STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Case 06-T-0650 - Application of New York Regional Interconnect Inc. For a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII for a High Voltage Direct Current Electric Transmission Line Running Between National Grid's Edic Substation in the Town of Marcy, and Central Hudson Gas & Electric's Rock Tavern Substation Located in the Town of New Windsor

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Evidentiary Hearing
3 Empire State Plaza
19th Floor
Albany, New York

April 3, 2009
8:30 a.m.

BEFORE: MICHELLE L. PHILLIPS,
Administrative Law Judge

JEFFREY STOCKHOLM,
Administrative Law Judge

(Exhibits 326 through 344 marked for identification.)

JUDGE STOCKHOLM: Let's go on the record. I call case 06-T-0650, petition of NYRI for a certificate of environmental compatibility and public need under Article VII of the Public Service Law.

Let's begin with appearance of counsel, please.

MR. SINGER: New York Regional Interconnect, the law firm of Couch White, by Leonard Singer, Garrett Bissell, and William McCarthy.

MS. COLLELA: For Communities Against Regional Interconnect, the law firm of Gilberti, Stinziano, Heintz & Smith, P.C., by John Klucsik, Gregory Brown and Brenda Collela.

MR. DEWAAL MALEFYT: For staff of the Department of Public Service, Steven Blow and Anthony Belsito.

MR. MALONE: For the New York Power Authority, Sarah Barish-Straus and Mark Malone.

MR. LANIADO: For the Long Island Power Authority, Read and Laniado, by Sam Laniado.

MS. WILKINSON: For Department of Environmental Conservation, Lisa Wilkinson and David

Sampson.

JUDGE STOCKHOLM: Thank you.

Are there any matters on the record before we proceed with the witnesses?

I should inform the record that following the hearings yesterday, as I think I explained, I met with the company, staff witnesses, DEC, and some others, and went through all of the requests that had been made with regard to stops along the on-site visit.

I don't recall any decisions with regard to taking stops off the list. It's also clear from what we saw that this will be at least six days.

In addition, I have asked the applicant and staff to work together to put together a final set of maps, locations and ultimately a brief description. And what I mean by that is it doesn't even have to be a sentence. It could just be an opportunity to see steep slope -- but in any event, that level of detail so a little bit of a head's up.

And close of business Monday the applicant has promised to get us maps and at least some initial descriptions of stops with their best guess as to timing and where we are going to be when.

As you can imagine, that is a somewhat

intricate calculation, how to get from point A to point B with 32 stops at the following locations. So, it does take some work to put that together.

In any event, that's what you should expect. Once we get those maps on Monday, we are going to put out a formal ruling, with or without changes, after we get a chance to review what they have done. And that should set the schedule for our on-site views.

Any questions about that? It will involve a train ride. It will not involve kayaks.

Okay, I think, Counselor, your witnesses this morning, NYRI's witnesses.

JONATHAN A. LESSER and NICHOLAS PUGA, after first having been duly sworn, were examined and testified as follows:

JUDGE STOCKHOLM: Please be seated and give your full names to the reporter.

(Lesser) Jonathan A. Lesser.

(Puga) Nicholas Puga.

MR. SINGER: Thank you, Your Honor.

DIRECT EXAMINATION

BY MR. SINGER:

Q. Gentlemen, do you have before you a document entitled, "Rebuttal Testimony of Jonathan Lesser and

Nicholas Puga on behalf of New York Regional Interconnect, Inc." consisting of 106 pages of written questions and answers?

A. (Panel) Yes.

Q. Do you have any changes or corrections to the testimony?

A. (Panel) No, we do not.

Q. If I were to ask you the questions stated in the testimony would you provide the answers set forth therein?

A. (Panel) Yes.

Q. Do you adopt the rebuttal testimony of Jonathan Lesser and Nicholas Puga as your testimony in this case?

A. (Panel) Yes.

MR. SINGER: Your Honor, I request that testimony be entered into the record as if given orally.

JUDGE STOCKHOLM: Granted.

MR. LANIADO: Objection, Your Honor.

JUDGE STOCKHOLM: Take that granted back. Go ahead.

MR. LANIADO: I am basically reading the reference from the staff motion to strike.

JUDGE STOCKHOLM: I appreciate that, but I would appreciate the numbers, too.

MR. LANIADO: Page 37, line 16 through page 38, line 8; page 97, line 4 through page 106, line 16.

And I am cognizant of the rulings you made to date. And I guess what I would suggest is that you grant the motion with respect to all the other testimony and for that excerpt you hold your ruling in abeyance until the conclusion of cross-examination.

MR. BELSITO: Staff supports LIPA's position.

MR. SINGER: I have a little bit of confusion with regard to the request. I thought he said grant the motion with respect to everything except what you hold into abeyance.

And I thought it was that the motions with respect to issues other than the Aurora modelling were denied and that you allowed the parties who raised the objections to that particular portion of their testimony to renew their motions at some point in time.

JUDGE STOCKHOLM: And in a sense I think Counsel is trying to protect his interest in being able to renew the motion without prejudice.

My first concern is what is the official record going to look like? If the testimony is physically stricken from the record, there is no record

on which an appeal can be taken because nobody has a copy of it. It's not in the record.

This is what I am going to do. I am going to grant the motion to copy the testimony into the record as though given orally. I am going to continue to reserve on the issue of striking the testimony, which I can do after having copied it into the record. I think that's the way we ought to do it.

I will make it clear that in directing it be copied into the record that is without prejudice to any argument is ought to be stricken. That presupposes nothing with regard to that claim.

MR. LANIADO: Thank you.

JUDGE STOCKHOLM: We will rule on that motion after cross-examination just so that you know. Testimony is in.

(The following is the prefiled testimony of Nicholas Puga and Jonathan Lesser:)

BEFORE THE

NEW YORK STATE PUBLIC SERVICE COMMISSION

NEW YORK REGIONAL INTERCONNECT, INC.

CASE NO. 06-T-0650

NEW YORK REGIONAL INTERCONNECT INC.

REBUTTAL TESTIMONY OF

JONATHAN A. LESSER AND J. NÍCOLAS PUGA

ON BEHALF OF

NEW YORK REGIONAL INTERCONNECT, INC.

MARCH 2, 2009

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I INTRODUCTION, QUALIFICATIONS AND PURPOSE

A. Witnesses and qualifications

Q PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS

A My name is Jonathan A. Lesser. I am a Partner with Bates White, LLC (Bates White or "the firm"), an economic and litigation consulting firm. My business address is 1300 Eye Street, N.W., Suite 600, Washington, DC 20005.

Q PLEASE SUMMARIZE YOUR QUALIFICATIONS.

A I have 25 years of experience in the energy industry. I have worked for electric utilities, government agencies, and as an economic consultant. I have addressed numerous economic and regulatory issues that affect the energy industry; these include: wholesale market design, gas and electric utility structure and operations, cost-benefit analysis of utility mergers, cost-benefit studies of transmission development, cost allocation and rate design, resource investment decision strategies, cost of capital, depreciation, risk management, incentive regulation, economic impact studies, and general regulatory policy. I have prepared expert testimony and reports in cases before public utility commissions in numerous states, the Federal Energy Regulatory Commission (FERC or "the Commission"); before regulators in Belize, Guatemala, Mexico, and Puerto Rico; in

commercial litigation cases; and before legislative committees in Connecticut, Maryland, Texas, Vermont, and Washington. I am also the coauthor of *Fundamentals of Energy Regulation*, which was published in August 2007 by Public Utilities Reports, Inc. A copy of my curriculum vitae is attached as Exhibit No. JAL/JNP-1.

Before joining Bates White, I served as Director of Regulated Planning for the Vermont Department of Public Service. Previously, I had been employed as Senior Managing Economist by Navigant Consulting. Prior to that, I was the Manager, Economic Analysis, for Green Mountain Power Corporation. I also spent seven years as an Energy Policy Specialist with the Washington State Energy Office and also worked for Idaho Power Corporation and the Pacific Northwest Utilities Conference Committee, an industry trade group, where I specialized in load forecasting.

I hold M.A. and Ph.D. degrees in economics from the University of Washington and a B.S. in mathematics and economics from the University of New Mexico.

Q HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NEW YORK PUBLIC SERVICE COMMISSION ("NYPSC" OR "THE COMMISSION")?

A No, I have not.

Q **PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS**

A My name is J. Nicolas Puga. I am also a Partner with Bates White, LLC (Bates White or "the firm"), an economic and litigation consulting firm. My business address is 1300 Eye Street, N.W., Suite 600, Washington, DC 20005.

Q **PLEASE SUMMARIZE YOUR QUALIFICATIONS.**

A. I have a B.S. in Electrical Engineering from Universidad de Guanajuato in Salamanca, Mexico. I also obtained an M.S. in energy engineering from the University of Arizona. I have over 28 years of experience in electric and natural gas market analysis and supply and demand-side resource planning and have advised various electric and gas utilities as well as other entities. I was employed by the Comisión Federal de Electricidad (CFE), the Mexican Government's vertically integrated utility, in Special Projects from 1975 to 1977. I served as a Research Engineer for the Instituto de Investigaciones Eléctricas, the Mexican Government's Electrical Research Institute, from 1977 through 1980. Since 1984, I have worked as a consultant in the U.S. and various other countries. From 1984 until 1990, I was Vice President of ANCO Engineers, an energy technology consulting firm located in 3 Culver City, California, where I worked on the design and implementation of several large-scale

utility demand-side management programs in the U.S. and Australia. I joined Resource Management International, Inc. (RMI), an international energy consulting firm in 1990, where I served as Vice President, Demand-Side Management. During my employment with RMI, I worked on a variety of energy efficiency and demand-side management consulting projects in the U.S., Canada, the Philippines and Indonesia. From 1996 to 1999, I worked as resident advisor to the Philippine Government and electric distribution utilities in demand-side management and integrated resource planning. RMI was acquired by and subsequently merged into Navigant Consulting, Inc. in 1999, where I worked until 2005. From 2005 to 2007, I worked as an independent consultant advising the California Energy Commission on the potential for energy efficiency and combined heat and power in the California, Mexico border maquiladora industry. In 2007 I joined the energy practice of Bates White, LLC. A copy of my curriculum vitae is attached as Exhibit No. JAL/JNP-2.

Q. PLEASE DESCRIBE OTHER REPRESENTATIVE CONSULTING PROJECTS RELEVANT TO THIS PROCEEDING THAT YOU HAVE WORKED ON.

A. I have worked on due diligence for independent power project developers seeking to build generation facilities and for financial institutions involved in financing privately owned generation and

transmission projects. I performed studies concerning generation dispatch protocols and issues relating to transmission constraints associated with the interconnection of new generation projects. Representative clients include the United States Agency for International Development, the California Energy Commission, Credit Agricôle Indosuez, Electricité de France, Mizuho Corporate Bank, the Japan Bank for International Cooperation, and other entities. I testified in front of the Public Utility Commission of Texas (PUCT) in the application for a Certificate of Convenience and Necessity (CCN) for the first high voltage direct current open access transmission interconnection between Texas and Northeast México, as to the economic benefits of the tie. More recently, I appeared in front of the Virginia State Corporation Commission to explain some of the results of an independent reliability needs assessment of a proposed 265-mile 502 Junction-Mt. Storm-Meadow Brook-Loudoun 500 kV Transmission Line conducted under my direction. I testified as to the ability of PJM's RPM demand response programs to provide the same level of long-term reliability as that of the proposed line.

Q HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NYPSC?

A No, I have not.

B. Purpose of Testimony

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A First, our testimony discusses how the NYRI project will help the State of New York meet three important state energy policy goals. These include: (1) meeting the state's Renewable Portfolio Standard (RPS), primarily by building new wind-power generating plants in western and northern New York; (2) increasing fuel and locational supply diversity to combat a recognized over-reliance on gas-fired generation in southeastern New York ("SENY"); and (3) reducing greenhouse gas emission consistent with the state's participation in the Regional Greenhouse Gas Initiative ("RGGI").

Second, our testimony rebuts the conclusions of a number of intervenor witnesses. In general, New York Department of Public Service Staff ("NYDPS") and intervenors' witnesses have ignored the energy policy benefits the NYRI project would stimulate, and instead focused on an inappropriately narrow evaluation of the project. Moreover, intervenors are inconsistent among themselves as to how even these narrow benefits should be defined. Some argue the benefits of the project should be based solely on production cost savings, whereas others argue that one cannot base benefits on production cost savings. Taken together,

the intervenors' testimony means the benefits of additional transmission capacity cannot be measured at all.

DPS Staff and intervenors have assumed away key issues and uncertainties. For example, they assume, without any evidence, that the current NYISO load forecast cannot be wrong, that forecast loads, which have decreased, in part, because of the economic downturn, cannot possibly increase. They assume the goals of the state's Energy Efficiency Portfolio Standard (EEPS), also known as "15x15" because it is supposed to achieve a 15% reduction in electric consumption by 2015, will be met simply because the goals has been established, ignoring the fact that the necessary programs are in their infancy. Moreover, they assume that such energy efficiency programs will be almost "too cheap to meter" and can obviate the need for any new transmission investment.

Some parties recommend that generators be built in New York City, even though doing so will exacerbate SENY's exposure to volatile fuel prices, in contrast to state policy goals. They also assume that generating plants that were cancelled years ago will nevertheless be built and, moreover, will be better alternatives than NYRI. They also assume that, even though there is insufficient transmission capacity to provide deliverability for the amount of wind resources that will be needed to

meet the state's RPS goal, these wind resources will nevertheless be developed. They assume that converting an existing NYPA transmission line to DC is preferable to building NYRI, despite the lack of any supporting evidence and even though NYPA witness O'Connor himself admits that there are currently no plans to develop this line in the future.

Q PLEASE IDENTIFY THE SPECIFIC WITNESSES WHOSE TESTIMONY YOU ARE REBUTTING.

A We rebut the testimony of the following witnesses:

- New York Department of Public Service ("NYDPS") witnesses James de Waal Malefyt, Leka Gjonaj and David Wheat, Thomas Paynter, and Edward Schrom; and
- Communities Against Regional Interconnect ("CARI") witness Richard Spellman

II. SUMMARY OF FINDINGS

A. There is a demonstrated need for additional transmission capacity from UPNY to SENY, and throughout the Mid-Atlantic Region

Q PLEASE DISCUSS THE U.S. DEPARTMENT OF ENERGY'S ("DOE") DESIGNATION OF A MID-ATLANTIC AREA NATIONAL TRANSMISSION CORRIDOR

A On May 7, 2007, DOE issued its draft report (attached as Exhibit No. JAL/JNP-3) regarding two recommended transmission corridors and opening dockets to review its findings ("DOE Draft Report").[1]

[1] 72 Fed. Reg. 25838.

Subsequently, after taking comments on this draft report and holding several public hearings, on October 5, 2007, DOE issued its final "National Electric Transmission Congestion Report" ("DOE Final Report"). The DOE Report designated two National Interest Transmission Corridors.[2] One of those was the "Mid-Atlantic Area National Interest Electric Transmission Corridor," which extends from upstate New York to Maryland. Exhibit No. JAL/JNP-4 provides a map of the Mid-Atlantic Corridor. As stated in the report, DOE's designation of such a corridor takes into account a number of policy criteria, including the following:

> (A) the economic vitality and development of the corridor, or the end markets served by the corridor, may be constrained by lack of adequate or reasonably priced electricity;
>
> (B)(i) economic growth in the corridor, or the end markets served by the corridor, may be jeopardized by reliance on limited sources of energy; and (ii) a diversification of supply is warranted;
>
> (C) the energy independence of the United States would be served by the designation;
>
> (D) the designation would be in the interest of national energy policy; and
>
> (E) the designation would enhance national defense and homeland security.[3]

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[2] 72 Fed. Reg. 56992, Rehearing Den'd, March 6, 2008.

[3] 72 Fed. Reg. 56992-3.

The DOE notes that the Congestion Study identified the Mid-Atlantic Area "based on evidence of historical, persistent congestion caused by numerous well known constraints that are projected to continue and worsen unless addressed through remedial measures"[4] and that it had "documented the existence of persistent congestion through regional differences in generation capacity factors within the footprints of the PJM Interconnection, LLC, (PJM) and the New York Independent System Operator (NYISO)."[5]

Q HOW DID DOE DEFINE CONGESTION IN THE REPORT?

A The DOE Report defined congestion as "as the condition that occurs when transmission capacity is not sufficient to enable safe delivery of all scheduled or desired wholesale electricity transfers simultaneously. This definition was based on common usage within electric system operations and spurred little dissent among commenters on the Congestion Study."[6]

Q DID DOE FIND THAT UPSTATE GENERATION IN NEW YORK WAS PREVENTED FROM BEING USED EFFICIENTLY BECAUSE OF TRANSMISSION CONSTRAINTS?

A Yes. For example, the DOE Draft Report states that,

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4 72 Fed. Reg. 56995.

5 Id. (fns. omitted).

6 Id., at 57003 (fn. omitted).

> "The effects of transmission congestion start to become apparent in the $60–70/MW class, where lower-cost capacity in Upstate East is available but its output is not always deliverable to Downstate. Downstate has more than 14,250 MW of capacity with production costs of $70/MW or higher (up to more than $200/MW), whereas Upstate East and Upstate West combined have only about 5100 MW at $70/MW or higher. Further, according to both historical data and DOE's projections for 2008, the units in Downstate in all classes with production costs above $70/MW almost always operate at higher capacity factors than in the other two areas."[7]

In other words, because of the transmission constraints, lower-cost generation in upstate New York cannot always be dispatched. As a result, higher cost generation in southeastern New York ("SENY") is dispatched instead. This reduces economic efficiency and increases the prices New Yorkers pay for electricity.

Q DID DOE FIND THAT THIS LOSS OF GENERATION PLANT EFICIENCY HAS ECONOMIC CONSEQUENCES?

A Yes. The DOE Draft Report stated that,

> "For the area served by NYISO, historical electricity price data from 2004 through 2006 show a persistent pattern of substantially lower wholesale electricity prices in the day-ahead market for the western and upstate zones than in New York City and Long Island. (See Figure VIII–12.) As a result of this persistent disparity, electricity consumers in the area north of New York City, the City itself, and on Long Island end up paying higher electricity bills than consumers in the

[7] 72 Fed. Reg. 25876 (emph. added).

> rest of the State of New York ... As one might expect, the price disparity widened considerably when the electricity supply system was working close to its physical limits, as on hot summer days."[8]

Q WHAT IS AN ECONOMICALLY RATIONAL APPROACH TO PRICE DISPARITIES SUCH AS THOSE IDENTIFIED IN THE DOE DRAFT REPORT?

A From a strict economic standpoint – and not addressing any of the other public policy issues, such as increased fuel diversity, increased renewable resource development, and reductions of greenhouse gases – the logical economic response to transmission constraints that cause generation dispatch inefficiency and high localized market prices is to either build new transmission capacity to address the existing transmission constraints or add new generating and load management capacity in the areas where prices are highest. The findings of the DOE Draft Report, which DOE affirmed in its Final Report and subsequent denial of a request for rehearing on its findings, affirmed that significant transmission constraints exist in New York State that prevent the economic flow of electricity from lower-cost Upstate regions to the higher-cost SENY region.

[8] 72 Fed. Reg. 25888-91 (emph. added).

B. The NYRI Project will help the State of New York achieve established state policy goals, and allow development of lower cost generation in UPNY.

Q **PLEASE SUMMARIZE THE STATE'S ENERGY POLICY GOALS.**

A New York State has three major energy policy goals. First, the state has established a Renewable Portfolio Standard ("RPS") under which 25% of total electric generation is to be derived from renewable resources (e.g., wind, solar, and hydro) by the year 2013, just four years from now. In his January 7, 2009, "State of the State" address, Governor Patterson suggested that this goal should be increased further to 30% by 2015, plus the current goal of a 15% reduction in electricity usage achieved through energy conservation.[9] The Governor also stated that, "It is time to make New York more energy independent and more energy efficient, to develop our own sources of clean and renewable energy, and to build new statewide systems for energy generation, transmission, and distribution."[10]

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[9] The text of Governor Patterson's address can be found at: http://www.state.ny.us/governor/keydocs/speech_0107091.html. The 15 percent energy conservation goal is the same as the existing "15x15" program put into place by the New York Public Service Commission.

[10] Id.

Q **WHAT IS THE SECOND ENERGY POLICY GOAL?**

A The second state energy policy goal is to reduce greenhouse gas emissions. New York State is a member of the RGGI and recently held its first auction of carbon allowances. Under the Memorandum of Understanding issued in 2005, the governors of ten Northeastern and Mid-Atlantic States have committed to state regulations that will cap and then reduce the amount of the greenhouse gas carbon dioxide (CO2) that power plants are allowed to emit.[11] Specifically, electric power plants in New York will be required to reduce greenhouse gas emissions by 10% by the year 2018. These emissions reductions increase the cost of fossil fuel generation, thus making development of renewable generation in New York more cost-effective.

Q **WHAT IS THE THIRD STATE ENERGY POLICY GOAL?**

A The third energy policy goal is to increase fuel and resource diversity. For example, in the 2002 New York State Energy Plan, one of the policy goals outlined was "Increasing energy diversity in all sectors of the State's economy through greater use of energy efficiency technologies, and alternative energy resources, including renewable-based energy."[12]

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[11] Available at: http://www.rggi.org/about/history/mou.

[12] New York State Energy Plan 2002, at S-2. Available at: http://www.nyserda.org/sep/sepexecsummary.pdf.

Governor Patterson's April 9, 2008 Executive Order establishing development of a new State Energy Plan in 2009 also highlighted energy diversity.[13]

Q WILL THE NYRI PROJECT HELP THE STATE ACHIEVE THESE THREE ENERGY POLICY GOALS?

A Yes. The NYRI project will increase transmission capacity into SENY and provide a needed link to connect upstate wind generation, where wind resources can be developed at a lower cost than, for example, building offshore, with the major load centers in SENY. Thus, NYRI will promote what Governor Patterson called for in his State-of–the State address. Moreover, NYRI will allow lower-cost additional gas-fired generation to be built sooner in upstate New York ("UPNY"). This will benefit consumers because land and labor costs are lower than in SENY and, especially, lower than New York City and Long Island. Additional energy resource development in upstate New York will also provide much needed jobs and economic development opportunities.

As the DOE Study found, existing transmission constraints from West-to-East and North-to-South currently prevent full dispatch of lower-cost generation in UPNY. The most prevalent and most cost-effective

[13] Executive Order No. 2, April 9, 2008, at 2. Available at: http://www.nysenergyplan.com/presentations/NYS%20Energy%20Plan%20Framework%20Document2.pdf.

wind resources are located in UPNY. Without added transmission capacity, however, new wind generation will be constrained from delivering power to SENY. Since the state's RPS is not based on installed capacity (i.e., "iron in the ground"), but rather actual generation of renewable electricity, it is critical to relieve existing UPNY transmission constraints.

Q HAS THE FEDERAL ENERGY COMMISSION ("FERC") ISSUED ANY RULINGS ABOUT THE NYRI PROJECT?

A Yes. The NYRI project is precisely the type of innovative transmission project FERC encouraged to be developed under the guidelines it developed in Order No. 679 and Order No. 679-A.[14] Recognizing the innovative nature and advanced technology to be used by the NYRI project, as well as the inherent financial risks, the Commission increased the authorized return for the project by a total of 275 basis points ("bp").[15] Specifically, the Commission Order stated that, "The Commission has recognized and encouraged the proven track record of Transco investment in transmission infrastructure and the need for

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[14] *Promoting Transmission Investment through Pricing Reform*, Order No. 679, FERC Stats. & Regs. ¶ 31,222 (2006), *order on reh'g*, Order No. 679-A, FERC Stats. & Regs. ¶ 31,236 (2006) *order on reh'g*, 119 FERC ¶ 61,062 (2007).

[15] *New York Regional Interconnect, Inc.*, 124 FERC ¶ 61,259 (2008). A basis point equals 1/100th of one percent. The incentives include 50 bp for membership in a RTO, 100 bp for independent ownership, and 125 bp for advanced technology.

increased transmission in general,"[16] and that "[t]he advanced technologies proposed will improve capacity, efficiency and reliability for the Project."[17] From a policy perspective, it makes little sense to have federal energy regulators promoting innovative transmission projects like NYRI, while state energy regulators discourage, or impose impossible regulatory hurdles on those same projects.

Q DOES NYISO'S COMPREHENSIVE RELIABILITY PLANNING PROCESS INCLUDE MEETING STATE OR FEDERAL ENERGY POLICY GOALS?

A No. NYISO's Comprehensive Reliability Planning Process ("CRPP") is focused solely on ensuring that NYISO meets established reliability standards, and nothing else. According to NYISO witness John Buechler, "NYISO is not a government agency, and its does not take public policy considerations into account when analyzing the impact of proposed facilities on reliability needs it identifies."[18]

Q DOES THE NEW NYISO CONGESTION ASSESSMENT AND RESOURCE INTEGRATION STUDY ADDRESS ANY OF THE STATE ENERGY POLICY GOALS YOU PREVIOUSLY SUMMARIZED?

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[16] 124 FERC ¶ 61,259, Par 41.

[17] 124 FERC ¶ 61,259, Par 52.

[18] New York Independent System Operator, Direct Testimony of John P. Buechler, January 9, 2009 ("Buechler Testimony"), at 26, lines 2-4.

A No. As stated by NYISO witness Buechler, NYISO will begin implementing its Comprehensive Assessment and Resource Integration Study ("CARIS") this year.[19] CARIS is a part of the larger CRPP and entails an economic assessment of the costs and benefits of investments that reduce transmission system congestion. Under CARIS, proposed transmission system investments that are financed by ratepayers must pass a cost-benefit test. According to the relevant language contained in the NYISO tariff and provided in Exhibit JPB-1,

> "The principal benefit metric for the CARIS analysis will be expressed as the present value of the NYCA-wide production cost reduction that would result from each potential solution. Additional benefit metrics shall include estimates of reductions in losses, LBMP load costs, generator payments, ICAP costs, Ancillary Services costs, emission costs, and TCC payments."[20]

Thus, NYISO does not envision that its CARIS process will address any public policy benefits in its cost-benefit analyses of investments that reduce transmission system congestion.

Furthermore, the NYISO CRPP favors projects proposed by the "Responsible Transmission Owners" ("RTOs"), i.e., the local distribution utilities, over other projects. Only if projects submitted by the RTOs are

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[19] Id., at 9, line 10.

[20] Exhibit JPB-1, at 33.

insufficient to meet NYISO's reliability needs will independent developers' projects be considered as "regulated solutions" paid for by ratepayers.

Q ARE PROJECTS THAT DO NOT PROVIDE RELIABILITY BENEFITS, BUT DO PROVIDE PUBLIC POLICY BENEFITS, SUCH AS ALLOWING GREATER DELIVERABILITY OF RENEWABLE GENERATION, ELIGIBLE TO BE CONSIDERED UNDER CARIS?

A No. As NYISO witness Buechler testifies, NYISO "does not take public policy considerations into account when analyzing the impact of proposed facilities on reliability needs it identifies. The decision whether there is a public need for the NYRI line is up to the PSC" [Buechler Testimony, at 27, lines 2-5].

C. The alternatives to the NYRI project identified by intervenors are not consistent with the state's policy goals, and will not relieve existing transmission constraints.

Q WHAT ALTERNATIVES TO NYRI HAVE BEEN PROPOSED BY WITNESSES ON BEHALF OF THE NYDPS?

A Several NYDPS witnesses propose building gas-fired generating units in lieu of NYRI. NYDPS witnesses Gjonaj and Wheat evaluated a hypothetical 1,200 MW gas-fired generating plant located either in UPNY, SENY, or New York City.[21] NYDPS witness de Waal Malefyt proposed a

[21] New York Department of Public Service, Prepared Testimony of Leka P. Gjonaj and David V. Wheat, January 9, 2009, ("Gjonaj and Wheat Testimony"), at 26:, lines 17-21.

1,200 MW gas-fired generating plant (or two, 600MW plants) in the Hudson Valley, near the proposed terminus of the NYRI project.[22] Mr. de Waal Malefyt also favorably referred to several generating projects that were cancelled years ago: Mirant Bowline L.L.C. for a 750 MW natural gas-fired plant in the Town of Haverstraw, Rockland County, and to Calpine Construction Finance Company, L.P. for a 540 MW natural gas-fired plant in the Town of Wawayanda, Orange County. He also referred to a 580MW gas-fired plant that may be built by CPV Valley LLC near the Wawayanda site where the cancelled Calpine plant would have been located.[23] NYDPS witness Schrom recommended either a generating plant in SENY or investments in energy efficiency sufficient to avoid the need for either new transmission or generation.[24] Mr. Schrom also testified that a proposal that NYPA "suggested", to change one of its two existing Marcy South Circuits to HVDC, would be preferable to NYRI,[25] but provided no supporting evidence other than his "opinion." Furthermore,

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22 New York Department of Public Service, Prepared Testimony of James J. de Waal Malefyt, January 9, 2009, ("de Waal Malefyt Testimony"), at 26, lines 8-22.

23 Id., at 27, lines 20-23.

24 New York Department of Public Service, Prepared Testimony of Edward Schrom, January 9, 2009, ("Schrom Testimony"), at 16, lines 8-23.

25 Id., at 17, lines 2-13.

NYPA witness O'Connor stated that NYPA has no plans to develop the Marcy South alternative at this time.[26]

Q WHAT ALTERNATIVES HAVE BEEN PROPOSED BY WITNESSES ON BEHALF OF CARI?

A CARI witness Lanzalotta proposed two alternative transmission projects. The first is to follow the Marcy South route evaluated by NYRI but have the line be entirely underground. The second is an alternative HVDC facility that would follow a much different route from Marcy South directly into New York City. Specifically, it would follow the route that had been proposed for the Empire Connection Project, which was cancelled in 2004 because no subscribers for that line's capacity could be found.[27] However, we understand that a January 26, 2009 ruling by NYPSC Administrative Law Judges Philips and Stockholm held that the alternative routing proposed by Mr. Lanzalotta could not be considered in this case, as this alternative "is not a reasonable alternate route to NYRI's proposal, but is rather a fundamentally different project."[28]

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[26] New York Power Authority, Direct Testimony of Mark D. O'Connor, January 9, 2009 ("O'Connor Testimony"), at 5.

[27] Communities Against Regional Interconnect, Prepared Testimony of Peter J. Lanzalotta, January 9, 2009 ("Lanzalotta Testimony"), at 9, lines 5-18. See also, Communities Against Regional Interconnect, Response to Procedural Ruling of December 2, 2008, December 8, 2008, at 1-2.

[28] Application of New York Regional Interconnect, Inc. for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII for a High

CARI witness Spellman, on the other hand, testifies that comprehensive DSM programs in SENY can eliminate the need for NYRI entirely.[29]

Q ARE YOU AWARE OF ANY OTHER TRANSMISSION OR GENERATION ALTERNATIVES TO THE NYRI PROJECT THAT HAVE BEEN PROPOSED BY INTERVENORS?

A No we are not.

Q PLEASE EXPLAIN WHY THE NATURAL GAS-FIRED GENERATING UNITS PROPOSED ARE NOT REASONABLE ALTERNATIVES TO THE NYRI PROJECT.

A All of the generation alternatives proposed are gas-fired. As discussed in a November 2008 White Paper issued by the New York Independent System Operator ("NYISO"), which is attached as Exhibit No. JAL/JNP-5, building new gas-fired units in southeastern New York will further exacerbate the region's reliance on gas-fired generation, which already sets the market price in 90% of all hours.[30] Therefore, rather than increasing energy resource diversity, these generation alternatives will

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Voltage Direct Current Electric Transmission Line Running Between National Grid's Edic Substation in the Town of Marcy, and Central Hudson Gas & Electric's Rock Tavern Substation Located in the Town of New Windsor, Case No. 06-T-0650,Ruling on Scope, Hearing Procedures, and Schedule, January 26, 2009, at 5.

29 Communities Against Regional Interconnect, Prepared Testimony of Richard F. Spellman, January 9, 2009 ("Spellman Testimony"), at 4, lines 2-6.

30 New York Independent System Operator, "Transmission Expansion in New York State," White Paper, November 2008 ("NYISO Transmission White Paper"), p. 4-5.

exacerbate an already existing over-reliance on gas-fired generation, contrary to state policy. Also, the inability of the natural gas pipeline system to deliver firm service in some area of SENY, could force new gas-fired generators to burn oil during peak load periods, increasing pollutant emissions.

Moreover, building generation in SENY and New York City will do nothing to relieve the long-standing West-to-East and North-to-South transmission constraints in NYISO and, as a result, will not provide any solution to the current inability to deliver the quantity of renewable power that is required under the state's RPS mandates. Again, that is contrary to state policy. As the NYISO Transmission White Paper states,

> "Without investment in additional transmission infrastructure to balance and move wind energy to the load centers in the southeastern regions of the state, it may become difficult for New York to meet its state RPS targets.[31]

Under Governor Patterson's call to increase that RPS target to 30% of total electric generation by 2015, it will become still more difficult for the state to meet its RPS targets without new transmission projects like NYRI.

Q PLEASE EXPLAIN WHY THE ALL-UNDERGROUND TRANSMISSION PROJECT PROPOSED BY CARI WITNESS LANZALOTTA IS NOT A REASONABLE ALTERNATIVE TO THE NYRI PROJECT.

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[31] NYISO Transmission White Paper, p. 4-3.

A First, in our opinion the CARI all-underground option is a "red-herring" designed to further delay and lead to the eventual cancellation of the NYRI project The CARI proposal would cost far more than the NYRI project, but would have a lower transmission capacity. Since several NYDPS witnesses, as well as ConEd witness Forte, have based their objections to the NYRI project because the proposed construction costs would be greater than the direct benefits (as measured by production cost savings), a more expensive but lower capacity alternative would obviously fail the same cost-benefit test.

As for the NYPA project to reconfigure one of its existing Marcy South circuits into an HVDC line, NYPA witness O'Connor states there are no current plans to develop the project. The project is not in the NYISO's transmission and generation "queue," and none of the required studies necessary to obtain approval from NYISO for the project have been submitted to NYISO. We assume that, if the NYPA project were as superior an alternative as NYDPS witness Schrom states, that either NYPA or an independent transmission developer would have submitted the project to the NYISO long ago.

Q HAVE THERE BEEN ANY MAJOR TRANSMISSION PROJECTS THAT HAVE BEEN BUILT IN NEW YORK IN THE RECENT PAST?

A We are aware of the Neptune Project, an undersea HVDC cable from New Jersey to Long Island and the cross sound cable running between Connecticut and Long Island – both of which sold their capacity to LIPA under long-term contracts. A number of proposed merchant transmission projects have been cancelled. We understand that the last such proposed project was the Empire State Transmission Project, which failed to receive any subscribers for the transmission capacity it would have provided if built. As a result, the project was withdrawn in 2004 by its developer, Conjunction, LLC. Some similar projects have been permitted within a utility's own service area including Con Ed's M-29 project. Although construction on that project was started, we understand that the project has now been caught up in a criminal investigation of Con Ed's contracting practices. Given the public good nature of transmission investment, it is not surprising that there has been no successful development of merchant transmission upgrades in the state.

Q PLEASE EXPLAIN WHY CARI WITNESS SPELLMAN'S TESTIMONY THAT ENERGY EFFICIENCY CAN OBVIATE THE NEED FOR THE NYRI PROJECT IS NOT REASONABLE.

A First, Mr. Spellman's energy efficiency study, which is presented as his Exhibit RFS-2, is riddled with errors. Mr. Spellman's assumed cost-effectiveness criterion of seven cents per kilowatt-hour ($0.07/kWh)[32] is irrelevant, as it is not based on any type of recognized cost-effectiveness methodology, but it rather relies on a comparison to LBMP estimates of questionable validity. Moreover, Mr. Spellman assumes that the reliability benefits of energy efficiency measures are equivalent to those of new generation and transmission facilities. Whereas transmission and generation facilities are dispatchable by transmission system operators, energy efficiency measures, unlike generation, transmission and demand response, are not, thus reducing their reliability benefits.

Second, Mr. Spellman's approach to estimating the amount of cost-effective energy efficiency savings layers erroneous assumption upon erroneous assumption, resulting in a study whose results are neither credible nor economically sound.

Third, nowhere does Mr. Spellman address how his energy efficiency proposal, as an alternative to the NYRI transmission line, would

[32] Exhibit RFS-2, at 56-57.

deliver the public benefits of the proposed line, such as helping meet the state's RPS requirement by enabling the power from renewable resources developed in UPNY to be delivered to consumers in SENY. DSM measures installed in SENY will do nothing to relieve the existing transmission system constraints and inability of existing generation, much less the thousands of MW of new renewable generation that will be needed to meet the RPS, to obtain unfettered access to the transmission system.

Q PLEASE SUMMARIZE THE ERRONEOUS ASSUMPTIONS MADE IN WITNESS SPELLMAN'S ENERGY EFFICIENCY STUDY.

A First, Mr. Spellman failed to carry out any appliance saturation surveys for specific energy efficiency measures in his proposal. Without knowing how many appliances are in place, called "saturation," it is impossible to determine potential energy savings from a specific appliance-related measure, such as targeting second refrigerators.

Second, Mr. Spellman relied on generic energy savings estimates that do not capture the inherent variability associated with different climate conditions, the ages of buildings and equipment, the relative size of homes and apartments, or the demographics affecting customers' willingness to participate in energy efficiency programs, even when such measures are offered "free" to those customers.

Third, Mr. Spellman failed to consider the risks inherent in any programmatic effort to capture energy-efficiency, both in achieving the goals of what in essence are marketing programs, and also in the actual persistence of those energy savings. This is another key reason why generic energy efficiency measures , such as installing compact fluorescent light bulbs and other "efficient lighting" measures, do not provide the same level of reliability as new transmission or generation investments.

Q **MR. PUGA, DO YOU CONSIDER YOURSELF AN EXPERT IN ENERGY EFFICIENCY ANALYSIS?**

A Yes. A significant part of my professional focus since 1982 has been the analysis of applications of energy efficiency technologies to diverse end-uses of energy by residential, commercial and industrial energy consumers, and the often necessary incentives and programs to advance their adoption, has been. In the course of my 25-plus year career, I have worked extensively in the modeling of building energy use, the design and implementation of commercial and industrial customer surveys and energy auditing of residential, commercial and industrial facilities. I have also worked in most aspects of the design, implementation and evaluation of utility energy efficiency and demand-management programs, including the engineering, installation and performance monitoring of energy-efficient end-use technologies. As a matter of fact, utility demand-side

management was at the core of my professional employment through 1999.

Q MR. PUGA, DO YOU HAVE ANY OTHER CONCERNS ABOUT MR. SPELLMAN'S ENERGY EFFICIENCY NON-ROUTE ALTERNATIVE?

A Yes. The concept of full equivalency between what amounts to vaguely sketched proposals for energy-efficiency programs and the proposed NYRI transmission line is fatally flawed for a number of reasons. First, energy efficiency programs are marketing programs designed to produce their impacts over a number of years with significant uncertainty as to their ultimate ability to achieve their participation goals, unlike a transmission line that, once built, is likely to operate close to its design capacity for the physical life of its components. Second, as already mentioned by Dr. Lesser, energy efficiency resources are not dispatchable, in contrast to the controllable nature of the proposed NYRI DC transmission line, nor offer the flexibility to provide access to diverse resources to serve load. Third, energy efficiency measure retention and persistence of energy savings over a period comparable to the life of the proposed transmission line have never been demonstrated.

Q CAN YOU PLEASE ELABORATE?

A Yes. While the literature cited by Mr. Spellman focuses on the most successful energy efficiency programs ever fielded, a more comprehensive

literature review reveals many energy efficiency programs that have not fully met their goals. For example, in 2001, the Florida investor-owned utilities reported to the Florida PSC that they missed their Summer MW reduction goals of 213.6 MW by 31%. This is not an isolated case; in the 1990's, during the peak activity era of utility funded energy efficiency programs, many utilities missed their goals.[33] And more recently, a meta-analysis carried out in 2004 by the American Council for an Energy Efficient Economy[34] showed that while potential studies at the time showed a median achievable annual savings potential of 1.2% of electric sales per year, there were only a few recorded examples of actual electricity savings above 1% per year. Thus, while the effective transfer capacity of the proposed line will become available from the moment it is energized, as permitted by the operating limits of the transmission infrastructure beyond its two interconnection points, the effective energy and demand reductions of the energy-efficiency "alternative" will only be known at the end of the ten-year life of its programs. This, in of itself,

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[33] Renz Jennings, Martin Pasqualetti, Merrilee Harrigan, and Robert Boscamp, "DSM Programs Must Target Consumers, Not Just Technology," *Public Utilities Fortnightly*, January 15, 1995, pp. 23-26.

[34] Steven Nadel, Anna Shipley and R. Neal Elliott, The Technical, Economic and Achievable Potential for Energy-Efficiency in the U.S. – A Meta-Analysis of Recent Studies, Proceedings of the 2004 ACEEE Summer Study on Energy Efficiency in Buildings, American Council for an Energy-Efficient Economy. Available at: http://www.fypower.org/pdf/ACEEEstudy.pdf.

represents a high risk to the reliability of service to the consumers of New York.

As I mentioned before, energy efficiency measures do not offer the operational flexibility or the ability to access different remote sources of energy or ancillary services. Finally, the durability of the impacts of energy efficiency programs, known as persistence, has always been a source of concern to program evaluators and resource planners. This is particularly true for the programs proposed by Mr. Spellman, which rely on energy efficient lighting and space conditioning technologies that are relatively easy to impair by changes of tenancy and/or space remodeling. I will revisit these three irreconcilable differences in my rebuttal of the many flawed assumptions made by Mr. Spellman in his estimation of potential energy savings.

D. The NYRI project should not be evaluated solely by comparing the project's estimated annual revenue requirement with the estimated generation production cost savings that it will make possible.

Q **DR. LESSER, DO YOU CONSIDER YOURSELF AN EXPERT IN COST-BENEFIT ANALYSIS?**

A Yes. I have specific expertise in applied cost-benefit analysis ("CBA" or "C/B analysis"). First, I studied the theory and application of cost-benefit analysis as part of my doctoral program in economics at the

University of Washington, and my doctoral dissertation was an exercise in applied cost-benefit analysis. Second, I have published scholarly articles on aspects of cost-benefit analysis. Third, I have previously provided expert testimony on CBA studies I have performed. For example, on behalf of the New Jersey Board of Public Utilities, I testified on the costs and benefits of a proposed (and subsequently withdrawn) merger between Exelon Corporation and Public Service Enterprise Group. I also testified on behalf of the Electric Power Supply Association (EPSA) regarding a cost-benefit analysis prepared by the MISO Independent Market Monitor with respect to implementing wholesale energy price mitigation measures in what are called Broad Constrained Areas. And, I testified on behalf of Dogwood Energy, LLC regarding the costs and benefits of Aquila Corporation joining the Midwest Independent System Operator or the Southwest Power Pool.

Q **DR. LESSER, GIVEN YOUR EXPERTISE IN COST-BENEFIT ANALYSIS, IS IT APPROPRIATE TO BASE APPROVAL OF THE NYRI PROJECT BASED SOLELY ON A COMPARISON OF THE NYRI PROJECT'S ESTIMATED COST AND THE ESTIMATED PRODUCTION COST SAVINGS THAT IT WILL PROVIDE?**

A No. First, it is unlikely that market-based transmission system investments will secure funding because the regional price differences such investments are intended to exploit will decrease after such projects

are built. Similarly, regulated transmission projects are unlikely to pass narrow cost-benefit tests based solely on production cost savings compared with revenue requirements. Third, even if a transmission project like NYRI does pass such a narrow cost-benefit test, such projects will still be evaluated based on broader non-price siting issues. It is inconsistent to require any proposed transmission project to pass a narrow cost-benefit test and not impose non-price public policy costs (e.g., environmental impacts), but at the same time not consider public policy benefits, such as increased energy resource diversity, reduced greenhouse gas emissions, and helping the state meet its RPS requirement. Therefore, to the extent that all transmission project siting reviews include evaluations of public policy costs as well as estimated production cost savings, it is only reasonable that the non-price policy benefits such projects provide all be considered.

Q DR. LESSER, CAN THE STATE'S POLICY GOALS BE EVALUATED IN A COST-BENEFIT FRAMEWORK?

A In theory, they can be. However, in practice they are not. To my knowledge, meeting the state's 25% RPS mandate, reducing greenhouse gas emissions as required under RGGI, and increasing resource diversity are not state policy goals that have been developed based on strict cost-benefit accounting. Whereas the costs of such public policy goals can be

measured, it is extremely difficult to measure the benefits of such goals with any sense of accuracy.

Moreover, such goals are typically imposed because they do not meet narrow cost-benefit criteria. For example, wind and solar generation are typically more costly and less reliable (because the sun doesn't shine at night and the wind doesn't always blow) than fossil-fuel generation. If wind and solar resources were less costly and provided the same availability as fossil-fuel generation, there would be no need for a RPS mandate, since the least-cost solution would to be build renewable generation in any case.

Similarly, gas-fired generation facilities have been proposed and been built in New York State because other types of generation are less acceptable from a public policy standpoint. Given concerns about greenhouse gas emissions, and, given existing state and federal air pollution regulations. Natural gas is a likely choice of fuel. However, building new gas-fired generation, as several NYDPS witnesses recommend, will exacerbate the existing over-reliance on gas-fired generation. As the NYISO Transmission White Paper states in regard to SENY,

> "Over two-thirds of the MWh produced in this region are subject to significant fuel price volatility. Transmission can

> provide significant fuel diversity benefits to this region by providing access to non-gas-fired resources located elsewhere."[35]

If a more diverse resource portfolio were also the least-cost alternative, again, there would be no need for specific policy goals to achieve greater resource diversity. Instead, that energy resource diversity would occur in any case.

Finally, requirements to reduce greenhouse gas emissions and the state's participation in RGGI are clearly not based on cost-benefit tests. The benefits, in terms of reduced climate change, to New York from reducing in-state greenhouse gas emissions will be *de minimis*; global climate change is a global issue. Requiring electric generating plants to purchase carbon offsets necessarily increase overall generating costs and the prices New York ratepayers pay for their electricity. Yet, state policy makers believe that reducing greenhouse gas emissions is an important policy goal. It makes no sense to require a transmission project like NYRI to meet a cost-benefit test based solely on production cost savings when the project will also help the state achieve broader public policy goals. Finally, as the NYISO Transmission White Paper also states,

> "While congestion and energy price differentials can drive investment, they may be insufficient to support the

[35] NYISO Transmission White Paper, at 4-5.

> development of a transmission project on market price differentials alone. Intra-pool point-to-point merchant transmission projects have failed to develop due in part to the uncertainties concerning price differentials after the construction of a project. Most projects will destroy the spread they are intended to capture by reducing congestion.[36]

This means that it is doubtful any new transmission project will ever pass a cost-benefit test solely based on production cost savings. That is why transmission is viewed as a "public good," much like the Interstate Highway system provides benefits to everyone.

Q ARE MERCHANT TRANSMISSION PROJECTS, I.E., THOSE THAT ARE FUNDED BY TRANSMISSION SYSTEM DEVELOPERS THEMSELVES, REQUIRED TO PASS A COST-BENEFIT TEST FOR NYISO APPROVAL?

A No. However, such projects must still complete all of the required interconnection studies to determine their impact on the NYISO system.

Q DR. LESSER, IN THE CURRENT FINANCIAL ENVIRONMENT, IS IT LIKELY THAT MERCHANT TRANSMISSION PROJECTS WILL BE FINANCED AND BUILT?

A I think it highly unlikely that merchant transmission projects will be independently financed in the current financial environment, for a number of reasons. First, the state of flux in the electric industry, including proposals to re-regulate the industry, evolving transmission

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[36] NYISO Transmission White Paper, at 4-8.

market designs, and the potential for new environmental regulations, introduce significant regulatory uncertainty for transmission projects, which typically have long economic lives. Second, as NYISO itself has pointed out in its Transmission White Paper and discussed previously, most transmission projects, by reducing congestion will eliminate the price spread on which their economic justification is based, destroying the economic rationale for independently financing such investments in the first place. That, in fact, is common to all public goods: markets supply too little of them.

Q HAVE ANY OF THE REGIONAL TRANSMISSION OWNERS IN NYISO (RTOS) PROPOSED TRANSMISSION PROJECTS THAT WOULD PROVIDE SIMILAR PRODUCTION COST SAVINGS AND PUBLIC POLICY BENEFITS AS THE NYRI PROJECT?

A To our knowledge, none of the other RTOs have submitted any such projects to NYISO.

Q WILL THE NYRI PROJECT RESULT IN ANY PRODUCTION COST SAVINGS?

A Yes. We prepared an independent analysis of projected production cost savings with the NYRI project. We estimate those savings to be $191 million (2006$) in 2012, when the project is assumed to be in service. The savings increase to $197 million (2006$) in 2015, and then increase significantly to $315 million (2006$) by 2018. Thus, whereas the estimated

production cost savings are not greater than the project's anticipated annual revenue requirement in the first few years, we estimate the production cost savings will be greater than the revenue requirement by 2018. The reason for this is that NYRI will create significant economic incentives to build new renewable and gas-fired generating facilities in UPNY by providing a new transmission conduit to SENY. Thus, in addition to helping the state meet its energy policy goals, we find that NYRI will provide a net reduction in energy costs by the year 2018.

Q IS THE NYPSC REQUIRED TO BASE APPROVAL OR DISAPPROVAL OF THE NYRI PROJECT SOLELY ON THE BASIS OF PRODUCTION COST SAVINGS?

A We assume the NYPSC takes into account public policy goals when determining whether to grant approvals, as well as non-monetary issues such as environmental impacts.

Q DO YOU RECOMMEND THE NYPSC GRANT A CERTIFICATE OF PUBLIC NEED AND CONVEYANCE TO THE NYRI PROJECT?

A Yes. First, it is unlikely that any merchant transmission projects linking UPNY to SENY will be built, especially in the current financial environment. Second, there are no other planned transmission projects that will enable the new renewable generation that will be needed to meet the state's RPS requirement and reduce greenhouse gas emissions, as

required by the state's participation in RGGI. Nor are there any other planned transmission projects that will allow for increased energy resource diversity, which is another state policy goal.

The alternatives recommended by the NYDPS consist of new gas-fired generation, which will reduce energy resource diversity, or reconfiguring an existing NYPA circuit into a DC line, even though NYPA itself states it has no plans to develop that project. The alternatives recommended by CARI are: (1) an underground, route for the NYRI project that will cost significantly more but have a lower capacity to wheel power, and (2) installing energy efficiency measures in SENY based on a utterly flawed analysis that also ignores the reliability benefits of transmission investments and is based on untenable assumptions.

NYRI will help the state meet its public policy goals. It will improve development of wind and other renewable generation in upstate New York. It will help reduce existing transmission constraints and allow for lower-cost generation in UPNY to more easily meet growing demand in SENY, thus lowering New York ratepayers' electric bills. NYRI will also encourage greater energy resource diversity and help to reduce greenhouse gas emissions. There are no other transmission projects in the NYISO queue that will provide these benefits. Nor will any of the

generation alternatives proposed by NYDPS staff, as those proposed projects are all gas-fired.

III. THE NYRI PROJECT WILL HELP THE STATE MEET ITS ENERGY POLICY GOALS

A. Transmission system investments like NYRI are a public good that will help the state meet its public policy goals and promote development of lower-cost generation in UPNY.

Q CAN A TRANSMISSION SYSTEM INVESTMENT PROVIDE BENEFITS THAT OUTWEIGH ITS COSTS, BUT FOR WHICH SUCH BENEFITS MAY NOT BE DIRECTLY CAPTURED BY THE OWNERS?

A Yes. One of the key benefits that high-voltage transmission provides is to reduce the costs of providing electricity to ratepayers. It does so in two ways. First, by connecting local consumers with distant and geographically diverse generating resources, transmission increases access to lower cost generating resources. Moreover, by interconnecting many generators, transmission increases system reliability for all consumers, or alternatively, allows for a chosen level of reliability to be provided at a lower cost than would otherwise be possible. The NYISO Transmission White Paper states that,

> The real value of transmission is in enabling and improving competitive markets for generation, particularly when the strategic value and benefit far outweighs the cost of the transmission itself. The premise is that transmission is a public good, not a competitive product. For example, the interstate highway system has provided immense benefits to

> consumers in the form of increased competition for all sorts of goods and services, benefits universally acknowledged to exceed the cost of building the interstate system. Likewise, transmission should be allowed to provide benefits in the form of enhanced competition for energy and capacity generation services.[37]

In addition to providing enhanced competition, in the case of New York, new transmission investment is required if development of new renewable generating resources, which under the state's RPS are required to provide 25% of all electric generation in 2013, just four years from now, and, under Governor Patterson's recently announced goal, 30% by 2015.

Q CAN YOU EXPLAIN WHAT YOU MEAN BY A PUBLIC GOOD?

A Yes. Public goods have several general characteristics. The two most important are called *nonexclusivity* and *nonrivalry*. Nonexclusivity just means that providing the good for one provides it for everybody. Central Park in Manhattan is a public good; anyone can go walk through it and enjoy the park. The interstate highway system, as the NYISO White Paper pointed out, is another. Anyone is free to drive on an interstate highway.[38]

The electric transmission grid has many characteristics of a public good, as do local distribution networks. For example, if the transmission

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[37] NYISO Transmission White Paper pp.4-8 – 4-9, fn. omitted.

[38] Toll roads like the New York State Thruway are different, since you have to pay to use them.

system is upgraded, everyone benefits from the improved reliability; customer A's reliability will not be improved while customer B next door's reliability remains the same. Furthermore, by providing greater access to competitively priced generation, all customers benefit, for the same reason that unfettered trade between two countries benefits both.

Q WHAT EVIDENCE DO YOU HAVE THAT BUILDING NEW GENERATION IN UPNY COSTS LESS THAT BUILDING NEW GENERATION IN SENY AND NEW YORK CITY?

A In 2007, NYISO commissioned NERA Economic Consulting to estimate the costs of building new gas-fired peaking generators in different regions of the state.[39] These cost estimates form the basis of the installed capacity ("ICAP") demand curves used by NYISO to determine how much all generators are paid for providing capacity resources. Having sufficient generating capacity, including a capacity reserve above projected peak loads is necessary to ensure overall system reliability.

NYISO divides the state into three zones for ICAP markets: New York City, Long Island, and "Rest-of-State." New York City and Long Island have their own separate ICAP markets because existing

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[39] NERA, "Independent Study to Establish Parameters of the ICAP Demand Curve for the New York Independent System Operator," August 15, 2007 (NERA Report"). Available at: http://www.nyiso.com/public/webdocs/committees/bic_icapwg/meeting_materials/2007-08-24/ICAPWG_Demand_Curve_Study_Report_final_82407.pdf

transmission constraints into those two areas requires that much of the generating capacity needed to meet peak demand be local. For example, 80% of the generation needed to meet peak demand in New York City must be physically located in the city. Similarly, 99% of the generation needed to meet peak demand in Long Island must be located there.

The NERA study evaluated the cost of building new generating units in UPNY, the Capital Region, the Lower Hudson Valley, New York City, and Long Island. For example, NERA estimated that labor costs associated with constructing new generating plants in New York City would be almost double those in UPNY.[40] In total, NERA estimated that constructing a generating plant in NYC or on Long Island would cost almost 40% more than building the same plant in UPNY.[41] NERA also estimated property taxes to be only one-fourth as high in UPNY as in New York City. Similarly, the cost to lease sites is far lower in UPNY than in New York City or Long Island. Moreover, labor and capital costs to maintain those same generating plants were also less in UPNY. For a 45 MW generating plant, the difference in capital costs alone amounted to about $45 million, or about $1,000/kW.

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[40] NERA Report, at 75.

[41] Id.

Q IF UPSTATE GENERATION COSTS ARE LOWER THAN DOWNSTATE COSTS, WHY DON'T DEVELOPERS FINANCE NEW TRANSMISSION PROJECTS THEMSELVES, RATHER THAN REQUEST RATE-BASE TREATMENT FOR THOSE PROJECTS?

A The problem is that, by adding new transmission capacity, the price differentials will often disappear because of the transmission investment itself. This was pointed out recently by NYISO in its Transmission White Paper:

> While congestion and energy price differentials can drive investment, they may be insufficient to support the development of a transmission project on market price differentials alone. Intra-pool point-to-point merchant transmission projects have failed to develop due in part to the uncertainties concerning price differentials after the construction of a project. Most projects will destroy the spread they are intended to capture by reducing congestion.[42]

This is one reason that private funding of transmission projects is rare. If the transmission projects are built and, as a result, eliminate the price differentials they were predicated upon, then those projects will have no market value. No investors will want to fund such investments.

For example, the proposed Empire State Transmission Project, a 2000 MW HVDC line that would have run from just outside Albany, New York, to New York City, was cancelled because no subscribers signed up

[42] NYISO Transmission White Paper, p.4-8 (emph. added).

for the line, even though it was recognized that the line would allow lower-cost power from upstate New York to be transferred downstate, where electric prices are higher. We are not aware of any other planned merchant transmission projects linking upstate New York to downstate markets.

Q DID THE NYISO TRANSMISSION WHITE PAPER ALSO ADDRESS ISSUES AFFECTING TRANSMISSION LINES NEEDED FOR PUBLIC POLICY REASONS?

A Yes. The White Paper recognizes that the existing NYISO transmission planning regime is inconsistent with state energy policy goals. Specifically,

> "The history and characteristics of the New York bulk power transmission system present additional drivers for (as well as obstacles to) transmission investment. Importantly, several of these drivers reflect New York's policy choices for the future of its electric system. These policy choices effectively create new criteria and objectives for transmission planning in New York. It is increasingly clear, however, that the development of these new environmental and public policy mandates did not fully take into account the existing transmission planning framework."[43]

The Transmission White Paper also states that,

> "transmission upgrades driven by environmental and public policy reasons are typically not needed to 'keep the lights on' and will likely fail traditional cost-benefit analyses that focus on production costs (LMPs) and congestion/uplift costs. For example, transmission projects needed to develop

[43] Id., at 4-1 (emph. added).

> renewable resources are often uneconomic because the resources are in remote locations, far from load centers and any other significant electric infrastructure. To date, no transmission planning regime (reliability or economic) explicitly includes public policy objectives as essential goals for transmission planning. It is becoming harder to reconcile existing transmission planning frameworks with various public policy mandates being enacted by state (and possibly federal) policymakers."[44]

New York State has enacted just the sort of public policy mandates that the white paper references. Despite that, however, intervenors, including NYDPS witnesses, have based large portions of their objections to the NYRI project on narrow cost-benefit analyses that compare the estimated benefits in the form of production cost savings the project will create with the project's cost, completely ignoring the public policy benefits the NYRI project will provide.

Q WHAT ARE THE PUBLIC POLICY GOALS THAT THE NYRI PROJECT WILL PROMOTE?

A NYRI will promote three interrelated state policy goals. These are: (1) increasing renewable generation, most likely wind generation, through the state's RPS goal of meeting 25% of the state's electric energy requirements with renewable resources by the year 2013 and, as set out by Governor Patterson in his "State of the State" address on January 8, 2009, meeting 30% of the state's electric energy requirements with renewable

[44] Id., at 4-2.

resources by the year 2015; (2) reducing greenhouse gas emissions from fossil-fuel generating plants, reflected by the state's membership in the Regional Greenhouse Gas Initiative (RGGI); and (3) increasing energy resource diversity, which was set out as a policy goal in the 2002 State Energy Plan and, most recently in the governor's aforementioned "State of the State" address.

Q WILL THE NYRI PROJECT HELP THE STATE MEET THESE PUBLIC POLICY GOALS?

A Yes. NYRI will help foster development of renewable resources upstate and improve the ability to wheel generation from such renewable resources to downstate utilities and consumers.

Q WHY IS ADDITIONAL TRANSMISSION INFRASTRUCTURE NEEDED TO MEET THE STATE'S RPS GOAL?

A As the NYISO Transmission White Paper explains,

> "Building wind plants alone, however, will not achieve compliance with the State's RPS targets. Many of the proposed wind plants are seeking to interconnect in concentrated clusters located in the northern and western regions of the State. These regions' existing transmission network was not designed to deliver all the potential wind plant output to the loads in the southeastern portion of the State. NYSERDA's long-term contracts only provide revenue to wind plants that generate energy that is ultimately used to meet New York's retail load. Without investment in additional transmission infrastructure to balance and move wind energy to the load centers in the southeastern regions

> of the state, it may become difficult for New York to meet its state RPS targets."[45]

Similarly, an October 2008 White Paper prepared for the NYISO on fuel diversity (attached as Exhibit No. JAL/JNP-6) states,

> "Without enhancements to the transmission grid in the state that will allow greater transfers of power from north to south, the wind resources may do little to reduce energy prices and diversify the downstate mix. Moreover, without transmission enhancements enabling greater delivery of wind, wind turbines may be required to dispatch down even when the wind is blowing because the grid would otherwise become overloaded with too much power for the local region to absorb."[46]

Q PLEASE EXPLAIN WHAT IS MEANT BY THE STATEMENT THAT "WIND TURBINES MAY BE REQUIRED TO DISPATCH DOWN."

A NYISO has stated that thousands of MW of new wind generation will need to be built to meet the state's RPS requirement. Without enough transmission capacity, however, all of this wind generation would overload the existing transmission system. It is as if one is trying to drain a bathtub when the faucets are running on full and the drain is partially clogged. There are only two solutions to the problem: unplug the drain (i.e., increase transmission deliverability or turn down the faucets (i.e., dispatch down wind turbines.) Without new transmission capacity, the

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45 Id., at 4-3.

46 NYISO, "Fuel Diversity in the New York Electricity Market," White Paper, October 2008 ("NYISO Fuel Diversity White Paper"), at 4-9 (fn. omitted).

NYISO system will be incapable of delivering all of the wind generation. This means that many wind generators will be told to reduce their output or, at times, even shut down completely so as not to overload the transmission system.

Q WILL THE NYRI PROJECT ELIMINATE THIS ISSUE?

A The NYRI project will help by increasing transmission capacity from UPNY to SENY, but clearly will not solve every transmission capacity problem in the state. Other transmission upgrades are needed to address those issues.

As we discuss in the next section of our testimony, NYDPS witnesses appear to be applying a standard that requires the NYRI project be rejected precisely because it does not solve all of these long-standing transmission constraints. This is an impossible standard for any transmission development to meet.

B. The NYDPS is using NYISO's existing transmission constraints to impose an impossible hurdle on transmission system infrastructure development, including NYRI.

Q DOES NYDPS WITNESS SCHROM AGREE THAT THE NYRI PROJECT WILL INCREASE THE ABILITY OF RENEWABLES TO DELIVER THEIR GENERATION AS YOU HAVE DISCUSSED?

A No. In his testimony, Mr. Schrom states

> "There are currently no proposed renewable energy projects near the proposed NYRI facility or the transmission system

> next to the interconnect at Edic. Most of the existing and proposed renewable generation is located to the extreme north and western part of the state and is already experiencing bottled capacity problems. To deliver the capacity to NYRI's proposed facility would require additional transmission lines to be constructed from the renewable generators to the Edic Station. There is currently insufficient transmission capacity to make those deliveries to NYRI's proposed facility."

[Schrom Testimony, at 18, line 13 – 19, line 2]. Although Mr. Schrom's statement is not entirely correct – there is significant wind capacity north of Edic – it reveals one of the most significant planning and policy limitations of NYISO itself. Specifically, unlike other RTOs, until last year, NYISO did not require the transmission system to be able to absorb all of the generation supplied by new generators interconnecting to the NYISO transmission grid.

Q WHY IS THIS A PROBLEM?

A As explained in an October 2008 Whitepaper prepared by NYISO on integrating wind resources into the NYISO system,

> "Proposed generation projects are required to comply with the applicable NYISO interconnection procedures. The interconnection study process identifies any adverse reliability impacts of the proposed project and identifies facilities required in order for the project to interconnect in a manner consistent with applicable reliability standards. The

> interconnection study process assesses the reliability of the system while providing the project access to the transmission system; however, it does not assure delivery service across the network."[47]

The NYISO Wind Integration White Paper goes on to say that this "may lead to sub-optimal reductions of wind plant output during periods of transmission limitations."[48]

In other words, while a new generator may be able to connect to the NYISO transmission system, it may be forced to reduce the amount of generation, even if the marginal cost of that generation is low, or zero in the case of wind energy, because there is too little transmission to deliver the power generated to where it is needed. If there is too little transmission capacity, a generator can be required to operate at a diminished level, or even be forced to shut down, because there is too little transmission capacity available to allow the generator to operate. As Mr. Schrom points out, this is already occurring today in NYISO, and is what he refers to as "bottled capacity."

Q HOW DOES THIS AFFECT EXISTING WIND GENERATORS?

A The NYISO Fuel Diversity White Paper states that,

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[47] NYISO, "Integration of Wind into System Dispatch," White Paper, October 2008 ("NYISO Wind Integration White Paper"), at 2-4 (fn. omitted).

[48] Id.

> "Typically, the NYISO cannot fully dispatch all low-priced power production facilities (such as wind) in the upstate region to meet downstate loads because of electrical overloading of the transmission system that would occur with the north-to south flows on the system. As a result, more expensive plants (gas-fired peaking plants, oil plants) must by physically located downstate, and then operated locally to keep the lights on in New York City and Long Island."[49]

Thus, today, New York consumers, especially in New York City and Long Island, pay more for their electricity than necessary, because lower cost generation in UPNY cannot always be delivered to SENY. As a result, higher-cost generation must be dispatched in New York City and Long Island. That raises costs to consumers.

Q **WOULD THE UNDERGROUND TRANSMISSION ALTERNATIVE PROPOSED BY CARI WITNESS LANZALOTTA SOLVE THE "BOTTLED CAPACITY" ISSUE FOR WIND RESOURCES LOCATED IN THE NORTHERN AND WESTERN PARTS OF THE STATE?**

A No.

Q **WOULD DEVELOPING THE NYPA TRANSMISSION ALTERNATIVE AS RECOMMENDED BY MR. SCHROM SOLVE THE "BOTTLED CAPACITY" ISSUE FOR WIND RESOURCES LOCATED IN THE NORTHERN AND WESTERN PARTS OF THE STATE?**

A No.

Q **DOES NYISO ITSELF BELIEVE THAT THE STATE'S RPS REQUIREMENT CAN BE MET WITHOUT BUILDING ADDITIONAL TRANSMISSION INFRASTRUCTURE THAT LINKS UPNY TO SENY?**

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[49] NYISO Fuel Diversity White Paper, at 1-2.

A No. The NYISO Wind Integration White Paper states that,

> "Just meeting New York State's 25% renewable energy mandate may require as much as 4,000 MW of wind capacity to be built in New York ... With wind plants continuing to locate in the northern and western portions of the state it will become difficult to meet state RPS targets without additional transmission infrastructure"[50]

Q ARE OTHER REGIONS OF THE COUNTRY ADDRESSING THESE SAME SORTS OF TRANSMISSION INFRASTRUCTURE ISSUES?

A Yes. As the NYISO Wind Integration White Paper states, several states have embarked on large public policy initiatives to ensure that renewable generation can be integrated into their power systems. For example, the State of California established a Renewable Energy Transmission Initiative (RETI) in order to identify the necessary transmission projects required to facilitate the state's renewable energy goals. Just in December 2008, the California Public Utilities Commission approved the Sunrise Power Link, which is designed to enable transmission of renewable generation from the Imperial Valley into the San Diego area.

Similarly, in July 2008, the Public Utility Commission of Texas awarded contracts worth almost $5 billion to fund a series of transmission projects to deliver wind energy from areas known as "Competitive

[50] Id., at 5-1 (fn. omitted).

Renewable Energy Zones" (CREZ). CREZ are "zones that can develop large amounts of energy from renewable resources in a cost effective and environmentally benign manner."[51] The goal is to interconnect over 18,000 MW of wind generation. The NYISO Wind Integration White Paper also notes that other such efforts are underway, including the Midwest Independent Transmission System Operator, which is "coordinating efforts to evaluate the transmission needed to support integration of 20% wind generation within Minnesota, Wisconsin, Illinois and Iowa."[52]

Q DOES NYISO HAVE ANY SIMILAR POLICY INITIATIVES UNDERWAY?

A No. Not only does NYISO have no such policy initiatives underway, it has none planned. Thus, whereas NYISO itself admits that new transmission infrastructure must be developed in order to meet the state's RPS goal, it does not even consider the existing transmission infrastructure's ability to deliver that renewable energy in its planning process. Worse, the NYDPS, which is a state government entity and is clearly aware of the state's RPS goals, opposes the NYRI project even though NYRI represents a key component of the transmission infrastructure that is needed. In essence, NYDPS witness Schrom

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[51] Id., at 5-3.

[52] Id.

recommends that NYRI be penalized for the NYISO's lack of adequate transmission capacity. In other words, since there is too little transmission capacity in NYISO to enable lower-cost generation in UPNY, including renewable generation, to be dispatched efficiently, Mr. Schrom argues there is no point in building NYRI, even if NYRI will add new transmission capacity and, as such, address some of those existing transmission constraints in NYISO.

Mr. Schrom essentially is imposing an almost insurmountable economic hurdle and "Catch-22" on any proposed transmission development in the state, including NYRI, designed to foster renewable generation development and increased use of lower-cost generating resources upstate. Accepting his logic means that transmission infrastructure like NYRI will not be built to meet the state's renewable generation requirements because there are other constraints on the NYISO system that prevent existing renewable generation from being fully dispatched, much less an additional 4,000 MW of renewable generation. Of course, new renewable generating plants will not be built or financed if the additional transmission infrastructure needed to sell those plants' generation is not allowed to be developed. Mr. Schrom's "Catch-22" approach is clearly wholly inconsistent with state energy policy that

wishes to promote renewable generation, reduced greenhouse gas emissions and greater energy resource diversity.

Q DR. LESSER, YOU HAVE SIGNIFICANT EXPERIENCE IN ENERGY POLICY DEVELOPMENT BASED ON YOUR TENURE AT THE WASHINGTON STATE ENERGY OFFICE AND, MORE RECENTLY, AS THE DIRECTOR OF PLANNING AT THE VERMONT DEPARTMENT OF PUBLIC SERVICE. DO YOU CONSIDER THIS "CATCH-22" SITUATION THAT NYDPS WITNESS SCHROM IS IMPOSING TO BE GOOD PUBLIC POLICY?

A Of course not. Not only do such "Catch-22" situations undermine infrastructure development – even when NYISO itself recognizes the need for such development – it also increases costs, as investors will require greater compensation for the additional regulatory uncertainty in the form of higher expected returns.

Q IGNORING THE FACT THAT NYPA WITNESS O'CONNOR HAS TESTIFIED THAT THERE ARE NO CURRENT PLANS TO BUILD THE TRANSMISSION PROJECT PREFERRED BY NYDPS WITNESS SCHROM, WOULD THAT PROJECT "SOLVE" THE "BOTTLED CAPACITY" PROBLEM?

A No. Moreover, it is odd that Mr. Schrom concludes the NYPA project is preferable to the NYRI project without having performed or even reviewed any studies of that project, as he admits in his response to Interrogatory NYRI-56 (attached as Exhibit No. JAL/JNP-7).

Q WOULD THE ALL-UNDERGROUND ALTERNATIVE LINE PROPOSED BY CARI WITNESS LANZALOTTA "SOLVE" THE "BOTTLED CAPACITY" PROBLEM?

A No. In fact, given that Mr. Lanzalotta's all-underground alternative would have a lower capacity than the NYRI project, it would provide access for even less Upstate generation.

C. NYRI will enable greater energy resource diversity in the state by allowing more generation that is not gas-fired to be developed.

Q WHY IS ENERGY RESOURCE DIVERSITY IMPORTANT?

A The reason energy resource diversity is important is because the state is already highly exposed to volatile fossil-fuel prices. As the NYISO Transmission White Paper notes, natural gas-fired and oil-fired generating resources are "on the margin" – and thus set market prices – about 90% of all hours.[53] By increasing resource diversity, consumers in southern New York, where the demand for electricity continues to grow, will not have to rely as heavily on natural gas-fired and oil-fired generating resources nor be as exposed to volatile natural gas prices.

Q ARE THERE ANY OTHER REASONS TO DEVELOP NEW GENERATING RESOURCES IN UPSTATE NEW YORK?

A Yes. Although new gas pipeline capacity into the southern Hudson Valley can be developed, prices are likely to be higher in the south than in

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[53] Id.

northern NY, as was also recognized in the NYISO Fuel Diversity White Paper. Building new gas-fired units in southern New York, as has been recommended by several NYDPS witnesses, will further exacerbate the region's reliance on gas-fired generation.

Q WHAT DOES THE NYISO FUEL DIVERSITY WHITE PAPER STATE ABOUT THE EFFECTS OF LIMITED FUEL DIVERSITY IN SENY?

A The NYISO Fuel Diversity White Paper states that

> "The comparatively limited downstate fuel diversity poses certain risks for the New York City and Long Island areas. For obvious reasons, the wholesale prices in these areas are inextricably tied in the short run to price conditions in the natural gas market. Without changes in the transmission infrastructure allowing power from other fuel technologies to become available to the downstate regions, prices will continue to be shaped by relatively expensive fossil fuels in the downstate area."[54]

Q WHAT OTHER FUEL TECHNOLOGIES IS THE NYISO FUEL DIVERSITY WHITE PAPER MOST LIKELY REFERENCING?

A The NYISO queue shows several large pumped-storage hydro resources located upstate, which use low-cost off-peak generation to provide high-value generation in peak hours. It is also possible that the state's existing nuclear units may see their generation increased through capacity uprates. And, of course, thousands of MWs of new wind generation are in the NYISO queue and will need to be developed for the

[54] NYISO Fuel Diversity White Paper, at 3-6 (emph. added).

state to meet the RPS requirement. As NYISO itself states, new transmission infrastructure will be required to ensure that power from other fuel technologies located upstate can be delivered to meet growing SENY demand.

Q IN THEIR EVALUATION OF GENERATION ALTERNATIVES TO NYRI, DID ANY NYDPS WITNESSES CONSIDER DEVELOPMENT OF OTHER FUEL TECHNOLOGIES BESIDES NATURAL GAS?

A No. NYDPS witnesses Gjonaj and Wheat, Schrom, de Waal Malefyt, or Davis all either modeled or assumed gas-fired generating plants as generation alternatives to NYRI.

Q DID NYDPS WITNESSES GJONAJ AND WHEAT STATE THAT BUILDING 1,200 MW OF NEW GAS-FIRED GENERATION IN SENY OR NEW YORK CITY WOULD INCREASE CONSUMERS' EXPOSURE TO VOLATILE NATURAL GAS PRICES?

A Yes. In response to Interrogatory Request NYRI-58(f) (attached as Exhibit No. JAL/JNP-8), witnesses Gjonaj and Wheat state that building new gas-fired generation would increase consumers' exposure to volatile natural gas prices.

Q IS THAT INCREASED CONSUMER EXPOSURE TO VOLATILE NATURAL GAS PRICES ADMITTED BY NYDPS WITNESSES GJONAJ AND WHEAT CONSISTENT WITH STATE ENERGY POLICY?

A No. It is directly contrary to state energy policy, which calls for greater energy resource diversity, not less. One of the goals of greater energy resource diversity is to reduce exposure to volatile fuel prices.

Q DID NYDPS WITNESS SCHROM STATE THAT BUILDING NEW GAS-FIRED GENERATION WOULD INCREASE CONSUMERS' EXPOSURE TO VOLATILE NATURAL GAS PRICES?

A No. Instead, Mr. Schrom avoided answering a direct question posed to him about the issue. Specifically, in response to Interrogatory Request NYRI-54(c) (attached as Exhibit No. JAL/JNP-9), Mr. Schrom stated that he had "not taken into account the affect [sic] of fuel process on the cost of generation."

Q WHAT DOES "THE AFFECT [SIC] OF FUEL PROCESS ON THE COST OF GENERATION" MEAN?

A It is not clear from Mr. Schrom's response. In general terms, the cost of fossil-fuel generation is affected by both the average level of fuel prices and the volatility of fuel prices. As volatility increases, it is possible to hedge that volatility by signing long-term contracts at fixed prices or by purchasing call options that are triggered at certain price levels. However, as volatility increases, so does the cost of hedging against that volatility. By building more gas-fired generating resources that increasingly set the market price of power in most hours, consumer exposure to volatile gas

prices increases, as the NYISO Fuel Diversity White Paper states. Reducing that exposure in the face of more natural gas-fired generation would require greater use of hedging mechanisms, which always have a net cost (insurance is never free, lest the insurer go out of business). Thus, building additional natural gas-fired generation necessarily increases costs to consumers, unless the State abandons its goal of greater energy resource diversity, in which case no money would be spent to reduce such exposure.

D. NYISO's assumptions regarding the need for new investment to maintain reliability are fraught with uncertainty.

Q **IN ITS 2009 "RELIABILITY NEEDS ASSESSMENT" (2009 RNA), DOES NYISO STATE THAT THERE IS NO NEED FOR NEW TRANSMISSION SYSTEM INVESTMENT TO MEET RELIABILITY STANDARDS THROUGH THE YEAR 2018?**

A Yes. The 2009 RNA states that, "the forecasted baseline system meets applicable reliability criteria for the next 10 years, from 2009 through 2018, without any additional resource needs."[55]

Q **JUST TO CLARIFY, HOWEVER, THE 2009 RNA DOES NOT CONSIDER INVESTMENTS THAT MAY BE NEEDED TO FURTHER STATE ENERGY POLICY GOALS, SUCH AS THE RPS. IS THAT TRUE?**

[55] 2009 RNA, at i.

A Yes. NYISO witness Buechler stated in his testimony that NYISO does not account for any public policy goals in its RNA process [Buechler Testimony, at 27, lines 2-5].

Q HOW DID NYISO DETERMINE THAT NO NEW INVESTMENT WAS NEEDED TO MEET RELIABILITY STANDARDS THROUGH THE YEAR 2018?

A According to the 2009 RNA, there is no need for new reliability investments because it assumes three things will happen with certainty:[56]

1. 1,714 MW of new generation, including 800 MW of new wind power, will be added by generation developers and fewer retirements of older, inefficient generators;
2. The state will realize its policy goal of a 15% reduction in total electric demand, known as the "15 x 15" energy efficiency portfolio standard ("EEPS"). NYISO assumes this will provide a 5% reduction in forecast peak loads by 2015, or 2,100 MW;
3. Increased registration of so-called "Special Case Resources" (SCRs), from 761 MW in the 2008 RNA to 2,084 MW in the 2009 RNA. SCRs are contracts with firms that agree to reduce their electricity use when asked by NYISO.

[56] Id., at i-ii.

Q DOES NYISO RECOGNIZE ANY UNCERTAINTIES OR OTHER ISSUES THAT COULD CHANGE ITS CONCLUSION ABOUT THE LACK OF NEED FOR NEW INVESTMENT IN THE 2009 RNA?

A Yes. NYISO discusses seven potential factors that could change its conclusions. These include the 15x15 EEPS program not producing the expected peak load reductions; higher load growth and extreme weather that increases peak demand on hot summer days; compliance with new environmental laws requiring reductions in emissions of oxides of nitrogen, which could cause some generating units to shut down because the required pollution control investments would not be economical; increased greenhouse gas allowance prices resulting from the state's continued participation in RGGI could lead to coal-plant shutdowns; unexpected generating plant retirements, such as may occur if a generating plant is unexpectedly faced with significant repair costs; increased loads of 750 MW in the Lower Hudson Valley or in New York City above the forecast. Clearly, there are numerous factors that may change the NYISO's Base Case projection in the 2009 RNA regarding reliability.

Q DOES THE NYISO HAVE ANY CONTINGENCY PLANS TO ADDRESS THESE ISSUES, SUCH AS IDENTIFIED PROJECTS THAT ARE "WAITING IN THE WINGS" IN CASE OF CHANGING CONDITIONS?

A No. As NYISO states in its 2009 RNA,

> "Should the NYISO determine that conditions have changed, it will determine whether market-based solutions that are currently progressing are sufficient to meet the resource adequacy and system security needs of the New York power grid. If not, the NYISO will address any newly identified reliability need in the subsequent RNA or, if necessary, issue a request for a Gap solution."[57]

In essence, NYISO's contingency planning boils down to "monitoring" the situation and then, if conditions change, beginning the process to acquire a regulated solution.

Q IS THERE ANYTHING WRONG WITH MONITORING THE SYSTEM FOR CHANGES FROM THE BASE CASE.

A Of course not. However, whereas monitoring is necessary, it may not be sufficient. It is easy to tell if generators are suddenly retired, a new law has been passed that requires environmental retrofits, or if a nationwide carbon tax or cap-and-trade system is passed.

In some cases, however, it may not be easy to determine if the there has been a fundamental shift, such as changes in peak load growth. Load growth is always volatile and load forecasts always change. It can be difficult to determine when peak load growth has changed fundamentally versus when it is being affected by random effects of weather and market

[57] Id., at iv.

prices. Thus, just as the NYISO's 2009 load forecast dropped from 2008, it could just as easily increase again in 2010 or 2011. However, NYISO relies solely on a point load forecast that does not account for the inherent uncertainty of future load growth.

The problem with failing to address uncertainty regarding future peak load growth is that, by relying almost exclusively on market-based solutions, NYISO is presuming that such solutions will have no problems obtaining the necessary funds for development. In the current capital market, this is unlikely to be the case. Moreover, as NYISO Transmission White Paper itself states,

> "The CRPP's all-source nature, its preference for market solutions, and the compression of the timeframe for regulated backstop solutions make it less likely that transmission will be chosen as a solution to address reliability needs in New York."[58]

Again, therefore, we have the specter of NYISO saying that new transmission investment will be needed if the state is to meet its public policy goals, while admitting that its own procedures make it unlikely that market-based transmission will be built. Moreover, if market solutions cannot obtain the necessary funding, one is inexorably left with regulatory "Gap" solutions.

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[58] NYISO Transmission White Paper, at 6-1.

Q WHY IS A "WAIT AND SEE" APPROACH TO DETERMINE IF MARKET SOLUTIONS WILL BE SUFFICIENT PROBLEMATIC?

A The problem with a "wait and see" approach is best explained by the previous quote from the NYISO Transmission White Paper: by the time one discovers that market solutions may not work, there may be too little time to develop transmission alternatives. Not only does that mean that a regulated transmission alternative may not be forthcoming even if it is the least-cost regulatory solution, but also that the other state policy goals will not be realized.

Additionally, in an uncertain investment climate such as today's, relying on market solutions will be increasingly costly and speculative, compared to regulatory solutions. Market projects may be delayed or cancelled suddenly, such as the ill-fated Empire State transmission project, because investors are afraid to commit. Yet, the 2009 RNA does not account for this timing uncertainty.

Q ARE YOU AWARE OF ANY GENERATING PROJECTS IN THE CURRENT NYISO PROJECT QUEUE THAT HAVE BEEN DELAYED OR CANCELLED OUTRIGHT?

A Yes. Table 1 below (also attached as Exhibit No. JAL/JNP-10) provides a list of generation projects in SENY (Zones H – K) that have been withdrawn from the NYISO interconnection queue just since 2006.

As can be seen from the exhibit, these plants have a combined capacity of over 10,700 MW.[59] The list does not include projects whose on-line dates have slipped, in some cases by years, from their originally planned on-line dates.

TABLE 1: Cancelled Generating Power Plants in SENY Since 2006

Generation Projects Withdrawn from the NYISO Interconnection Queue in SENY (Zones H, I, J, and K) Since 2006

Queue Pos.	Owner/Developer	Project Name	Date of IR	SP (MW)	Type	Location County/State	Zone	Interconnection Point	Utility
13	East Coast Power, LLC	Linden 7	3/25/99	100	ST-NG	Richmond, NY-NJ	J	Goethals 345kV	ConEd
16	Oak Point Property, LLC	Oak Point Yard	4/15/99	500	CC-NG	Bronx, NY	J	Hell Gate/Bruckner 138kV	ConEd
22	Calpine Eastern Corporation	Wawayanda Energy Center	6/10/99	500	CC-NG	Orange, NY	H	Coop Corn-Rock Tav Lines 345kV	NYPA
24	Reliant Energy	Astoria Repowering-Phase 1	7/13/99	367	CC-NG	Queens, NY	J	Astoria 138kV	ConEd
23	Calpine Eastern Corporation	Sullivan County Power Project	6/25/99	1080	CC-NG	Sullivan, NY	H	Coop Corn-Rock Tav Lines 345kV	NYPA
29	Mirant	Bowline Point Unit 3	10/13/99	750	CC-NG	Rockland, NY	H	W. Haverstraw 345kV	ConEd
35	Gotham Power Zerega, LLC	Gotham Power - Bronx I	1/12/00	79.9	CT-NG	Bronx, NY	J	Parkchester/Tremont 138kV	ConEd
70	Reliant Energy	Astoria Repowering-Phase 2	8/18/00	173	CT-NG	Queens, NY	J	Astoria 138kV	ConEd
93	In-City I, LLC	Cross Hudson Project	5/11/01	550	CC-NG	New York, NY-NJ	J	W49th Street 345kV	ConEd
96	Calpine Eastern Corporation	CPN 3rd Turbine, Inc. (JFK)	5/29/01	45	CT-NG	Queens, NY	J	Jamaica 138kV	ConEd
105	Calpine Eastern Corporation	Titan Smith Street	10/5/01	79.9	CT-NG	Kings, NY	J	Gowanus 138 or 345 kV	ConEd
106	TransGas Energy, LLC	TransGas Energy	10/5/01	1100	CC-NG	Kings, NY	J	E13St, Rainey, or Farragut-345kV	ConEd
110	PG&E/Liberty Gen. Co., LLC	Liberty Generation	2/4/02	400	CT-NG	Richmond, NY-NJ	J	Goethals 345kV	ConEd
194	Calpine Energy Services	Bayonne	5/26/05	300	ST-NG	New York, NY	J	World Trade Center 138kV	ConEd
200	Cavallo Power	Linden Power I	8/16/05	845	CC	NY, NY - Union, NJ	J	Goethal Substation	ConEd
202	Liberty Generating Co.	130 MW Uprate	8/25/05	130	CT-NG	NY, NY - Union, NJ	J	Goethal 345kV	ConEd
209	SUEZ Energy Generating NA, Inc	Nassau Generating	2/10/06	88	CT	Nassau, NY	K	Garden City Substation 138kV	LIPA
226	Cavallo Power	Linden	9/8/06	1200	CC	NY, NY - Union, NJ	J	East 13th, West 49th	ConEd
255	In-City, LLC	Cross Hudson	8/23/07	550	CC-NG	New York, NY-NJ	J	W49th Street 345kV	ConEd
268	NRG Energy, Inc.	Arthur Kill	12/7/07	800	CC	New York, NY	J	Gowanus Substation	ConEd
274	In City I, LLC	PSEG Fossil Bergen Unit 2	1/23/08	100	CC-NG	New York, NY-NJ	J	W49th Street 345kV	ConEd
283	Riverbank Power Corporation	Riverbank Power J	3/3/08	1000	H	Queens, NY	J	Poletti Substation 345kV	NYPA
				10738					

Q WHY DO PROJECT DELAYS AND CANCELLATIONS MATTER?

A Project delays and cancellations matter because they can affect the reliability of the NYISO system. Moreover, they call into question NYDPS witnesses' recommendations that gas-fired generating plants are preferred alternatives to NYRI for reliability purposes. If merchant generating projects are delayed or cancelled, either because of changing market

[59] This list does not include the 1,100 MW TransGas Energy, LLC gas-fired plant located in Kings, NY. Although this plant remains in the NYISO queue, it is our understanding that it is unlikely to be built.

conditions or difficulties in securing financing, then, as NYISO has stated, the compressed time frame for selecting Gap projects limits transmission alternatives. It is clear from Table 1 that many merchant projects suffer this fate.

Q HOW REASONABLE IS NYISO'S DEMAND RESPONSE ASSUMPTION, SPECIFICALLY THAT OVER 2,000 MW OF PEAK LOAD REDUCTIONS WILL BE ACHIEVED THROUGH THE STATE'S 15X15 EEPS PORTFOLIO REQUIREMENT?

A NYISO's assumption, which itself assumes that only 30% of the 15x15 program savings will be achieved, may be overly aggressive, based on the findings of a report prepared by the New York PSC - NYISO Working Group VIII. This working group was charged with addressing peak demand reductions in the 15x15 program through demand response programs. The Working Group VIII Final Report, dated October 15, 2008, states that

> "a [demand response] provider may be willing to accept prices below the market price at any one given point in time, if over the longer term, the revenue derived from their investment provide a sufficient return. The current market for DR in the state provides neither of these things – price stability nor revenue assurance. Absent long-term revenue certainty, WG VIII expects demand response to remain static or decline, creating potential capacity shortfalls and eroding system load factors."[60]

[60] CASE 07-M-0548, Energy Efficiency Portfolio Proceeding, Working Group VIII, "Demand Response and Peak Reduction," Final Report, October 15, 2008, p. 15 (emph. added).

This statement appears to conflict with the assumption made by NYISO in the 2009 RNA that demand response resources will more than double to over 2000 MW and, importantly, remain available through 2018. Companies that sign up to provide demand response are not bound to long-term contracts, and may decide to no longer participate in the future.

Furthermore, the energy efficiency programs under development jointly by utilities and NYSERDA under the EEPS portfolio standard have almost no discussions as to how to achieve the mandated 15% reduction in peak demand, even though that reduction in peak demand will be a critical component to reducing the need for new transmission system investments needed for maintaining reliability standards.

None of the Working Group reports provide any analysis of the cost of achieving the 15x15 goal. Instead, the Working Group VIII Final Report recommends development of new methodologies to estimate the costs and benefits of proposed programs.[61] Without such information, one cannot state that the 15x15 goals, even if they can be achieved at all, can be achieved cost-effectively.

Finally, implementing the EEPS Portfolio Standard does nothing to address the need identified by NYISO to build new transmission facilities

[61] Id., at 3.

so as to interconnect the additional renewable generation required under the 25% RPS.

IV. SPECIFIC REBUTTAL OF INTERVENOR WITNESSES

Q HOW IS THIS SECTION OF YOUR TESTIMONY ORGANIZED?

A We begin with our rebuttal of the testimony of NYDPS witnesses Gjonaj and Wheat, Paynter, Schrom, and de Waal Malefyt. Next, we rebut the testimony of CARI witness Spellman.

A. Rebuttal of NYDPS Witnesses Gjonaj and Wheat

Q WHAT IS THE FOCUS OF THE TESTIMONY OF NYDPS WITNESSES GJONAJ AND WHEAT?

A Their testimony evaluates the costs and benefits of the NYRI project. They measure the short-term benefits as the reduction in production costs made possible by NYRI and the long-term benefits "as the difference between the cost of new entry in SENY and the cost of new entry in UPNY" [Gjonaj and Wheat Testimony, page 8, lines 14-16]. Based on their definition of benefits, they conclude the cost of the NYRI project exceeds its benefits.

Q DID WITNESSES GJONAJ AND WHEAT ATTEMPT TO MEASURE THE BENEFITS OF THE NYRI PROJECT STEMMING FROM PROVIDING GREATER DELIVERABILITY FOR RENEWABLE GENERATING RESOURCES REQUIRED UNDER THE STATE'S RPS?

A No.

Q DID WITNESSES GJONAJ AND WHEAT ACCOUNT FOR THE IMPACTS OF RELYING ON ADDITIONAL GAS-FIRED GENERATION ON ENERGY RESOURCE DIVERSITY?

A No. In response to Interrogatory NYRI-38 (attached as Exhibit No. JAL/JNP-11-2), they stated no such study was performed by the NYDPS. Furthermore, in response to Interrogatory Request NYRI-58(f) (previously attached as Exhibit No. JAL/JNP-8), witnesses Gjonaj and Wheat state that building new gas-fired generation would increase consumers' exposure to volatile natural gas prices, contrary to the state's policy goal of increased energy resource diversity.

Q DID WITNESSES GJONAJ AND WHEAT STUDY THE FEASIBILITY OF BUILDING A 1,200 MW GAS-FIRED GENERATING PLANT IN NEW YORK CITY (ZONE J)?

A No. Also in response to Interrogatory NYRI-38 (previously attached as Exhibit No. JAL/JNP-11), they stated no such study was performed by the NYDPS. Interestingly, a similar sized plant, the 1,100 MW generating plant proposed by TransGas Energy, LLC, whose in-service date was originally 2007, was denied a Certificate of Environmental Compatibility and Public Need by the New York State Board on Electric Generation Siting and the Environment in a March 21, 2008 Order.[62]

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[62] Case No. 01-F-1276, *TransGas Energy Systems LLC*, Opinion and Order Dismissing and Denying Application, March 21, 2008, Order on Rehearing, July 15, 2008.

Q **ON PAGE 19, LINES 9-13 OF THEIR DIRECT TESTIMONY, WITNESSES GJONAJ AND WHEAT STATE THAT BECAUSE THE FORECAST PRODUCTION SAVINGS IN NYRI ARE A RESULT OF ADDING IN THE NYRI LINE PLUS CHANGES IN THE ASSUMED SUPPLY MIX, IT IS DIFFICULT TO ISOLATE THE IMPACTS SOLELY ATTRIBUTABLE TO THE NYRI LINE. DO YOU AGREE WITH THIS STATEMENT?**

A No. The referenced statement by NYDPS witnesses Gjonaj and Wheat reveals a basic misunderstanding of cost-benefit analysis. They assume that, to measure correctly the benefits and costs to the NYISO system with and without the NYRI line, there can be no other differences between the scenarios. For example, if 4,000 MW of wind generation is added under a with-NYRI scenario, the same 4,000 MW must be added in the without-NYRI scenario to identify the benefits of NYRI. This is an incorrect characterization of the cost-benefit analysis framework.

The problem with their framework assumption is that it eliminates one of the key benefits of the NYRI project: allowing more renewable generating resources and fossil-fuel resources to be built in UPNY and have their output delivered to SENY load centers. There are existing transmission constraints in New York that limit the deliverability of power from UPNY to SENY and NYC. One of the benefits of the NYRI project is that it will help reduce those constraints and thus create an incentive for additional generation to be developed in UPNY for delivery

into SENY and NYC. The framework adopted by Gjonaj and Wheat eliminates consideration of that benefit, thus biasing the results of their short-term analysis of the benefits of the NYRI project downwards.

Moreover, in describing their short-term impact analysis of generation alternatives to NYRI, witnesses Gjonaj and Wheat make the same mistake for which they had criticized the NYRI analysis.

Q ON PAGE 28, LINES 9-27, OF THEIR TESTIMONY, GJONAJ AND WHEAT DESCRIBE THEIR LONG-TERM ANALYSIS FRAMEWORK. DO YOU AGREE THAT THEIR LONG-TERM FRAMEWORK IS AN ACCURATE MEASURE OF THE BENEFITS OF THE NYRI PROJECT?

A No. Gjonaj and Wheat state that,

> "The premise underlying the approach is that the NYRI transmission line would be reasonable to build if its cost plus the costs of building and running a new upstate generation facility is less than the costs of building and running a new downstate generation facility"

[Gjonaj and Wheat Testimony, page 28, lines 9-14]. Their approach, which they state is based on that developed by NYDPS witness Thomas Paynter, is overly simplistic and inaccurate.

Q PLEASE EXPLAIN WHY THE FRAMEWORK USED BY GJONAJ AND WHEAT IS SIMPLISTIC AND INACCURATE.

A In his testimony, NYDPS witness Paynter states that, "Ultimately, wholesale prices in each location should end up reflecting the local cost of building and operating new generation" [Paynter Testimony, page 5, lines

10-12]. Mr. Paynter's statement is wrong. In the long run, if there are no transmission constraints between UPNY and SENY, wholesale prices will not reflect differences in the costs of building generation, they will differ only by the actual cost of wheeling the power from one region to the other.

To understand this basic economic concept, suppose that power can be transmitted between UPNY and SENY, but that the cost of building and operating generation in UPNY is one cent per kilowatt-hour lower than in SENY. In that case, generators in UPNY will want to sell power into SENY, where the market price is higher. They will continue to do so until the market price of power in SENY equals the market price in UPNY. If generation costs more in SENY than UPNY, then generators in SENY will be forced to "back down" their plants because of the imports from UPNY.

Moreover, even if, *arguendo*, generation costs were lower in UPNY than in SENY in the short-run, the cost of the inputs that make up those generating costs would increase because of the increased demand to build new generating capacity until the cost of building and operating plants in both regions was the same. In fact, in the absence of any transmission

constraints, there would be no meaningful distinction between UPNY and SENY as there is today.

The NYISO Transmission White Paper recognized the limitations of this framework for analyzing the benefits of transmission investment. If a transmission investment eliminates the deliverability constraint between two disparate regions, then the initial price difference between the regions that provides the incentive for the transmission investment will vanish, making private merchant funding of such transmission impossible.[63]

Second, the framework presupposes that there are no restrictions whatsoever on building downstate generation facilities, which is clearly not the case. If there were not restrictions on building downstream generating capacity, the persistent price differences between UPNY and SENY would not exist, for the reasons discussed above. Moreover, Gjonaj and Wheat implicitly assume that transmission and generation provide identical reliability benefits, but they fail to provide any basis for such an assumption.

Ultimately, therefore, the benefit-cost ratios used by Gjonaj and Wheat to demonstrate that the NYRI project is not cost-effective on a long-

[63] NYISO Transmission White Paper, at 4-8. "Intra-pool point-to-point merchant transmission projects have failed to develop due in part to the uncertainties concerning price differentials after the construction of a project. Most projects will destroy the spread they are intended to capture by reducing congestion."

term basis are irrelevant. First, the theoretical premise of Mr. Paynter's long-run framework, on which Gjonaj and Wheat base their conclusions, is wrong. Second, it presupposes no restrictions on building new generating plants in SENY, thus "assuming way" one of primary reasons for building the NYRI project. Third, it ignores all public policy benefits associated with NYRI that will not be achieved by building additional gas-fired generation in SENY and, in fact, will exacerbate the lack of energy resource diversity, contrary to state policy. Fourth, if fails to account for any differences in the reliability benefits provide by NYRI compared with building generation.

B. Rebuttal of NYDPS Witness Schrom

Q **WHAT IS THE FOCUS OF NYDPS WITNESS SCHROM'S TESTIMONY?**

A Mr. Schrom focuses on the reliability impacts of the NYRI project. He concludes that NYRI would adversely affect reliability and lead to reduced operation of the Roseton and Danskammer generating units in SENY, and possibly their retirement [Schrom Testimony, page 8, lines 9-15].

Q **DID MR. SCHROM PREPARE ANY ANALYSIS ON WHICH HE BASED HIS CONCLUSIONS ABOUT POSSIBLE GENERATION RETIREMENTS?**

A No. According to Mr. Schrom's response to Interrogatory NYRI-119 (attached as Exhibit No. JAL/JNP-12), Mr. .Schrom states that he conducted no analysis in support of his statement.

Q DID MR. SCHROM STATE THAT GENERATION LOCATED IN SENY WOULD PROVIDE GREATER RELIABILITY BENEFITS THAN TRANSMISSION ALTERANTIVES LIKE NYRI?

A Yes. Mr. Schrom also states that new generation in SENY would provide greater reliability benefits than NYRI because

> "It is best to have generation located close to the load center. A generator close to the load center has lower delivery losses than a generator that is far away and dependent upon the transmission system to deliver it"

[Schrom Testimony, page 16, lines 12-16].

Q DID MR. SCHROM PREPARE ANY ANALYSIS TO SUPPORT HIS CLAIM THAT GENERATION LOCATED IN SENY WOULD PROVIDE GREATER RELIABILITY BENEFITS THAN TRANSMISSION ALTERNATIVES?

A No. In his response to Interrogatory NYRI-54 (previously attached as Exhibit No. JAL/JNP-9), Mr. Schrom states he prepared no analysis of the relative reliability benefits of generation and transmission. He simply relies on statements in the NYISO Comprehensive Reliability Plan that building generation close to load centers can reduce electrical losses compared with generators located further away. While this is true, it completely ignores the question.

Q DO YOU AGREE WITH MR. SCHROM THAT LOCATING GENERATION NEAR A LOAD CENTER PROVIDES GREATER RELIABILITY THAN DISTANT GENERATION DEPENDENT ON THE TRANSMISSION SYSTEM FOR DELIVERY?

A No. Mr. Schrom's statement grossly oversimplifies system reliability issues. The logical extension of his argument is that all generation should be located adjacent to or within load centers to provide maximum reliability. Such a conclusion, however, flies in the face of why power pools and high voltage transmission systems were developed in the first place.

Q PLEASE EXPLAIN.

A There are two main reasons for interconnecting generating units with high-voltage transmission systems. The first is to increase system reliability, not reduce it as Mr. Schrom implies. The second is to provide access to lower-cost generating resources, thus providing consumers with more economical electricity supplies.

To achieve the same 1-in-10 year "loss of load expectation" (LOLE) standard using just local generating units, one must have sufficient excess generating capacity to ensure that forced generator outages do not result in blackouts. For example, if the electric demand in a local area can be met with just one generating unit, ensuring a 1-in-10 year LOLE would

require that many other generating units were standing by in case the one generator suffered a forced outage. Moreover, additional generation would be required when the one generating unit was shutdown for routine maintenance. Having access to a broad array of generating units reduces the likelihood that a forced outage at a generator will cause a local blackout.

The "installed reserve margin" in NYISO, for example, is determined by the New York State Reliability Council (NYRSC) based on the available pool of generating resources that can meet load, as well as forced outage rates for generators, and the mix of generating resources.[64] The NYRSC also determine the minimum percentage of local generating resources that must be located in the New York City and Long Island zones because of existing constraints on transmission capacity into those zones. If there was no transmission capacity into New York City, for

[64] Installed reserve margin (IRM) for New York State, as well as minimum locational capacity requirements (MLCRs) for New York City and Long Island, are determined by the New York State Reliability Council (NYSRC). For the 2009 planning year, which begins on May 1, 2009, the NYRSC increased the statewide IRM from 15 percent in 2008 to 16.2% in 2009. According to the NYRSC, one of the main reasons for the increase was an increase in generator forced outages, which the NYSRC stated "was particularly significant for units located in NYC." See, NYSRC, New York Control Area Installed Capacity Requirements for the Period May 2009 through April 2010, Technical Study Report, December 5, 2008, at 3. The full report is available at: http://www.nysrc.org/pdf/Reports/2009%20IRM%20Report%20-%20Final%2012%2005%2008%20V1.pdf.

example, far more generation would need to be built in the city, not only to meet electric demand, but to ensure that there was enough generation to address forced outages.

Q DID MR. SCHROM CONSIDER THESE ISSUES IN SUPPORT OF HIS STATEMENT THAT BUILDING GENERATION NEAR LOAD CENTERS PROVIDES GREATER RELIABILITY THAN ADDITIONAL TRANSMISSION CAPACITY?

A No.

Q DID MR. SCHROM PREPARE ANY STUDIES OF GENERATING RESOURCES IN SENY AS THE BASIS FOR HIS STATEMENT THAT BUILDING GENERATION IN SENY WOULD BE PREFERABLE TO BUILDING TRANSMISSION?

A No. According to his response to Interrogatory NYRI-107 (attached as Exhibit No. JAL/JNP-13), Mr. Schrom states that he conducted no studies.

Q DID MR. SCHROM STUDY THE TYPES OF GENERATION THAT COULD BE BUILT IN SENY OR NEW YORK CITY?

A No. Also in response to Interrogatory NYRI-54 (previously attached as Exhibit No. JAL/JNP-9), Mr. Schrom stated he did not take that into consideration. However, in response to Interrogatory NYRI-58, NYDPS (previously attached as Exhibit No. JAL/JNP-8), witnesses state that they believe it unlikely that either new nuclear or coal-fired generation would be built in New York State "due to siting concerns."

This leaves gas-fired generation as the only reasonable fossil-fuel alternative.

Q DID MR. SCHROM CONSIDER THE IMPACTS OF SITING NEW GENERATION IN SENY OR NEW YORK CITY ON ENERGY RESOURCE DIVERSITY?

A No. Again, in response to Interrogatory NYRI-54, Mr. Schrom states that he did not consider that issue.

Q IN HIS RESPONSE TO PART (B) OF THAT INTERROGATORY NYRI-54, MR. SCHROM REFERS TO PAGE 8 OF THE NYISO 2008 COMPREHENSIVE RELIABILITY PLAN ("2008 CRP") AS EVIDENCE THAT LOCAL GENERATION PROVIDES BOTH RESOURCE ADEQUACY AND SYSTEM SECURITY. DOES PAGE 8 OF THE 2008 CRP STATE THAT?

A No. The specific question and response of Mr. Schrom are as follows:

> Please state whether "closeness" to load centers provides resource adequacy or system security or both.
> **Response:**
> Closeness to the load center helps to meet resource adequacy and system security. It also reduces the delivery loss to deliver the power from the generating facility. (See the 2008 CRP, p.8.)

Page 8 of the 2008 CRP is attached as Exhibit No. JAL/JNP-14. As can be seen from the exhibit, there is no such statement on page 8 of the 2008 CRP.

Q CAN YOU PROVIDE SIMPLE DEFINITIONS OF "RESOURCE ADEQUACY" AND "SYSTEM SECURITY?"

A Yes. The NYISO 2008 Comprehensive Reliability Plan ("CRP") defines adequacy and security as follows:

> "Adequacy, which encompasses both generation and transmission adequacy, refers to the ability of the bulk power system to supply the aggregate requirements of consumers at all times, accounting for scheduled and unscheduled outages of system components. Security refers to the ability of the bulk power system to withstand disturbances such as electric short circuits or unanticipated loss of system components."[65]

Thus, resource adequacy can be thought of as a long-run requirement: there must be sufficient generating capacity installed to meet forecast peak loads plus an extra "cushion" to account for unexpected changes, such as generator forced outages.

System security is more of an instantaneous concept. Since electricity demand fluctuates constantly, NYISO must always be able to instantly balance supply and demand. Doing so requires that NYISO be able to instantly ramp up and ramp down certain generating resources (typically called "automatic generation control"), as well as maintain resources "in reserve" that can be available immediately or within a few minutes' time (typically called "spinning reserve" and "non-spinning reserve").

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[65] 2008 CRP, at 2-6.

Q DO YOU AGREE THAT GENERATING RESOURCES CAN PROVIDE RESOURCE ADEQUACY AND SYSTEM SECURITY?

A Yes, depending on the type of generator. Generation that is not schedulable, such as wind generation, will typically provide less resource adequacy and system security than generation that is schedulable, such as fossil-fuel generation. However, it is simply not true that a generator that is "close" to a load center necessarily provides greater amounts of resource adequacy and system security than a generator that is "less close." The equivalent resource adequacy and system security will depend on numerous factors, including the type of generator, its forced outage rate, the generator's location in NYISO, and so forth.

Q ON PAGE 16, LINES 17-23, MR. SCHROM STATES THAT ENERGY EFFICIENCY PROVIDES GREATER RELIABILITY BENEFITS THAN EITHER GENERATION OR TRANSMISSION. DO YOU AGREE?

A No. Mr. Schrom answers that, "While I am not an energy efficiency specialist, a reduction in load demand of several hundreds of MW would reduce the need for new generation and transmission" [Schrom Testimony, at 16, lines 20-23]. Mr. Schrom's answer belies two facts. First, he admits he has insufficient knowledge to answer the question. Second, as with his statement regarding the greater reliability benefits of local generation, Mr. Schrom has grossly oversimplified numerous issues.

Q WHAT ARE SOME OF THE ISSUES AFFECTING THE RELIABILITY BENEFITS OF ENERGY EFFICIENCY RESOURCES?

A Although energy efficiency programs can reduce electricity demand, the amount of the reduction can be highly uncertain, depending on the program. For example, demand response resources, in which customers agree to reduce their electricity use when called on by NYISO, provide a known quantity of demand reduction at a given time (assuming the demand response resource complies with NYISO requirements). However, general energy efficiency measures, such as installing compact fluorescent lights in people's homes, are not controllable. Thus, all things equal, they provide much less reliability benefits than controllable resources like demand response, generation or transmission. Second, whereas some energy efficiency resources can contribute to long-term resource adequacy, they may not contribute whatsoever to system security for the simple reason they are not controllable at all. NYISO does not know which individuals in which homes have their lights turned on or off at a given moment, who are using their home computers, washing laundry, and so forth. Thus, it is not possible for NYISO to control that energy use.

Q HOW DID MR. SCHROM RESPOND WHEN ASKED WHETHER THE RELIABILITY BENEFITS OF ENERGY EFFICIENCY WERE GREATER

THAN THAT OF ADDITIONAL GENERATION OR TRANSMISSION?

A In his response to Interrogatory NYRI-55 (attached as Exhibit No. JAL/JNP-15), Mr. Schrom states that "Energy efficiency can reduce the peak load experience [sic] by the NYISO, and therefore reduce the need to have more generation. See the 2009-2010 IRM study done by the NYSRC." Thus, Mr. Schrom failed to answer the question. Similarly, when asked whether NYISO considers the per-MW reliability benefits of energy efficiency resources to be the same as, more than, or less than the per MW reliability benefits of generation or transmission, Mr. Schrom provides an undocumented quote, apparently from the 2009 Reliability Needs Assessment. Again, he failed to answer the question.

Q **ON PAGE 17, LINES 2-13 OF HIS TESTIMONY, MR. SCHROM STATED THAT A BETTER TRANSMISSION ALTERNATIVE TO THE NYRI PROJECT WOULD BE AN HVDC LINE PROPOSED BY NYPA. WAS MR. SCHROM'S RESPONSE BASED ON HIS REVIEW OF THE PLANNING STUDIES BY NYPA FOR THAT TRANSMISSION LINE?**

A No. According to Mr. Schrom's response to Interrogatory NYRI-56 (previously attached as Exhibit No. JAL/JNP-7), the NYPA project is <u>not</u> even in the NYISO queue. Mr. Schrom also states that he has not reviewed any studies of the proposed NYPA line.

Q **DID MR. SCHROM CONDUCT ANY STUDIES OF THE NYPA HVDC LINE TO REACH HIS CONCLUSION ABOUT ITS PREFERABILITY TO THE NYRI PROJECT?**

A No. In response to Interrogatory NYRI-56, Mr. Schrom states that he conducted no such studies.

Q **SINCE THE NYPA PROJECT IS NOT EVEN IN THE NYISO QUEUE AT THIS TIME, DO YOU CONSIDER IT A BETTER TRANSMISSION ALTERNATIVE THAN THE NYRI PROJECT?**

A No. First, NYPA witness O'Connor has stated that NYPA has no current plans to develop this alternative. Second, since the NYPA project is not even in the NYISO queue, it has not submitted any of the required planning studies. Thus, there is no information for Mr. Schrom to base his conclusion that the NYPA project is preferable to the NYRI project. Third, Mr. Schrom is once again introducing an impossible burden on NYRI or any developer of any project, to wit, that a proposed project must be found to be superior to any potential alternative, regardless of whether such alternatives have even been proposed as market-based or Gap solutions.

C. Rebuttal of NYDPS Witness de Waal Malefyt

Q **WHAT WAS THE SUBJECT OF NYDPS WITNESS DE WAAL MALEFYT'S TESTIMONY?**

A Mr. de Waal Malefyt's testimony appears to address environmental issues associated with the NYRI project as well as compare the

environmental impacts of NYRI with those of gas-fired generation units in SENY.

Q ON PAGE 25, LINE 22 – PAGE 30, LINE 16, MR. DE WAAL MALEFYT DISCUSSES THE LOWER ENVIRONMENTAL IMPACTS OF GAS-FIRED GENERATION ALTERNATIVES IN SENY COMPARED TO THE ENVIRONMENTAL IMPACTS OF THE NYRI PROJECT. DID MR. DE WAAL MALEFYT ADDRESS THE STATE'S ENERGY RESOURCE DIVERSITY POLICY GOAL IN HIS RECOMMENDATIONS?

A No. In his response to Interrogatory NYRI-17 (attached as Exhibit No. JAL/JNP-16), Mr. de Waal Malefyt stated that the NYDPS did not analyze the impacts on energy resource diversity.

Q DID MR. DE WAAL MALEFYT ADDRESS THE IMPLICATIONS OF THE STATE'S MEMBERSHIP IN RGGI ON THE FEASIBILITY OF BUILDING NEW GAS-FIRED GENERATION IN SENY?

A No. In his response to Interrogatory NYRI-18 (attached as Exhibit No. JAL/JNP-17), Mr. de Waal Malefyt stated that the NYDPS did not analyze the impacts on energy resource diversity.

Q DR. LESSER, ON PAGE 58, LINES 1-3, MR. DE WAAL MALEFYT STATES THAT THE SOCIETAL COSTS OF THE NYRI PROJECT EXCEEDS IT BENEFITS. DO YOU AGREE?

A No. Mr. de Waal Malefyt provided no basis for his statement. For example, he failed to address the reduction in energy resource diversity that would occur if his recommended gas-fired generation alternatives were constructed. He failed to address NYISO's statement that new

transmission must be built if the state is to meet its RPS requirement. He failed to address the implications of the state's membership in RGGI.

To perform a societal cost-benefit analysis correctly, one needs to address not only private costs and benefits, such as production cost changes, but also non-market costs and benefits. Mr. de Waal Malefyt, for example, provided a qualitative (but not quantitative) assessment of the relative environmental costs of the NYRI project. For example in response to Interrogatory NYRI-62 (attached as Exhibit No. JAL/JNP-18), Mr. de Waal Malefyt stated that he performed no analytical studies that are commonly used to estimate environmental costs, but instead based his conclusions "on his experience."

Furthermore, Mr. de Waal Malefyt failed to address any of the potential environmental benefits, such as the project's allowing for greater deliverability of renewable generation to meet the state's RPS requirement and reduce greenhouse gas emissions, as required under RGGI. Nor did he attempt to evaluate the benefits of greater energy resource diversity (or, alternatively, the costs of reduced energy resource diversity caused by even greater reliance on gas-fired generation in SENY.)

D. Rebuttal of CARI Witness Spellman

Q **PLEASE DESCRIBE THE SIGNIFICANT FLAWS IN MR. SPELLMAN'S ASSESSMENT OF THE ENERGY EFFICIENCY POTENTIAL IN SOUTH EAST NEW YORK.**

A Perhaps the most significant flaw of Mr. Spellman's assessment of the potential for energy efficiency improvements in eight counties of down-state New York is the lack of a credible baseline. In Exhibit RFS-2 of his direct testimony, Mr. Spellman fails to provide evidence of having carried out, and/or relied on, any customer appliance saturation surveys or other primary research to obtain the detailed information relating to the current saturation of electric energy efficiency measures in the SENY region. Further he fails to provide evidence of having carried out segmentation analyses of building stocks by size construction type, age, etc. or of appliance stocks by type, age, efficiency, etc.

As is well documented in the energy efficiency literature, these are essential first steps in ascertaining the technical feasibility of each energy efficiency measure from an engineering perspective.[66] Mr. Spellman states that the technical potential determined is based on 100% penetration of all the energy efficiency measures identified [Exhibit RFS-2, page 19]. This is problematic, to say the least, since the economic and achievable potential

[66] J. Chamberlin and C. Gellings, Demand-Side Management: Concepts & Methods, 2nd ed., (New York: Fairmont Press, 1993).

at the core of his non-route alternative are based on this inaccurate first step of his analysis.

Q PLEASE CONTINUE.

A Another significant concern about Mr. Spellman's analysis in Exhibit RFS-2 is that it relies on energy savings estimates from diverse sources, including baseline data and assumptions corresponding to demographic, economic, building construction and climatic conditions different from those found at SENY. Thus, the baseline energy use for those measures must be adjusted to reflect local SENY conditions likely to be encountered in the field at the time of adopting the energy savings measures. These conditions include, but are not limited to, building size, construction characteristics, operating hours, weather, etc. The only reliable source for this information would be recent building stock and customer surveys which Mr. Spellman does not report using in the analysis as presented in Exhibit RFS-2. Some of the baseline electric consumption estimates were attributed to the 2001 EIA Residential Energy Consumption Survey, but some were based on energy consumption surveys carried out in other U.S. regions with different housing characteristics, weather, etc. For example, the base electric use for single family residence central air-conditioning measures was taken from a 2003

residential survey carried out by Mr. Spellman's firm for Brazos Electric Cooperative, near Waco, Texas.[67]

Q DO YOU AGREE WITH MR. SPELLMAN'S METHODOLOGY TO ESTIMATE THE TECHNICAL, ECONOMIC AND ACHIEVABLE ENERGY SAVINGS POTENTIAL?

A No. As explained earlier in my testimony, while the methodology adopted by Mr. Spellman to find the technical potential is in principle correct, his use of inaccurate proxy data, in lieu of area-specific building and appliance saturation survey data, introduces great uncertainty to their potential estimate. Furthermore, the cost-effectiveness criterion adopted by Mr. Spellman to establish the economic potential ignores the cost-effectiveness tests prescribed by both the NYPSC and NYSERDA.

Q WHAT COST-EFFECTIVENESS CRITERIA DID MR. SPELLMAN ADOPT AND HOW IS IT DIFFERENT THAN THOSE SANCTIONED BY THE NYPSC AND NYSERDA?

A In order to estimate the economic potential of energy-efficiency, that is, the portion of the technical potential that is deemed economic under some criteria, Mr. Spellman's analysis considers cost-effective all energy efficiency measures with an estimated cost below that of the weighted average locational marginal price for SENY, equal to $0.07/kWh (2009$).

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[67] RFS-2, Appendix A-3, page A-15.

Mr. Spellman assumes this will be the average cost of the energy delivered by the NYRI transmission line, although that estimate was determined in large part by an assumption made with respect to the amount of new and efficient gas fired combined cycle generation and wind likely to be built to take advantage of the existence of NYRI, and the access to high price SENY markets that the line will provide. The selection of this "threshold" is arbitrary, as well as contrary to well-established regulatory principles of cost-effectiveness for demand-side resources.

In reality, an energy efficiency program aspiring to New York State and or rate payer funding, is required by NYSERDA and the PSC to demonstrate its cost-effectiveness by applying a test called the "Total Resource Cost" (TRC). This test compares the total cost of installing an energy efficiency measure including those incurred by the energy end-user and the program administrator including equipment, installation, O&M and removal and disposal; against the benefits it captures, including the price of the energy and water saved and any tax credits received. Mr. Spellman's criteria, however, simply compares the marginal costs of his proposed energy efficiency measures with the average price of energy in different zones.

Q **PLEASE DESCRIBE OTHER UNRELIABLE ASSUMPTIONS MADE BY MR. SPELLMAN IN THE ANALYSIS PRESENTED IN EXHIBIT RFS-2.**

A Mr. Spellman extrapolates unrealistically high upper limits on program measure penetration.[68] To do this, he cites to penetration rates that have been achieved by a select group of energy efficiency programs in the U.S. However, these programs have involved energy efficiency technologies far different than those proposed, and Mr. Spellman fails to provide any evidence that those programmatic levels can be achieved in SENY.

To prove that the extremely high market penetration levels at the core of CARI's Non-Route Alternative [Exhibit RFS-2, page 34] are achievable, Mr. Spellman lists ten U.S. Energy Efficiency programs with very high market penetrations. The list includes: programs that have taken three decades to achieve 80% penetration (e.g., Central Maine Power – residential water heater bundle-up program); one residential multi-family/low income program for new construction in Vermont that reached 90% penetration (not highly applicable in the current real estate climate); three high-efficiency gas furnace programs (not comparable to the high efficiency space conditioning technologies proposed); and, one statistic on

[68] The term "penetration" in this context represents the percentage of the technically and economically feasible applications of a specific energy efficiency measure that is ultimately achieved.

the 75% market share achieved by Energy Star windows in the US Northwest by 2002 (different demographics, building stock, and economic growth). The programs listed and the measures whose adoption they promoted, are either not among the ones considered in Mr. Spellman's programs (high-efficiency gas furnaces), or represent a relatively small share of the total energy savings projected by Mr. Spellman (DHW bundle, multi-family new construction, and Energy Star windows).

Q DOES MR. SPELLMAN PRESENT ANY OTHER EVIDENCE OF THE FEASIBILITY OF ACHIEVING SUCH UNCOMMON LEVELS OF ENERGY EFFICIENCY PROGRAM PENETRATION?

A Yes. In Exhibit RFS-2, pages 36-38, as evidence of the feasibility of achieving unrealistically high penetration rates, Mr. Spellman presents, the results of his single-question survey of eight energy efficiency "experts." Mr. Spellman's "survey" is laughable in its design.

First, Mr. Spellman's survey question,

> "Based on your experience and knowledge, and given the assumptions of implementation of very aggressive energy efficiency programs for the next 10 years and unlimited funding, what maximum penetration do you believe could be achieved for electric energy efficiency measures ten years from now?"[69]

[69] Exhibit RFS-2, page 36.

is vague, biased, and unrealistic. Depending on how one defines "very aggressive," the results may be anything. Second, framing a question based on "unlimited funding" is clearly inappropriate, as funding is always limited, if for nothing else that EE programs in New York must pass established cost-effectiveness criteria. The answers he provides from his energy efficiency "experts" are highly varied (as one would expect) nor quantifiable. Thus, the responses of these "experts" has no probative value in supporting Mr. Spellman's extravagant claims of achievable program penetrations.

Q BASED ON YOUR EXPERIENCE, DO YOU THINK THE PROGRAMMATIC APPROACHES PROPOSED BY MR. SPELLMAN ARE LIKELY TO PRODUCE THE AMBITIOUS GOALS DESCRIBED IN EXHIBIT RFS-2?

A No. It's highly unlikely that the loosely sketched programmatic approaches described by Mr. Spellman in its report, if implemented, would reach in 10 years the "achievable" energy savings potential estimated by Mr. Spellman. First, contrary to prudent programming practice, Mr. Spellman's proposed program schedule doesn't consider a pilot stage to vet marketing approaches, but assumes direct full-scale implementation, increasing the risk of adopting ineffective marketing approaches. Second, the programs proposed by Mr. Spellman intend to

capture the same annual energy savings from year one, ignoring the characteristic "S"-shaped uptake pattern of technology diffusion [adoption] programs. Mr. Spellman's self-proclaimed "aggressive" assumptions ignores the typically slower participation rates observed in the beginning phase of demand-side management programs. Thus, it is highly unlikely that Mr. Spellman's estimates of "achievable" energy savings will occur materialize in the time he proposes.

Q CAN YOU POINT TO ANY OTHER PARTIES THAT HAVE CONCLUDED THAT ACHIEVING THE LEVELS OF ENERGY EFFICIENCY SAVINGS PROJECTED BY MR. SPELLMAN IS UNREALISTIC?

A Yes. NYISO's 2009 RNA load forecast conservatively assumes that only 30% of the 15x15 EEPS goals will be met. Since Mr. Spellman's achievable potential estimate by 2015 is commensurate with the goals of the 15x15 EEPS,[70] NYISO's conclusion supports my own.

Q HOW MUCH WEIGHT SHOULD BE GIVEN TO MR. SPELLMAN'S NON-ROUTE ALTERNATIVE TO NYRI?

A None. Mr. Spellman's potential analysis is riddled with inaccurate and poorly supported assumptions and, as a consequence, has no probative value. His penetration goals across all programs are

[70] RFS-2, Table 1-2, page 7, shows an achievable impact 14% of electric energy sales in downstate New York.

unrealistically high and not adequately supported by evidence of comparable programs with similar technologies, financial incentives, market conditions, marketing techniques and timelines.

V. INDEPENDENT ANALYSIS OF THE NYRI PROJECT'S ECONOMIC BENEFITS

Q DID YOU PERFORM AN INDEPENDENT ANALYSIS OF THE ECONOMIC BENEFITS OF THE NYRI PROJECT?

A Yes. We performed an analysis using the AuroraXMP® ("Aurora") hourly model developed by EPIS, Inc. Aurora has been in use since 1997. Like the GE-MAPS model used in the CRA, NYDPS, and Consolidated Edison analyses, Aurora is an hourly model that determines a least-cost dispatch of available generating plants to meet forecast loads. We prepared an analysis of product cost savings that would be made possible by NYRI in the years 2012, 2015, and 2018, as did other witnesses in this proceeding.

Q WHY DIDN'T YOU PERFORM AN ANALYSIS USING GE-MAPS?

A We do not have an operating license for GE-MAPS. Our firm has an operating license for Aurora because we determined the model best met our client needs. There are, of course, many other production simulation models available in the market.

Q **WHAT LOAD FORECAST DID YOU BASE YOUR ANALYSIS OF PRODUCTION COST SAVINGS STEMMING FROM THE NYRI PROJECT ON?**

A We used the load forecasts for peak demand and annual electric consumption that was published in the 2009 RNA. This is the most current forecast NYISO has available and includes NYISO's assumptions regarding the impacts of the state's 15x15 EEPS portfolio standard on forecast peak loads and energy consumption.

Q **DID YOUR ANALYSIS ACCOUNT FOR THE IMPACTS OF THE RECENT RGGI AUCTION IN NEW YORK ON GENERATOR COSTS AND DISPATCH?**

A Yes. We assumed an allowance price of $3.07 per ton, based on the results of the December 2008 RGGI auction.

Q **DID YOU PERFORM A NODAL ANALYSIS LIKE THE ANALYSES PERFORMED USING GE-MAPS?**

A No. Although Aurora can perform nodal-level analysis just as GE-MAPS, we performed our analysis at the zonal level. In other words, we evaluated the production cost changes occurring in each zone as a result of NYRI. Our zonal analysis assumes that intra-zonal constraints are not binding and thus allows for more efficient dispatch of generating units within each zone. We believe this approach, while obviously providing a less detailed analysis than the nodal analyses performed using GE-MAPS,

provides a better indication of the production cost benefits provided by NYRI because it does not hold NYRI hostage to existing transmission constraints and reliability issues within individual zones, such as New York City (Zone J). Instead, the purpose of the NYRI project is to increase transmission capacity between UPNY and SENY, enable greater transfers of lower-cost generation from UPNY to SENY, and facilitate development of new renewable generating resources. The NYRI project is not intended to solve within-zone transmission constraints. Thus, by performing a zonal analysis that assumes existing within-zone transmission constraints have been addressed, we obtain a more reasonable estimate of the production cost savings that could be realized with the NYRI project.

Q **ON PAGE 19, LINES 9-16 OF THEIR TESTIMONY, NYDPS WITNESSES GJONAJ AND WHEAT CRITICIZED THE ANALYSIS PERFORMED BY CRA, STATING THAT DIFFERENCES IN THE "WITH-NYRI" AND "WITHOUT-NYRI" GENERATION MIXES "MAKE IT DIFFICULT TO ISOLATE THE IMPACTS THAT ARE ATTRIBUTABLE SOLELY TO THE ADDITION OF THE NYRI LINE." DO YOU AGREE?**

A No. By holding the generation mix constant in their with-NYRI and without-NYRI cases, NYDPS witnesses Gjonaj and Wheat eliminate one of the key reasons for building NYRI in the first place, which is to encourage greater development of renewable and other generating resources in UPNY. As we discussed earlier in our testimony, the 2007

NERA analysis of new capacity costs that was prepared for NYISO determined that the costs of building new generation in UPNY were far lower than those in NYC or Long Island.[71] From an economic standpoint, therefore, it is appropriate to assume a different generating resource mix in UPNY with NYRI than without NYRI.

Q WHAT GENERATION ADDITIONS IN UPNY DID YOU ASSUME IN THE WITH NYRI CASE?

A First, we assumed that NYRI would allow for additional development of renewable resource generation in UPNY. As the NYISO Transmission White Paper stated, without new transmission capacity, it will be impossible to meet the state's RPS requirement. Moreover, as we discussed previously in our testimony, renewable generation developers will have no economic incentive to build new generation if they cannot sell the output from that generation because it is "bottled up." We therefore assumed that all of the wind generation shown in the February 2009 NYISO queue with a LFIP status of 5 or higher would be developed if NYRI is developed. We also assumed that other projects in the NYISO interconnection queue with a status of 9 or higher would be completed.

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[71] In fact, Gjonaj and Wheat also cited to that same study as the basis for the cost of new gas-fired generation in their GE-MAPS analysis [Gjonaj and Wheat Testimony, page 30, line 18 – page 31, line 9].

Second, in order to meet future load growth, even with the 15x15 EEPS program, and expected generator retirements, in 2018 we added several gas-fired generating units in SENY, specifically in zones E, G, I and J.

Q PLEASE SUMMARIZE THE GENERATION ADDITIONS YOU MADE IN THE WITH-NYRI AND WITHOUT-NYRI CASES.

A Our generation addition assumptions began with the February 2009 NYISO interconnection queue. Specifically, in the with-NYRI case, we added all new wind generating resources with a status of 5 or above in the queue, based on proposed generation in the current NYISO queue that are shown as having on-line dates prior to 2012 and a current LFIP status of 5. Consistent with the conclusions of the NYISO Transmission White Paper discussed infra, we assumed that, in the absence of new transmission capacity, it will not be possible to install enough wind generation to meet the state's 25% RPS requirement by 2013.

In terms of fossil generation, we assumed that all fossil-fuel generating resources having a status number of nine or above in the current queue would also be developed and operating at the current in-service dates shown in the queue. These are shown in Table 2 (also attached as Exhibit No. JAL/JNP-19). We also assumed that in the absence of NYRI one new 1,000 MW gas-fired combined cycle unit to be built near

Marcy with an assumed on-line date of 2018. This is somewhat later than the time frame that NYDPS witnesses Gjonaj and Wheat assumed, although they assumed a slightly larger plant capacity of 1,200 MW would be built [Gjonaj and Wheat, page 26, lines 17-19]. Additionally, the elimination of load curtailment hours in our model required the addition of one 600 MW CC facility in Zone G and two 230 MW GT peakers in Zone J.

TABLE 2

NYISO Added Resources

Resource Name	Heat Rate	Capacity (kW)	Fuel Type	Zone	2012 with NYRI	2012 without NYRI	2015 with NYRI	2015 without NYRI	2018 with NYRI	2018 without NYRI
Gas-fired Generation										
New 1000 CC in Zone E	7,000	1,000,000	NG	E					X	X
New 230 GT 1 in Zone G	9,000	230,000	NG	G					X	
New 230 GT 2 in Zone G	9,000	230,000	NG	G					X	
New 230 GT 1 in Zone I	9,000	230,000	NG	I					X	
New 230 GT 1 in Zone J	9,000	230,000	NG	J					X	X
New 230 GT 2 in Zone J	9,000	230,000	NG	J						X
New 600 CC in Zone G	7,000	600,000	NG	G						X
Total New Gas-fired Generation									1,920,000	2,060,000
Wind Generation										
Windhorse Beekmantown	0	19500	WND	D	X		X		X	
Alabama Ledge Wind Farm	0	79,200	WND	A	X		X		X	
Allegany Windpark	0	100,500	WND	A	X		X		X	
Ball Hill Windpark	0	90,000	WND	A	X		X		X	
GenWy Wind Farm	0	478,500	WND	A	X		X		X	
New Grange Wind Farm	0	79,200	WND	A	X		X		X	
Steel Winds II	0	45,000	WND	A	X		X		X	
Armenia Mountain II	0	75,000	WND	C	X		X		X	
Hartsville Wind Farm	0	50,000	WND	C	X		X		X	
Prattsburgh Wind Park	0	55,500	WND	C	X		X		X	
Ellenburg II Windfield	0	21,000	WND	D	X		X		X	
Noble Burke Windpark	0	120,000	WND	D	X		X		X	
Cape Vincent	0	210,000	WND	E	X		X		X	
Cherry Valley Wind Power	0	70,000	WND	E	X		X		X	
Jericho Rise Wind Farm	0	79,200	WND	E	X		X		X	
Moresville Energy Center	0	99,000	WND	E	X		X		X	
Orion Energy NY I	0	100,000	WND	E	X		X		X	
Tug Hill	0	78,000	WND	E	X		X		X	
SII Rotterdam Junction	0	9,300	WND	F	X		X		X	
Total New Wind Generation					1,858,900	0	1,858,900	0	1,858,900	0

Q WHY DID YOU ASSUME THAT, WITHOUT NYRI, A 1,000 MW GAS-FIRED COMBINED CYCLE UNIT WOULD NOT BE BUILT IN UPNY UNTIL 2018?

A With or without NYRI, by 2018 there will be a need for additional generation by the year 2018, based on the 2009 RNA forecast. Since building generation in UPNY is less costly than in SENY, we added 1,000 MW of new combined-cycle generation in UPNY, rather than a similar unit in SENY. Moreover, as shown in Table 1 above, despite the addition of this 1,000 MW unit, we also added two 230 MW generation turbines (GTs) in Zone G, one such GT in Zone I, and two more such units in Zone J. In the without-NYRI case, we added the same two 230 MW GTs in Zone J to avoid load curtailments, and a 600 MW combined-cycle unit in Zone G.

Q PLEASE SUMMARIZE THE RESULTS OF YOUR PRODUCTION COST SAVINGS ANALYSIS.

A The results of our production cost savings analysis for the years 2012, 2015, and 2018 are summarized in Table 3, below.

TABLE 3

Impact of NYRI on Production Costs in 2006$ (Millions)

	Year		
	2012	2015	2018
Base Case	$ 5,640.4	$ 6,282.3	$ 7,120.3
With NYRI	$ 5,449.0	$ 6,085.5	$ 6,805.6
Difference	**$ 191.3**	**$ 196.8**	**$ 314.8**

Q HOW DO THESE PRODUCTION COST SAVINGS COMPARE WITH THE PRODUCTION COST SAVINGS PREVIOUSLY ESTIMATED BY NYDPS WITNESSES GJONAJ AND WHEAT?

A DPS witnesses Gjonaj and Wheat estimated production cost savings for 2012, 2015, and 2018 of $128 million (2006$) in 2012, $83 million (2006$) in 2015, and $99 million (2006$) in 2018. Again, however, as we discussed previously, those witnesses artificially constrained the production cost benefits of the NYRI project by constraining the generation mix in the with- and without-NYRI cases to be identical.

Q YOUR RESULTS SHOW A SIGNIFICANT INCREASE IN THE ESTIMATED SAVINGS FROM THE NYRI PROJECT IN 2018 COMPARED WITH THE ESTIMATED SAVINGS IN 2012 AND 2015. CAN YOU EXPLAIN WHY?

A Yes. The NYISO 2009 RNA forecasts increasing load growth, despite the 15x15 program. Loads grow most in SENY. Without added generation from UPNY, more new generation must be built in SENY to meet that growing load. As more generation is added, the potential cost savings provided by NYRI grow, because the wind generation afforded by NYRI allows for greater production cost savings.

In essence, our modeling shows that by 2018, the NYISO reaches a "tipping point" where, despite the lower 2009 RNA load forecast and the assumptions of 15x15 savings made by NYISO, significant new generating

capacity will be required. This is also consistent with the sensitivity studies performed by NYISO in its 2009 RNA, which showed that additional load growth of just 750 MW or an equivalent quantity of additional generation retirements in New York City would lead to violations of reliability standards.[72]

Q CAN YOU EXPLAIN WHY DIFFERENT MODELS ESTIMATE PRODUCTION COST SAVINGS ESTIMATES THAT DIFFER?

A Yes. All models are abstractions from reality and modeling a highly complex system like the NYISO is particularly challenging. No model can account for every single facet of how generation is dispatched, the terms of every bilateral contract, the exact quantities of electricity that can flow over a transmission line at any instant, how NYISO system operators will account for unplanned events, and so forth. Nor can these models perfectly predict the precise timing of new generation additions and retirements, when new legislation may be passed, and so forth.

Every modeler, therefore, must make reasoned assumptions, and every assumption can always be challenged. For example, NYISO's 2009 RNA forecasts lower peak loads in 2018 than its 2008 RNA. Yet, nobody can predict with certainty what may happen in the intervening 10 years.

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[72] A description of the scenarios modeled by NYISO for the 2009 RNA and the impacts of those scenarios on LOLE are discussed on pp. 4-6 – 4-23 of the 2009 RNA.

And, while NYISO developed a variety of planning scenarios in the 2009 RNA, it did not assign specific probabilities to certain events, such as the potential impacts of new environmental regulations.

What is important, therefore, is to ensure the overall modeling framework is reasonable and that assumptions are consistent. To take but one example, as we discussed previously, we assume that building NYRI will provide greater incentives for new wind generation to be developed in UPNY than without NYRI, because existing wind generation is already "bottled up" there and there is little economic incentive for new wind generation to be developed if developers cannot access the transmission system in order to sell the output of their projects. We made that assumption because, in our view, it is consistent with the NYISO Transmission White Paper, which has stated that new transmission capacity must be added if New York is to meet its RPS goals. We have attempted to develop assumptions that are defensible, given the information we have today.

Q DOES THIS CONCLUDE YOUR TESTIMONY?

A Yes.

BY MR. SINGER:

Q. Gentlemen, did you also attach exhibits to your rebuttal testimony and those exhibits have been marked as -- for identification as Exhibits 326 through 344?

A. (Panel) Yes, we did.

Q. Were those exhibits either prepared by you or referred to by you in your rebuttal testimony?

A. Yes, they were.

JUDGE STOCKHOLM: The documents counsel just discussed with the witnesses have been marked for identification as Exhibits 326 through 344.

MR. SINGER: Thank you, Your Honor. The witnesses are available for cross-examination.

JUDGE STOCKHOLM: I believe Ms. Collela.

MS. COLLELA: Thank you, Your Honor.

CROSS EXAMINATION

BY MS. COLLELA:

Q. Dr. Lesser, good morning. Have you ever prepared what is known as an energy efficiency potential study?

A. (Lesser) You will have to be a little more specific as to what you mean.

Q. Let me give you a definition and see what you think about that. It's been defined as a quantitative analysis of the amount of energy savings that either

exists as cost-effective or could be realized the implementation of energy efficiency programs and policies.

Does that sound like something you have prepared?

A. (Lesser) Yes, as a matter of fact.

Q. Do you have a lot of experience in preparing those kind of studies?

A. (Lesser) I have some experience. I am not sure I could characterize it as a lot of experience. That's a relative term, obviously.

Q. How many of those kinds of studies have you prepared?

A. (Lesser) In the context of energy efficiency studies, I have done a number of them with respect to the ability of energy efficiency to delay or obviate the need for transmission upgrades and distribution system upgrades.

I have also evaluated cost-effectiveness of energy efficiency programs. I am not the person that would go out and design the type of program in terms of, do we insulate this house or what sort of light bulb do we put in this fixture. That's not what I would do.

I am an economist. I would evaluate the cost-effectiveness of those measures based on someone

else's engineering recommendations.

Q. Have you conducted an energy efficiency potential study for the southeastern New York area?

A. (Lesser) No, Ma'am.

Q. How about any area within New York?

A. (Lesser) No, Ma'am.

Q. Have you conducted such a study for any area within the northeastern part of the United States?

A. (Lesser) Yes, I have.

Q. Where would that have been?

A. (Lesser) In Vermont.

Q. So you yourself performed the study?

A. (Lesser) I have done the analysis, yes.

Again, I have not been the one to design a specific program in terms of designing the programmatic measures or selecting them based on engineering concerns.

What I have done is evaluate cost-effectiveness.

Q. Did your study result in a written report?

A. (Lesser) Well, I have testified on it so there is -- I have submitted written testimony.

Q. Okay. Is it fair to say in your 25 years of experience that you have primarily been involved with the development of transmission and generation projects?

A. (Lesser) No. I have done quite a wide variety of things as my resume indicates. I have experience in generation transmission development, yes, but I've done a lot of other things.

I wouldn't characterize my experience as solely being those two.

Q. Mr. Puga.

A. (Puga) Yes.

Q. You have also worked on a fair number of transmission and generation projects; isn't that correct?

A. (Puga) Yes.

Q. But you do have experience in working in the energy efficiency field?

A. (Puga) I would say more than I have in generation and transmission.

Q. Have you conducted energy efficiency potential studies?

A. (Puga) Yes.

Q. Have you conducted any such studies for the southeastern New York region of New York?

A. (Puga) I worked extensively on the design of the early 19 -- mid-1980s programs for Consolidated Edison New York.

Q. That was during what time period?

A. (Puga) 1984 through 1986 or '7, I presume.

Q. That was specifically a study of the potential for energy efficiency programs?

A. (Puga) Yes. There was an analysis all the way down to the individual savings for each type of technology, each type of lamp, and water, and adding all the savings, and looking at the technical, economic potential and creating a gigantic spreadsheet at the time to come up with potential impacts, yes.

Q. But to be clear, you have not conducted your own study of the southeastern New York region to determine the potential of an energy efficiency non-route alternative to the NYRI project; is that correct?

A. (Puga) No, I have not.

Q. Are you familiar with the National Action Plan for Energy Efficiency?

A. (Puga) Vaguely.

Q. This was initially developed in July of 2006 by a group of 60 leading organizations in the energy efficiency field, including governmental entities, utilities and other stakeholders?

A. (Puga) Yes. I am aware of this.

Q. And that was facilitated by the US Department of

Energy and US Environmental Protection Agency; is that correct?

A. (Puga) I believe so.

Q. Are you also familiar with the guidance document that was developed by a leadership group among the 60 organizations called, "The Guide for Conducting Energy Efficiency Potential Studies"?

A. (Puga) I have seen the document. I never studied it in detail.

Q. But you have seen it?

A. (Puga) Yes.

Q. Would you agree that this guidance document -- I will just call it that for the sake of not having to repeat the whole title -- sets forth in general the typical methodology used within the energy efficiency field for conducting energy efficiency potential studies?

A. (Puga) I haven't read in detail to make a judgment as to whether is in my opinion adequately addressing the limitations of those methodologies. I haven't studied the document, no.

Q. But on your -- upon your knowledge of the document and what you have looked at, would you agree that it sets forth in general the framework for these

types of studies?

A. (Puga) I guess limited by the parties that were involved and the amount of effort spent on the document, my guess would be that it is, yes.

MS. COLLELA: I am going to mark a document for identification.

JUDGE STOCKHOLM: Is the document you are proposing, Counsel, the same document you were just questioning the witnesses about?

MS. COLLELA: Yes, it is.

JUDGE STOCKHOLM: It doesn't strike me you have a very firm foundation for this document based on the very limited knowledge the witnesses have.

MS. COLLELA: Well, Your Honor --

JUDGE STOCKHOLM: I am not going to not mark it. I am just pointing out to you that while the witnesses recognize the document as a document, their testimony suggested that they were not familiar with it.

And the last question you asked was answered with the witness saying that they guessed. I just advise you that's where things stand right now.

MS. COLLELA: Thank you, Your Honor.

(Exhibit 345 marked for identification.)

JUDGE STOCKHOLM: The document we have been

discussing has been marked for identification as Exhibit 345. The title is, "Guide for Conducting Energy Efficiency Potential Studies," dated November 2007.

MS. COLLELA: Your Honor, you said that was marked for identification as Exhibit 345.

JUDGE STOCKHOLM: Yes, Ma'am.

MS. COLLELA: Okay, thank you.

Q. Mr. Puga and Mr. Lesser, you have before you the document marked as Exhibit 345.

Mr. Puga, does this refresh your recollection as to the document that we have been discussing?

A. (Puga) Yes, and I remember having thought that it was a very general guidance on the very general principals on how to prepare a potential analysis of demand side management, but that based on this document you are more than likely to be able to prepare such a potential study. It would require a lot of additional knowledge and information.

Q. Could you turn to page 1 of 3 of that document, please -- 1-3. Can you take a look at the paragraph in column one starting after the bullet points, and the sentence -- the paragraph starts out with, "The guide is."

Do you see that?

A. (Panel) Yes.

Q. Can you read that second sentence for me, Mr. Puga?

A. (Puga) "The guide lays out a basic potential study structure methodology with flag issues that need to be addressed in specific circumstances."

Q. So would you agree with that statement as far as what this guide represents?

MR. SINGER: Your Honor, I object. I don't see how he can answer that question. He hasn't read the entire document.

MS. COLLELA: Your Honor, he just testified that he was familiar with it as a general --

JUDGE STOCKHOLM: And having a copy in his hands refreshed his recollection, and he went on to describe it in more detail than he had under previous questioning, his view of this document.

I will allow the question.

MS. COLLELA: Thank you.

A. (Puga) Could you rephrase the question again.

Q. I will restate it. Would you agree that this statement -- would you agree with this statement that this is what this guide represents?

JUDGE STOCKHOLM: This statement is the

second sentence in the paragraph below the bullets in the document identified for identification as 345.

MR. SINGER: Your Honor, I think in order to answer the question he's going to have to read the entire document.

JUDGE STOCKHOLM: No. I don't want him to read the document. I don't mind him taking some time to refresh his recollection.

However, if he doesn't know whether or not he can agree with that sentence, he can certainly so respond.

(Puga) Give me one second, please.

JUDGE STOCKHOLM: Absolutely.

A. (Puga) My response would be that I never really studied the document to try to determine whether it was -- it gave sufficient structure and sufficient clarity on the methodologies to be followed to be a guide.

I guess even if it was incomplete it could be considered a guide. I don't know if it would be a satisfactory guide or something that only someone could provide a structure and guidance on the methodology to conduct studies because I have not studied the document in detail.

(Lesser) In fact, if I might add, on top of the

second column on that same page it specifically says, and I quote, "Note that this guide is not" -- and not is emphasized -- "intended to give the general reader enough information to conduct a potential study on their own."

Q. Okay. Let's turn to section three of the document and that's starting on page 3-1. Do you see the italicized text at the top of the page?

A. (Puga) Yes.

Q. Can you read for me that first sentence, please.

A. (Puga) "This chapter of the guide describes general concepts to completing a potential study and breaks the process down into five broader steps. One, identify the objective on the audience. Two, select the potential types to analyze. Three, determine the appropriate level of detail. Four, select and define the methodology, and, five, present the results. The specifics of these five steps need to be explored with or communicated to the entity performing the study."

Q. That's good.

Based on your experience in conducting these types of studies, would you disagree with the statement that these are the five broad steps that you would use in conducting an energy efficiency potential study?

A. (Puga) They are broad enough that anything would fit under those categories, yes.

Q. So these are not the steps that you would take -- broad steps you would take in completing the study?

A. (Puga) Well, I mean, step four, select and define the methodology. I mean practically anything would fit under that.

Q. Okay. We are going to put this aside for now and revisit in a little while.

Mr. Puga, you state in your testimony that you have worked in the design and implementation of commercial and industrial customer surveys. That's on page 28 of your testimony; is that correct?

A. (Puga) Yes, that is correct.

Q. Would these have included appliance saturation surveys?

A. (Puga) Yes.

Q. Would you agree in general that an appliance saturation survey is one in which you collect data on the number of certain appliances that can be found in a defined area of households?

A. (Puga) Yes.

Q. And you haven't conducted any appliance saturation surveys for the southeastern New York region;

is that correct?

A. (Puga) No.

Q. How many of these saturation surveys have you completed?

A. (Puga) Without recalling the exact number I would believe that probably approximately a dozen, I would say.

Q. On average how long did these surveys take to complete?

A. (Puga) Well, they were very different durations clearly because the scope and the size of the samples and methodologies were slightly different, but anywhere from three to eight months.

Q. Have you ever completed a survey for an area as populated as the area that we are referencing now as southeastern New York?

A. (Puga) What do you mean by "populated," population density or population number of inhabitants?

Q. Number of inhabitants?

A. (Puga) Yes, I have. I managed the design and implementation and evaluation of appliance saturation surveys for commercial and industrial sectors of Southern California Edison and Southern California Gas Company Los Angeles metropolitan area.

Q. About how long did saturation surveys take to complete?

A. (Puga) From the point of conceptualizing the design and sampling methodology, collecting the data and announcing the result, probably close to a year.

Q. Would you agree that the performance of the saturation surveys would be considered primary research data in the context of conducting the study for the potential for energy efficiency programs?

A. (Puga) Yes.

Q. And the use of data collected by others would be considered secondary research data?

A. (Puga) Yes.

Q. Have you ever completed the study of a potential energy efficiency program using secondary research data as opposed to primary data?

A. (Puga) Well, if you refer to whether I have relied on the surveys conducted on the same area or in other areas that were not the same as the study I was conducting.

Q. Let's start first with the same area?

A. (Puga) I have conducted the studies that relied on surveys conducted in the same area by other parties.

Q. How about information collected for other areas

but with adjustments made for differences that might have occurred?

A. (Puga) No. I don't consider that the appropriate methodology. There are so many variables, if I may say, involved in adjusting the -- ultimately the appliance saturation reflects customer choice.

And customer choice is a topic influenced by many factors and very hard to adjust for from one area to another.

Q. When you are conducting your potential studies you have always used data that was collected just for the area that you were studying?

A. (Puga) Inasmuch as possible, yes.

Q. Inasmuch as possible. So there may have been some areas where you had to use data that was collected for other areas?

A. (Puga) If you are talking about appliance saturation, no.

Q. What about other aspects of the study?

A. (Puga) Well, you are talking about the characteristics of a technology or how technology responds to climate, cost of the technology adjusted for regional cost of labor and other factors, yes.

Q. So, you would agree then that it is considered

acceptable within the field of energy efficiency studies to use reliable secondary data as long as it either corresponds to the area that's studied or it can be adjusted to account for differences?

A. (Puga) It depends on the adjustment that you make.

Q. But you would agree if it's correctly adjusted that it would be acceptable?

A. (Puga) If it's correctly adjusted by using information that reflects the characteristics of the area that you were studying, yes.

Q. Are you familiar with the American Housing Survey conducted by the US Department of Housing and Urban Development in the US Census Bureau in the New York City metro region in 2003?

A. (Puga) Vaguely. I never spent any time studying the statistics or data, but I know of its existence, yes.

MS. COLLELA: I am going to mark another document for identification.

JUDGE STOCKHOLM: Counsel has identified -- I hesitate to say how many pages in this document.

MS. COLLELA: It's around 350.

(Exhibit 346 marked for identification.)

JUDGE STOCKHOLM: Around 350. Thank you. How apropos. Marked for identification as Exhibit 346. It is a report of the US Department of Housing and Urban Development and US Department of Commerce. My assumption is that you want to do cross-examination on this document.

MS. COLLELA: Yes.

JUDGE STOCKHOLM: So, therefore, we are going to need it anyway. We put it in the record. As a general matter, however, we will take official notice of official government documents.

MS. COLLELA: Thank you.

Q. We have handed you a document marked as Exhibit 346.

A. (Puga) Yes.

Q. We have handed you a document marked as Exhibit 346. Can you read me the title of that document.

A. (Puga) "American Housing Survey for the New York Nassau-Suffolk-Orange metropolitan area 2003, Current Housing Reports."

Q. Does this appear to be the document that I was just discussing with you?

A. (Puga) By the cover, yes, I assume it is.

Q. Can you please turn to page iv of the document.

In column one, the paragraph, the heading are you on -- I am sorry. Not iv, vi.

In column one, you see the paragraph with the heading "Contents of Books"?

A. (Puga) Yes.

Q. Can you read that aloud for me.

A. (Puga) "This book presents data on apartment single-family homes, manufactured mobile homes, vacant housing units, age, sex, and housing, householder's income and neighborhood quality, housing costs, equipment and fuels and size of the housing units. The book also presents data on mortgages, rent control, rent sources, previous units, resources for moving.

Q. Thank you.

Can we turn to page 1-1. I am sorry, it's page 1, Table 1-1. If you could take a moment to look at the information listed there on the left-hand side of the table under the heading Characteristics.

A. (Lesser) Could you be more specific as to where you would like us to look.

Q. Just look in general at the heading at the type of information that's listed there and then take a look at the headings going across the top column of the table or top row of the table.

A. (Lesser) Okay.

Q. Would you agree that this table appears to provide a summary of housing characteristics data for the housing units that were surveyed?

A. (Puga) Yes.

Q. Now let's turn to page 5. This is Table 1-4. Will you take a look at the type of information in the left-hand column entitled "Characteristics", particularly under the first heading, "Equipment." Familiarize yourself with that.

A. (Puga) Okay.

Q. Would you agree that this table appears to provide a summary of the type of equipment found in each of the housing units surveyed including, among other things, household appliances, lights, refrigerators, dishwashers and washing machines?

A. (Puga) By general type of appliance, yes.

Q. Are you aware that GDS Associates, which is CARI's consultant in this proceeding, utilized appliance saturation data and housing characteristics data for the New York City metro area from this survey for its energy efficiency potential analysis in this proceeding?

A. (Puga) Yes.

Q. Besides this survey that we have just discussed,

are you aware of the other New York specific information that GDS relied upon in its analysis, including survey dated collected by Consolidated Edison for purposes of a filing before this Public Service Commission in September of 2007? Are you aware of that?

A. (Puga) Was that reported in their exhibit?

Q. Yes, it was. It was reported in Appendix A3 to that exhibit.

A. (Lesser) We don't have a copy of that exhibit with us on -- with us today. Could you show us a copy so we could take another look at that.

Q. Sure. Let me see if we can do it another way. You have reviewed the report that was prepared by GDS Associates, correct?

A. (Puga) Yes.

Q. You reviewed the appendices in that report, correct?

A. (Panel) Yes.

Q. Can you accept, subject to check, that in Appendix A3 to that report they did include data collected by Consolidated Edison in this saturation data?

A. (Lesser) Subject to check.

(Puga) Yes.

Q. Are you aware that GDS Associates also utilized New York specific data collected by the Energy Information Administration residential energy consumption survey that was conducted in 2001?

A. (Puga) Yes.

Q. Are you aware that GDS Associates conducted special building simulation analyses for typical homes in the New York City metro area to derive estimates of electricity savings for weatherization and installation programs?

A. (Puga) That was briefly noted in one of their appendices, yes.

Q. At page 89 of your rebuttal testimony, line 12, you indicate that Mr. Spellman did not provide evidence of having carried out segmentation analyses of the data used in the GDS Associates study; is that correct?

A. (Puga) That is correct.

Q. Are you aware that GDS Associates did, in fact, segment the residential sector of its energy efficiency potential analysis by building type by looking at appliance data for single-family and multi-family market segments separately?

A. (Puga) From my reading of this report I did not conclude that.

MS. COLLELA: Your Honor, could I have a moment to get that report for them. Thank you.

Your Honor, may I approach the witnesses and provide them a copy of the Spellman testimony and exhibits.

JUDGE STOCKHOLM: Yes, Ma'am.

Q. Can you turn to the second exhibit to Mr. Spellman's testimony.

JUDGE STOCKHOLM: Has that been entered in the record, Counsel?

MS. COLLELA: No, it hasn't, but it will be.

JUDGE STOCKHOLM: It's coming, okay.

Q. Can you look at page 50 of that report, please.

A. (Puga) Yes.

Q. Would you read that first sentence of the first paragraph under section 5.1.

A. (Puga) "34 residential electric energy efficiency measures, including various permutations of energy supplies, fuel source and installations in both single-family and multi-family housing units, were included in the analysis for the residential sector. The list of energy efficiency measures" --

Q. Just the first sentence, thank you.

So, would you agree there that it does refer to

measures in both single-family and multi-family housing units?

A. (Puga) I did read the statement in my analysis. I just couldn't really find proof that he had carried it out.

Q. Would you turn to Appendix A3 -- actually A2 of the report.

A. (Puga) What was the number?

Q. Turn to page A10 of Appendix A2.

A. (Lesser) I think you are going to have to help us. It's not obvious to us where this is.

MS. COLLELA: Can I approach.

JUDGE STOCKHOLM: Yes, sure.

Not that document?

MS. COLLELA: Unfortunately, Your Honor, when this was originally filed some of the exhibits were left out and we filed a revised copy.

I am going to provide him a page out of my book, if that's okay.

JUDGE STOCKHOLM: I worry about confusion in the record now. Is the page that you are going to show the witness a page that will be offered for evidence by CARI?

MS. COLLELA: This is part of the revised

exhibit, Your Honor.

JUDGE STOCKHOLM: That's fine. Thank you.

MS. COLLELA: This is page A10 of Appendix A2.

JUDGE STOCKHOLM: It also seems to me, I would like to know if this page appears identically in the original filing.

MS. COLLELA: Your Honor, in the original filing it was inadvertently left out.

JUDGE STOCKHOLM: Omitted, okay.

MS. COLLELA: In the revised filing it was just to include that.

JUDGE STOCKHOLM: What was the date of the revised filing?

MS. COLLELA: January 25, 2009.

JUDGE STOCKHOLM: Thank you.

BY MS. COLLELA:

Q. Sirs, if you could look at the -- this Table A2, and I believe you have A2A in front of you. If you would look at the third column over on that table. Can you tell me what the heading of that column is.

A. (Puga) Home type.

Q. And can you tell me what the indication is in that column for row 49, what the abbreviation there is?

A. (Puga) There is no row 49 on this table.

Q. Row one.

A. (Puga) You the mean the measure name? SF.

Q. Do you know what SF would indicate there?

A. (Puga) My guess would be single-family.

Q. And if you go down to -- just tell me, do you see in that column for any of those rows a different abbreviation?

A. (Puga) Yes.

Q. What would that be?

A. (Puga) MF.

Q. Would you agree that stands for multi-family?

A. (Puga) My best guess would be that, yes.

Q. So would you agree then for these residential energy efficiency measures listed here in this table that they are segmented by home type?

A. (Lesser) We would certainly agree with that, but I point out that, A, we have never seen this table before because it was not included in the original testimony.

And, secondly, there is no sourcing for this data shown on this page. And, therefore, there is no way for us to even validate any of the data here.

Q. You were not provided a copy of the revised

exhibit with the appendices included?

A. (Puga) I recall seeing a copy of the revised study. I don't know if I recall seeing this table and appendices that were filed different file.

Q. Are you aware then that GDS Associates also segmented their analysis with respect to construction type looking at data with respect to both existing buildings and new construction?

A. (Puga) I can see this table that you showed me and I can see the statement in the result.

I don't know what the source of the segmentation analysis was. If it was some of the housing surveys from the federal government that were cited, I didn't have the opportunity to cross reference the data that was used by Mr. Spellman against the data on the survey.

JUDGE STOCKHOLM: Gentlemen, just to clarify, when you prepared your rebuttal testimony in this case, is it your testimony here today that that rebuttal testimony was not based on any knowledge of this table or was done -- I hate to use this word, but was done in ignorance of this table? You had no knowledge of this table when you prepared your rebuttal testimony, is that true?

(Puga) When I reviewed the study, Your

Honor, I looked at the statements made in the body of the report and I looked for the appendices.

And in some cases the appendices were either not legible or missing. So I never had a chance to -- I did look at some of the data that showed the -- the savings attributed to certain equipment, certain appliances. They were very hard to read and I looked at the references. I am not sure that I reviewed this table in detail if it was available.

JUDGE STOCKHOLM: Thank you.

BY MS. COLLELA:

Q. Do you recall if you reviewed the next table that was included in Appendix A3, which you don't have in front of you. I am asking if you recall if you had reviewed that?

A. (Puga) Is Exhibit 3 the one that lists the savings of each individual appliance?

Q. Appendix A3, which includes Table A3, entitled, "Residential Energy Efficiency Measures Data Sources"?

A. (Puga) Yes, I reviewed that one.

Q. We are going to move to another topic.

You state in your rebuttal testimony at pages 89 through 90, starting at line 17 on page 89, that the fact that Mr. Spellman's determination of technical

potential was based on 100 penetration -- 100 percent penetration is problematic; is that correct?

A. (Puga) That is correct.

Q. Let's turn back to the National Action Plan Guide that was marked as Exhibit 345, page 2-4, please. Do you see the paragraph with the heading "Technical Potential"?

A. (Puga) Yes.

Q. Can you read that aloud for me, please.

A. (Puga) "Technical potential is the theoretical maximum amount of energy use that could be displaced by efficiency. It's regarding all non-engineering constraints such as cost-effectiveness and the willingness of end users to adopt the efficiency measures. It is often estimated to continue as a snapshot in time assuming immediate implementation of all technically feasible energy saving measures with additional efficiency opportunities assumed as they arise from activities such as new construction."

Q. So, would you agree that this definition that you just read contemplates that all technologically feasible energy efficiency measures will be put immediately into place?

A. (Puga) Yes, but my problem with the statement, if

I may add, was that the available information from secondary sources that were five years old do not constitute a proper basis to determine technical feasibility from an engineering perspective.

Home surveys that Mr. Spellman refers to do not substitute for further analysis of the specific construction types and engineering challenges even among different builders that represent the replacement of windows and energy efficiency or sealing of ducts and other changes to housing units, commercial units, that have to be determined from local knowledge about construction techniques used in a given area.

Q. So, you do not take issue with the use of a hundred percent penetration rate for technical potential, then, assuming that technical potential is accurately derived?

A. (Puga) Yes, except that it's a bit of circular definition because the question is how do you determine the technical potential?

The technical potential is determined from an engineering standpoint, determined which are all the opportunities that are technically feasible in a given sample.

Q. So you first determine all of the measures that

are technically -- technologically feasible, correct?

A. (Puga) Correct.

Q. Then you apply the hundred percent penetration rate?

A. (Puga) That is correct.

Q. Let's turn back. Let's take a look at that page again, page 2-4. You see there that under that paragraph entitled "Technical Potential" there are three other terms that are discussed there; is that correct, the next three paragraphs?

A. (Puga) Yes.

Q. And that would be economic potential, achievable potential and program potential; is that correct?

A. (Puga) That is correct.

Q. Would you agree that when you are determining the potential for these energy efficiency measures that technical potential is your starting point?

A. (Puga) Yes.

Q. And that economic potential is a subset of the technical potential in that it's the portion of the technical potential that is economically cost-effective?

A. (Puga) That is correct.

Q. And would you agree that achievable potential, then, is that portion of the economic potential that can

realistically be expected be put in place assuming the most aggressive program scenario possible?

A. (Puga) Yes. If I may say, achievable potential refers to the programmatic efficiency or the ability of your marketing campaigns and your program procedures and protocols to capture that potential.

Q. Would you agree that the conclusions that were reached in the GDS analysis regarding energy savings that could be achieved were based on an achievable potential and not technical potential?

A. (Puga) I am not sure I understand your question. Can you --

Q. Would you agree that the conclusions that were reached in the GDS report regarding the energy savings that could be achieved by putting certain energy efficiency measures into place were based on the achievable potential rather than the technical potential?

A. (Puga) What you are asking me is that if I agree that Mr. Spellman followed sieve methodology to go from technical potential than pertaining what the economic potential within that potential is and ascertaining what the achievable potential would be.

Those three steps were taken, but I strongly

disagreed with the application of economic criteria to determine economic potential. And then there was no way for me to ascertain the achievable potential because Mr. Spellman's report was lacking in any kind of definition about problematic approaches.

Q. But you would agree that his conclusion as to energy savings was not based on the assumption of a hundred percent penetration; is that correct?

A. (Puga) My statement was that I had a problem in believing that with the information available to him through secondary sources he could determine accurately what the technical potential was because the engineering feasibility of a wide variety of buildings and technologies in that area could not be ascertained to a degree by basing the research on secondary research, by example, in the home surveys.

Q. Are you finished?

Can you answer my question, though? Would you agree that his conclusion as to the energy savings that could be achieved was not based on one hundred percent penetration rate? It was based on something less than that, correct?

A. (Puga) Again, what I stated in my testimony was that Mr. Spellman stated that the technical potential

was determined based on a hundred percent penetration of all the energy efficiency measures identified.

I did not believe he stated potential was correctly carried out and, therefore, that hundred percent of those measures may not be a hundred percent. The technical potential would have been inflated by not having considered the proper technical barriers for implementation.

Q. Okay. I am going to move on. On page 92 of your rebuttal testimony you indicate that Mr. Spellman should have used the total resource cost test to demonstrate the cost-effectiveness of the potential energy efficiency program; is that correct?

A. (Puga) Yes.

Q. Would you agree that the total resources cost, or TRC test, measured the net costs of a demand side management program as compared against the benefits of the program?

A. (Lesser) Define what you mean by "net cost," please.

Q. It would include the costs of both those customers participating and not participating in the program; is that correct?

A. (Puga) No.

(Lesser) In our testimony on lines 12 through 15 of that same page we define what the total resources test is.

Would you like us to read that into the record.

Q. Just a second. Let me get there.

JUDGE STOCKHOLM: What page are we on, Counsel?

MS. COLLELA: Page 12 of the testimony.

MR. BISSELL: I believe the original question was page 92, line 12.

MS. COLLELA: I am sorry, thank you.

Q. You said that the TRC test compares the total cost of installing energy efficiency measures, including those incurred by the energy end user and program administrator, including equipment installation and O&M and removal and disposal, correct?

A. (Puga) Correct.

Q. And against it you compared the benefits that it captures, including the price of energy and water saved and tax credits received?

A. (Puga) That is correct.

Q. The TRC test in the end results in a ratio; is that correct?

A. (Puga) Yes.

Q. And the ratio is the total benefits divided by the total costs?

A. (Puga) Yes.

JUDGE STOCKHOLM: In the costs in this test do you include externalities, any external costs?

(Panel) No.

(Lesser) Your Honor, that would fall under what's known as the societal test.

JUDGE STOCKHOLM: Thank you.

BY MS. COLLELA:

Q. Isn't it generally true within the energy efficiency field -- see if you agree with me -- that if the resulting TRC test result is -- the ratio from the test is greater than 1.0 that the measure of the program is considered to be cost-effective?

A. (Puga) According to the definitions of the test by the California Public Utilities Commission that is correct. By the creators of the test, that was the criteria.

In practice, other commissions and other utilities have set the threshold a little bit higher by requiring it be 1.2 or whatever, that depends.

(Lesser) Moreover, if I may add to that, if you in the context of, say, least cost planning or

integrated resources planning, if you prefer, if one is looking for a least cost portfolio of resources, then applying the -- essentially implementing all measures down to a cost/benefit ratio of 1.0, you end up not saving any money.

So it's the wrong economic approach because it's looking at average costs and benefits versus marginal costs and benefits.

Q. In your testimony, I believe it's page 92, starting at line 9 and going through line 10, you state that "The PSC requires the use of the total resources cost test," correct?

A. (Lesser) Yes.

Q. By PSC, who were you referring to?

A. (Lesser) New York Public Service Commission.

Q. And what were you referring to there?

A. (Puga) I will tell you exactly. It has been -- the test has been used for many years now and in New York in proceedings in front of the New York PSC.

However, the reason this is not footnoted as to where the test was adopted is that I could not find it, but it has been in use in proceedings.

Q. Are you familiar with proceedings before the Public Service Commission entitled "The Energy

Efficiency Portfolio Standard Proceeding"?

I can give you a case number if that helps.

A. (Lesser) I think we are generally familiar with the proceeding. I don't recall the case number.

JUDGE STOCKHOLM: That's all right. This record will be decipherable by the Commission. We don't need the case number.

MS. COLLELA: Case number 07-M-0548.

Q. You are familiar with this proceeding?

A. (Panel) Yes.

Q. Sometimes referred to as the EEPS proceeding?

A. (Panel) Yes.

Q. Are you familiar with the order that came out of that proceeding dated June 23, 2008, which established an energy efficiency portfolio standard?

A. (Puga) Generally, yes.

MS. COLLELA: Mark a document for identification.

JUDGE STOCKHOLM: Is it the Commission order?

MS. COLLELA: It is.

JUDGE STOCKHOLM: Not necessary. You can show it to the witnesses. Otherwise it's in the Commission's records.

MS. COLLELA: Thank you.

JUDGE STOCKHOLM: The effective date of the order.

MS. COLLELA: June 23, 2008.

JUDGE STOCKHOLM: Thank you.

Q. Can you turn to page 16, please, and look at the second sentence -- first full paragraph, second sentence, starting with the word "because."

Can you read that for me.

A. (Lesser) Sentence says, "Because, with minor exceptions, programs will not be considered for approval unless they have a score of at least 1.0 on the total resources cost test, systemwide program benefits are expected to exceed costs."

Q. So, would you agree that that indicates that in this proceeding they considered 1.0 to be a cutoff point for using the TRC test?

A. (Panel) Yes.

Q. Going back to GDS's study in this proceeding. GDS did employ a TRC test in its analysis, albeit a simplified TRC test; isn't that correct?

A. (Puga) I seen the statement by GDS talking about a simplified test. I have no knowledge of any sanction of any Commission of that test.

Q. Do you recall that the result of that test was cost/benefit ratio of 2.3?

A. (Lesser) Could you refer us to the page in the Spellman study, please.

Q. Page 9 of his report, Exhibit 2 to his testimony.

A. (Puga) I see it.

Q. There is a table on the page, Table 1-3; is that correct?

A. (Puga) That is correct.

Q. What is the title of that Table?

A. (Puga) Summary of Total Resource Benefits and Costs of Maximum Achievable Potential Electricity Savings Scenario.

Q. And do you see the bottom row of that table, what does it state there?

A. (Puga) Total resources cost has benefit to cost ratio.

Q. What is the amount of the ratio that's assigned to that?

A. (Puga) 2.3.

Q. Assuming that GDS were to conduct a more detailed TRC test and determined that the TRC benefit/cost ratio for the overall portfolio of measures that were studied is even higher than 2.3, would that indicate to you that

the program study could be considered cost-effective?

A. (Lesser) Let me see if I understand your question. You are asking us a hypothetical as to whether if GDS conducted a study and they used the actual -- what is the agreed upon definition of the total resources cost test, and that total resources cost test -- and ignoring any issues over what are the appropriate costs, all the inputs to that test --

Q. Ignoring the inputs?

A. (Lesser) -- that the cost/benefit ratio was greater than 2.3, whether it would be cost-effective, all those measures, then under your hypothetical that is true.

Unfortunately, of course, that's not what Mr. Spellman did.

Q. Okay. You are familiar with the inputs that typically go into the TRC test?

A. (Panel) Yes.

Q. In considering the benefits of the measures is one of those inputs the avoidance supply costs that the measure achieves?

A. (Lesser) One of the typical benefits is avoided energy cost, that is correct.

MS. COLLELA: I am going to mark another

document for identification.

MR. SINGER: Could we take our morning break soon.

JUDGE STOCKHOLM: Yes. Would this be a good time?

MS. COLLELA: Yes. Great time.

JUDGE STOCKHOLM: We will take maybe 15 minutes. We will get back at ten after.

(Recess taken.)

JUDGE STOCKHOLM: Come back to order, please. One preliminary thing. This is just to inform the record as much as anything else. I suspect everybody here already knows.

We had cross-examination earlier in this case with regard to requests that were pending at FERC concerning NYRI's petition for rehearing and also its request for expedition.

Because that proceeding -- FERC has now issued a ruling in that proceeding, I wanted you all to know that, issued March 31 in docket OA08-52-003.

So, some of the issues that were discussed on the record were decided by FERC in that. I wanted the record and you all to know that. And we will in fact take administrative notice of that ruling.

Okay, I think, Ms. Collela, you have circulated a document entitled "New York State Energy Smart Program Evaluation and Status Report" year ending December 31, 2008 report to the Public Service Commission. And that document has been marked for identification as Exhibit 347.

(Exhibit 347 marked for identification.)

MS. COLLELA: Thank you.

BY MS. COLLELA:

Q. You have before you what's been marked as Exhibit 347?

A. (Lesser) Yes, we do.

Q. And Judge Stockholm already read the title into the record. Are you familiar with the study?

A. (Lesser) I have never seen this report before.

A. (Puga) Neither have I.

Q. Does this appear to be a study of the New York State Energy Research and Development Authorities Energy Smart Program, at least a status report about that program?

A. (Lesser) That's what the title says. Again, we have never seen this report and so we really can't comment on what it is.

JUDGE STOCKHOLM: I think that's a fair observation from the witnesses. This is a report that was at the earliest issued March 1st, I mean I don't know when in March it was issued, and the testimony that's being cross-examined here was prepared well in advance of this report.

The report, at least on its face, is relevant, and I don't have problems with you asking the witnesses about it, but how much about it is a relative matter. And don't forget, you can always cite to this report unless there is objections to it.

My assumption is this is a copy of a formal report served with the Commission and is in the Commission's files.

MS. COLLELA: Right.

JUDGE STOCKHOLM: And is now also marked for identification, but in any event, if the witnesses have not seen the report I don't know how much you can get out of them about it, but I will allow you to proceed.

MS. COLLELA: Thank you, Your Honor.

Q. Can you turn to page 2-23 of the report, please.

A. (Lesser) All right.

Q. Actually, I am going to step back from that page first to page 2-1. You agree there it states, "This is

section two of the report portfolio level reporting"?

A. (Lesser) Yes.

Q. And if you look at the first paragraph, the second sentence, you agree that this indicates that this section presents findings and results for the portfolio of New York Energy Smart Programs?

A. (Lesser) That's what it says, yes.

A. (Puga) Yes.

Q. Now let's turn to page 2-23. If you look at the first sentence under introduction, do you see where I am there?

A. (Lesser) Yes.

Q. Do you agree it says, "This section presents the portfolio level benefit/cost analysis of the New York Energy Smart Program?

A. (Lesser) That's what it says, yes.

Q. If you look at the last sentence on that page under methods, do you agree it says that, "This section provides definitions of benefit/cost terms and describes how certain concepts were applied to this year's analysis"?

A. (Panel) Yes.

Q. Thank you.

Let's turn to the next page. You see the first

three terms there at the top of the page in bold starting with "Avoided electric energy costs" and ending with "Avoided transmission and distribution costs"?

A. (Panel) Yes.

Q. Would you mind taking just a few minutes to look at that, please.

A. (Puga) Okay.

Q. Would you agree, based on your reading here, that these bolded terms and descriptions appear to present a description of the avoided energy costs NYSERDA used in its cost/benefit analysis in this report?

A. (Lesser) Do you mean it says that electric energy costs, electric capacity costs and avoided transmission and distribution costs, and that's what you mean by collectively avoided energy costs?

Q. Yes, that's what I mean.

A. (Lesser) That's what it says.

A. (Puga) Yes.

Q. Are these typical of the supply costs that are considered in a total resources cost test as far as the kind of the benefits that are considered?

A. (Puga) Initially, yes.

(Lesser) Initially, yes. I would point out certainly the avoided transmission distribution cost,

the approach that has been used apparently in this document with that number is completely wrong because from a marginal standpoint it's incorrect.

And I can refer you to several papers I have published in peer-reviewed journals in my resume attached as Exhibit 1, I believe, that talk about what is wrong with this approach.

Q. But you would agree that in general these are the type of costs that are typically considered as benefits?

A. (Lesser) I would agree with that, yes.

JUDGE STOCKHOLM: If you are leaving that page, Counselor, before you do, if I could ask the panel.

I noticed under the topic discount rate, you were not asked about that, but it is on that page.

(Lesser) Yes, it is.

JUDGE STOCKHOLM: Would you read those sentences just to familiarize.

My question is how reasonable in March 2009 is it to look at a discount rate of 5.5 percent especially in comparison to discount rates that apparently were applied in various reports of 3 percent?

I am not a financial expert, but it does seem to me that that's moving in the wrong direction,

isn't it, going from 3 to five-and-a-half, given current economic conditions?

(Lesser) Well, first off, this is a real discount rate, which means it's not accounting for inflation.

Secondly, what it would -- it appears the 3 percent ratio or discount rate that has been used in the past is consistent with typical estimates of what is known as societal discount rate.

Now, why they chose five-and-a-half percent real discount rate, I can't tell you. Under a TRC -- and that's different from the societal test I mentioned earlier --

JUDGE STOCKHOLM: Understood.

(Lesser) Under societal test it would probably be appropriate to use a societal discount rate, but for TRC you are going to want to use more of a private market discount rate, in my opinion.

And you can have endless debates on what the discount rate would be. I would tend to argue it's in fact higher in terms of nominal discount rate and then you have to determine what the appropriate inflation rate is for that.

But it's -- again, without knowing what's

the background of why did they choose five-and-a-half and why did they go from 3 to five-and-a-half. Five-and-a-half is a -- from a historic standpoint has an extremely high real discount rate from a societal standpoint.

So, it may be going previously from societal to more of a private type of discount rate. I just don't know.

JUDGE STOCKHOLM: I really am not trying to ask you what their logic was, just your view of what the numbers were.

Let me ask you this question: If the discount rate is higher, how does that impact the ultimate conclusions on costs and benefits? Does it make more things cost beneficial than otherwise would be or does it work the other way?

(Lesser) Unfortunately, in typical economist parlance I am going to say it depends.

JUDGE STOCKHOLM: Now you are going to give me assumptions, right?

(Lesser) I guess I will. I have two hands, Your Honor. It depends on how the relative discounting of the cost side and the benefit side. So, if you just have, say, you had all your costs just today and you

increased the discount rate, that will reduce the cost-effectiveness of efficiency measures, but if you are spreading the costs over time, then it really depends.

JUDGE STOCKHOLM: Then it could actually balance out?

(Lesser) It's possible.

JUDGE STOCKHOLM: I just wanted to understand how the math worked.

BY MS. COLLELA:

Q. Mr. Puga and Mr. Lesser, did you conduct total resource cost tests with respect to the study that GDS Associates performed?

A. (Puga) No.

(Lesser) Just to add, GDS Associates did not conduct a total resources cost test either.

Q. Not a detailed total --

A. (Lesser) What they called a simplified TRC test, which we would argue is not a TRC test.

A. (Puga) They avoided including the full costs of the program, the participant cost of the programs.

Q. Let's turn to page 93 through 94 of your rebuttal. Here you discuss Mr. Spellman's use of an 80 percent long-term market penetration rate for the

maximum achievable potential, correct?

A. (Puga) Yes.

Q. Let's flip to page 29 through 30 of your rebuttal testimony. At the bottom of page 29, going on to page 30, you refer to a more comprehensive literature review regarding energy efficiency programs; is that correct?

A. (Puga) Yes.

Q. Did you, in fact, undertake a comprehensive literature review regarding other energy efficiency potential studies?

A. (Puga) It all depends on your definition of comprehensive. For this particular engagement I looked at evidence of programs that have achieved 80 percent penetration.

Q. Did you actually do a review of potential studies?

A. (Puga) I did a review of documents that -- reporting of the findings of potential studies.

Q. Documents that reported the findings?

A. (Puga) Actually, yes. Documents or papers that report on what are the penetration, maximum penetration levels that are -- have been achieved in the past by other programs, which is what Mr. Spellman used to validate his assumptions as to the penetration of his

programs.

Q. How many of those reports did you study, did you look at?

A. (Puga) Probably from between a dozen, I don't know, papers, yes.

Q. Did you in this review look at a study performed by Optimal Energy on behalf of the New York State Energy and Research Development Authority, otherwise known as NYSERDA, for the State of New York in 2003?

A. (Puga) No, I did not.

MS. COLLELA: I am going to mark a document for identification.

JUDGE STOCKHOLM: Counsel has asked a document entitled, "Energy Efficiency and Renewable Energy Resources Development Potential in New York State Final Report Volume 3 August 2003 for NYSERDA", that multi page document is marked for identification as Exhibit 348.

(Exhibit 348 marked for identification.)

MS. COLLELA: Thank you.

Q. You have Exhibit 348 in front of you?

A. (Lesser) Yes, we do.

Q. And this is -- appears to be the study performed by Optimal Energy on behalf of NYSERDA; is that correct?

A. (Puga) That's what the cover reads.

Q. Can you take a look at page 328 -- 3-28, please. You see a table on that page identified as Table 3.2.12?

A. (Lesser) Yes.

A. (Puga) Yes.

Q. It's entitled, "Achievable Penetration Rates for Key Residential Measures"; is that correct?

A. (Puga) Yes, the name of the title, yes.

Q. You would agree that on the left-hand side of the table it indicates end uses -- specified certain end uses; is that correct?

A. (Lesser) Yes.

(Puga) Yes.

Q. The next column identifies specific measures?

A. (Panel) That's correct.

Q. And then it gives a percentage for over a time range; is that correct?

A. (Puga) That is correct.

Q. So, if you look at the long-term penetration rate that the farthest year out, 2022, and out of the measures there, which I count as nine, would you agree that all but two show penetration rates at 80 percent and higher at year 2022?

A. (Lesser) That's what the table shows. Again,

these are just assumptions.

Now, I have never seen this report before, so, the key issue is you could put 100 percent. You could put 110 --

Q. But it's true that's what they assumed in the study, correct?

A. (Puga) That's what they studied, yes.

(Lesser) But the critical issue is how realistic is that assumption. Moreover, is that assumption due to natural replacement levels or specific programmatic effects?

Q. We can agree that it's based on assumptions that are made, but these were the assumptions made here, correct?

A. (Lesser) In 2003, yes.

Q. Even at ten years out, at 2012, would you agree that it shows four, five out of those nine measures penetration rate of 75 percent and higher?

A. (Lesser) That's what it assumes, yes.

(Puga) That's what it shows, yes.

JUDGE STOCKHOLM: Are those assumptions or calculations?

A. (Puga) They are calculations, conclusions --

JUDGE STOCKHOLM: Based on other

assumptions?

A. (Puga) Assumptions they made in 2003, which are basically -- you always go back to data from prior years. So they had to use -- they did primary research. They had to be based on federal appliance saturation survey that probably dated a few years back.

You are talking about projections made in 2003 based on data that was several years old projected to 2022.

MS. COLLELA: Thank you for the clarification, Your Honor.

JUDGE STOCKHOLM: I understand the witness' point with regard to the time frame of the testimony. I have also been around the Commission long enough to know if you can predict the price of oil next week you should be in that business.

MS. COLLELA: Mr. Lesser?

(Lesser) Your Honor, I just want to point out one thing, the previous page of the report, if you look at it, their assumptions they state, "We assume that such programs would provide incentives up to one hundred percent of the incremental measures costs for the measures for which high cost currently appears to be a barrier to consumer purchase."

So, in other words, they give away the stuff for free. That's one of the underlying assumptions for their penetration --

BY MS. COLLELA:

Q. You are saying the assumption is a hundred percent incentives. Is that what you are referring to?

A. (Lesser) Yes, I am just reading from the report.

Q. Okay, thank you.

Dr. Lesser, you formerly worked for the Vermont Department of Public Service, correct?

A. (Lesser) Yes, I did.

Q. Are you aware -- did you include this in your literature review the study performed by the Vermont -- for the Vermont Department of Public Service in January 2007 regarding the achievable cost-effective potential for energy efficiency in the State of Vermont?

A. (Lesser) You will have to refresh my memory. I don't have the report with me. If you could show it to me.

MS. COLLELA: I am going to have this marked for identification, as well.

JUDGE STOCKHOLM: Counsel circulated a document entitled Vermont Energy Efficiency Potential Study Final Report January 2007 for the Vermont

Department of Public Service. That document has been marked for identification as Exhibit 349.

(Exhibit 349 marked for identification.)

MS. COLLELA: Thank you.

Q. You now have this document marked as Exhibit 349 before you?

A. (Lesser) Yes, I do.

Q. Does this refresh your recollection as to the study?

A. (Lesser) Yes. Even though I was not working at the Department of Public Service at the time I am familiar with the study.

Q. You worked at the DPS after the study was performed?

A. (Lesser) No, no, no. I worked at DPS from 2003 to 2004.

Q. That's right. Thank you.

Can you take a look at page 40, please.

Point you to section 4.3, first paragraph, last sentence. Does that indicate there that the study used an achievable penetration rate of 80 percent?

A. (Lesser) Yes, it is.

Q. Thank you.

So, was this study included in your literature

review?

A. (Puga) Not in mine, no.

(Lesser) I actually can comment a little more on the study because I was hired by some of the industrial consumers in the State of Vermont to review the study and comment on it as part of a -- I believe it was a proceeding, although I cannot recall the number of the proceeding.

As part of the study, my review, I was able to go through the detailed electronic spreadsheet analysis that was supplied by GDS Associates and I found numerous errors in that study and concluded that the reasonableness of the study was extremely limited, if any. It was just full of errors.

Q. You were working for whom when you did this?

A. (Lesser) I was working for Coalition of Industrial Customers in Vermont.

Q. This study, as far as you know, was accepted by the Vermont Department of Public Service, correct?

A. (Lesser) I don't know whether it was formally accepted or not in the proceeding. I don't know.

All I know is my review and report pointed out deficiencies in the study and the methodology used and some of the basic assumptions.

A. (Puga) May I point out from a couple of questions ago and this one, I would like to clarify a misunderstanding. My analysis of the achievable potential figure used by Mr. Spellman was based on historical achievements of DSM programs.

So, it wasn't other potential studies. I don't believe that the proper validation for a forecast is other forecasts but a back cast.

Q. You know what? That's a perfect segue to where I was going next.

Just so I can clarify, what you are saying is you did not actually do a literature review of other studies for the potential energy efficiency. You looked at actual programs that had been implemented?

A. (Puga) That's correct. I looked at some papers and studies that summarized -- and the tables that Mr. Spellman provided himself comparing his findings of his potential assessment to other potential assessments in other jurisdictions.

Q. Are you referring to the 2004 analysis that you cited in your testimony at page 30 published by the American Council For Energy Efficient Economy?

A. (Puga) That was one of them, yes.

Q. One of them, okay.

A. (Puga) That was a review not of potential studies but of achievements by programs that were implemented.

Q. It wasn't a review of potential studies?

A. (Puga) No. It's a review of what were the achievements of various -- which reference are you --

Q. Let's turn to page 30 of your rebuttal testimony. If you look at your testimony there starting at line 6.

A. (Puga) That is a review of the potential studies.

Q. It looked at potential studies?

A. (Puga) I looked at another review ACEEE document that referred to achievements of programs in the field.

Q. And this particular analysis you indicated some meta analysis?

A. (Puga) Yes.

Q. Is that indicating that it's a study of other studies?

A. (Puga) That is correct.

Q. Do you recall how many studies they included in this analysis?

A. (Puga) Not really.

Q. Do you recall interrogatory response in which you indicated it was 11 studies?

A. (Puga) I probably -- if I responded that to the interrogatory I probably went back and looked at the

document and cited from the document, yes.

JUDGE STOCKHOLM: We will take that answer as subject to check.

MS. COLLELA: Thank you.

Q. Do you also recall seeing a response to a NYRI interrogatory? The response was from CARI witness, Mr. Spellman, regarding the potential studies that he had looked at?

A. (Lesser) Could you show us the response, please.

MS. COLLELA: Sure. I think I am going to have this marked for identification.

JUDGE STOCKHOLM: What is the document again, Counselor?

MS. COLLELA: Response to NYRI interrogatory.

JUDGE STOCKHOLM: Okay. That's fine.

NYRI interrogatory request number 270 directed to witness Spellman and consisting of 31 pages has been marked for identification as Exhibit 350.

(Exhibit 350 marked for identification.)

Q. Looking at this document, Exhibit 350, do you recall seeing this?

A. (Panel) Yes.

Q. And does it indicate in the response to

subsection A that Mr. Spellman had looked at 195 studies for the potential of energy efficiency?

A. (Puga) That's what it says, yes.

Q. He attached a table listing those studies, correct?

A. (Puga) That is correct.

Q. Would you agree that 11 is quite a small portion of 195 studies?

A. (Puga) Since all I have is the evidence of the table that Mr. Spellman claims he reviewed, I have no idea to the extent of his review. I have no idea what conclusions of each report and what he used the citations for.

(Lesser) I think I should also point out if you look at Appendix A it begins with -- he includes some of his documents, load forecasting reports. So, for example, study number one is northeast utility system 1996 forecasts of loads and resources for the period 1996 through 2015.

I mean when I was at Green Mountain Power I prepared studies like this. In terms of those such studies, providing some sort of definition or documentation of energy efficiency potential, it is rather limited.

Q. You are saying that the universe of potential studies of energy efficiency is limited?

A. (Lesser) No, no, no. I am not saying that.

I am saying that some of the studies he includes as ones he's looking at are essentially forecasts of loads.

Q. But can you agree, though, that 11 is a small portion of the amount of studies of potential for energy efficiency that have been done in the past 20 years?

A. (Lesser) I think if you are referring to the 11 studies in the ACEEE study, if that's correct, then I think there is a bit of confusion because the ACEEE, what that report looked at was a comparison of actual realized savings compared to estimates of the potential.

And what the ACEEE found was that the actual realized savings in almost all cases fell far short of the potential studies.

Q. That study was based on what year data, do you recall, the 2004 ACEEE study? Do you recall what data they were relying on?

A. (Puga) Actually relied on, obviously the potential studies were probably many years before the evaluation documents of impacts that they compare to because obviously the potential estimates are made at

the onset.

The programs are designed. They are filled over a number of years and then have to wait until the evaluation results come in and then compare what we say we are going to achieve versus what was the actual achievements.

Q. The data for the actual achievements would have been 2004 or earlier, correct?

A. (Puga) Yes.

Q. Have you ever used the Energy Information Administration website to look at data on energy?

A. (Lesser) I frequently use that website.

Q. You are familiar with the form 861 data available on that website?

A. (Panel) Yes.

Q. You agree the form 861 is the annual electric power industry report?

A. (Panel) Yes.

Q. It provides information on the current status and trends of the electric power industry?

A. (Puga) Yes.

Q. It includes data on the annual electricity savings for the top electric efficiency utilities within the United States?

A. (Puga) Yes.

Q. Have you attempted to collect data from that database on the annual electricity savings for the top energy efficiency utilities for purposes of this proceeding?

A. (Puga) I have seen the reports provided by Mr. Spellman and I went to the website and looked at some of the data. I didn't do substantive search. I did it to satisfy myself that the degree of detail in the programatic savings was reported was not enough to conclude the programs Mr. Spellman is proposing are analogous or similar enough to the programs reported that you could actually draw a conclusion that my programs will achieve the same levels of savings as these programs that are reported.

The fact there is a lighting program with such-and-such savings or even a specific technology program, like CFL program, with such-and-such savings, in the reporting forms there is not enough documentation to explain what were the levels of incentives, what were marketing campaigns, the methods to approach the customer.

Q. You did look at the statistics for the savings cited for the utilities?

A. (Puga) Yes.

Q. Do you recall that the data shows that the top 20 energy efficiency utilities saved on average about 1 percent of their annual kilowatt sales in years 2004, 2005 and 2006?

A. (Puga) Yes. The top 20.

Q. That's right.

JUDGE STOCKHOLM: Was New York in the top 20? Were any utilities in New York in the top 20?

A. (Puga) You got me, Your Honor, I don't remember.

JUDGE STOCKHOLM: I am just curious. Never mind.

BY MS. COLLELA:

Q. Let's turn to page 96 of your rebuttal testimony. On page 96 you talk about Mr. Spellman's assumptions being aggressive; is that correct?

A. (Puga) He said it himself.

Q. You take issue with the aggressiveness of his assumptions; is that correct?

A. (Puga) I think they aren't realistic.

Q. We will say unrealistic?

A. (Lesser) If you go back to page 94 of our testimony where we discuss Mr. Spellman's presentation of his evidence of the feasibility of achieving high --

what I call unrealistically high penetration rates, he justifies those penetration rates by the results of his single question survey.

Q. He also justified that based on other items beside the survey, didn't he?

A. (Lesser) But the survey also assumed unlimited funding potential, which is simply unrealistic.

(Puga) I didn't make a blanket statement in this part of my testimony as to his assumptions. I specifically referred to the fact that Mr. Spellman assumes that a new program hasn't been tested because he doesn't believe in pilots.

Launch in the street is going to achieve the same level of savings every year for the life of the program. I mean even -- it's not -- it has never been found to be the case for any kind of customer take up of any kind of marketing or new product or new technology or adoption across anywhere from aviation technology, telephony, consumer products, et cetera.

There is always an S-shape curve where you start it slowly and ramp up. And when everybody has that product or nobody wants one anymore, there is a better product available, the update tapers off.

Q. Are you familiar, either one of you, with

Efficiency Vermont?

A. (Lesser) I am very familiar with Efficiency Vermont.

Q. You are familiar with when that got started?

A. (Lesser) Yes, I am.

Q. When was that?

A. (Lesser) Subject to check, I believe it was 1992 or '3.

Q. It wasn't more like 2000?

A. (Lesser) I am sorry. Correction. The mass of it, efficiency program, started early 1990s. You are right. Efficiency Vermont as an entity started around 2000.

MS. COLLELA: I have a document to mark for identification.

JUDGE STOCKHOLM: Counsel handed out a document, "Efficiency Vermont, year 2008, Preliminary Savings Claim" dated March 23, 2009. And it has been marked for identification as Exhibit 351.

(Exhibit 351 marked for identification.)

MS. COLLELA: Thank you.

Q. You have before you a document marked Exhibit 351?

A. (Lesser) Yes, we do.

Q. And it is a report appears to be prepared by Efficiency Vermont regarding year 2008 preliminary savings claim?

A. (Lesser) Yes, it is.

Q. Let's turn to page 3 of the document.

A. (Lesser) I would point out for the record we have never seen this study.

Q. I assumed not since it's dated March 23, 2009.

JUDGE STOCKHOLM: What page, Counsel?

MS. COLLELA: Page 3.

Q. Actually I think I have my page numbers wrong. Just give me a moment. Please. Sorry, page 1.

The first sentence there states, "The 2008 savings claim summary provides an overview of the important characteristics of the 2008 electric savings claim and total resources benefit information submitted by Efficiency Vermont to the Vermont Public Service Board," correct?

A. (Lesser) That's what it says.

(Puga) Yes.

Q. Let's turn to page 2 and look at the last paragraph on the page under the title "Load Growth Continues to be Offset by Efficiency."

Can you read that for me.

A. (Lesser) Sure. It says, "In 2007, Vermont became the first state to offset its projected underline load growth through increased energy efficiency. It also offset load growth in 2008 when new efficiency savings as a percentage of statewide resource requirements (2.5 percent) exceeded the Department of Public Service's long-term projected increase and underlying load growth (1.42 percent)."

I would actually take issue with the accuracy of the conclusion, but that's what it says.

Q. Okay. This was for a program that just began in 2000, correct?

A. (Lesser) Well, Efficiency Vermont really is not beginning -- didn't begin those programs. They essentially were created to administer programs, many of which had been going on before then since the early 1990s and initially started and performed by the utilities themselves.

Q. You would disagree that this program has been aggressively implemented? Would you disagree with that?

A. (Lesser) I would disagree with Efficiency Vermont has tried to be very aggressive about its implementation. What I would disagree with is how the cost-effectiveness of the implementation, because I

don't consider it to be cost-effective.

I also disagree with their savings claim and I would disagree with the statement because, not having read the report, there is no evidence of how they evaluated the other factors, such as Vermont's slowly dying economy, that contributed to load growth reductions. Now --

Q. But you would --

A. (Lesser) Let me continue, if I may.

In a response to one of the interrogatory requests -- I don't recall the number -- Mr. Spellman cited a number of utilities that had achieved negative sales or zero sales growth between 2005 and 2006. And he cited those as evidence of utilities with successful energy efficiency programs because sales growth fail.

What he failed to note is that what all the other possible reasons, such as weather adjustments and total electric sales, since weather affects sales, he failed to note that in the US as a whole, loads did not grow between 2005 and 2006.

He failed to know anything about the economic conditions of those utilities --

Q. Well, let's --

A. (Lesser) He failed to notice anything about the

demographics.

Q. Let's put aside the assumptions and inputs you may disagree with, but can we agree that Efficiency Vermont has been aggressively implemented? Can we agree on that?

A. (Lesser) Very aggressively implemented and have been generously funded by the state or ratepayers. I think it's not worth it --

Q. Can we agree then that aggressive implementation is possible?

A. (Lesser) Well, sure. Aggressive implementation is possible, but what's key is not whether the implementation is aggressive or not.

The key is what are the results and what are the costs to achieve them? That is the most important thing. That's where we take issue with Mr. Spellman's study and we certainly -- I would take issue with the Efficiency Vermont.

JUDGE STOCKHOLM: Let me interrupt here for a second and ask the witnesses if either of you have seen efficiency calculations done in regard to GDP?

So, kilowatt hours per GDP measured, which eliminates the economic piece of it. I have heard people say we have got very aggressive energy efficiency

goals in New York, but all we need is the recession to meet them.

And I wonder if you have seen studies that have looked at efficiency per GDP weather normalized, if you have noticed?

(Lesser) I have. In fact, I have done some of the calculations in the past. What they show is that our country as a whole has become more energy efficient over time. That's not necessarily due to any programmatic specific conservation programs, but it has to do with technology marching on.

If you look, for example, automobiles. Your typical 1970 automobile was not overly efficient.

JUDGE STOCKHOLM: Yeah, but it was fun.

(Lesser) It was a lot of fun.

And you see now we have far higher efficiency levels. The same is true of many different types of appliances. Industrial processes are far more efficient because those commercial enterprises are more efficient. Plus, we have less manufacturing, which is less energy intensive.

So, even if nothing had changed in terms of its per kilowatt hour efficiency, just because you have less energy intensity in the industry, you would say,

a-ha, the country has become more energy efficient.

JUDGE STOCKHOLM: Have you seen the kinds of studies done in terms of setting goals for programs or judging programs? For example, in response to a question from Counsel you said one of the things that -- acknowledging you haven't read the report, but one of the things may not be considered in this report is a falling economy in Vermont.

(Lesser) That is correct.

JUDGE STOCKHOLM: Are you familiar with any reports that would look or that have looked at energy efficiency in response to -- not in response to energy efficiency results adjusted for GDP?

And I guess my question is: Why haven't we heard more about that? It seems to me -- let me go back. It's highly theoretical and I apologize to all of you, but I do want to ask this question. It seems to me bluntly that we don't have the right targets because we can achieve them without achieving what we are trying to achieve.

A. (Puga) You make the wrong assumptions. That probably would be correct. One of the things I note about the paragraph on the bottom of page 2 is that he talks about it also said load growth, et cetera, but he

also talks about in 2007 Vermont became the first state to offset its projected underline load growth. So the forecast is off.

You can remember, Your Honor, back in 2006 nobody dreamt of the bottomless pit recession we are in right now. So the projections throughout the country that we're feeling in sales is in some case are steady and some cases dropping.

So if you are measuring against forecast that project the continued load growth and sales reduction is not considered in this study, I presume that's because of the date of publication of this study, which was an effort probably carried out towards the latter part of last year, even the results in the study may not have taken into consideration the depth of the recession.

(Lesser) As a former load forecaster, I can tell you that load forecaster's creed is give them a number or give them a date. Don't give them both.

JUDGE STOCKHOLM: I think we had a projected price of oil estimated in 1989 at over $100 a barrel by the year 2000.

(Lesser) That was the basis for the PURPLA contract.

JUDGE STOCKHOLM: Exactly. And then when we

got to 2000 we said, that was such a ridiculous estimate. We will never see $100 barrel. So forecasts go.

Sorry, Ms. Collela.

MS. COLLELA: That's okay.

BY MS. COLLELA:

Q. Let's turn to page 2-4 of the National Action Plan Guide.

JUDGE STOCKHOLM: Is that 345, Exhibit?

MS. COLLELA: Yes.

JUDGE STOCKHOLM: Thank you.

Q. We talked earlier about these different terms, technical potential, economic potential, achievable potential. And I think we agreed on the basic way they work.

Can you read for me the sentence beginning "Achievable potential."

A. (Lesser) Sure. "Achievable potential is the amount of energy use that efficiency can realistically be expected to displace assuming the most aggressive program scenario possible (e.g., providing end users with payments for the entire of incremental cost of more efficiency equipment).

Q. Thank you.

So it does refer there to the most aggressive programs scenario possible, correct?

A. (Puga) Yes.

(Lesser) Correct.

Q. That's the typical definition used for achievable potential, correct?

A. (Puga) The proper terminology would be maximum achievable potential.

Q. Thank you.

I just want to go back to a couple of statements you made earlier and just make sure we are clear on the record.

I believe, Mr. Puga, you talked about the programmatic description that was included in the GDS study saying it was --

A. (Puga) Sketchy at best, yes.

Q. Somewhat lacking.

Let's turn to the GDS report. I will give you a page number here in just a second. Turn to page 48.

Maybe you recall after having reviewed the study, isn't it true that page 48 through 95 gives a description of the programs that are being studied here?

A. (Puga) Are we talking about page -- the page starting on section five.

Q. Yes. So it would be all of section five and section six. You did review this part of the report?

A. (Puga) Yes, I did.

Q. You would agree in general this is the description of the programs, right, page 48 through 95 of the report?

A. (Puga) My problem is I couldn't find much program description. I found the numeration of the technologies that the program were going to cover, the residentials of the programs would be targeting, but there was nothing programmatic about it.

There was nothing that talked about how the marketing campaign would be assembled, whether people were going to be approached in one way or the other. I don't recall seeing that.

Q. If you go to page 65, starting with section 5.71, Energy Star Residential Lighting Program, do you see there is a description of the measure the program incentives, projected CFL sales, program design and implementation on the next page? And it goes on for three more pages.

Do you see that there?

A. (Puga) Yes.

Q. Wouldn't you agree then that he performed -- GDS

performed the same kind of description in the following pages for the other programs that are there -- that were studied? Wouldn't you agree with that?

A. (Puga) Well, in my testimony I referred to the sketchiness of his program descriptions. And the problem is that he talks in general terms what the technologies would be, what the level of incentives would be.

He talks about potential trade alliance that might be involved, but there is really no -- when you have a program design on the street you have to describe who the trade allies are specifically. I don't know of the trade allies that he describes, for example, actually exist in the counties that he's addressing with his programs.

Q. So he did, in fact, describe the programs. You just take issue with the level of detail?

A. (Puga) Absolutely. He is reaching a conclusion that these programs will achieve certain levels of savings. And all those levels of savings are all predicated on the marketing campaigns and how they are carried out.

You can have two programs that on the surface might seem completely homologous. One would be very

successful because of a very successful marketing campaign and approach to market.

May have another program that may not be. And as I say, the devil is in the details. I have no way to ascertain by the description Mr. Spellman provides whether his very aggressive programs would be aggressive enough to reach the 80 percent or high savings potential that he predicates.

(Lesser) The other thing I want to point out that, for example, if you go back to his -- in his report, Table 1.3, he shows a 10-year cumulative effect of maximum achievable cost-effective annual cumulative megawatt hour savings from energy efficiency programs with 80 percent market penetration (load zones H, I, J and K). And he shows a number in 2018 of 18,596,880 megawatt hours.

Now, if you go to the next page, Table 1.4, and Table 1.4 is sources of maximum achievable energy efficiency megawatt hour savings potential. He has a sum, the fourth column of that table, sum of residential and commercial and industrial end use savings. This is maximum achievable. And these are all in megawatt hours. 3,231,539,074 megawatt hours.

So, in Table 1.3 he says the maximum achievable

savings are 18,597,000 approximately megawatt hours, but then in Table 1.4 he now says they are over 3.2 billion megawatt hours.

Q. I think this must have been another item that was revised in the revised report because my table does not say that in the revised report.

A. (Lesser) You must have handed us the wrong --

Q. I did. I apologize. What we had in our files over there was not the revised report. That was an error. It wasn't a mathematical error. It was just an inadvertent error that was corrected in the revised report.

You also stated earlier, when talking about the total resources cost test, that the test that was employed by GDS did not include participant costs.

Did you say that?

A. (Lesser) That is correct.

Q. In fact, on page 10 of the GDS report, RFS-2?

JUDGE STOCKHOLM: Is that the report -- do the witnesses have in front of them the report that is in the record?

MS. COLLELA: They did not have the revised report that's in the record.

MR. BISSELL: Can I request the witnesses be

given the correct copy of the report if you are going to reference it and going to ask them questions about it?

JUDGE STOCKHOLM: Seems like a reasonable request, Counselor.

MS. COLLELA: Yes, Your Honor. I will give them the page I have here.

JUDGE STOCKHOLM: Ms. Collela, how much longer do you think?

MS. COLLELA: Not very much longer. Maybe 15 minutes. Give me a moment to pull that page up.

JUDGE STOCKHOLM: Take your time.

MS. COLLELA: Thank you.

Q. If you look at the second full paragraph there, where the total resources cost test is discussed, does it not say that the costs in this test are the program costs paid by the utility and the participant?

A. (Lesser) That's what the total resources cost test is, but in one of the discovery responses Mr. Spellman stated categorically he did not use the total resource cost test. He used a simplified total resource cost test. That excluded participant costs.

Q. Just a couple of more questions.

A. (Lesser) Would you like to see the discovery response where he says that?

Q. No. I think I am going to move on to another line of questioning, thank you.

Let's move to page 226 and 27 of your rebuttal testimony -- I am sorry, 26 to 27. On those pages you compare the reliability benefits of a transmission project like NYRI's to an energy efficiency program like that analyzed by GDS in this proceeding, correct?

A. (Panel) Yes.

Q. Isn't it the case that in recent years energy efficiency programs have, in fact, been considered as an alternative to generation or transmission projects and in effect in the case where reliability constraints are a concern?

A. (Lesser) Can you be a little more specific as to where they have been considered and what sorts of programs.

Q. Let's take a look back at our National Action Plan guide. Can we go to page 2-2, section 2.3. The heading there is "Potential Studies as a Policy Tool"?

A. (Lesser) I see that, yes.

Q. If we go to the next page, 2.3.2, section 2.3.2, "Identifying Alternatives to Supply Side Investments." Can you read that first sentence there for me.

A. (Lesser) Sure. Says, "Energy efficiency is

increasingly being considered as an alternative to supply side investment in generation or transmission resources especially in the context of reliability constraints."

Q. So, in fact, studies are performed of energy efficiency programs to determine whether they can be an alternative to supply side projects?

A. (Lesser) Yes. I have performed those studies and, in fact, some of the results are published in some of the articles I mentioned previously.

There is really several problems. One is that the -- when you are looking at cost-effectiveness and it's typically more in a -- of the studies we were doing, which is the distribution level for addressing radial feeders. When you start looking at avoided T&D cost savings and you put those into a dollars per megawatt basis and then translate those into dollars per megawatt hours, that's simply the wrong comparison.

That's why I worked with the Electric Power Research Institute to develop what's called the area investment planning model. And what we did with that is we put energy efficiency and we used the correct economic framework, looking at the lumpiness of transmission distribution investments.

Then, to do the comparisons using a dynamic programming approach taking into account load uncertainty. The other thing you need to understand about energy efficiency programs is that there is -- it's more common in, say, PJM as well as NYISO and ISO New England, the RTOs that they are using and demand response programs can participate in the capacity auctions.

So, they are as alternatives to new generating capacity, but there is a big, big difference between demand response that is callable when the operator wants it, and energy efficiency.

Q. Would you agree, though, that in some of these auctions energy efficiency programs are also being allowed to participate?

A. (Lesser) PJM is allowing energy efficiency to participate, although their payments for energy efficiency declined to zero over a four-year period.

And those energy efficiency programs can only receive payments when their -- after their measurement and verification protocols are affected. And that's the real number of the energy efficiency issue. And I mean I am a believer in energy efficiency.

I don't want to spend more for the electric

utility than necessary, but when you are talking about using these programs to meet reliability-specific NERC reliability standards, it's -- the measurement and verification issue is absolutely critical because you have to know what savings will you achieve and when.

And there is a big, big problem if you can't guarantee that. That's why the RTOs were so hesitant with demand response because they were concerned about the controllability of those resources.

MS. COLLELA: Thank you. That's all I have, but my colleague, Mr. Brown, has some questions, too.

JUDGE STOCKHOLM: Mr. Brown, I am going to jump in ahead of you for a couple of questions.

A couple of questions ago Counsel asked you about that first sentence on page 2-3 under 2.3.2.

(Lesser) We have it.

JUDGE STOCKHOLM: In response to questions that Counsel asked you about this sentence, Dr. Lesser, you gave two different answers.

The first answer was, if I understood correctly, you had a methodological issue and you then worked with and testified a little about that.

Would you explain to me what the methodological problem was.

(Lesser) Sure. The problem is that the typical approach in looking at energy efficiency investments in the context of reliability planning was that they -- the crux was not what are the energy savings and how does that compare to the generation savings. It's how does it compare to the avoided -- and that's what they used, the term avoided transmission and distribution costs.

The idea being that with energy efficiency investments you could either delay or perhaps even entirely obviate the need for transmission distribution to upgrades because as the loads grow ultimately you need bigger circuits and the like.

The problem with transmission distribution upgrades -- and they would look at it and compute it on a dollars per megawatt or dollars per kw basis. T&D investments are quite lumpy. You can't build a 1 kw substation or a 1 kw transmission line. At least not to my knowledge. I would look to my esteemed engineering colleague for that, if it's possible.

When you start using the wrong margins, when you essentially want to perform, like economists do, to look at marginal costs versus marginal benefits, when you start looking at the wrong margins and assuming they

are 1 kw margins, but when the investments are actually much lumpier than that you have a problem.

So, what we did is we said, look, let's get rid of the avoided cost approach. Let's look at the actual total costs and compare them over time. And accounting for both uncertainty of load growth --

JUDGE STOCKHOLM: The economic community didn't shoot you for doing that, looking at actual cost?

(Lesser) Don't tell anyone, Your Honor.

We applied that. We looked at the uncertainty of load growth because we found that was the key driver. This is when I was working at Green Mountain Power and we were planning how to serve the ski area's loads when the ski areas were saying, well, we may expand significantly. We may delay a year or two.

And we have an obligation to serve. So, we developed this model using what's called the dynamic programming approach, which is similar to a decision tree. And we did that and looked at both costs of the T&D upgrades in the sequence needed that the engineers would tell me, we must have this for reliability.

So, if you do this first investment or can't do -- can't replace this feeder unless you replace this substation first. We did those and compared the energy

efficiency savings estimates and costs of those programs based on the uncertainty of future load growth.

And then essentially we do that with the decision tree, roll the tree back and solve what is the truly least cost alternative given the uncertainty as we understand it. That's the entire premise of that approach.

JUDGE STOCKHOLM: Are you aware of any regulatory commissions that have adopted that kind of an approach?

(Lesser) I am not aware of any. I have testified in Vermont several times with that approach, but I am not -- specifically I can't tell you whether anyone really adopted it or not.

JUDGE STOCKHOLM: Thank you.

Yes, Mr. Puga.

A. (Puga) I would like to add that I actually fully agree with the full extent of 2.3.2 except that we only agree with the first sentence. In following down says, To answer a potential study can answer the question can efficiency displace needed investments and supply side or transmission resources. Investment decisions, especially those regarding investments to meet future reliability, may require a more detailed potential study

than under the previous scenario, which discloses the type of study that Mr. Spellman carried out, very generic, broad area studies.

These studies typically focus on specific set of conditions, for example, geographic area and customer loads, to facilitate comparison with alternative solutions.

Ideally, the methodologies based on detailed site-specific data to support investment grade analysis. Such a potential study is designed to produce estimates of what can be accomplished from a specific program design rather than on generally aggressively efficiency investments.

That's precisely to our point. I participate personally with Con Ed in the design and implementation of selected area network program, which was an effort to replace lighting and chillers in large high rise buildings in a given area served by given transformer in some station.

Basically, those programs were predicated on a hundred percent replacement costs. Conde Nast building replaced their chiller based on full cost of the replacement. That eliminated the need to replace the substation, basically digging out the volume and bigger

switch gear, et cetera.

It's much more cost-effective than the case of Con Edison on a specific selected area than generic energy efficiency programs.

JUDGE STOCKHOLM: Completely different question -- well, not completely different, but when you looked at CARI's submittal did you make any assumption with regard to the program they described as being incremental to, overlapping with, or equivalent to the energy efficiency programs that have been adopted and are being implemented by the New York Public Service Commission?

Let me ask the question in a slightly different way so you understand what I am asking. I will use the word incremental, I am sure.

Did you have any assumptions from reading Mr. Spellman's study or the GDS study whether the achievements being discussed there and programs being discussed there were incremental to programs that are currently ongoing?

A. (Puga) I could not ascertain from reading Mr. Spellman's studies as to who would implement his programs. I think we raised that in interrogatories.

Clearly, we asked that question of him in

interrogatories. The response was that he had considered the programs at Con Edison and another utility were implemented, but he did not say how that had been considered.

So, it's not clear to me to this day whether these programs are incremental or if they include the utilities' programs.

(Lesser) It would seem to be the case that since he relied on 2003 and 2001 saturation data, and to the extent that some of these programs such as the EEPS have been adopted subsequent to that, that he may not have really accounted for how these programs would work in conjunction with other existing programs.

A. (Puga) Because the saturation data he based the studies on does not distinguish between homes that have or been targeted by Con Edison or by the other utilities, so it's --

JUDGE STOCKHOLM: Are you saying basically that his study, in your view at least, might be counting energy efficiency improvements that have already been accomplished?

(Lesser) Yes. That's very possible.

JUDGE STOCKHOLM: That, I think, is what the question was in my mind, really. Sorry it took me three

or four questions to get it.

Mr. Brown.

MS. COLLELA: I want to follow up on that, Your Honor.

JUDGE STOCKHOLM: Okay, fine.

BY MS. COLLELA:

Q. Actually, isn't it true that when Mr. Spellman looked at the measures that he was going to include in his study and he looked at the households that were using certain appliances, he excluded those households that were already using energy efficiency measures?

A. (Puga) That's true, but that was 2003 data. He did not update his saturation numbers for update of existing programs and natural adoption of the measures in the period of five years or --

(Lesser) And change of the housing stock, as well.

Q. And assuming that the most recent survey was 2003 for that area that has been collected by other people, you are suggesting he would have had to collect that data himself?

A. (Puga) If you are going to be trying to eliminate transmission in the area on the assumption that your alternative based on efficiency is going to be there,

certainly as the construction of the line would take place if it was permitted, then I would say yes.

The uncertainties build layer upon layer of assumption. Mr. Spellman's study gives me a great degree of discomfort in order to be able to say, yeah, this is enough to eliminate the load the line would have served. And also have other disagreements as to the attribute comparison between energy efficiency and transmission infrastructure.

Q. You are aware that his saturation data did include 2008 data?

A. (Puga) Not for everything he did.

Q. But for some of the measures. And you also -- go ahead. I am sorry.

A. (Lesser) Please, go ahead and finish.

Q. And you did testify earlier that to complete a saturation survey for an area as big in population as the southeastern New York area could take up to a year?

A. (Puga) I mean on the outset that would be the maximum time, but, see, the utilities which have been in the business of energy efficiency for all these years, you will see that they routinely carry out these types of surveys because they know that the generic available surveys data is not good enough.

So perhaps if you went back and looked at all the surveys that Con Ed and other utilities have carried out you could perhaps design targeted surveys that would be carried out in less time.

Q. We did establish that he did include Con Ed data in his saturation data, correct?

A. (Puga) At this point, to the best of my recollection, I can't recall what he did or didn't.

Q. Subject to check?

A. (Puga) Subject to check.

(Lesser) If you go to corrected Table 1-4 in his report of the 18,600,000 megawatt hours of cumulative savings he is projecting, over fourteen-and-a-half million megawatt hours of those savings or roughly three-quarters are in the commercial and industrial sectors.

Now, if you look at Mr. Spellman's report, the -- his report is almost entirely devoted to discussions of those residential programs. There is almost no discussion whatsoever of the commercial and industrial programs, yet he's assuming three-quarters of those savings will come from commercial industrial sectors.

There is a couple of problems with that. One is those sectors are most likely to implement measures

themselves because they are really trying to achieve bottom line savings and because larger users tend to have more sophisticated knowledge about energy efficiency investments than, say, your typical residential person.

And also the commercial industrial stock can change very rapidly. For example, you may have an office building and the tenant goes out of business and somebody else comes in and completely guts the building.

All the measures you had put in, all the efficient lighting, et cetera, are suddenly gone because instead of, say, an office, now it's going to be a beauty parlor, art gallery, whatever.

It concerned both of us greatly that he's projected most of his savings from these commercial and industrial programs but devotes almost no time to discussing how do these programs get implemented. What are the potentials? What are they based on? What are the assumptions? None of that.

A. (Puga) In the estimation of the potential savings in the industrial sector is the one sector where he did a top down approach and analysis of potential as opposed to bottom up, which you could argue that he had done it right for residential sector, be more valid, but doing

top down approach for estimation of potential savings for industry, which is the thorniest sector to attack with energy efficiency, it is, to me, very uncertain.

MS. COLLELA: Thank you. I am going to turn it over to Mr. Brown, now.

BY MR. BROWN:

Q. Good morning, still.

A. (Lesser) Are you going to give us any more paper?

Q. Dr. Lesser, most of my questions are directed to you. I'll be fairly brief. I just want a little help understanding some of your rebuttal testimony here, in particular as it relates to the cost/benefit analysis.

On page 88 you refer to a societal cost/benefit analysis. Earlier you mentioned that includes externalities?

A. (Lesser) Yes, external costs and benefits, sure.

Q. Is this sort of the same notion of trying to understand who the client is for the purpose of doing a cost/benefit analysis, so if you are looking at it from the perspective of, say, individual company or individual town versus the state you might consider a different --

A. (Lesser) Sure, absolutely.

Q. So, when we are saying societal cost/benefit

analysis to do something like that, what kinds of -- what procedures would you go through? What are the general steps?

A. (Lesser) To perform a societal cost/benefit analysis?

Q. Yeah.

A. (Lesser) The first thing you want to do, obviously, is determine what are the alternatives you are going to be comparing and what's your base case. The second alternative -- I'm sorry, not alternative.

Once you have your alternative, then you want to go through and identify the different costs and benefits. Those are both going to include private costs and public or social costs. So, for example, if you are looking at a new transmission line, obviously the private costs are what does it cost to build it.

Some of the public benefits are going to be, well, does it, in fact, improve reliability and, if so, by how much? And you can actually come up with a value of improved reliability. It's difficult, but can be done.

You might want to look at, well, it's going to lead to -- that transmission line will lead to more efficient dispatch of generation and greater access by

lower cost generation, which is going to lead to lower environmental emissions, fewer emissions of SO2, Nox, that sort of thing, mercury. And those have social benefits, but they would not be considered private benefits.

In the case of NYRI, we testified that building NYRI will allow far greater development of renewable resources upstate and that's a social benefit --

Q. I don't want to cut you off, but do want to move it along.

One of the things you identified is measuring the alternatives. You want to consider the alternatives if doing a societal cost/benefit analysis?

A. (Lesser) In any cost/benefit analysis you obviously have to start with what are the alternatives. Otherwise, this is cost-effective compared to what?

Q. Including the no action alternative?

A. (Lesser) Exactly.

Q. You want to identify the potential benefits and costs and put those into some type of cash value, discount them, depending on particular benefit or cost you are looking at you might have different discount rate?

A. (Lesser) Typically, we use the same discount

rates for benefits and costs. Whether it's a private benefit/cost test or a social benefit/cost test, you may use a different discount rate.

That was my discussion earlier with Your Honor about what's the real discount rate, 5.5 percent, et cetera.

Q. And then you reduce that to present value so you could do a comparison?

A. (Lesser) Yes. In fact, that's a better approach than using benefit/cost ratios.

Q. Then, there is some evaluation criteria used sometimes or you sort of stop there and leave it to decision makers or apply some type of criteria for determining whether or not it's a good project?

A. (Lesser) Depending on what you are asked to do, yes. You may say there are net present value benefits to this project and this alternative has the highest net present value of all the alternatives considered.

That's typically how you would approach it, but you can -- or you can say, well, because if you are doing societal tests there may be other social costs and benefits that are just simply impossible to identify with a degree of accuracy that you may say, well, this is -- here's from what we can identify, this has a

positive benefit or it doesn't.

You know, actually a renewable portfolio standard is a wonderful example. We impose renewable portfolio standards recognizing that it's a higher cost to build renewables than alternative fossil fuel generation. Otherwise, if the renewables were less costly, you would build them anyway.

So, because they are more costly we say, well, we think that benefits, the other societal benefits or renewables are worth that additional cost so we have a policy to do that.

Q. I will get to that in a second once we finish up here.

You have done this now -- have you done this kind of cost/benefit or benefit/cost -- is there a difference between cost/benefit analysis and benefit/cost analysis?

A. (Lesser) Depends who you ask. My former dissertation chairman says yes. He thinks of cost/benefit analysis as the more mechanical tallying up the costs and benefits, but he says benefit/cost analysis is something a bit lost here.

I think for the purposes of this proceeding let's call them the same thing.

Q. And you mentioned some of the things that are

non-market things. I am trying to estimate that are -- sometimes hard to agree on how to estimate.

For a project like a transmission line you might want to look at impacts on property values, correct?

A. (Lesser) That would probably be more considered private. It's an external cost, but it's --

JUDGE STOCKHOLM: Some of it's internal. Some of it's external, I think, because in some cases you take the land and taking the land is part of the base project cost.

(Lesser) Right.

JUDGE STOCKHOLM: In some cases we have seen testimony here where land not taken is still imposed upon.

(Lesser) With a visual impact. And there's discussions, debate over what's the effect of seeing the transmission line from a certain distance on a property value.

BY MR. BROWN:

Q. There is a visual impact but also market impact on the property value apart from the visual impact as well that could be measured, right?

A. (Lesser) In theory, sure. You can measure -- if the property sold for $100,000 before the transmission

line and property sold for $90,000 after the transmission line, and you accounted for all the other potential impacts, the junked cars put on the property during that year, et cetera, that was the measured effect on the property.

Q. You could do some type of estimation technique to account for that and then the visual impact might be a separate technique to try to isolate that attribute?

A. (Lesser) Yes.

Q. So on down the list?

A. (Lesser) Yes.

Q. How about non-use, might that be an attribute you might want to put some value on?

A. (Lesser) Non-use of the affected property?

Q. Yeah.

A. (Lesser) Do you mean existence value of the property?

Q. Yes, existence value of the property. Say it's a really nice state park nearby the proposed project. Not everyone goes to the state park. Some people might value the fact it's there?

A. (Lesser) There is a possible impact. If there is, in fact, an impact on the state park. Now, I don't know if -- I would kind of doubt the line is being sited

through a state park. I don't know. So --

JUDGE STOCKHOLM: There are parties who agree with that, yes.

Q. Have you done what we have just been describing as a benefit/cost analysis or cost/benefit analysis for the purpose of the NYRI project?

A. (Lesser) We did not. In terms of what we have been discussing in terms of a full societal cost/benefit analysis, no, we were not asked to do that.

Q. Do you know: Was that included in the application by anyone, any other consultant, CRA?

A. (Lesser) I am not -- I will confess to not having read the entire record or all the documents submitted, so I haven't seen a study. I have seen certainly references in testimony to staff talking about different effects on pollution levels and references to river crossings and that sort of thing, but nowhere did I find all in one place this is the societal cost/benefit analysis.

Q. Then in your testimony you mentioned this earlier, too. You used the phrase of -- turn to 18. You used the phrase public policy benefits?

A. (Lesser) Yes, I see that.

Q. Is that sort of defined in the sense of

cost/benefit analysis we were just talking about?

A. (Lesser) It can be.

Q. Now, because you could evaluate that public policy under cost/benefit analysis?

A. (Lesser) Yeah, you could do it several ways. One is, you could attempt to directly calculate the benefits using, for example, if it was reduced greenhouse gas emissions, it might be possible -- difficult, but might be possible to estimate the present value benefits from reduced greenhouse gas emissions through lower sea level impacts. You know the drill.

Or you could do it indirectly and say, well, if we perform this policy -- let's say build lots of renewables, we can estimate the increment of cost that will require relative to what we would consider to be a least cost plan of coal plants.

Q. Cost-effective approach?

A. (Lesser) Establish lower bound on if we impose this policy in any way then we must be assigning at least a value of that cost difference to the policy.

Q. That would be where you already decided you are going to implement a policy and trying to decide the most cost-effective way to do it?

A. (Lesser) No. It's more if you are deciding to

implement a policy. You could say, well, if we did this, what would it cost?

Well, it's going to cost us an extra billion dollars. Do we, in fact, value this at more than a billion dollars?

JUDGE STOCKHOLM: Is it your testimony that that's actually the order in which decisions are ordinarily made by the government?

(Lesser) No, sir.

BY MR. BROWN:

Q. So, in terms --

JUDGE STOCKHOLM: Nor mine.

Q. In terms of notion of the public policy benefits being considered, say, within this whole universe of net costs and benefits for the NYRI project, would it make more sense to say there is a benefit to increased generation of renewables that you would say, okay, what are the costs and benefits for that component and add that into the ledgers for costs and benefits for the NYRI transmission line?

A. (Lesser) I am not sure I entirely follow you. I think what you are asking -- correct me if I am wrong -- is whether you essentially have here the costs and benefits of NYRI are nice and narrowly defined.

Q. Societal.

A. (Lesser) Societal would also include the other things, like what are we getting from the renewables, that sort of thing.

Q. If you had done the cost/benefit analysis, societal cost/benefit analysis, you would include the effects of if they were related?

A. (Lesser) Yeah, sure.

Q. Of other consequences?

A. (Lesser) Yeah. So, if you decided and argue, as we do in our testimony, that without NYRI New York will be unable to develop the wind generation that NYISO has indicated or -- not ISO, the state wants to acquire to meet the RPS, and NYISO has indicated you need transmission to do that, then you would incorporate that. That would be part of the societal benefit, the public policy benefit.

Q. There is no, like, separate hurrah benefit. You are not trying to measure the willingness to pay because someone is happy that a policy is about to be met irrespective of what the policy is?

A. (Lesser) Um.

Q. It's not the policy of being achieved on its own that you are measuring and saying there is a benefit, it

is the underlying, okay, there is a benefit?

JUDGE STOCKHOLM: Counselor, could I ask you to start that thought again. I am having a hard time following it.

(Lesser) I am familiar with many kinds of costs and benefits, societal and private. Hurrah benefit is not in my lexicon.

BY MR. BROWN:

Q. Now, if you were trying to look at related consequences of you say NYRI's you would include in societal cost/benefit analysis?

A. (Lesser) Yes.

Q. Say you assume that there was no renewable portfolio standard?

A. (Lesser) Okay.

Q. Assume there are no added extra tariffs or tax benefits for producing wind power or favoring it over other generation. And you had NYRI there. NYRI is put in place.

What kind of generation would sprout up in the upstate region?

A. (Lesser) Well, it depends what other sorts of restrictions the state might impose.

Q. All else held constant?

A. (Lesser) Where are we starting from, Counselor? We might build more nuclear generation. We might build more coal-fired power or gas.

Given the responses to that I reviewed from the Department of Public Service witnesses who indicated that they kind of doubted that new coal and nuclear plants would be built in the state, okay, if you take away that, it's probably gasified. Maybe it's pump storage hydro.

Q. Basically you are looking for the most cost-efficient?

A. (Lesser) Yeah, depending on if it's regulated. Is it regulated? Do you have an open market for -- that's going to stay the same for wholesale generation, sure.

Q. If we remove the renewable portfolio standard and any subsidies, incentives, we just left it as pure economic efficiency and put the NYRI line down, we wouldn't necessarily see any more wind generation?

A. (Lesser) We might not, no. If there is no RPS and wind is more expensive, unless people are really willing to pay for wind on sort of an individual basis or because utilities happen to offer programs -- I am sorry. Wind might be developed if it's the lowest cost

resource regardless of an RPS or not.

Q. Is that -- in your experience, is wind the lowest cost resource?

A. (Lesser) It hasn't been in my experience, no.

Q. You have written articles on creating some type of system to help promote renewables, correct?

A. (Lesser) Yes.

Q. That's because they need something to help sponsor their development?

A. (Lesser) Yes.

Q. So now looking into two of the public policy benefits that you have identified. One was renewable, encouraging the development of the renewable portfolio standard, achieving the goal.

Another was reducing greenhouse gas emissions?

A. (Lesser) Yes, and the third was increased energy and resources diversity.

Q. Would you agree that a transmission line, one of the reasons you put a transmission line in is if you take advantage of different prices in different markets and help equate those prices?

A. (Lesser) Yes.

Q. In this case we might be saying --

A. (Lesser) That's one reason for building

transmission, can be.

Q. So that the lower cost transmission generation has the opportunity to take advantage of some higher prices?

A. (Lesser) Yeah. You would get -- you would -- essentially you are transferring some transaction and increasing economic efficiency because you are moving lower cost generation to a higher use value.

Q. I am talking about the generators, the producers' response. They get a higher price. They are going to want to generate more. They can take advantage of that, move it down market, downstate?

A. (Lesser) That is correct.

Q. That would include coal generators?

A. (Lesser) To the extent that they are not fully generating right now, that's possible, yes.

Q. And natural gas, right?

A. (Lesser) Yes.

Q. If we were doing a societal cost/benefit analysis and looking at the effects of NYRI, would you want to then consider the potential for increased greenhouse gas emissions from increased generation of coal?

A. (Lesser) You would to the extent that -- but you would also want to look at is that lower cost generation

displacing higher cost, less efficient generation in downstate, which it presumably would be.

In fact, that's one of the things that the DPS staff says --

Q. Let me cut you off right there. You are talking about less efficiency, right? I was talking about greenhouse gas emissions.

A. (Lesser) We are talking about the same thing.

Q. Not necessarily.

A. (Lesser) Let me finish.

Let's say we have a generator that's in New York City that has to run a lot, or southern New York, and it's at a heat rate of 10,000 BTUs per kilowatt hour and we can replace that because now with new transmission there is a new more efficient generator of 7,000 BTUs per kilowatt hour that can replace that, that older inefficient will actually come up with -- will have lower greenhouse gases as a result.

Q. I mean so you have to basically calculate it all out. You would have to consider --

A. (Lesser) You would want to calculate it all out, absolutely.

And also consider what are the existing policies. For example, you may have a policy that says we will not

build any more coal resources period.

Again, so you calculate it within all the other constraints that exist.

Q. Whether there is a legal limit, legal restriction?

A. (Lesser) Or even if it wasn't a legal restriction, I don't believe New York State has, subject to check, has a legal restriction that says section such-and-such of the losses you cannot build any new coal power plants.

But from a realistic standpoint if someone -- I presume if someone proposed a nice new coal plant in upstate New York or downstate or New York City that it would be met with disfavor.

JUDGE STOCKHOLM: An understatement.

Q. Getting back to what started this line, if you are doing societal cost/benefit for NYRI and there was no renewable portfolio standard, then, you wouldn't count wind power generation as one of its benefits, would you?

A. (Lesser) Unless if you determined that, in fact, over time wind generation was, in fact, less costly and it would promote more development because wind generators thought we have a real competitive

opportunity here because of the wind resources in upstate New York, et cetera. Then you would count.

Q. If wind generation was less costly?

A. (Lesser) Yeah, and depending on obviously the alternatives.

JUDGE STOCKHOLM: Time check.

MR. BROWN: Maybe ten minutes, Your Honor.

JUDGE STOCKHOLM: Go ahead.

Q. Dr. Lesser, you haven't done any cost/benefit analysis for determining whether the RPS standard is a good policy?

A. (Lesser) No, we did not do that.

Q. And you haven't done benefit/cost analysis on determining whether RGGI is a good policy?

A. (Lesser) No. Nor have we done a study whether increased energy resource diversity is good or not. We took those established public policy goals by the State of New York to achieve that.

Q. So, when you call them benefit, it's only in stated policy goals. It's not in the sense of you have done a cost/benefit analysis?

A. (Lesser) That is correct.

JUDGE STOCKHOLM: In preparing your testimony did either of you look at December 2007 --

December 24, 2007 Commission policy statement in the long range planning case?

(Lesser) I haven't seen that document, Your Honor.

JUDGE STOCKHOLM: Thank you.

MR. BROWN: I have got one for you.

JUDGE STOCKHOLM: Document circulated by counsel from Energy and the Environment, an article entitled "Blowing in the Wind Renewable Energy Mandates, Electric Rates, and Environmental Quality" with that October 2007 date has been marked as Exhibit 352.

(Exhibit 352 marked for identification.)

Q. Dr. Lesser, I take it it's your article. It's got your name and photograph on it?

A. (Lesser) I neither confirm nor deny that. Yes. It's my article.

Q. Dr. Lesser, if you could refer to your conclusion. I would ask if you just read your conclusion into the record.

JUDGE STOCKHOLM: From page 3.

Q. Page 28 under "Is there any room for realism"?

A. (Lesser) "Renewable energy clearly can provide some benefits. However, it has been oversold as a world redeeming panacea. Policymakers who continue to create

RPS mandates that are devoid of realism are not doing their constituents any favors.

Instead, they are needlessly raising costs for all of us while providing little, if any, of renewable energy's promised benefits. A bit more economic rigor could go a long way not only in evaluating the costs and benefits of renewables, but also in determining the least cost approaches to achieving non-economic goals which, contrary to the beliefs of some, neither economics nor economists disdain."

Q. Dr. Lesser, in evaluating NYRI on societal cost/benefit basis, promoting renewable portfolio standard goal, I take it from your opinion of those standards it wouldn't be considered much of a benefit?

A. (Lesser) Not necessarily. First off, we weren't asked to do that valuation. And I certainly stand by what I say that there can be -- I think there has been an over emphasis on renewable energy as a panacea, but one of the tenets of cost/benefit analysis, in fact, if there is an established goal -- and in the State of New York there is a requirement to meet a renewable portfolio standard and to achieve certain levels of that, then that's part of the policy.

And, therefore, the idea behind that is what is

the least cost way of achieving the goal. I may happen to disagree with the goal. Someone else may vehemently disagree with me and think this is great, yes, there are extensive benefits.

Q. Again, it's the least cost sort of a different type of analysis, that's the cost-effectiveness analysis?

A. (Lesser) No, not really. Least cost, you can't maximize benefits less costs without having least cost.

Q. But the idea you already selected the policy?

A. (Lesser) That is correct.

MR. BROWN: One more document and --

JUDGE STOCKHOLM: This is down to three pages.

While it's being handed out, Dr. Lesser, I assume this is kind of a general article. It's not aimed at any specific state or Commission policy?

(Lesser) Not at all, Your Honor.

JUDGE STOCKHOLM: Do you know enough about the RPS program in New York to be able to give me an opinion as to whether or not policymakers in this state continue to create RPS mandates that are devoid of realism?

In other words, do the mandates in New York

fall within that category or do you not know enough about it?

(Lesser) I think the realism of the New York RPS will, in fact -- and achieving it will depend on whether there is sufficient new transmission capacity put in like NYRI.

Without any new transmission capacity -- and this is not my opinion. It's NYISO's opinion. It won't be achieved. So, in that sense it's not realistic.

JUDGE STOCKHOLM: Are you making the assumption the policymakers assume there will be no new transmission, in that sense they are being unrealistic?

(Lesser) That's what the NYISO transmission white paper says, that without this transmission this goal cannot be achieved.

JUDGE STOCKHOLM: My question to you is a little bit different. Are the policymakers that are establishing RPS mandates in New York, which is, well, without excluding others, certainly the Public Service Commission, are those mandates which I read here, correct me as you will, as 25 percent of our power being renewable, are those mandates devoid of realism?

(Lesser) I don't have enough information to make a statement or conclusion one way or another.

JUDGE STOCKHOLM: That was exactly my question. Thank you.

Could you identify the document you circulated.

(Exhibit 353 marked for identification.)

MR. BROWN: Document here marked as Exhibit 353, and it's an article from Public Utility Fortnightly. The AG Global Warming Suits Regulation by Litigation October 2004.

I believe that was authored by you, Doctor.

A. (Lesser) Yes, it was.

Q. Dr. Lesser, in this article you are talking about a lawsuit brought by State Attorney General against five of the largest electronic utilities in the nation?

A. (Lesser) Yes, sir.

Q. And one point you write on page 2, the suit deems these plant emissions said to account for 10 percent of all carbon dioxide emissions in the United States a public nuisance.

So I take it you went off of relying on the fact there is about 10 percent of the United States carbon dioxide emissions at issue in this litigation?

A. (Lesser) That's according to the allegations of the lawsuit. That was correct.

Q. And you relied on that allegation in --

A. (Lesser) I didn't independently tally the emissions for all these utilities and compare it to the entire nation's emissions, no.

Q. If you turn to the fourth page.

A. (Lesser) That would be one there is a heading tallying the benefits.

Q. Exactly. Could you read the first bulleted point on that page.

A. (Lesser) Yes. The first bulleted point says, "Would a 3 percent annual reduction in CO2 emissions by each of these utilities measurably reduce the impacts of global climate change?"

Q. And then if you turn the page above tallying the cost you have a conclusion there. Would you read that.

A. "Thus, the answer to the first question of the prudence determination is that the benefits of the lawsuit are likely to be negligible, at least from the standpoint of global climate change and CO2 emissions reductions. This in itself would suggest the lawsuit would not pass a prudence review."

Q. What's a prudence review?

A. (Lesser) My understanding of it -- and this is as an economist and non-attorney -- is that a prudence

review is designed to evaluate the reasonableness of actions taken by a party or parties given their current knowledge at the time and determining whether would a reasonable person have made the same decision.

Q. Cost/benefit analysis?

A. (Lesser) It's -- I couldn't characterize it as a cost/benefit analysis, no.

Q. Now, for NYRI there is -- you are claiming some benefits of added wind generation, increased wind generation, that would be a benefit for greenhouse gas emissions replacing other types of generation, correct?

A. (Lesser) Yes.

Q. You haven't done any analysis of the benefits of that?

A. (Lesser) In terms of the dollar benefits of that, no, I did not.

Again, I took that as this is established state policy and so I looked at would NYRI help the state meet its policy goal.

Q. I take it from this article, which involved 10 percent of the nation's greenhouse gas emissions, you consider this a negligible benefit?

A. (Lesser) That would be my conclusion, yes.

Q. If we were doing societal cost/benefit analysis

for NYRI, two of the projects, the public policy benefits you have identified, probably pretty dubious on the benefit side?

A. (Lesser) No. I see where you are going, Counselor, and I think you are being a bit disingenuous about it in that -- hard to believe an attorney being disingenuous, sorry.

JUDGE STOCKHOLM: Or in my experience economists, of course.

(Lesser) They are worse, Your Honor. If one --

MR. BROWN: I don't even have a question. So, I am all done.

JUDGE STOCKHOLM: A question or two, if I may.

Dr. Lesser, are you aware that the NYISO in New York is looking at a production cost savings, cost/benefit type analysis with regard to the NYRI line?

(Lesser) That's my understanding, Your Honor.

JUDGE STOCKHOLM: And do you understand that analysis to be limited to a ten-year future time period?

(Lesser) That's my understanding, Your Honor. And also from reading some of NYISO witnesses'

testimony they say they explicitly do not consider any broader public policy benefits but rather consider that the purview of the Public Service Commission.

JUDGE STOCKHOLM: Understood.

I don't know if this is factually true so I am going to pose this to you as a hypothetical. I will tell you the way I was informed of the story.

That is, Robert Moses. Are you familiar with Robert Moses.

(Lesser) No, I am not, Your Honor.

JUDGE STOCKHOLM: Robert Moses was one of the leaders that built the Niagara hydro project some hundred years or so ago. And as I have no proof of this, this is hypothetical as far as the record is concerned.

But my understanding is that once that project -- the hydro project was built, whatever date that might have been, that Mr. Moses had a serious problem because he couldn't produce electricity as cheaply as it was otherwise available at that time.

If you made the assumption, if you made those factual assumptions, wouldn't it -- wouldn't the cost/benefit analysis of a project that was priced above the market necessarily result in a determination that

the project is not economic?

(Lesser) From a strict private cost and benefit standpoint, that's correct.

JUDGE STOCKHOLM: Yes, and I am trying to keep these questions simple.

(Lesser) Okay. I won't go --

JUDGE STOCKHOLM: Go ahead if you want to expand.

(Lesser) The plants on the Niagara River, as well as in the west with the Bonneville Power, certainly with the case of Bonneville Power, those projects were built primarily to stimulate the economy and provide people with jobs.

And then the government passed legislation, I believe, under the Bonneville Project Act. And earlier -- I am not sure of the legislation affecting the resources on the Niagara resources. That was around 1909, 1910, I believe.

The idea was to take the federally generated hydropower and distribute it using what they said within economic transmission distance. It was specifically designed to share the benefits of this, all this nice new cheap hydropower.

By the time in the Bonneville case it was

far less costly based on -- the government was essentially giving away to everyone for free as well as using it to develop irrigation in the Pacific northwest.

JUDGE STOCKHOLM: That project really was very heavily tied to economic development?

(Lesser) Yes.

JUDGE STOCKHOLM: Let me go back and explain my question. I suspect that there are projects. I suspect one might have been the Niagara Project. I suspect another one may well have been Marcy South.

But there are long-term infrastructures of lives of 50, 60 years or longer that when built are marginally cost-effective, maybe even slightly not cost-effective in the short-term, but the value of the Niagara hydropower today is so far beyond I suspect what Robert Moses and the people who built the project ever thought it would be, that it seems to me that a ten-year limited test in terms of determining what is in the long-term public interest is not sufficient.

That's a proposition from my head and I'd like to ask you to comment on that.

(Lesser) I would agree with that. And I also suggest that when you are dealing with long-lived projects attempting to use a point forecast of both

costs and benefits, unless, of course, the costs are all up front and you know this is what it's going to cost, that it makes much more sense to look at some sort of probabilistic approach that tries to account for the fact that none of us can possibly know what the world will look like, I would say, ten years from now. Certainly not 50 years from now, 40 years from now.

I testified in a case ten years ago and on the opposite side was Mr. Singer's company, in fact, in Vermont. And it had to do with the prudence of Hydro Quebec and Vermont signing long-term 25-year agreement with Hydro Quebec.

At the time the finding was made that this power will never be cost-effective. And we trotted out various people saying, this power is far more expensive than the market will ever be. I argued that yes, it is cost-effective, but lost.

What it turns out now that power is extremely cost-effective because no one predicted what was going to happen to fuel costs.

I would agree it's critical to incorporate some sort of overall range of possible outcomes that can give you a better idea. Even then, there are simply things you just can't predict.

JUDGE STOCKHOLM: How do you address the criticism I have often heard of trying to look at benefits over a 50-year period?

If you go much beyond ten years, although you could argue 15 maybe, but if you go much beyond that, when you present value the benefits, the value of the benefits 50 years from now may look like a big number in 50 years but today it's worth a penny.

How do you deal with that kind of criticism of looking at longer term benefits?

(Lesser) There are several approaches you can take. Some people like to use -- essentially not discount those benefits at all and say, in these kinds of public policy situations, including greenhouse gases, we should not discount the future at all.

In fact, I have seen some people apply negative discount rates, which taken to its logical conclusion leads to results that are completely bizarre.

You know, it's really hard. Unless you are going to say, we are not going to discount the future as much as the present, or we're not going to discount the future at all, or we are going to create some sort of scenarios where we think that this investment has a tremendous potential, that's -- but we really don't know

what it is yet. It's very difficult.

JUDGE STOCKHOLM: Thank you. We will take our lunch break. Be back at 20 to 2:00. Thank you.

(Recess taken.)

JUDGE STOCKHOLM: Judge Phillips and I have been informed of what I will call a momentous announcement. We want to talk about it and think about it and go back on the record. We will take a ten-minute recess.

(Recess taken.)

JUDGE STOCKHOLM: Mr. Singer.

MR. SINGER: Yes, Your Honor.

JUDGE STOCKHOLM: Do you have an announcement?

MR. SINGER: Yes. As I said off the record, we have discussed a couple of times in the last two days the FERC order that came out, I believe it was on March 31st, rejecting New York Regional Interconnect's request for rehearing with respect to the New York ISO CARIS process.

Based on that order from the FERC, the investors have decided that the financial risks of cost recovery are too great at this point in time, and as a result they are withdrawing their Article VII

application.

JUDGE STOCKHOLM: Thank you.

We have discussed the implications of that statement with regard to this record in this case, and have reached the following conclusions.

Number one, I believe we should enter into the record before we close the record the exhibits that have been identified today, numbered 326 through 353. I will consider the motion has been made to enter those into the record. Is there any objection?

Hearing none, those exhibits will be taken into the record.

(Exhibits 326 through 353 received in evidence.)

We also are going to adjourn today. I wouldn't expect any hearings to go forward under all the circumstances, and we will probably simply close this case, but I don't think that that's advisable until two things happen.

First, I would like to ask NYRI if they would please file a letter with the Secretary withdrawing the case; however you want to say that. Circulate that letter to the parties and then we will give the parties one week -- can you do that by Monday,

Mr. Singer?

MR. SINGER: Yes.

JUDGE STOCKHOLM: One week from Monday.

If any of the parties believe for any reason that this case needs to remain open for any purpose, the parties should advise us. If we get no one who suggests -- no one who argues that this case ought not to be closed, anybody argues this case should be -- unless someone argues this case should be continued, we fully expect to close this case and will do so in a ruling or a Secretary notice, I am not sure which, a week from Monday.

Anything from the parties on this?

Ms. Wilkinson.

MS. WILKINSON: Mr. Blow can go.

JUDGE STOCKHOLM: Mr. Blow, okay, fine.

MR. BLOW: Your Honor, I have sort of been -- watched this unfold in another case, in 01-T-1474, the Cross Hudson case, where an arguably somewhat ambiguous letter came into the Secretary withdrawing or relinquishing a certificate or whatever -- relinquishing a certificate of whatever.

Then there was new investors that came, purchased the rights -- it's a little different, but I

think it's analogous enough to bring up the point.

And then there was an argument at the ISO and ultimately at FERC as to what queue position that new -- the new company had, and FERC ultimately decided that the new company should -- the ISO should have bumped them from their queue position and ultimately put them back into a different queue position.

In any case, just my suggestion, that NYRI make very clear what its intentions are with respect to related processes, too, if that's at all possible, only because it's one of the things that can be problematic down the road as to how to handle things.

JUDGE STOCKHOLM: I understand your point, and I will ask, Mr. Singer, to the extent that you can, to advise in your letter to the Secretary what your intent is with regard to this project in the NYISO's process.

MR. SINGER: Yes, we will do that.

JUDGE STOCKHOLM: Thank you, sir.

Ms. Wilkinson.

MS. WILKINSON: Your Honor, I think I echo some of Mr. Blow's concerns. Our concern is this: This is a voluntary withdrawal and, first of all, any future Article VII application, it's our position, would start

from ground zero, day zero, with respect to its filing and review by the Commission. If this is withdrawn, that it wouldn't be picked up somewhere in the middle of the record and continued.

But the other concern we have is with potential impacts, if the investors decide to bypass New York State and go directly to FERC, that the state may have an incomplete record here, that we have other panels and other witnesses who are going to go and on which a record was going to be developed.

And if NYRI decides it's going to create or make a legal argument that the state -- it couldn't get process in the state, and go on to FERC and bypass the state, it would be an incomplete record and it may disadvantage the state, and particularly with the question of need.

JUDGE STOCKHOLM: Okay. A couple of different questions you asked.

First, with regard to picking up this record in the middle, I find that highly unlikely that anything like that would happen. What may happen, however, is that the record made in this case may be deemed appropriate, or sufficiently relevant and material, to be included in a future record, whether it's witnesses'

testimony or exhibits or maps or whatever it may be may, may well in the future be relevant in another Article VII proceeding as, in fact, the Conjunction exhibits and I think testimony was included in that filing as well, but I wouldn't swear to that.

But, in any event, materials from the Conjunction record are in this record and do have some degree of relevance to what we are doing here, not withstanding the fact that their environmental studies at this point are somewhat aged.

MS. WILKINSON: That's not my -- that wasn't my concern.

JUDGE STOCKHOLM: I understand.

I think your concern in terms of starting this in the middle is extremely unlikely. The only reason I would say it would never happen is because obviously there are those above me who could order that it happen.

But, in my opinion, I don't think that will ever happen. It wouldn't go back in the middle of the case. There would be an argument at most, I think, about how relevant what we have in the record today may be to another case with another applicant.

However, lest it was not clear the way I

phrased this earlier, Mr. Singer, one of the things that I would appreciate it, if you can, to address in your letter is whether NYRI has any intention of seeking certification from FERC.

Sounds to me like the answer to that would be no, but I leave that up to you to decide how to address.

MR. LANIADO: Your Honor.

JUDGE STOCKHOLM: Yes, Mr. Laniado.

MR. LANIADO: I know NYRI should be able to withdraw an application with all the heartache we tried to cause them right now. I have a problem admitting the testimony of Lesser and Puga.

JUDGE STOCKHOLM: Subject to the outstanding motions.

MR. LANIADO: Not only that. I was about to cross and then the application was withdrawn, for fear of my cross, of course.

MS. BARISH STRAUS: I had cross, too, Your Honor. I was planning to do that, too.

JUDGE STOCKHOLM: So, it's really in fear of the authorities in New York that this application is withdrawn?

MS. BARISH STRAUS: We did plan this during

lunch. We were ready.

JUDGE STOCKHOLM: Then I must admit that I should have put you at the front table if you had that much power.

MR. LANIADO: I only bring this up what you said the Conjunction record was used for.

MR. BLOW: I would echo Mr. Laniado's concern. We have serious concerns.

JUDGE STOCKHOLM: I will solve this problem very easily. Hang on just one second.

We will grant staff's motion to strike the testimony of this panel to the extent that staff identified that testimony in its motion. That should solve that problem.

Is there anything else we need to discuss on the record?

Yes, Mr. Klucsik.

MR. KLUCSIK: By comparison a pedestrian matter, your Honor.

The bench has outstanding a request for additional information on EMF to CARI. Does the bench intend to persist in that request in light of recent developments?

JUDGE STOCKHOLM: No. In terms of getting

that answer in writing, no, I don't think the record needs that, but the bench out of curiosity would like to know generally what your witness found if you know.

MR. KLUCSIK: I do, your Honor.

The short answer is that undergrounding provides minimal shielding from magnetic fields, and that the proximity of the cables one to another does have an effect on magnetic field strength.

I think your third question was what would be the required setback in order to achieve a 0.2 milligauss field strength level with underground cables at 36 inches one from another. And based on our expert's calculation, that answer is about 400 feet.

JUDGE STOCKHOLM: That would be an interesting issue to pursue on this record, in any event, but thank you for that. I appreciate that.

MR. KLUCSIK: You're welcome, Your Honor.

JUDGE STOCKHOLM: Is there anything else that we need to do on the formal record?

MR. BLOW: Your Honor.

JUDGE STOCKHOLM: Yes, Mr. Blow.

MR. BLOW: It just hit me that exhibits 285 and 286 were marked but not received in evidence.

JUDGE STOCKHOLM: That's correct. There's

no foundation for them.

MR. BLOW: Subject to Mr. Laniado's --

JUDGE STOCKHOLM: Besides, your motion was granted. Moot.

MR. BLOW: That's fine.

JUDGE STOCKHOLM: I should have started that quickly in the first week, right?

All I can say is the last thing on the record is when we walked in here three weeks ago I asked the parties -- I advised parties that we had a very large task in front of us, a lot of which we have accomplished, and I asked you all to do so in an efficient and professional manner. I compliment you all on having achieved that goal, at least.

I regret missing the on site visit, but beyond that, at least, if NYRI would get a letter to the Secretary and parties on Monday. The parties have one week if they want to respond in any way to that letter.

If there are no responses, I expect that this case will be closed, I am going to guess actually by the Secretary, a week from Monday.

Thank you all very much, and have an enjoyable weekend.

(Hearing adjourned.)

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