landscape beauty that area citizens and  
11 visitors enjoy. Instead, the project's huge structures towering above the  
12 trees and small farms will transform the character of almost every open  
13 space in the area. The project will contribute to a significant adverse,  
14 cumulative environmental impact on the aesthetic and scenic values of the  
15 rural environment in southwest Steuben County, New York.

16

17 **Q: Has the Applicant proposed any mitigating measures sufficient to**  
18 **mitigate or avoid the aesthetic and visual impact of the project?**

19 A: No. None of the thirteen mitigation measures proposed by the applicant  
20 actually mitigate the most important truth about the project's lack of

1 environmental fit, its enormous scale, completely disproportionate and  
2 incongruent with the trees, houses and barns in this rural landscape.

3

4 **Q: Do you have anything else to add about the TRC VIA report?**

5 A: Yes. The TRC Report suggests that the project area's landscape has less  
6 scenic value because few people live and travel here. Quite the opposite,  
7 the attractive scenery and natural appearance of this corner of Steuben and  
8 Allegany Counties in New York and across the border into Northern  
9 Pennsylvania is enhanced by a sense of quiet and solitude.

10

11 **Q: Did you rely on any references in preparing your testimony?**

12 A: Yes, I referred to: Courtney, Elizabeth, (1991), Vermont's Scenic  
13 Landscapes: A Guide for Growth and Protection, Vermont Natural  
14 Resources Publication

15

16 **Q: Does this conclude your testimony?**

17 A: Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**MICHAEL LEWIS**

**605 COUNTY ROUTE 67**

**ARKPORT, NY 14807**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1    **Q:     Please state your name and home address.**

2    A:     Michael Lewis, 605 County Route 67, Arkport, NY, 14807. This is my home address;  
3           however I own a barn, small cabin and acreage surrounded by the wind project.

4    **Q:     Are you employed? If yes, by whom are you employed and in what capacity?**

5    A:     I am a first class line mechanic and am employed by Avangrid.

6    **Q:     On whose behalf are you submitting this testimony?**

7    A:     I submit this testimony on behalf of myself, my wife, children and grandchildren.

8    **Q:     Are you familiar with Eight Point Wind Project? If so, how?**

9    A:     Yes, I own 138 acres within the project which includes a barn and small cabin.

10   **Q:     What is the purpose of your testimony?**

11   A:     The purpose of my testimony is to inform the Board of my concerns regarding the project  
12           and how it will impact myself and my family.

13   **Q:     As part of your analysis what components of the application did you review?**

14   A:     I reviewed the shadow flicker and noise report.

15   **Q:     Where is your property located in relation to the project?**

16   A:     My property is located at 651 Saunders Rd., in the town of West Union, NY, and is  
17           approximately 700 feet from one of the proposed turbines but surrounded by at least nine  
18           other turbines within the project.

19   **Q:     What impact will the project have on your property?**

20   A:     As an avid outdoorsman, myself and my family will be negatively impacted by the  
21           turbines. Because we spend most of our time working, hiking, playing and hunting  
22           outside, the shadow flicker, vibrations, noise and obtrusive view cannot be avoided.

1   **Q:**     **Are you a member of any organization to raise awareness of turbines impact in**  
2           **rural areas?**

3   **A:**     Yes, I am part of the CMORE group.

4   **Q:**     **Does this conclude your testimony?**

5   **A:**     Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**MONA L. MEAGHER**

**17 ELM STREET**

**ANDOVER, NY 14806**

**CMORE BOARD MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1     **Q:     Please state your name and address.**

2     A:     My name is Mona Meagher. I reside at 17 Elm St., Andover, NY 14806 and I am a  
3             member of The Citizens for Maintaining our Rural Environment “CMORE”, with an  
4             address of P.O. Box 102, Canisteo, NY 14823.

5     **Q:     On whose behalf are you submitting this testimony?**

6     A:     I am a Board Member of CMORE and am giving testimony of CMORE’s behalf.

7     **Q:     Are you currently employed?**

8     A:     No. I am retired.

9     **Q:     Describe your educational background and any certificates you hold.**

10    A:     I have a Bachelor’s Degree in Nursing. I am a registered nurse in New York State,  
11             licensed since 1979.

12    **Q:     Are you familiar with Eight Point Wind application to build and operate a wind  
13             energy facility in the towns of Greenwood and West Union?**

14    A:     Yes, I have been aware of this project for approximately two years. I own property within  
15             the study area. I have posted comments on the DPS/DMM website and I also presented  
16             comment at the Public Hearing for the Eight Point project on October 27, 2018.

17    **Q:     Have you had any previous experiences in providing written or oral testimony in a  
18             legal proceeding?**

19    A:     No, I have not, and this process is foreign to me.

20    **Q:     What is the purpose of your testimony?**

21 A: The purpose of my testimony is to inform the board of my concerns surrounding Eight  
22 Point Wind's transparency in this process, to include filing of leases, NYS Code of  
23 Conduct disclosures and issues regarding the public's ability to participate in the Article  
24 10 process. I would also like to address the WHO (World Health Organization) 2018  
25 guidelines being applied to this Article 10 application.

26 **Q: What concerns do you have regarding the filing of leases?**

27 A: In 2017, when searching leases filed with Steuben County, NY, it appears leases were  
28 being filed under at least three different company names: Eight Point Wind LLC,  
29 Boulevard Associates LLC (See Exhibit 1) and one lease under Tower Associates, which  
30 unfortunately at the time of this filing, I have been unable to locate to include as an  
31 exhibit. This practice of assigning and filing leases to multiple entities and companies is  
32 not supportive of providing transparency to the public to better understand the true scope  
33 and impact of the Eight Point Wind Project on our community.

34 **Q: What are your concerns on NYS Code of Conduct disclosures?**

35 A: The conflict of interest disclosures do not get posted in a timely manner. In newspaper  
36 postings from December 30, 2018 according to page 36 of the disclosure list on Eight  
37 Point's website, James McCormick had signed a lease on March 1, 2017. Eight Point had  
38 posted disclosures in the newspaper on April 25, 2018 and the McCormick lease was not  
39 revealed at that time. The other lease posted on December 30, 2018 for Leon Woodworth  
40 had been signed August 20, 2018 and not posted on their website according to an email  
41 from Eight Point until November 27, 2018. Councilman Leon Woodworth (the son of  
42 leaseholder) of the Hartsville, NY town board voted on a wind law amendment on  
43 October 10, 2018 (see Exhibit 2). Had the public been more expeditiously informed they

44 would have asked Councilman Woodworth to recuse himself from that vote. This  
45 information was kept hidden from the public for three months. Also, while Eight Point  
46 Wind disclosed Aaron Mullen has a conflict of interest being he is a Steuben County  
47 legislator, they have failed to disclose that he is also the attorney representing the  
48 interests of the towns in this project.

49 **Q: What concerns do you have regarding the public's ability to participate in the**  
50 **Article 10 Process?**

51 **A:** Aside from the two issues already discussed in impeding public participation, there was  
52 great delay in being awarded intervenor funds. At the procedural hearing on October 18,  
53 2018 Eight Point requested re-verification of CMORE members, which had already been  
54 provided, specifically in the intervenor fund request in January 2018. The majority of  
55 those residents had given testimony at the Public Hearing on October 17, 2018 and had  
56 provided the ALJ's with their contact information. There was no need to have CMORE  
57 provide this information again, except for a "stall" tactic by Eight Point in the award of  
58 intervenor funds. CMORE replied to this request on October 22, 2018. There were  
59 "rumblings" that CMORE had some type of outside corporate funding and issues were  
60 still being raised about CMORE membership. Yet another "stall" tactic. To which John  
61 Sharkey, CMORE Board president at the time, responded on November 26, 2018 with an  
62 affidavit stating CMORE was NOT receiving outside funding and provided a full list of  
63 CMORE members as of that date. On November 27, 2018 CMORE was presented with  
64 ten more questions regarding the intervenor fund request. One being a request for the  
65 resumes and qualifications of all attorneys working for CMORE on this project. If, this  
66 was a concern, why was this not addressed in the intervenor requests in January or

67           October 2018? Another stall tactic? In response to those questions CMORE expressed  
68           concerns with being able to obtain expert services due to severe financial constraints.  
69           CMORE responded to the November 27, 2018 request on December 5, 2018. As of  
70           January 8, 2019, there had still been no further intervenor fund award to CMORE. As a  
71           result, CMORE/public participation has been seriously and materially prejudiced in being  
72           able participate in these proceedings.

73   **Q:     What are your concerns about WHO 2018 guidelines?**

74   A:     On January 2, 2019 the Public Siting Committee/John Rhodes filed deficiencies on the  
75           Canisteo Wind Project (CWE) Case No. 16-F-0205. Rhodes outlined in Exhibit 15 Public  
76           Health and Safety 1(b) on pages 6 and 7 (see Exhibit 3) the need for that project to  
77           comply with WHO 2018 noise guidelines for wind turbines. While the Eight Point Wind  
78           project application has been deemed complete, it has not yet been approved and should  
79           therefore, also needs to comply with the WHO 2018 guidelines.

80   **Q:     Does this conclude your testimony?**

81   A.     Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**TRACY A. BAUMAN**

**565 SAUNDERS ROAD**

**REXVILLE, NY 14877**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1    **Q:     Please state your name and home address.**

2    A:     Tracy A. Bauman, 565 Saunders Road, Rexville, NY, 14877. My home address is also  
3           my mailing address.

4    **Q:     Are you employed? If yes, by whom are you employed and in what capacity?**

5    A:     I am the bookkeeper and helper for my husband's business.

6    **Q:     Please describe your educational background and identify any certifications you  
7           possess.**

8    A:     Business Major – High School Diploma.

9    **Q:     On whose behalf are you submitting this testimony?**

10   A:     I submit this testimony on behalf of myself, my husband, my son, daughter, and my  
11          grandchildren. Also, any affected neighbors.

12   **Q:     Are you familiar with Eight Point Wind Project? If so, how?**

13   A:     My husband and I reside within the project and we will undoubtedly be impacted by the  
14          wind turbines surrounding our home and property.

15   **Q:     What is the purpose of your testimony?**

16   A:     The purpose of my testimony is to inform the Board of my concerns with the proposed  
17          wind project. My home and property that I worked and paid for will be negatively  
18          impacted by this project.

19   **Q:     As part of your analysis what components did you review?**

20   A:     I reviewed the Shadow Flicker Report submitted by Eight Point Wind.

21   **Q:     Where is your home located in relation to the Eight Point Wind Project?**

1 A: My home, business shop, and property are located at 565 Saunders Road, Rexville, NY  
2 14877. A receptor number was not assigned to our residence. This fact is very disturbing,  
3 considering the Shadow Flicker Report was based on the receptors assigned to  
4 residences.

5 **Q: What impact, if any, will the project have on your residence?**

6 A: Shadow flicker from Turbine #28 will affect us at our home. The vibration, noise, lights,  
7 and overall intrusion of surrounding turbines (10+) are a great concern to us. We are  
8 concerned with the overall impact on our neighborhood.

9 **Q: Are you a member of any organization to raise awareness of the impact of turbines**  
10 **in rural areas?**

11 A: I have attended meetings of Citizens for Maintaining Our Rural Environment (CMORE).

12 **Q: Does this conclude your testimony?**

13 A. Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED TESTIMONY OF:**

**TRACEY PICKERING**

**967 COUNTY ROUTE 84**

**REXVILLE, NY 14877**

**MEMBER OF:**

**CITIZENS FOR MAINTAINING OUR RURAL ENVIRONMENT**

**P.O. BOX 102**

**CANISTEO, NY 14823**

1    **Q:     Please state your name and home address.**

2    A:     Tracey Pickering, 967 County Route 84, Rexville, NY, 14877. My home address is also  
3           my mailing address.

4    **Q:     Are you employed? If yes, by whom are you employed and in what capacity?**

5    A:     I am employed by Whitesville Central School District as a school bus driver. Also, I am a  
6           farmer at my home residence. I raise cattle, chickens, pigs and goats.

7    **Q:     Please describe your educational background.**

8    A:     High school education.

9    **Q:     On whose behalf are you submitting this testimony?**

10   A:     I submit this testimony on behalf of myself, my husband, my daughter and my  
11          grandchildren. Also, on behalf of the affected public at large.

12   **Q:     Are you familiar with Eight Point Wind Project? If so, how?**

13   A:     I reside within the project and will be gravely impacted by the turbines surrounding our  
14          homes and agricultural barns.

15   **Q:     What is the purpose of your testimony?**

16   A:     The purpose of my testimony is to inform the Board of my concerns with the proposed  
17          project. My residence and agriculture business will be impacted by this project.

18   **Q:     As part of your analysis what components did you review?**

19   A:     I reviewed the Shadow Flicker Report submitted by Eight Point Wind.

20   **Q:     Where is your home located in relation to the project?**

21   A:     I am receptor number 512. My residence and barns are between turbines 24 and 25.

22   **Q:     What impact, if any, will the project have on your residence?**

1 A: We will have at least 3 turbines within ¼ mile of our property. More than ½ of our  
2 property will receive shadow flicker which is measured to a residence. As farmers, we  
3 spend most of our daylight hours outside. We will be affected more outside than in my  
4 home. This is shown in appendices 15-1. I am also concerned about the vibrations,  
5 pressures and noise that is also associated with wind turbines. With at least 8 turbines  
6 surrounding us and within close proximity to our residence, we will be negatively and  
7 greatly impacted.

8 **Q: What impact, if any, will the project have on your agricultural business?**

9 A: As stated above, turbine #24 is located near our cattle barn and pasture. By our  
10 calculation it is between 1,100-1,200 feet from our cattle barn.

11 **Q: To your knowledge does the Eight Point Wind Application identify or respond to**  
12 **your concerns as required by 16 NYCRR 1001.2(c)**

13 A: No. To date, Eight Point Wind has not contacted us nor have they offered any  
14 compensation in order to accommodate us. The feasibility of this project depends on the  
15 use of our property for shadow and noise impact for which we have not been offered  
16 compensation nor given permission which is trespass of property rights.

17 **Q: Are you a member of any organization to raise awareness of turbines impact in**  
18 **rural areas?**

19 A: Yes, I am a member of the not for profit organization called Citizens for Maintaining Our  
20 Rural Environment (CMORE).

21 **Q: Does this conclude your testimony?**

22 A. Yes.

**STATE OF NEW YORK  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT**

---

**In re the Matter of:**

**Application of Eight Point Wind for a  
Certificate of Environmental Compatibility and  
Public Need Pursuant to Article 10 to Construct  
a Wind Energy Project.**

---

**CASE 16-F-0062**

**PRE-FILED REBUTTAL TESTIMONY OF:**

**MICHAEL LAWRENCE ASLA**

**MICHAEL LAWRENCE AND ASSOCIATES PLC**

**8 LINDEN LANE**

**ESSEX JUNCTION, VT 05452**

1   **Q:    Do you have any rebuttal testimony to offer and, if so, whose direct**  
2   **testimony do you wish to address?**

3   A:    Yes, I would like to address the pre-filed testimony of Andrew C. Davis,  
4           Utility Supervisor for the Department of Public Service's Office of  
5           Electric, Gas & Water.

6

7   **Q:    What are your criticisms of Mr. Davis' pre-filed testimony?**

8   A:    Both Mr. Davis and I address the viewshed map and the extent of  
9           facilities visible throughout the study area, but I think Mr. Davis greatly  
10          underestimates the visual effects. When reviewing the applicant's  
11          viewshed map, it seems apparent that the facility will be visible in  
12          hundreds of places and thousands of acres over a wide geographical area.  
13          On page 17 of Mr. Davis' testimony, the question was asked "Will the  
14          proposed Facility result in adverse visual impacts?". Mr. Davis never  
15          answered this question, only described the project and potential views.

16

17   **Q:    Do you have further concerns over Mr. Davis' testimony and its**  
18   **completeness?**

1     A:     Yes, it doesn't appear that Mr. Davis has visited the site he refers to in his  
2           testimony. I visited the area in December 2018 in order to gain a deeper  
3           understanding of the landscape character, record my observations, and  
4           compare them to the applicant's VIA so I could provide my conclusions. I  
5           observed many beautiful places, including a rolling landscape with a mix  
6           of wooded parcels, open meadows, pastures and croplands. The roads in  
7           the project area offer a wide variety of views and panoramic vistas. I  
8           looked at existing landscape scenery from areas expected to have project  
9           visibility as depicted (colored blue, green or purple) on the applicant's  
10          Project Viewshed Map. The applicant's VIA describes the nature of the  
11          area as "bucolic". Mr. Davis' testimony doesn't fully consider the effect  
12          that a large industrial installation will have on the bucolic nature of the  
13          area and its current inherent beauty. In general, a highly visible large  
14          industrial project installed in a place with a bucolic nature will drastically  
15          impact and change that nature. The wind turbines included in the photo-  
16          simulations accompanying the photographs in the applicant's VIA will  
17          greatly diminish that bucolic nature and the existing landscape beauty that  
18          area citizens and visitors currently enjoy. Mr. Davis' testimony doesn't  
19          capture the extent to which the wind turbines will adversely impact the  
20          beauty and peacefulness this rural area currently embodies.

1   **Q:    Please describe any concerns you have regarding the design**  
2           **alternatives that Mr. Davis recommends to reduce the visual impacts**  
3           **of the proposed facility.**

4    A:    To answer the question “What, if any, design alternatives do you  
5           recommend to reduce the visual and cultural resource impacts and effects  
6           of the proposed facility?”, Mr. Davis responded “Staff recommends  
7           consideration of elimination of turbine T-15 located south of Route 248.  
8           This turbine will loom large above a wide lake-like location on Marsh  
9           Creek, creating a stark visual contrast with the existing landscape, due to  
10          the height of the turbine and the repetitive rotational motion of the turbine  
11          blades above the predominantly static landscape.”

12  
13          The image that Mr. Davis is describing is VP 17 in the applicant’s VIA. I  
14          agree that this turbine should be eliminated, however, Mr. Davis’  
15          recommendation falls short. The impact of turbines on VP 17 will be very  
16          similar in VP 12. The applicant’s VIA will loom large in both scenes and  
17          create stark visual contrast with both existing landscapes due to the height  
18          of the turbines and the repetitive rotational motion of the turbine blades  
19          above the predominately static landscapes. Turbines in VP 12 should also  
20          be eliminated.

21

1   **Q:**    **Can you clarify whether there is an additional turbine or turbines**  
2           **that should be eliminated for the same reasoning that supports**  
3           **elimination of turbines in VP 12 and VP 17?**

4   **A:**    Yes. The visual impact study attached as an exhibit to my testimony  
5           includes many more examples of the type of image that Mr. Davis found  
6           objectionable in VP 17. I encourage Mr. Davis to review my report and  
7           consider asking for the removal of additional turbines based on the clearly  
8           deleterious visual impact.

9

10   **Q:**    **Does this conclude your testimony?**

11   **A:**    Yes.

## AFFIDAVIT AFFIRMING PREFILED TESTIMONY AND EXHIBITS

**PENNIE WETZEL**  
Notary Public, Vermont  
My Commission Expires 01.31.21

1 16-F-0062 - Eight Point Wind - 3-11-19

2 STATE OF NEW YORK

3 I, ALEXANDER JONES, do hereby certify that the foregoing  
4 was reported by me, in the cause, at the time and place,  
5 as stated in the caption hereto, at Page 1 hereof; that  
6 the foregoing typewritten transcription consisting of  
7 pages 1 through 786, is a true record of all proceedings  
8 had at the hearing.

9 IN WITNESS WHEREOF, I have hereunto  
10 subscribed my name, this the 11th day of March, 2019.

11  
12  
13 ALEXANDER JONES, Reporter  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25