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3   STATE OF NEW YORK
    DEPARTMENT OF PUBLIC SERVICE

4   14-M-0101  In the matter of Reforming the Energy Vision

5   15-M-0180  Regulation and Oversight of Distributed Energy
                   Resource Providers and Products
6
7   14-M-0224  Proceeding on Motion of the Commission to
                   Enable Community Choice Aggregation Programs

8                   TECHNICAL CONFERENCE

9                   Wednesday, December 16, 2015
                    19th Floor Conference Room
10                   Three Empire State Plaza
                    Albany, New York 12223-1350
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2       (On the record 10:29 a.m.)

3       MR. ELFNER:  Okay.  We're going to get

4 started.  Good morning.

5       This is a technical conference regarding

6 customer and aggregated energy data and related issues.  It

7 was noticed by the Commission or by the secretary's office

8 November 3rd in Cases 14-M-0101 which is the Reforming the

9 Energy Vision case, 15-M-0180 which concerns oversite of

10 distributed energy resource providers, and 14-M-0224

11 which concerns community choice aggregation.

12       I'm Doug Elfner.  Tina Palmero is to my

13 right.  Other staff members are Kelly Connell and Tom Dwyer,

14 and Amanda Mulhern on the other side and she's responsible

15 for making sure all the logistics have happened, are working

16 and -- and has done a great job.

17       So we're trying something new here.  This is

18 an on the record technical conference, and we haven't done a

19 lot previously with live participation from New York and

20 Albany.

21       So we really need your assistance in -- I'm

22 sorry, live participation from New York and Buffalo.  So we

23 really need your assistance and cooperation in those remote

24 locations and first of all could you please put your

25 microphones on -- on mute in those locations.

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1                    Thanks.  Again, it's a little unusual.  We're

2    trying our best to facilitate involvement of all parties in

3    these proceedings, and we're doing our best to be live from

4    -- from three locations.

5                    So you should have had access to a hard copy

6    of the agenda when you came in the room which is -- which

7    also includes the names of the speakers.  And as you see that

8    agenda, there's two main parts.  Customer energy data and

9    aggregate -- aggregated energy data.  For each of those two

10   parts, we're going to begin with a series of presentations,

11   prepared presentations.  And then after those prepared

12   presentations are completed -- in case of the first panel

13   when all five presentations are completed, then we'll turn to

14   an open discussion.

15                   And at that time we'll invite the other

16   participants from Albany, New York City and Buffalo to

17   participate in the discussion.  So we'll ask that everybody

18   holds questions, comments and -- and so on until all the

19   presentations are completed.  Okay.

20                   UNIDENTIFIED SPEAKER:  Sorry, I do have one

21   quick question before we start.  Is it possible we can

22   download these presentations to follow along while they're

23   being given?

24                   MR. ELFNER:  The presentations will be

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2    available.  You'll see them on the screen, all right?

3                    Amanda, I don't know if we can do that

4    instantaneously, send -- send them out to -- we don't have an

5    e-mail list.  So we're going to do that after the -- after

6    this event, but you'll see them -- the presentations as

7    they're being delivered.  You'll see them on the screens that

8    we understand are available and working in each of these

9    locations.

10                    Okay.  Also we remind you that written

11   comments are also invited in this -- in this docket in

12   particular on the questions in the notice.  So parties have

13   an opportunity to file written comments by December 30th

14   please.

15                    The purpose of this conference is to obtain

16   additional information on providing consumers, vendors and

17   local planners access to energy consumption information, to

18   among other things, lead to improved energy management in

19   homes, businesses and communities.

20                    We'll be discussing actions that the

21   Commission may take to facilitate access to customer energy

22   data, both customer specific and aggregated data all to

23   advance the goals of The Reforming the Energy Vision

24   proceeding.

25                    As we'll discuss further, the issues we're

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2    addressing today have been raised in some form in -- in each

3    of these dockets and we're seeking today to obtain additional

4    information, so that the Commission may take action.

5                So the discussions, after the presentations,

6    will focus on the main questions that are -- that were

7    identified in the notice.  And, again, we'll further explore

8    other issues that have come up in -- in the -- in the context

9    of the presentations including procedural issues, such as --

10   where we go from here.

11               Tina, do you have anything else you want to

12   add?

13               MS. PALMERO:  No, I just wanted to say that

14   these issues are so ripe and timely for discussion as the

15   Commission looks to deliberate on a number of these

16   proceedings that Doug has mentioned.

17               You know, I have been -- my staff and I have

18   been working on the Community Choice Aggregation proceeding

19   and I know a number of these issues have come up, so we're

20   looking forward to hearing and getting some good information

21   out of this conference.  So I thank all the presenters for

22   being here to provide that guidance.

23               The other thing I wanted to stress is if you

24   have specific points that you want to raise, I do suggest

25   putting them in writing and submitting written comments.

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2    Although this will be on the record, it will greatly assist

3    staff in reviewing those comments and just ensuring that your

4    points are addressed.  So please do consider providing

5    written comments.  Thank you.

6              MR. ELFNER:  Okay.  So just a few things to

7    repeat.  Can I ask again, I believe it's New York City that

8    some microphones are on at least.  We hear lots of rustling

9    of papers and so on, so we appreciate your -- your

10   cooperation there.

11             Also on the transcript, everything here is on

12   the record.  A transcript will be created.  That transcript

13   will be put on the Commission's public document management

14   system in a week or so.

15             And like we already discussed, the

16   presentations that are delivered here today will be available

17   very shortly.  And it -- we're doing our best to get them up

18   as quickly as -- as possible.

19             Okay.  So turning to the first panel, and

20   whoever -- whoever -- the size of this room I guess more than

21   every chair is taken and, you know, we appreciate everyone's

22   interest in this -- in these matters.  But turning to the

23   first panel, throughout the REV case and related dockets,

24   we've heard from many parties about the importance of sharing

25   energy data.

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2                     Some parties have emphasized the benefit to

3    consumers, of new tools that empower consumers by giving them

4    the ability to easily have that information shared with

5    vendors they select.  Parties have also highlighted how

6    sharing this data will facilitate market development by

7    assisting vendors and understanding customer energy usage and

8    designing tailored products.

9                     Some parties have urged that the Commission

10   move expeditiously to implement data-sharing tools, and

11   others have indicated that more work and more research is

12   required.

13                    The Commission has spoken on the importance

14   of sharing customer data as recently as the Track One order,

15   where on page sixty, there's a quote that says, "It's

16   essential to have means to facilitate transactions and

17   delivery of data necessary to secure a sale by a potential

18   distributed energy resource provider and commodity vendor to

19   a customer."

20                    So the first panel is going to explore these

21   issues including issue of a potential uniform protocol to

22   provide this capability.  One protocol to be considered is

23   Green Button Connects and the notice identified several

24   specific questions that we'd like to explore.  They include:

25   (1) the advantages and disadvantages of Green Button Connect

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2   as -- as well as any alternatives (2) the extent to which the

3   Commission should impose requirements on vendors who received

4   customer-specific data using this protocol (3) whether there

5   should be fees associated with transmittal of customer data

6   through Green Button Connect or some alternative and (4) any

7   other implementation issues.  So we have an excellent panel

8   here today to address these and other issues.  Let me proceed

9   with introducing them.

10                Okay.  Our first panelist is Mr. Cameron

11  Brooks.  Cameron is here representing Mission Data which is a

12  coalition of companies with data-rich consumer products and

13  services.  Cameron is president of Tolerable Planet

14  Enterprises, an advisory firm active in regulatory engagement

15  and policy strategy.  He's also the founder of E9 Insight

16  which is a regulatory research firm focused on the U.S.

17  electric industry.

18                In these capacities he has been particularly

19  active across the country in tracking and developing policies

20  affecting consumer technologies and innovation for a wide

21  variety of clients in addition to Mission Data including the

22  U.S. Department of Energy, Lawrence Berkeley National Labs,

23  Google, The Energy Foundation, Energy Hub, Tendril, Varentec,

24  Navigant Research, GridWise Alliance, and the Smart Grid

25  Consumer Collaborative.

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2                    Previously he was vice president of policy at

3    Tendril.  He holds an M.B.A. from Cornell with a focus on

4    energy markets and a B.A. from Yale in ecologic design.  And

5    Cameron lives in Colorado -- Boulder Colorado.

6                    Next we'll have Christopher Irwin.

7    Christopher has spent twenty years in the diverse spectrum of

8    high technology fields from H-VAC to semi-conductor

9    manufacturing, communication networks for advanced metering

10   and smart grid infrastructure.

11                   At the DOE Office of Electric -- Electricity

12   Delivery and Energy Reliability, he has managed over one and

13   a half billion dollars in grid modernization projects.  He

14   leads DOE smart grid standards and interoperability efforts

15   working alongside NIST, FERC and others in the smart grid

16   interoperability panel and other forums.

17                   He founded DOE's participation in the Green

18   Button Data access initiative to empower customers with

19   improved access to their own energy data, and he works with

20   the Grid Wide Architecture Council on transactive energy

21   concept development.

22                   He holds a B.S. in mechanical engineering

23   from the University of Maryland College Park and an M.B.A.

24   from the W.P. Carey School of Business at Arizona State

25   University.

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2                 Next is Erin Hogan who is the director of the

3 Utility Intervention Unit which is an office within the New

4 York Department of State's Consumer Protection Division.

5 U.I.U. has the statutory authority under the executive law to

6 represent consumers' interest in utility rate cases and other

7 regulatory proceedings before the Public Service Commission.

8                 Prior to joining the Utility Intervention

9 Unit in July 2014, Erin worked at NYSERDA for thirteen years

10 where she was responsible for monitoring the state and

11 national wholesale electricity markets, transmission issues,

12 electricity system reliability and natural gas electric

13 systems interface, serving as a resource for policymakers and

14 other NYSERDA departments.

15                 Erin holds a B.S. in engineering from SUNY

16 College of Environmental Science and Forestry and an M.S. in

17 management with a concentration in power engineering from

18 Rensselaer Polytech Institute.

19                 She's also a licensed professional engineer

20 in New York.

21                 Michael Murphy.  Michael is department

22 manager for digital and customer experience at Consolidated

23 Energy Company of New York.  In this role, Michael is

24 responsible for the company's efforts engaging customers

25 through digital channels including mobile, web and apps.

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2                        Michael is currently leading a major effort

3    to redesign all customer facing digital channels to improve

4    their experience.

5                        Michael has significant experience in

6    customer services and engagement including prior roles at Con

7    Edison, responsible for customer billing systems, commercial

8    and industrial customer care and deregulated customer choice

9    programs.

10                        He's earned a bachelor's degree of business

11   administration from the University of Albany and a masters of

12   business administration from Fordham -- Fordham University.

13                        And Joe Hally.  Joe is the manager of energy

14   transformation and solutions for Central Hudson Gas and

15   Electric Corporation.

16                        In this role, Joe has -- has lead

17   responsibility for developing and executing all

18   responsibilities related to Central Hudson's REV initiatives

19   including demonstration projects such as the energy exchange,

20   targeted demand response programs and microgrids.

21                        Joe's current responsibilities also include

22   working with the other New York electric utilities and

23   various stakeholders in the energy industry to develop policy

24   positions in order to facilitate the implementation of REV.

25                        So I want to thank you in advance, all the

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2   panelists for -- for agreeing to participate here and for

3   sharing your expertise.  And I'm going to stop talking and

4   turn it right over to -- to Cameron.

5                    MR. BROOKS:  Great.  Well, thank you.  It's

6   an honor to be here and it's especially an honor or at least

7   I'm glad to be here, because somehow the Colorado mountains

8   always make it difficult to get to Albany, and yesterday was

9   no exception.

10                   So I apologize if I rely on my notes a little

11  bit, but it was a long day of travel.

12                   Anyway, it's an honor to be here and I'm

13  excited about the conversation today.  The topic, the role of

14  customer data I think is foundational to the markets as

15  they're envisioned under the REV initiative.  And so my

16  thanks to the staff for putting this together and to the

17  Commission for hosting the event.

18                   With that in mind, I think the three

19  questions we'd like to address today and where we see some

20  immediate actions available to the Commission.

21                   The first is should an affirmative data-

22  access policy and framework be established?

23                   Two is what steps do we think can be taken

24  today to implement that framework even if only part of the

25  larger vision?

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2              And, three, what are the appropriate

3   boundaries between basic consumer service, neutral platform

4   services and competitive markets?

5              As mentioned, I'm here today on behalf of

6   Mission Data, a coalition of over forty organizations and

7   companies that share a simple vision.  That consumers should

8   have the access to the best available information about their

9   own energy use, what it costs them and the ability to share

10  that information with the companies that they value and

11  trust.  Mission Data has been an active participant in the

12  REV proceeding and we've consistently advocated for this --

13  for policies that support this vision.

14              And I think the record shows that we're not

15  alone.  In fact, while there may be differences of opinion in

16  terms of how we might address privacy, the investments

17  required to enable this and the design of the markets, we

18  don't see any evidence on the record that anyone has argued

19  against consumer access to their own information as anything

20  other than their fundamental right.

21              A coalition includes companies that offer

22  energy efficiency, build management, load management,

23  detailed disaggregation and other services today.

24              In consumer markets today, millions of

25  customers are benefiting from products like intelligent

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2   thermostats and services available from control software and

3   data analytics.  I'm hardly the first to observe it and, in

4   fact, I think this observation underlies the very vision that

5   REV started with.

6               But it bears repeating that these digital

7   technologies offer innovations at the edge of the grid that

8   weren't possible before.  And the value of the corresponding

9   consumer and environmental benefits simply raise the

10  opportunity cost of not establishing a strong, forward

11  looking open-data framework.

12              So we have a simple policy asked to address

13  the first question, should an affirmative policy be

14  established.  Yes, we believe the Commission should update

15  and reinforce its policy regarding consumer data so that

16  consumers have a clear right to the best available

17  information about their energy use including interval data

18  where available, real-time information directly from the

19  meter with home area communications.  And the corresponding

20  details of bill charges and tariff information.

21              Second, we think that consumers should have

22  the ability to share that information with whomever they

23  choose, which means that the information has to be machine

24  readable and adhere to industry standards and can be

25  delivered through secure and convenient web service

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2  protocols.

3           And, finally, this basic level of service,

4  which is exactly what consumers are getting in every other

5  sector of the economy should be delivered as part of basic

6  service with any implementation investments included in base

7  rates accordingly.

8           This last point is relevant to one of the

9  questions posed in the notice about restrictions on

10  indiscriminate fees which we think applies here.

11           We think it's particularly appropriate for

12  the Commission to establish this policy before any advanced

13  metering or other platform technologies are approved and

14  deployed.  Experience from other states and certainly common

15  sense would suggest that designing the systems from the

16  beginning with data in mind is a lot easier than trying to

17  retrofit it after the fact.

18           As I said before, there's no evidence that I

19  see on the record to suggest that any party disagrees with

20  this fundamental premise that consumers have the right to the

21  information that directly pertains to them and from which

22  they can benefit today.

23           But it's worth noting that the same notion is

24  embedded within federal policy, within previous Commission

25  policy including a 2009 order establishing that customers

have a right to access real-time information directly, with

the core findings as -- as was pointed out before from the

staff and the Commission and also other parties on the record

here.

So with regard to the second question, what

steps can be taken today, there's no reason not to implement

data access through Green Button Download and Green Button

Connect today.  While we don't believe that the Commission

should prescribe one single standard for data access and

Green Button is by no means a data panacea, we will say that

Green Button offers an implementation pathway many years in

the making with strong industry and government support and

currently being used in other states that have millions of

customers.

There's absolutely no reason why consumers in

New York shouldn't enjoy the same level of access, especially

given the objectives that REV has established.  This doesn't

require AMI although obviously more granular information is

only going to increase the value of that data.

But there are many applications today that

have immediate value, building, benchmarking, solar system

sizing, bill management that are available using only the

twelve data points that are commonly delivered through the

year from traditional systems.

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2                    There's no reason to delay.  With a policy in

3   place, the Commission can ensure that data is considered and

4   the distribution level planning considered by REV, and that

5   advanced-meter deployments include immediate data-access

6   privileges.

7                    With regard to Green Button, I just point out

8   that there are two different flavors of data access.  Green

9   Button Download, a one-time file transfer that requires a

10  manual intervention from the customer.  And Green Button

11  Connect which allows the kind of set it and forget it

12  customer participation that I think is what we all agree is

13  -- is convenient in the modern world.

14                    I do want to address, before I go further, at

15  least two concerns that have been raised in offline

16  discussions.  The first is the scale of the needed

17  investments and the suggestion that somehow those costs

18  outweigh the benefits.

19                    I'll just note first today there is no cost

20  offered anywhere in the record of this proceeding or any

21  other record before -- in the proceeding before the

22  Commission.  So it seems premature to jump to the conclusion

23  that somehow it's not cost efficient.

24                    Second, any commission that has engaged in an

25  analysis of the cost and benefits of data access have

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2   determined that benefits overwhelmingly outweigh the costs.

3                      In the case of New York, customers spend

4   twenty-three billion dollars every year buying electricity.

5   If we limit it just to the mass market residential section --

6   segment, every improvement of one percent represents a

7   hundred million dollars of customer benefit.

8                      And you don't need AMI to get that.  You only

9   need to modernize the data that's already available.

10                     Third, it should not be difficult to quickly

11  get estimates since nearly every vendor active in this space

12  has made public statements about their ability to implement

13  Green Button quickly and easily.  So I'd say rather than off-

14  the-record murmurings, we really welcome an on-the-record

15  discussion about the scope of the investments required.  And

16  as part of that conversation we'd highlight that it's

17  critical to distinguish between the costs associated with

18  delivering secure web services and third-party authorization

19  similar to major services like Google or Yahoo or PayPal.

20                     And the costs associated with the particular

21  data standard used to package the information.  Many of the

22  costs we believe are attributable to the former not the

23  latter because to analogize this a little bit, it really

24  doesn't matter when you pick up the phone whether you speak

25  French or English.  The cost is in placing the call.

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2              The second concern that seems to have come

3    up, and the reason I highlight the importance of unbundling

4    these implementation costs is that there have been murmurings

5    in offline discussions that an existing standard, EDI, should

6    be preferred, since it's already in use.  Quite simply we

7    disagree with that.

8              While EDI may serve as an existing function

9    quite well, and there's no need to expect that one standard

10   is going to meet all data needs, it's important to recognize

11   that EDI was developed decades ago, long before the web

12   services we use today.  And as a result, there's a looseness

13   in the standard that only increases implementation costs.

14             It's not available for direct to consumer

15   access.  It introduces privacy and security concerns by its

16   use of personally identifiable information in the file

17   transfer protocol it uses.  And quite simply it's the wrong

18   tool for the job in 2015.  So with regard to that last point,

19   I'll offer a quick analogy.

20             You know, my wife regularly teases me that

21   I'm never going to get rid of a couple boxes of cassette

22   tapes in our storage unit.  And we've even sold the last car

23   that had a working tape deck where I could listen to them.

24             But she's right.  I probably will never get

25   rid of those.  But that doesn't mean I'm looking to replace

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2   my Smartphone with a Walkman.  And outside of Brooklyn, I

3   doubt anyone in New York is either.  Quite simply I'd just

4   say we're trying to design for the future I think.

5               So the third question before the Commission

6   relates to the boundary between basic-service platform

7   functions and competitive markets.  While this is important

8   to -- or why this is important to address immediately is that

9   demonstration projects and utility AMI applications currently

10  underway or before the Commission introduce products and

11  service offerings that include limitations on consumer data

12  access.

13              This is a poor process for developing public

14  policy.  While we might see platform services related to

15  aggregated data that justify a fee, and that's a topic we'll

16  get into this afternoon, when it comes to consumer data, any

17  fees are borne by the consumer plain and simple.  If there's

18  a fee on Green Button Connect, which is the most convenient

19  way for consumers to share their information, then it's

20  simply a fee that increases their cost arbitrarily and

21  capriciously.

22              Similarly, demonstration projects include

23  products like subscriptions to data analytics services that

24  are available today from companies in open markets.  But

25  these companies are precluded from working in New York

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2   because the data are available only from utility channels and

3   not through a competitively neutral platform.

4                    Again, offline discussions seem to have

5   murmurings that data-rich services, like enhanced analytics,

6   just don't have the revenue to support utility market-based

7   earnings mechanisms to augment declining utility revenue.

8                    This seems misguided and it conjures images

9   of the proverbial monkey paw trap where a firm grasp on the

10  small prize forfeits the much greater benefits available from

11  innovations and open markets.  As a notable scholar of

12  innovation recently observed about the U.K. market, which is

13  an inspiration for this proceeding, one of the crucial

14  aspects of consumer benefit that is under appreciated is the

15  effect on innovation and the benefits that consumers enjoy.

16                   Because consumers not only reveal their

17  preferences in markets, but they actually learn what their

18  preferences are from the process of evaluating available

19  choices.  We don't know what people are going to want because

20  they don't what they're going to want.  The very goal of

21  economic regulation in general is to stimulate -- simulate

22  the competitive result.

23                   The incoming president of NARUC, Travis

24  Kavulla, addressed his colleagues last month and he mused on

25  this central paradox of regulation which is that competition

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2   if it could work, would work better than we do.  That's a

3   humbling thought he concluded.  And he continued by imploring

4   his colleagues to explore where markets can work today, and

5   to be vigilant in the face of parochialism and rent-seeking

6   behavior.

7                 This concern about the impacts to fair

8   competition is echoed by parties on the record in this

9   proceeding, and it raises important questions about the

10  ability of the utility to simultaneously execute its neutral

11  system-operation function, the platform services, while also

12  participating in competitive markets.  This is why some

13  clarification is required immediately with regard to what

14  services customers can and should expect.

15                 With that in mind and with regard to data in

16  particular, we propose the Commission clarify the boundary

17  between there different domains.  Sorry, three different

18  domains.

19                 And, first, with regard to basic service, I

20  would simply say that what we're advocating here for, which

21  is usage, cost and real-time information, that's assumed as a

22  minimum level function of any definition of a smart or modern

23  grid.

24                 And, as I said earlier, electricity remains

25  the only sector of the economy where this kind of data is

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2 | somehow considered novel or forward looking.  I've been

3 | downloading my financial information into Quicken for

4 | decades.

5 |           So, yeah, we think this should be part of

6 | basic service and the cost should be addressed through

7 | traditional cost-recovery mechanisms.

8 |           As with regard to platform services, we think

9 | what services are required to successfully operate the system

10 | and its platform capabilities should be clarified.  And are

11 | any of these value-added services that can be offered by the

12 | platform provider in a competitively neutral fashion?  If so,

13 | one presumes that the associated fees would be levied on

14 | market participants and determined in a cost of service

15 | manner similar to consumer rates.

16 |           And, finally, what are competitive services?

17 |           Clearly we believe that partnering with

18 | customers to meet their needs is an area where competitive

19 | products already exist.  So we question the need for the

20 | utility to somehow be required to accelerate the market.  We

21 | also question whether they're in some way better positioned

22 | than others to lead that innovation and the market animation

23 | that REV seeks.

24 |           So with that I'll say thank you.  Again, it's

25 | an honor to be here and I look forward to the rest of our

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2  discussion.

3                    MR. IRWIN:  Excellent.  Good morning

4  everybody.

5                    So the title of this presentation is the New

6  Ground Floor.  A lot of this is going to be preaching to the

7  choir, but I think that it's very important that we go over

8  some of our fundamental motivations for advancing customer

9  data-access because it's core to our success as far as grid

10  modernization goes.

11                    Doug covered a lot of my -- my background

12  that I've already got up on the screen there.  One of the

13  things that you didn't mention up there is that I'm probably

14  one of Department of Energy's foremost experts on advanced

15  metering infrastructure, which is actually a very low bar at

16  the Department of Energy, so take that with a grain of rock

17  salt.

18                    One quick sort of just frame-setting,

19  context- setting discussions is the fact is that I borrowed a

20  slide from one of my colleagues, Eric Langer (phonetic

21  spelling) who's working on the future of the grid initiatives

22  is trying to assess at a national level as interpreted

23  through the needs of regions and localities what does the

24  future of the grid imply.

25                    And, of course, New York REV is -- is leading

2   the charge on that.

3                     But essentially there is no segment of the

4   nation that is thinking that the future of the grid is going

5   to diverge from a -- a customer-centric model.  It is simply

6   increasingly unacceptable at the customer level to be a

7   disengaged served party in this process.

8                     So what I wanted to start with is no

9   information equals no energy.  Is it the only grid capable of

10  powering our economy while conforming to society's needs is

11  an automated one?

12                    Information and energy are inseparable

13  commodities.  Is that, yes, we can operate an analog grid,

14  but it is not the grid that serves our society.  It is a grid

15  of last resort increasingly.  And so as we -- as we progress

16  as an economy, as we progress as a society, we are not

17  capable of sustaining ourselves without energy, and we are

18  not capable of sustaining ourselves at the scale that we

19  operate at without information.

20                    And so really it is an inseparable commodity,

21  and to serve energy without information is increasingly

22  unacceptable and it's, of course, particularly dissident at

23  the customer interface today.

24                    Another thing that I'd like to observe is

25  that this obligation is bilateral.  It is that to the extent

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2   that an energy producing appliance is a participant in the

3   grid, it has an obligation to serve and react to information.

4   And so it's not just a one-way street where it's the one-way

5   flow of information.  It's a little bit underexplored but

6   ultimately if the -- if the D.S.P. is going to be an energy -

7   - energy networking, energy balancing entity, it needs to be

8   by necessity an information distribution platform as well.

9               The role of an information-distribution

10  platform is much less well developed, and it is not in the --

11  the natural current skill-set of -- of some utilities.  It is

12  a new role, and we're increasingly hiring into that within

13  the utility industry.

14               But essentially multiparty energy-data

15  services seem to me to be a necessary parallel to energy

16  service.  And it follows then that anybody who believes

17  energy-consumption data is the only data a D.S.P. might

18  oversee, I think they're underestimating their opportunities.

19               I think that if you consider the kind of data

20  that's just beginning to move as part of our energy

21  enterprise, you can take a look at the data services of the

22  future that might be emerging around outage data at

23  increasing aggregation and disaggregation levels, more than

24  just notifying the customers that the lights are out.  And

25  also high resolution reliability data.

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2                    Because as we seek to improve the stability

3    of our grid and increasingly find our levels, that data

4    simply must flow to the customers who we choose to engage in

5    the process.

6                    So Cameron stole all of my good quotes here.

7    But customers do have a right to their consumption data, but

8    it's not just because they have a right to it.  It's because

9    of the fact that the system needs them to have it in order to

10   be a partner in our energy infrastructure.

11                   From my personal observation devoid of the

12   Department of Energy is that there is no such thing as a

13   controls-only modernized grid, where only the utility invests

14   in the controls necessary to produce a modernized grid.  Is

15   that ultimately we have to share the sensors, the data, the

16   control, resources that are available in customers' homes, in

17   their -- in their businesses and things like that because of

18   the fact that just having that sole investor in the big iron

19   of the grid is going to be increasingly untenable.

20                   The data has to, of course, be machine

21   readable and human readable.  And, of course, the -- the

22   example I bring up is G.P.S. data.  Is that I should remind

23   you G.P.S. data was top-secret military information up until

24   the '80s.  As a result of President Reagan's actions under

25   the air-traffic controller strike, to a certain extent, this

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2   became public information.  It became available to the

3   public.

4                   And so when you think about some of the

5   analyses of basic data access that location aspect, is G.P.S.

6   gives you your location, Green Button data, energy

7   consumption data gives you your context.  Without that

8   context, you do not have an intelligent dialogue with the

9   customer because they don't know what they're operating from.

10                  I think it's important to observe that

11  organizations who operate on the public trust has a -- have a

12  obligation to maximize public benefit in this context.  And

13  so it's not just about to provide the minimum data available

14  to meet their obligations.  They have an obligation to

15  actually maximize that public benefit through low-friction

16  data access.

17                  Another observation that I -- I'd like to put

18  out there is that innovation in general must be preceded by

19  data.  As many innovations that we will see from the vendors

20  here in the room, that we've seen across the -- the Green

21  Button eco system, this is extremely early days.

22                  And so trying to theorize, if you'll look

23     over

24  to the right there of my -- my G.P.S. location services

25  management screen on my generic phone of no origin, is the

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2   fact is that I can choose how and where to share my

3   locational data with dozens of apps.

4                One of them happens to be Fruit Ninja.  I

5   have no idea why I'm sharing my location data with them, but

6   I've chosen to.  So there's certain things where it's -- it's

7   an interesting application but nonetheless is that if this

8   data doesn't begin to flow freely to a constellation of

9   innovators, you're not going to know what's possible.  Fruit

10  Ninja, I'm still skeptical.

11               But if you look at some of the other

12  transport vehicle, food, services and things like that, we

13  never thought that they would be empowered by locational data

14  until we let it go.  And I can guarantee you, the U.S.

15  Military never thought about the impact of G.P.S. data on

16  Yelp.

17               So I just want to make that observation is

18  that as much as it looks good today, any business case is not

19  going to look at all of the potential value that we're

20  uncovering by a smooth and convenient data access mechanism

21  here.

22               So I've gone over some of the -- the

23  innovation that's possible here.  I think that in order to

24  embrace innovation it has to be done through a broadly-

25  embraced standard.  Certainly Green Button is national and

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2   proceeding forward, it is international in nature.  And so it

3   is a strong base from which to derive new opportunities.

4                   I will not encroach on Erin's domain here

5   except to say that automation be it for grid controls or

6   customer data must simply be a -- accompanied by enhanced

7   protections, and we have done a lot of thinking about that at

8   national and local levels to make that possible.

9                   Fortunately, that double click actually

10  worked just fine.

11                  The other two things that I wanted

12  To highlight about Green Button and its universality and

13  increasing nature is that I have hosted delegations from both

14  Germany and Italy recently identifying that as extensive they

15  have been in DER, they have realized that they have lagged

16  behind in customer data access and it's becoming a difficult

17  situation.

18                  And so there are actually Green Button

19  initiatives going on in Germany, Italy and Sweden at this

20  point.  So it is a -- a broad context.

21                  In order to keep to the time that we've got

22  going on here, I will do a quick sketch of the data access

23  that we're talking about.  Because of the fact that one of

24  the key things that we need to think about in the New York

25  context is how customers positively assert they want data to

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2   flow to a certain vendor.  Many people think it ought to be

3   only done through the utility but a unilateral authorization

4   where the customer can demonstrably indicate their

5   willingness to share their data with a third party needs to

6   be unilateral in nature in order to make it smooth and easy.

7                   The final thing that I want to point out is

8   that we do have a -- a lot of things going on right now.

9   Illinois implemented Connect My Data and they've piloted it.

10  Again, it's early days and they're showing a lot of interest

11  in the business community on how to use that data stream

12  quite powerfully.

13                  However, customers and third parties have had

14  more than a century to innovate with energy but only a

15  fraction of a decade to innovate with energy data.  So,

16  again, looking at the G.P.S., again, we're not going to know

17  what's possible until this information starts to flow and the

18  information flow must proceed the total available innovation

19  that we're going to be producing here.

20                  So thank you very much.

21                  MS. HOGAN:  And thank you very much for

22     having

23  me on the panel, Doug.  You know, I -- I appreciate the

24  mechanics of creating this type of open-access system and

25  standardizing it is technically difficult.  But I think the

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2    consumer protections should be held in the highest regards,

3    in the top priority to making sure we get it right.

4                    As -- in 2011 the Public Service Commission

5    issued a policy guidelines regarding the smart grid systems

6    and modernization of the electric grid, which included seven

7    core principles for third-party collection in use of customer

8    data.

9                    At the time, the Commission struck an

10   appropriate balance between outlining key principles and not

11   being overly prescriptive while the technologies were

12   evolving.

13                   Now almost five years later with the

14   advancement in meter technology and the proliferation of

15   distributed energy resource, it's time for the policy

16   standards in New York to also evolve with more specific

17   criteria.  Done correctly, consumers can benefit from

18   understanding their energy usage and respond accordingly to

19   their bills.  Done incorrectly, customer data could be used

20   to reveal details on home life and household activities they

21   otherwise wouldn't want shared.

22                   It could be used for unwanted marketing and

23   advertising or could be combined with other personal data to

24   -- or -- and to disclose more information.  Regardless, even

25   if all parties are in full compliance of more stringent

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2   privacy criteria, there is no doubt the data-risk breaches

3   will increase.

4                    In January of this year Chris mentioned, the

5   DOE finalized its privacy voluntary code of conduct with the

6   intent that utilities and third parties would adopt it,

7   unless the code was in conflict with other governing laws and

8   regulations.

9                    The voluntary code of conduct developed clear

10   defined terms with five core principles with specific

11   criteria and protocols to protect customer data that the PSC

12   could build upon in its regulatory framework.

13                    Many here today are familiar with these

14   voluntary code of conduct, but I'd like -- I think it's

15   important to frame the discussion by reviewing our current

16   principles that were established in 2011 and captured in our

17   unified business practices and comparing some of the actual

18   practice that are occurring and highlight the aspects of

19   those privacy voluntary code of conduct that should be

20   incorporated into our mandatory rules for those who wish to

21   access New York customer data.

22                    So let me see.  So I'd just like to walk

23   through the PSC's principles and I mirrored it up with the

24   voluntary code of conduct.  And I just, again, I think it

25   would be helpful because some people are familiar with our

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2   UBP and others are more familiar with this DOE voluntary code

3   of conduct.

4              So there's a lot of similarities, and in this

5   one is the data policies and practices must be clear,

6   transparent and explained.  And I -- I think the voluntary

7   code of conduct details under the customer notice and

8   awareness is much more defined than what we have in our

9   business practices.

10             And so currently there has been reports of

11  DER providers going to customers, asking customers if they

12  would share their information.  If the customers are unable

13  to find their bill, there's been reports that they've

14  actually given the account number and then that DER provider

15  calls up the utility to access the customer data with all the

16  personal identification information given.

17             So clearly if this practice is going on, we

18  have a problem.  And the one thing that I've observed with

19  this Green data or whatever standard we ultimately pick, if

20  we pick any -- and I -- and I hope we pick something -- is

21  that at least we would have a better mechanism to control the

22  messaging to the customers.  And I think that's important

23  because the customers need to understand what data they're

24  giving.  And now with the new interval meter data, when we

25  say you're giving the data, we're going to have to figure out

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2   what -- what exactly and does that customer understand what

3   they are giving.

4              Because in the past, if you were only giving

5   your monthly usage, they know your monthly usage.  Now with

6   interval data that can know the real power, reactive power

7   and even angles, there are mechanisms to fingerprint those

8   appliances or usage.

9              So it just needs to be very clear given these

10  new advances in technology what is included in the notice and

11  making sure the customer is fully informed on that decision.

12             Now here with customer choice and content,

13  you know, again, the Commission in 2011 agreed that no

14  customer data should be collected without the expressed

15  consent of the customer.  In our UBP it -- the utility just

16  assumes that the ESCO received customer consent.  And so I

17  think with the Green Button or something similar it would be

18  just a mechanism by which it's much more clear that the

19  customer has given the consent that its data can be shared.

20             So in this -- you know, we had three policies

21  in the state that kind of covered one principle in the

22  voluntary code of conduct.  And only -- only data relevant to

23  the specific purpose should be collected and data acquired

24  for one purpose should not be used for another.

25             In our UBP what we -- what I think we're

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2    missing that the voluntary code of conduct includes is --

3    what is that called when the -- the second -- the special

4    purpose?  If -- for like a billing agent and they --

5                    UNIDENTIFIED SPEAKER:  Primary purposes.

6                    MS. HOGAN: -- purposes.  And -- and so it -- it's

7    clear in the voluntary code of conduct that there's an entity

8    that might be receiving the customer data for ancillary

9    services such as like billing support.  And so under those

10   circumstances I think it would be helpful if we looked at the

11   definitions in the UBP, compare it to the voluntary code of

12   conduct to see where it could be expanded.

13                    And then customers have the right to access,

14   confirm and demand correction of their personal data.  So

15   this is covered as well.  And -- and this seems to be more of

16   the mechanics that it -- the information is shared in a

17   timely fashion and that they can review and correct it again.

18   Having it more in a standardized format, I think, would help

19   customers be informed initially what they're signing up to.

20   And then as they're reviewing the information with that

21   awareness -- better awareness, would have opportunities to

22   make these corrections as necessary.

23                    Okay.  All third party entities handling

24   customer data should be held responsible for complying with

25   the same privacy requirements.  And so they're -- in the

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2  voluntary code of conduct they have self-enforcement

3  management and redress.  And they have -- the idea is that

4  everyone who has access to this data will review its

5  practices for maintaining accurate data, compliance and

6  process improvements.  And meets legal and regulatory

7  protection mandates.  And then also provides simple,

8  efficient and effective measures to address customer

9  concerns.

10              And so I -- I think this is probably one of

11  the most important things that we make sure we have

12  standardized is the integrity and security of the data.  And

13  -- and then, again, clarifying exactly who has the data, such

14  as those special agents that can do those ancillary services.

15  And from my perspective I think it will be really important

16  that we define who has the data and confirm that they're

17  complying with our unified business practices.

18              So my recommendation is that we compare our

19  UBP and look at the definitions included in the voluntary

20  code of conduct and revisit those to see if there's

21  additional refinements that we should make, add additional

22  terms and then incorporate those aspects that are missing in

23  the UBP and from the voluntary code of conduct to make it

24  mandatory compliance.

25              But more importantly as we're sharing this

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2    information with more and more people, I think it's really

3    important we consider how we're monitoring compliance.  And

4    that's going to be the challenge as more people get this, and

5    I think that's going to be the crux of doing this right.

6              MR. MURPHY:  Okay.  Good morning.  I'm Mike

7    Murphy.  I'm here to represent Con Edison and O and R.  And

8    today I'd like to just take you through our position on

9    third- party data access, review some initial benchmarking

10   that we've done, sharing what we've learned and really focus

11   the couple minutes that I have in my presentation -- and --

12   and focus my time on some of the outstanding issues that we -

13   - we think need to be addressed at either today at this

14   conference or on further evaluation of the proper protocol to

15   share data with customers.

16              So overall Con Edison O&R support third-

17   party data accessibility, we understand how important it is

18   to market development and many of the REV principles.  We do

19   believe that this is a key aspect of the AMI programs that

20   both companies are pursuing, and that really drives the

21   business case for a robust protocol such as Green Button

22   Connect and the associated implementation cost.

23              From our perspective, you know, our plan is

24   to evaluate the Green Button Connect My Data Standard.  We

25   think it's the right standard for evaluation of

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2   implementation for the following reasons.  It is based on

3   modern technical principles, specifically the REST APIs for

4   transfer.  The auth 2.0 authorization process and the XML

5   format.

6              It also aligns with some internal work we're

7   doing on re-platforming of our digital properties and so --

8   so we believe that this is, you know, the right way to design

9   these type of systems.  There's also a very clear customer

10  driven authorization process which supports the goals that

11  we're trying to accomplish here.

12             The -- the data transfer is fully automated

13  once that customer makes that transfer -- makes that

14  authorization, and we really can benefit from a nationwide

15  standard in that it -- it will support the adoption by third

16  parties who are multistate companies.

17             And, you know, we can benefit from vendors

18  who are investing in this area and so can third parties who

19  can help us all implement and get this right.  And lastly we

20  can learn from what other utilities have done in their

21  implementation and make sure this is done right.  Also it is

22  a secure standard and -- and the base protocol calls for no

23  personal customer information to be exchanged.

24             Lastly, you know, we think development of

25  other alternatives would be costly and duplicative, so -- so

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2   we think Green Button Connect is the right one to proceed

3   with.

4            In our initial benchmarking with a number of

5   utilities, what we've learned is that success is, you know --

6   to be successful it's important to take a phased approach

7   with this.  We believe it's best to put the foundation in,

8   get the transfer process and the authorization process down

9   correctly, evaluate what's working, what's not and look at

10  making enhancements.  There's a strong protocol but there is

11  also choices you can make in terms of implementation and the

12  way you interact with customers.

13           These are complex and costly implementations.

14  These are not quick and easy, stand them up.  Our benchmarks

15  our twelve to eighteen months for implementation and, you

16  know, cost anywhere from five million to nineteen million

17  dollars.

18           We've also talked to utilities about the need

19  for -- other utilities about the fact that they've seen a

20  need for ongoing support resources on ongoing basis to manage

21  third- party registration processes, help them ensure that

22  they're communicating correctly on a protocol and just to

23  manage the technical infrastructure that has been developed.

24           And from our perspective we've seen some

25  utilities who have added additional data that is not in the

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2   protocol but they've used the same data transfer and format.

3   And while -- while this is possible, it certainly has added

4   additional cost and complexity to their implementations and -

5   - and the ones that we have seen have -- have looked at that

6   as a sort of day two item.

7                   The -- the adoption from the utilities we

8   benchmark with has not been widespread and I think we have to

9   set expectations about that.  We benchmarked with one

10  California utility who has millions of customers and has --

11  after three years with Green Button Connect has about fifteen

12  thousand customers who have gone in and affirmatively

13  consented for a third party to access their data.  So we have

14  to take that into consideration.

15                  So there are a number of outstanding issues

16  that -- that need to be addressed as we look for -- at

17  evaluating Green Button Connect to make the final

18  determination, if it's the right solution for Con Ed and O

19  and R.  Some of those are exactly which data are we talking

20  about being exchanged?

21                  You know, we strongly believe that usage

22  data, the core aspect of the Green Button Connect protocol is

23  -- is the best place to start.  We should get -- get all the

24  processes down and the protocol correctly using -- with --

25  with just usage data so that we can do it right and learn.

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2   And we think that gets us out of a lot of the issues of

3   customer profile data when we look at, you know, potential

4   complexity, privacy issues, et cetera.

5                   There are three different types of request

6   options so customers can go in and look at a one-time -- make

7   a one-time historical -- make a third party -- allow a third

8   party access to data on a one-time historical basis.  On an

9   ongoing basis moving forward, that is -- that doesn't close

10  until the customer takes an action to close it or on a

11  temporary basis for let's say sixty or ninety days.  So, you

12  know, we need to get these details down in terms of how we

13  are implementing here at Con Ed and O&R.

14                  There are also issues around data that we

15  have to resolve.  The timeliness of the data, next day, more

16  real time.  The granularity, is it hourly, five minute --

17  fifteen minute, five minute?  And the quality of the data and

18  the timing of the data.  Has validation and estimation been

19  completed, you know, and what -- what do all -- what does the

20  -- the decisions on all of these items, you know, add to

21  complexity and implementation and what have others done

22  elsewhere.  So we want to make sure that, you know, we

23  address these issues as we move forward.

24                  Another item is cost of the data.  You know,

25  we think it's important that core data, the base available

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2   data, you know, is available at no cost to third parties.

3   You know, we have to look at exactly what that fee structure

4   -- you know, what that looks like.  But -- but, you know,

5   today, for example, we provide ESCOs with data as of

6   yesterday on an hourly basis at no cost.

7                 But as you dig into more frequent data that

8   access of the data and more granular data and from our

9   benchmarking with other utilities, we believe that that's an

10   added service and that hourly data, prime data will solve

11   most of the -- the needs of -- of the wider market.

12                 And to the extent there is, you know,

13   additional needs beyond, you know -- you know, most -- most

14   third parties, we think there should be a fee structure

15   associated with that consistent with REV principles and

16   market- based earnings for utilities.  So we need to

17   determine the appropriate fee structure there.

18                 You know, we look to the -- the -- the ESCO

19   market today and there was a significant role for the

20   Department of Public Service approving and suspending ESCOs

21   and managing that process.  There is also a role in the

22   utility side of after that they've been approved by the

23   Department of Public Service, registering them in their

24   territory.  We want to make sure all the details of that

25   process are down, and I understand the DER UBPs, you know,

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2  might address some of this, but they're important details as

3  we look to implement which could drive cost and the business

4  process.

5              We also believe that when we think about

6  third- party data access we really have to make sure we -- we

7  understand the unique needs of -- of three different groups

8  of stakeholders.  Non-ESCO third parties which really Green

9  Button Connect is perfect for.  Those third parties where a

10 customer might go in and authorize, you know, a non-ESCO

11 third party to get their data to do analysis or to provide

12 some valuated service to them.

13             But ESCOs have a different authorization rule

14 under the UBP today and they're able to submit an account

15 number and get access to data.  And so, you know, we want to

16 look at that closely and -- and we certainly don't -- aren't

17 proposing today that ESCOs who serve many customers would

18 have to have their customers go into the web and push a

19 button to authorize access to data which they get today in an

20 automated fashion under the UBP just by serving those

21 customers or prevent -- or submitting an account number.

22             So while we believe the Green Button Connect

23 protocol and the -- the transfer format, you know, is -- is

24 appropriate, we might -- we might look at different ways of

25 authorizing ESCOs to use that same API and protocol to get

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2   that data.

3              And lastly there's going to be a lot of

4   direct customers who want access to their data directly.  We

5   think we could use some of the same foundational technologies

6   to do that, again, but the authorization processes might

7   change slightly, and we want to make sure we have all those

8   details down before we, you know, move forward with

9   implementation.

10             We also have to address the fact that today

11  the customers who have interval data in our territory today,

12  the few thousand large customers who have interval data, they

13  have existing methods of getting data that range from retail

14  access website, posting files on that site to submitting a

15  paper form with a authorization to provide access to data.

16  And we think as we move forward and really if we move forward

17  with a protocol that is robust like Green Button Connect, you

18  know, it would be costly and complex to have multiple --

19  multiple ways of exchanging data.

20             And we want to go with one robust secure

21  method, and that would mean phasing out a lot of those other

22  methods.  And, you know, there would be some customers that

23  just aren't happy with that.  They actually like the current

24  protocol.  And it's important that as, you -- you know, our

25  utilities, you know, support one robust protocol.

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2            So from -- from a next step perspective, Con

3 Ed and O and R, you know -- you know -- you know, we believe

4 we need to address all these outstanding issues which could

5 have impacts on, you know, our decision to move forward and

6 the complexity and -- and help us ensure that we're meeting

7 the needs of all of the parties that need data. That will

8 help us consider the cost for its adoption and the value of

9 this -- this -- this significant investment.

10            You know, and we'd follow our normal standard

11 process for initiatives like this where after we do that

12 evaluation we would make a -- a go, no-go evaluation of our

13 own determination. And, you know, we'd begin -- if we made a

14 go determination, we would start looking at implementation

15 plan and -- and timeline for implementation with, you know, a

16 target for us would be that as we roll out any line meters

17 and give the customers access to all of these more granular

18 data, we'd want to make a robust protocol available for data

19 access as well at that time.

20            MR. HALLY: Good morning. I'm Joe Hally. I'm

21 the manager of Energy Transformation and Solutions at Central

22 Hudson. And this morning I'd like to provide a little bit of

23 Central Hudson's perspective on providing customers with

24 access to their data, for allowing third parties to get

25 access to that data as well if they've been authorized by the

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2    customer.

3                    And our view of a preliminary analysis that

4    we performed on Green Button Connect and some outstanding

5    issues that we have regardless of -- of the protocol that's

6    used to -- to provide that data to third parties.

7                    So let me start by just saying Central Hudson

8    definitely supports the need to provide customers with access

9    to their data.  We think that we're doing it today and we

10   think that it's the future of the industry.  We think that's

11   the utility of the future that customers need access to that

12   data, and that third parties can bring innovative, new

13   products and services to the market if they're provided with

14   access to that customer data as well when they're authorized

15   by the customer.

16                   So we are doing some things today and will be

17   doing some things in the near future that provides customers

18   with access to their data.  And one of the things we're

19   really excited about is our energy exchange demonstration

20   project which will include Green Button Connect Download My

21   Data functionality.  So April of 2016 we expect that to go

22   live and we expect customers to be able to download their

23   data through the Green Button standard at that time.

24                   It also will be providing an energy insights

25   portal which will provide customers with direct access to

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2   their energy usage information, some comparison information.

3   And it will provide them tips and other information that

4   should help them more effectively manage their energy usage

5   and potentially enroll in utility or third party programs or

6   buy or purchase products and services that help them to

7   better manage their energy usage.

8            Also today Central Hudson and -- and all the

9   utilities in New York utilize electronic data interchange or

10  EDI, and I think regardless of what happens with Green Button

11  Download My Data or Green Button Connect My Data, I think EDI

12  is here to stay at least for the near term.  I think there is

13  information that's available within EDI that today our ESCOs

14  use and I think, you know, potentially could be leveraged to

15  provide other third parties with access to customer

16  information as well when they're authorized.

17            So I think we really have to spend some time

18  and explore that before we -- we jump to another protocol and

19  -- and really ensure that, you know, we're making the right

20  decision and we understand exactly what's included in EDI

21  today and exactly the types of information that third parties

22  want to see in the future.

23            And then finally there are transactions, and

24  I'd like to just demonstrate one transaction that customers

25  can use today on Central Hudson's website to get access to

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2 their energy information.  So on the screen in front of you

3 is a screen capture of a website that's available for

4 customers today, and by simply inputting their account number

5 or if they've granted a third party with access to their

6 account number, the third party can enter it and the next

7 thing that pops up is this screen which provides a number of

8 data fields.

9               And -- and this is actually another set of

10 data that's available through EDI as well which would provide

11 any number of just customer-dependent fields.  So county,

12 municipality, sales tax rate, the meter number, the bill

13 cycle, the billing frequency, the load zone, the Icap tag,

14 the load profile and the usage factor of that customer, as

15 well as twenty-four months of usage history for that

16 customer.

17               So this is a pretty robust data set.  It's

18 available to ESCOs and third parties through EDI protocol.

19 It's also available to our customers through a website

20 transaction.  So they do have access to pretty robust data

21 set today.  And I think that's an important thing to

22 recognize, that customers do have access to data.  What we're

23 looking at here are ways to evolve that access and -- and

24 potentially add more value.

25               And one of the methods that's up for

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2   consideration within this conference is Green Button Connect

3   My Data.  And we've performed a very preliminary analysis of

4   Connect My Data and looked at it and said, you know, there

5   are really three attributes of this method that stick out.

6   One is that there's a standard platform for providing usage

7   history.  So there's -- there's a national standard that's

8   involved with Connect My Data.  That same national standard

9   extends to Download My Data which is what Central Hudson is

10  looking to roll out in April of next year.

11             But that -- that's very important because if

12  a third party is operating in one state or jurisdiction, they

13  may be able to bring similar products or services to New York

14  in an easier manner if they're following one standard.  So I

15  think that's something that can't be overlooked but it's also

16  something that's available through Download My Data or may be

17  available to third parties through other means.  But we have

18  to take a look at that.

19             Other attributes of Connect My Data are that

20  the customer is the one that's authorizing the -- the

21  transfer of data and they're doing it directly through a web

22  interface.  And I think that's something that we really have

23  to explore the value of that feature a little bit more as

24  markets evolve, as customers look to -- to perform this

25  initiation of -- of the transfer of data.  I think we really

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2   need to understand the value of that feature.

3              And I don't think we have a -- a full grasp

4   on that today, and I think some of the other panelists have -

5   - have talked about that as well, that these markets aren't

6   here today.  We're looking to see what innovation comes out

7   of providing this data.  So I think it's -- it's something

8   that -- that today there's not a clear answer on the value of

9   that feature.

10             And I think the last function is the data

11  feed.  So the recurring data feed or a data stream that can

12  be provided through Green Button Connect versus Download My

13  Data or some other means of -- of transferring the customer's

14  data.  And I think that attribute -- really the value of that

15  attribute is based on interval data availability.  So I

16  think, you know, that's something that's -- that's very

17  important to consider here is whether or not that utility has

18  deployed or plans to deploy in the near future, AMI

19  throughout its entire service territory.  And that's a point

20  I'll get to in a minute.

21             So one of the main points I want to make is

22  that we need to gain some experience and -- and flexibility

23  between different utilities.  So REV has created a great

24  environment within New York where we've been able to

25  experiment with new technologies, new customer offerings.

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2   And I think that's -- that's a great environment that's here

3   today.  And I think that access to customer data is no

4   different.  It includes a large technological investment, and

5   we really have to understand what are the benefits and what

6   are the costs of that investment.

7                    And those costs and benefits are going to

8   differ by each utility's service territory.  So each of us

9   have different population, different population density,

10  different size and different geography within our service

11  territories.  And I think all of those attributes come into

12  the cost benefit analysis and we really need to understand

13  them.

14                    There's also uncertainty about the cost of

15  implementation in and of itself.  So Mike talked about the

16  range of cost estimates and that's a very big range.  So

17  understanding that range and really dialing in what the cost

18  for a utility to implement Green Button is critically

19  important.  And then it's important to also understand how

20  scalable are those costs?  Central Hudson is in a

21  significantly different position than Con Ed when you look at

22  the number of customers we have to spread that cost over.

23                    So the -- the cost of implementation is -- is

24  one factor.  But then the scalability of that cost is also

25  critically important to -- to understanding how much benefit

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2  are you providing to your customers compared to the

3  individual customer cost.

4  So I think there are a number of

5  opportunities to learn here, not just about cost but also

6  about the value of the system. And one of the values that I

7  think we really need to take a look at is customer adoption.

8  Right. And I think if -- if another utility in the state

9  moves forward with an analysis or moves forward with

10  implementation, that really allows the other utilities to --

11  to take a look and -- and see what is customer adoption, how

12  much are customers excited about this technology and, you

13  know, how much value is involved here?

14  So just moving on to outstanding questions

15  and a number of the other panelists have touched on these, so

16  third-party data requirements, really understanding what

17  third parties are looking for and ensuring that we -- we

18  understand that up front and that we're not just going ahead

19  with a platform and then changing it as we move forward in

20  time because that becomes very expensive.

21  Third-party authorization, I think there have

22  been a number of comments that look to Department of Public

23  Service Commission staff to play that role, and I think

24  that's an important role for them to play. And I think

25  really what the parties to -- to this proceeding need to

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2   understand is just who is going to play that role.

3   Affirmation of the party that's going to play that role.

4                   And then, finally, a topic that hasn't been

5   talked about very much but I think should be included within

6   that third-party authorization is understanding exactly how

7   data is going to be presented by third parties when they get

8   access to it.  So this sounds like a -- a pretty trivial

9   concern, but this is one of the things that actually drives a

10  lot of cost and call volume to utilities is when data is

11  presented one way by either one utility program or third

12  party, and then in -- in some other manner it's presented in

13  a completely different manner.  I can cause a lot of customer

14  confusion.  And really we need to understand exactly how data

15  is going to be presented, and -- and how customers are

16  actually going to interpret that data.

17                  And then finally, as I said, next steps for

18  Central Hudson are we expect to roll out our Energy Exchange

19  Demonstration project by April of 2016.  We expect that to

20  include a robust energy insights portal.  And it will also

21  include Green -- excuse me, Green Button Download My Data

22  functionality.  We don't expect to roll out Connect My Data

23  functionality any time in the near future and would really

24  look for examples within the state that we could learn from

25  before we jumped into a roll out of that functionality.

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2               But I do think as time goes on, we will look

3 for ways to automate data going to customers, and looking at

4 that customer initiated authorization is -- is something that

5 we're pretty interested in and -- and how we can actually

6 include that in our data portal is -- is something that we'll

7 be looking at in the future.

8               Thank you.

9               MR. ELFNER:  Thanks to all the panelists.

10 Can we give them a round of applause?  Okay.  Thanks very

11 much.  And we're right on time too.

12               So we have an open discussion for the next

13 hour or so, but there's two preliminary matters I'd like to

14 handle before we open it up.

15               There's -- when the notice went out November

16 3rd we invited anybody who was interested in making a

17 presentation to identify themselves and we -- Amanda and I

18 had -- and -- and Tina and others had conversations with them

19 to see how it -- how it would fit.  There was one individual

20 that we thought would fit very well but that didn't need full

21 ten or twelve minutes.  So that's Elena Lucas.  She's

22 cofounder and C.E.O. of Utility API, and I'd ask Elena to

23 approach the -- the microphone and then speak briefly.

24               And while she's doing that, the second

25 preliminary matter I just want to give a heads up to is I'd

2  like to ask any utilities other than Con Ed and Central

3  Hudson if they're willing to just state very briefly what

4  their position is, whether it's closer to Con Ed's, closer to

5  Central Hudson's or what the -- what the main differences

6  would be?  Not a requirement just an invitation and then

7  we'll open up to a -- a broader discussion.  Thank you.

8                  MS. LUCAS:  Thank you, Doug.  And thank you

9  to the Public Service Commission and DPS staff for hosting

10  this technical conference and inviting me to speak.

11                  When we saw the topic for this technical

12  conference we were very excited to contribute.  The New York

13  Commission's Track One Order directed continued investigation

14  of a digital marketplace linking DER vendors and customers

15  including the design, ownership and a customer data-sharing

16  mechanism.

17                  Utility API is a data sharing mechanism, and

18  we are already providing this service to vendors in New York,

19  California and across the US.  We have built a universal data

20  infrastructure between DER vendors and utilities while

21  complying with the voluntary code of conduct and the Data

22  Guard privacy standard set forth by Department of Energy.

23  And we are the only third party that has built integrations

24  with all current and scheduled US Green Button Connect

25  implementations.

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2                        Utility API automates the process of

3    authorizing access, collecting and formatting electricity

4    utility data.  We also work with utilities to validate,

5    implement and test internal data infrastructures including

6    Green Button and Green Button Connect.  We use Green Button

7    data in our service, but we also collect other data that is

8    not yet included in the Green Button standard such as PDF

9    bills,  tariff name and demand charges.

10                       DER vendors need this additional data to

11   assess a site for various new energy technologies, finance

12   the project and monitor its value after installation.  The

13   lack of easy access to data due to manual processes and data

14   request backlogs has limited the adoption of new energy

15   technologies and made energy technologies more expensive.

16                       Efforts to standardize data sharing including

17   the Green Button standard are helpful but can be improved.

18   Green Button is a voluntary standard and each utility

19   implements it differently, which makes it prohibitively

20   difficult for vendors to use it.  As stated in the REV

21   proceedings, securing data for an interface is difficult and

22   requires a different skill set than a utility's core

23   business.

24                       Data infrastructure is Utility API's core

25   business.  We're using best practices from tech to make data

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2    sharing as affordable and secure as possible for utilities

3    and ratepayers.  These practices include a hundred percent

4    transparent layer security, public key encryption and split

5    stack design.  And when it comes to additional marketplace,

6    we encourage utilities to partner with private companies that

7    are already connecting customers to new energy technologies.

8                    Using Amazon as an example for digital

9    marketplace is not useful because selling energy technologies

10   to consumers is more specialized.  Solar and energy

11   marketplaces such as Energy Sage, PickMySolar as well as

12   Residential Demand Response Aggregator OhmConnect have

13   already engaged customers.  They're taking the best practices

14   from digital marketplaces such as focusing on the user's

15   experience and applying it to energy technologies.

16                    This is crucial because the user interface

17   will determine the success of any effort to involve customers

18   so the consumers and businesses in energy-reduction targets.

19   A customer facing data authorization platform must focus on

20   user experience so people can and want to use it.  Utilities

21   should partner with these companies that have already --

22   already have traction selling to consumers and selling these

23   new energy technologies instead -- instead of trying to

24   reinvent the wheel.

25                    Please come ask us questions.  The Department

2 of Energy has funded us to expand our service and to continue

3 to support new energy technologies.  We are excited about the

4 opportunity for bi-directional data flows as well.  We have a

5 solution and we're already working with vendors and

6 marketplaces.  We're excited to work with the PSC and New

7 York utilities to ensure timely, accurate, data sharing

8 platform for the evolving grid.

9            We've learned a lot from what we've already

10 implemented and look forward to sharing our lessons learned.

11 Thank you.

12            MR. ELFNER:  Good.  Thanks, Elena.  So on the

13 invitation for other utilities, is anybody -- any

14 representatives of utilities want to take an opportunity to -

15 - to state their position and how it may be similar or

16 different than what we heard from Con Ed or Central Hudson?

17            MR. MARTIN:  First thanks for the

18 opportunity.  Think these presentations are fantastic this

19 morning, so looking forward to continuing to work with us.

20 I'm Jeff Martin from National Grid.  I support our billing

21 operations -- operation and also been very close to a lot of

22 our data programs.

23            National Grid also supports, as we've heard

24 from many, also supports some customer and third-party access

25 to data.  That's something we continue to do and -- and we

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2   think is very important to continuing use of new technologies

3   and -- and promoting smart energy use.

4                National Grid also has looked into and

5   implemented the first stage of Green Button with the Download

6   My Data, so we've taken that first step into -- into that

7   protocol on top of many of the other protocols that we heard

8   about today.  We have web functions, we have EDI.  We have

9   custom-built applications that work with entities like

10  NYSERDA.  So we've done many of these things already and work

11  with customers that have both AMI or interval data and also

12  just monthly data.

13               We definitely agree it all starts with the

14  data.  It -- it's very important and it's -- it's an

15  underlying structure.  And -- and actually the converse of

16  that is very true too that it doesn't start without the data.

17  So, you know, it just -- it just very -- is very important to

18  establish that foundation.

19               We -- we've wrestled a little bit with is AMI

20  necessary for meaningful use analysis and -- and really get

21  down to it's -- it's yes and no actually.  It -- it depends

22  on the application.  You know, whether you need AMI data to

23  support the application.  It really depends upon what

24  application, what customer and what use of that data is --

25  it's intended for.

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2                    National Grid is also very supportive of an

3    AMI infrastructure.  We know and -- and we recognize that AMI

4    supports the achievement of -- of many of the REV objectives.

5                    Moving forward with AMI though also depends

6    upon a very -- a very solid, positive business case analysis.

7    National Grid is working on -- on that very thing right now,

8    a positive business case analysis toward a further AMI

9    deployment.  Recognizing, and I've heard some of the same

10   things from other parties here this morning, recognizing

11   attributes of service territory, size, density, demographics,

12   geography, recognizing all those things.  You have to look at

13   those to make sure that your business case makes sense for

14   further deployment.

15                    There's a question of should Green Button

16   Connect My Data be part of that.  You know, personally I

17   think it could be.  And I -- I think it's a smart thing to

18   look at going forward.  Track Two of REV also brings into the

19   -- the equation pricing considerations.

20                    So what does this all mean without pricing,

21   without tying variable rates?  That's a very important thing

22   I think to customers as well.  So making sure that, you know,

23   this feeds into a Track Two further development on pricing, I

24   think is really important for everybody to recognize.

25                    And, again, you know, the company really --

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2   my company, National Grid supports establishment of

3   standards.

4              And also, you know, we've heard a bit about,

5   you know, this all.  It starts with the data, and it brings

6   into the equation now DER providers.  And in -- in addition

7   to ESCOs, and the company does also support establishment of

8   DER standards.  We think everything we've heard today on

9   protection of data, on proper use of data, it all gets down

10  to some standards that everybody can agree to and -- and live

11  by.  So I think, you know, establishment of DER standards are

12  -- are very important as well.

13             The company -- National Grid has also

14  proposed, as others have said, the proposed -- and is

15  starting to move forward on demonstration projects for REV

16  which I think are -- are extremely important to prove

17  technologies,  and prove new ways of doing business.

18  National Grid has a new -- has -- has a proposed project in

19  the Buffalo area, solar projects.  It has a microgrid

20  proposal up in Potsdam, and it also has a -- an AMI based

21  customer pilot proposed for the Albany/Clifton Park area,

22  which we're still working toward approval on.

23             So to sum it all up I think National Grid's

24  position is absolutely we think we're -- we're moving towards

25  more and more meaningful and useful sharing of data.  And I

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2  think the company wants to be given the time to do the proper

3  business case analysis to present what it feels for its

4  customers and its third-parties providers.  What's -- what

5  makes most sense.

6              MR. ELFNER:  Good.  Thanks, Jeff.  I think

7  Marc Webster wanted to speak for NYSEG and RG&E.

8              MR. WEBSTER:  Good morning.  Thank you very

9  much.  Marc Webster from NYSEG and RG&E.

10             I too want to kind of reiterate what you've

11 been hearing from the other utilities.  NYSEG and RG&E do

12 support, you know, creating standards, creating a, you know,

13 set of protocols whereby we could get customer data out there

14 in the market.

15             I am one of the, I guess, looking around, one

16 of the dinosaurs who started working on retail access back

17 even in the days of FERC Order 636.  And as we've seen the

18 retail access market grow, we've seen the value of that data

19 first, you know, at the very early stages.  And more recently

20 how the -- the data has shown value, how it has moved the

21 markets.  So we do support creating a protocol, whether it be

22 Green Button Connect we're not sure yet.  We are still

23 evaluating that.  But we do support that standard.

24             We do obviously want to reiterate and support

25 that, you know, we believe that it should be -- you know,

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2   that the customer should be active in deciding who gets the

3   data, and in -- in the release of that data, you know,

4   protections for that is very important.  So from our

5   perspective, I would say that Doug, to use your -- your

6   analogy of where we are in the spectrum, I think we're

7   somewhere in between but we are definitely on board.  And,

8   you know, we -- we support any movement forward.  Thank you.

9                    MR. ELFNER:  Good.  Thanks, Marc.  And Mike

10  Novak from National Fuel Gas.

11                   MR. NOVAK:  Good morning.  I'm Mike Novak

12  from National Fuel Gas and I -- I wanted to start by thanking

13  all the panelists or presenters.  There is interesting

14  information in each of your presentations that provided some

15  keen insights in what we'll ultimately do.  First the

16  preliminary.

17                   At National Fuel we're much closer, in fact.

18  I wrote my notes.  We pretty much mirror Central -- what

19  Central Hudson does absent looking at the Green Button,

20  Download My Data.  And -- and I guess part of this is as a

21  gas-only utility, we don't see some of the other business

22  requirements that combinations company would see for their

23  electric division.

24                   But the more general principle that we have

25  is that we currently provide a ton of information directly to

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2 our customers through online portals.  We make it available

3 to ESCOs and -- and so forth.  Where it comes to customers we

4 feel we can do a better job in terms of timeliness because

5 we're providing the customer direct real time access to their

6 -- to those twelve data points that were referenced.

7 If we introduce a third party, it's much like

8 EDI.  It's -- we'll provide the data but it's next day.  And

9 we're not sure, you know, really that it would be worthwhile

10 to create the -- the real time capability where a third party

11 could come in or we would communicate real time with a third

12 party with all the data privacy concerns and so forth.

13 The other issue that we're concerned about

14 with this is that the -- there's a presumption that all

15 customers want this.  We had a requirement to put out a -- a

16 marketing list.  It's called the eligible customer list in

17 Pennsylvania, and we found out that twenty-five -- twenty to

18 twenty-five percent of our customers opted out of this list,

19 and -- and we think that's a direct correlation with the

20 privacy so -- interests that customers have.

21 So that we think that certainly there are

22 many customers that want to share their data and so forth.

23 We have to be careful in how we go about this, recognize that

24 a lot of people like to be left alone.  And it -- it's going

25 to be a challenge through all these things.

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2                    So, to sum it up, the approach we would take

3    -- we had zero problem with sharing information with

4    customers and -- and agree with the principle they should be

5    able to do what -- what they want with it.  We just think

6    that we can do a better job of it, more efficient job of it

7    by modifying and enhancing existing portals that we provide

8    today.  Thank you.

9                    MR. ELFNER:  Good.  Thanks.  So now to turn

10   to the open discussion part of this, which not really sure

11   how many people want to speak.  Know we've got lots of people

12   in New York City and a few in Buffalo as well.

13                    I remind you that this is on the record.  We

14   also have another opportunity for you to file -- to provide

15   comments which is -- which is the written comments that are

16   due December 30th, so you might want to consider that if that

17   works better -- better for you.

18                    My staff's job here today is to help flesh

19   out the record in particular on the four questions that were

20   in the notice.  So I'm going to try to focus and organize the

21   discussion around those four questions.  As I started to

22   think about this obviously all -- a lot of these questions

23   are interrelated.  So let me tell you how I would like to

24   approach it, again, just for some sake of organization.

25                    So the first question about -- is about

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2   whether there's an alternative to Green Button Connect that

3   should be considered or not.  I think the answer to that

4   depends a lot on cost and so on.  Let's talk about cost

5   later.  All right.

6              So just right now, for the first question,

7   just like to consider whether you think whether there's any

8   other protocol that's out there that's worth discussing.

9              Second question on oversight.  I think that

10  kind of speaks for itself, but this -- this is privacy

11  issues, what the role of the Commission should be.  The

12  extent of rules and regulations applicable to those vendors

13  who -- who -- who get the data through this tool.

14             Third general issue is charges.  What should

15  the utility be allowed to charge on a transactions basis for

16  this data being transmitted?  And then the implementation

17  issues.  And the implementation issues include cost, they

18  include what data should be part of Green Button Connect if

19  that's where we go at the outset.  Includes should it be tied

20  to AMI and what the timing should be overall.

21             So I think those implementation issues might

22  be the stickier -- the most sticky issues of -- of the ones

23  that we've identified.  So I'm hoping to spend most of our

24  time there.  But we'll start with the -- the very first

25  question about the alternatives.

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2                    Is -- I didn't hear any of the panelists talk

3    about any other alternative to Green Button Connect that had

4    at least been researched to some extent.

5                    Again, Elena had a very interesting

6    perspective about the complimentary -- I would -- I'll call

7    it mostly complimentary approach of her -- of Utility API

8    But is there anyone else, in particular not the panelists,

9    who -- who have any -- anything they'd like to say about

10   alternatives that they would like the Commission to consider?

11   Again, this is hypothetically if the Commission is going to

12   consider a tool to further empower customers, is there

13   another protocol which should be considered?

14                    Anyone in New York City want to be heard on

15   this?  Good we're moving along.  Go ahead, Cameron.

16                    MR. BROOKS:  Well, I just have a comment

17   which is I -- I agree that I didn't hear anyone talk about a

18   different standard or a different protocol.  I do think you

19   heard some references to different methods of delivering

20   information, in particular, web portals.  And from that point

21   of view I think it's really important to go back to a

22   principle of convenience.

23                    So in the modern age, a web portal is not a

24   convenient access for a customer to get their information.

25   And it offers no ability to share.  So the whole point is to

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2  be able to engage in the market.  So in terms of -- of

3  standards, I agree the only one that's been identified that

4  meets that level of convenience is Green Button Connect.  And

5  I would just ask the Commission and others to really consider

6  what do we mean when we say convenient in the year 2015,

7  because I don't think a web portal is convenient.

8            MR. HALLY:  I guess I'd -- I'd like to

9  respond to that a little bit.  So I -- I talked about Green

10  Button Download My Data functionality, and I think that is

11  the same standard and the same protocol, the same information

12  that would be transmitted.  The primary difference between

13  the two, at least to my understanding, is a recurring data

14  feed.  And I think that's important, because without interval

15  data so within Central Hudson's service territory, that data

16  feed would be updated six times per year, right?

17            So when -- when you're looking at the

18  different tools and you're looking at the different costs

19  associated with the different tools, updating a live

20  streaming data feed six times per year doesn't seem like

21  that's the proper use of a live data feed.  So I think when -

22  - when we're looking at alternatives for Green Button Connect

23  I think we have to look at the whole picture, what other

24  technologies are implemented within the utility service

25  territory.  What are the cost of those other technologies to

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2   implement?  And then what's the best way to provide data

3   access to customers?

4                   And that's why when -- when Central Hudson --

5   within the Central Hudson presentation we talked about Green

6   Button Download My Data functionality as the alternative to

7   Green Button Connect.

8                   MR. NOVAK:  I'll -- I'll build off that

9   clarification.  I -- I would say that at National Fuel --

10  this is Mike Novak again -- that it's the functionality that

11  we're willing to provide and -- and look into.  And -- and

12  you have to understand that customers aren't monolithic and

13  the means  that they want to deal with the utility.

14                  Twenty years ago when we were talking about

15  customer choice, the utilities were going to fade away.  And

16  it's been anything but.  We -- even though we have in excess

17  of twenty percent of our customers shopping at this point,

18  they still look at the utility as the source of information

19  for their data or the people who connect them and -- and so

20  forth.  And that utilities have outreach and education

21  efforts.

22                  These web portals which you may look at as

23  antiquated technology reach a segment of the market and --

24  and we just see no evidence at this point that customers are

25  eager to migrate to, whether it be Green Button or any other

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2  competitive platform and so forth.

3              Now is -- if looking into finding out ways to

4  make the data we provide compatible so they could be shared

5  for other things, that's certainly something we can look at.

6  But utilities haven't faded away.  We still provide a

7  valuable function.  The customers look to us and -- and, you

8  know, for that matter, you know, New York -- particularly

9  Upstate New York tends to have an older demographic.  We

10 still have most people would prefer to deal with us either in

11 person or through the call centers.

12             As much as we try to automate them through

13 different things that we do, through the web, different data

14 channels and so forth, certainly there are some customers who

15 would like to work through a platform like -- like Green

16 Button.  We just don't see it as being something that's worth

17 the investment at this point to replace the others.  And --

18 and so there's a lot of life left in older technology like

19 web portals.

20             MR. ELFNER:  Okay.  Thanks.  We'll -- we'll

21 go to -- we're going to spend some time on cost in a bit.  Go

22 ahead, sir.

23             MR. GORDON:  I'm going to be really brief

24 because I'm going to talk a little bit more about this this

25 afternoon.  Mike Gordon with Sustainable Westchester.

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2                   I'm Mike Gordon with Sustainable Westchester.

3   And just replying to other -- other opportunities beyond

4   Green Button.  One of the things that we are going to explore

5   and I'd like to explore, ultimately what we're going to need

6   I think is trunk level two second data, ultimately to gain

7   value to all the value streams -- gain access to all the

8   value streams in the market.

9                   And specifically, if we need a separate meter

10  data authority, I don't know.  We're going to explore some of

11  the pluses and minuses of that, but I think it's something to

12  consider, a separate metered data authority that can then

13  apply -- provide access with specifically service level

14  agreements to that data.  Just throwing it into the

15  conversation for comment because I'll explore it with more

16  depth later, but that's it.

17                  MR. ELFNER:  Good.  Thanks.  Anyone else on

18  this first kind of a threshold issue?  Not seeing -- okay,

19  quickly Elena.  Sure.

20                  MS. LUCAS:  To address the data portal, the

21  way that customers are using us, so companies are using us

22  like solar and storage, energy efficiency companies.  They

23  have a prospective customer and they need to get access to

24  their data.  Those twelve data points, twenty-four data

25  points or interval data if it's available.  And so the solar

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2  consultant sends our link to that potential customer.

3              They grant us and that -- that vendor

4  explicit access and authorization to collect data on their

5  behalf.  Then we collect the data, structure it in a

6  standardized form so that the vendor is able to use it across

7  their -- their proposal tools and evaluate the -- the -- the

8  value of that -- that installation after as well.  And so

9  it's a fully automated process.  It's standard across all the

10  utilities so that the customer knows what to expect and the

11  vendors know what to expect.

12              So that's how the vendors are using it right

13  now and involving customers is one thing, but customers think

14  about electricity usage under ten minutes a year.  And so

15  engaging the vendors and when they have someone that's

16  interested in a new energy technology, that's where the

17  opportunity is.  Thank you.

18              MR. ELFNER:  Okay.  Good.  We're going to

19  move on to the -- the second general area?

20              MS. HOGAN:  I'm sorry, can I just ask?

21              MR. ELFNER:  Go ahead.

22              MS. HOGAN:  I -- I think one of the things

23  that I've observed with computer software is when you make a

24  decision it puts you down a path for a long-term commitment.

25  And I'm just -- what's not clear to me in this whole process

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2   is the choice between Green Button either Download Connect

3   versus other systems.

4                   If we make a decision now, does that -- how

5   long does that lock us in to that approach?  Does anyone have

6   that?

7                   MR. MURPHY:  Let me talk about it briefly.  I

8   mean, these are significant investments.  I mean, we

9   certainly would not want to start down this road and -- and -

10  - and change it.  And that is why we're suggesting that there

11  are all these outstanding issues that we have to resolve

12  before we really move forward.  And we need an evaluation

13  period, probably early next year, to really do what we do

14  with all of our big investments which is understand all of

15  the technical architecture, design it properly, understand

16  the resources required to build it and support it afterwards.

17                  Understand the technical components that we

18  need to procure, and these are not easy decisions to turn

19  back from.  These investments.  You can't procure a major

20  software product and then return it.  So we -- we can't take

21  that lightly.  That's why we have to at a conference like

22  this really consider, you know, all these factors before

23  moving forward.

24                  MR. BROOKS:  It just -- to address the

25  question of technical or technological lock in.  I think it's

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2   important to recognize that, a) this standard Green Button

3   came from industry, has been developed for years through

4   industry-led processes.  And it augments and doesn't lock-in

5   any particular data standard.  We're -- I guess we're going

6   to address this later, but it remains my view and our view

7   that most of the cost relate to things like updating to

8   things like restful  APIs pull off XML schemas which does not

9   preclude the continued use of EDI in applications or web

10  portals in applications as they're being used today or others

11  in the future.  So I don't think there's really a risk of

12  technical lock in.

13                  MR. ELFNER:  Okay.  Thanks.  I'm going to

14  move on to the second general subject then.  That is --.

15                  MR. LEONHARDT:  Actually, you have a question

16  from New York.  Can you hear us?

17                  MR. ELFNER:  Okay.  Go ahead.

18                  MR. LEONHARDT:  You said you could hear us?

19                  MR. ELFNER:  Go ahead, New York City.

20                  MR. LEONHARDT:  Thanks.  One thing I just

21  wanted to iterate.  With -- as far as the data collection and

22  reporting, I want to second the -- the person -- the speaker

23  from utility API and the need to standardize in whatever

24  mechanism we ultimately choose.  If you don't then you risk

25  each utility territory making it -- creating a different

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2   method and you won't be able to unify this data into a wider

3   picture.

4                    I mean, data availability is the enabling

5   mechanism for everything envisioned by REV.  And its

6   standardization is going to be that inducement for new

7   players and businesses to join the market.  If we allow

8   different data standards to crop up then you're immediately

9   erecting barriers to entry from the get-go for this.  So now

10  suddenly everybody has to develop fifteen, twenty different

11  mechanisms of dealing with this data rather than a single

12  one.

13                   I mean, and referring to the previous

14  example, the G.P.S., that system was standardized from the

15  get-go.  Because it was when it was open different -- you

16  know, different satellites weren't using different types of

17  transmissions.  It allowed multiple hardware manufacturers to

18  jump in, you know, right at the beginning much as different

19  software and other service providers are going to want to

20  jump in to this.

21                   And you look at like a bad example, you look

22  at cell phones.  More recently, when the iPhone first came

23  out it was only available on the AT&T network.  Nobody who

24  had a different provider could get one, let alone if you

25  wanted to take your phone to Europe.  When different

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2   standards erupt and you -- you only complicate the market and

3   make it more expensive for everybody.

4                    Also I think it's worth thinking about how,

5   if at all, we're going to aggregate this data on a wider

6   network.  For example, you know, we're talking about customer

7   individual pulls and Green Button Connect may be the way to

8   go forward for that.  But I don't know if that's necessarily

9   scalable.  I think ideally we'd want to publish this data say

10  at a substation level or in a wider territory level not --

11  not having to worry about privacy concerns.  This would have

12  published every single month or every single day in whatever

13  type of thing.

14                   Aggregated far enough that individual

15  customers aren't in any way threatened by this.  But that

16  should just be published outright and the data standard for

17  that as well should be talked about.  Whether that's just

18  some sort of aggregation of the same kind of data gathered by

19  say Green Button Connect or whatever other standard you

20  adopt, or whether another standard needs to be created in

21  order to allow that level of reporting.

22                   MR. ELFNER:  Good thanks.

23                   MR. LEONHARDT:  Or large scale things.

24  Transmission, et cetera.

25                   MR. ELFNER:  All right.  Thanks.  We're going

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2   to talk about the aggregated data this afternoon.  Could you

3   identify yourself in New York City, person who spoke?

4                    MR. LEONHARDT:  Apologize.  Dan Leonhardt

5   from Pace Energy and Climate Center.

6                    MR. ELFNER:  Good.  Thanks, Dan.

7                    And our last speaker on this subject.

8                    MS. JOHNSON:  Hi.  My name is Angelia

9   Johnson.  I'm from North Consulting Group.  I just wanted to

10  make -- my name is Angelia Johnson.  I'm from North

11  Consulting Group.  I just want to make a comment on the --

12  the path in which whatever it might be that you choose as a

13  utility company.

14                   Once you do start going down a path you

15  invest dollars.  Those dollars have to be at some point

16  they're -- they're going to amortized over a period of time.

17  That cost is going to be recovered in some way.  Once you go

18  down that path and you've made that investment, turning

19  around from a platform perspective should not be

20  underestimated.

21                   It is difficult once you get down that path.

22  And typically what we see throughout the nation with

23  implementations of all types is that once you go down that

24  path, you're on a ten-year investment, period.  Because

25  changing technology just cannot be done that quickly because

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2   it actually penetrates all throughout your organization.

3                    Fortunately is a standard that is industry

4   wide and it is being used throughout the nation for various

5   different reasons.  So a lot of the platforms that Green

6   Connect is going to have as far as some of the connection and

7   -- and security components are very well known in the

8   marketplace.

9                    So I don't necessarily -- I wouldn't say that

10  going down this route is a bad route, but I will say that you

11  have to be very careful about underestimating what going down

12  this route means because it does put you on a certain

13  platform and a certain path that you will be on long term I

14  think.  At least within the next ten years.

15                    MR. ELFNER:  Okay.  Thanks -- thanks very

16  much.  The second general subject is oversight.  Heard

17  many panelists, if not all, mention the importance of -- of

18  protecting customer privacy, protecting the data, disclosing

19  the benefits and the risks of any new tool to consumers up

20  front.  Some mentioned the importance of the PSC, PSC's role

21  in overseeing entities that are obtaining this data.  And

22  many -- many also discussed the challenge of monitoring this

23  to make sure it's working well.

24                    So as a little bit of background, there's a

25  separate case that was part of this notice here.  DER

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 2  oversight case, 15-M-0180 where the Commission took comments

 3  and is now contemplating issuing an order on exactly the

 4  rules that should be applicable to DER providers.

 5           Before that, in the Track One order, the

 6  Commission said that it believes -- I'm sorry, it asserts

 7  that it has jurisdiction and intends to exercise that

 8  jurisdiction in certain circumstances.  And one is over

 9  vendors who choose to obtain data through any tools --

10  customer specific data through any tools that the -- that the

11  Commission creates.  So the open question here is, any

12  reaction to -- to that?

13           Is there anything else the Commission could -

14  - should consider as it tries to connect the dots from what

15  it said in the Track One order about its intention to provide

16  oversight?  And what we are here about, perhaps the need for

17  oversight?  Open discussion on -- on that issue.

18           MS. HOGAN:  I -- I -- I think I'll just

19  reiterate my concerns that it's imperative that there is

20  oversight.  Because we now have ESCOs DER providers, they're

21  contracted agents that, like I was saying, that's doing the

22  billing.  And where is this data going?  And how long will

23  the data be retained?  How will it be destroyed, and how do

24  we know every person who had this data is complying with

25  these guidelines?

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2                         So without having some sort of enforcement

3    oversight mechanism, how is -- how do we know it's being

4    handled appropriately?

5                         MR. ELFNER:  Okay.  Yeah, it's very hard to

6    take a position that privacy does not matter and the PSC --.

7                         MS. HOGAN:  But -- but even -- even if we say

8    there will be enforcement and oversight, how do we confirm

9    who has this information?  Because we have applications to

10   become an ESCO.  The expanded eligibility for ESCOs

11   application.  The DERs have to put in an application.  But

12   once they get that information, like I said, who's dealing

13   with their billing?  Who's -- do they subcontract out?  How

14   is that information handled?  And is it destroyed properly

15   and -- and so on?  So I won't belabor the point, but there's

16   -- it's -- the -- it's going -- it's opening it up to an

17   order of magnitude that will make your job a lot more

18   challenging.

19                         MR. ELFNER:  Okay.  Thanks.  And, Mr. Novak.

20                         Yeah, and this is a -- this is a tough issue

21   because it's -- there's a lot of moving parts here and this

22   is an issue that really has made some progress in that DER

23   oversight case.

24                         MR. NOVAK:  Mike Novak from National Fuel

25   again.  I'd -- I'd like to endorse the call for oversight and

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2   -- and I want to point to something from the customer choice

3   industry that I think potentially could be a problem here.

4              We have issues that drive a lot of the

5   controls that we've put into the UBPs, laws that have been

6   changed to react to a few bad parties that tar an entire

7   segment.  And there's no reason to believe that DER will be

8   exempt from a few bad actors.  And so it's pretty critical we

9   think to basically make sure, one, that there's oversight.

10  Two, because some parties will be both in the, you know, ESCO

11  and DER business.  Probably makes more -- a lot of sense to

12  have them be either the same or highly aligned and so forth

13  so that we don't have to.

14              In other words, we should build off our

15  experience with customer choice in this regard, and -- and

16  hopefully avoid some of these problems that could ultimately

17  crop up and harm the development of what we're trying to

18  accomplish here.  Thank you.

19              MR. ELFNER:  Good.  So can I go on to the

20  next general issue which is fees and charges for the -- for

21  the data?  I heard several panelists.  I believe Cameron, Con

22  Ed and -- and Central Hudson kind of rallying around a model

23  where implementation development costs would be part of a

24  utility's operating expenses and utilities would be provided

25  cost recovery for that.

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2                    But the transmittal of data would not --

3    there would not be a -- an individual -- an individual

4    transactions fee associated with the transmission of -- of --

5    of data.  I think Con Ed clarified that a little bit, and

6    I'll ask Michael if he wants to clarify more.  I understood

7    for the base level of what might be considered Green Button

8    Connect that there would be no per-transaction charge.  But

9    if there were vendors or the consumers who were interested in

10   getting the data much more frequently or in a different

11   format that charges might be appropriate there.

12                   So if I could ask Mike to clarify that

13   position and then open this up for discussion.  Any -- any

14   feedback on whether that's -- that's a model that the -- that

15   the Commission should consider.

16                   MR. MURPHY:  Yeah, sure.  So in our

17   evaluation of -- of third party data access, there are a lot

18   of use cases that the base set of standard data is going to

19   be completely sufficient which might be hourly data on a --

20   on a day behind basis.  You know, for example, I'll just give

21   you two quick ones.  You know -- you know, if a solar company

22   wants to obtain historical data for a customer to help them

23   provide an estimate and -- and maybe future savings when

24   they're trying to make a sale, I don't think that -- I think

25   day behind data would be certainly sufficient in that case.

2                    I don't think that data as of two p.m. today

3    would make a -- a significant difference there.  And -- and

4    they would want to probably pay for additional services.  You

5    know, there are going to be a smaller group of -- of -- of

6    cases where presentation of data of -- to customers that is

7    from the last hour let's say, and maybe in fifteen-minute

8    intervals or five-minute intervals there is a significant

9    value for that particular use case for that third party.  And

10   we think that that third party should -- should pay for that

11   -- the -- the value that they are going to provide to the

12   customer.

13                   There's a business that they're trying to

14   drive with that additional value and they should pay for that

15   additional, more granular, potentially more frequent access

16   to that -- that data.  And I think that's very consistent

17   with what we've been tasked as utilities to look for business

18   opportunities in a lot of the REV filings and -- and, you

19   know, where we're providing market-based value to, you know,

20   set fee structures that both provide a revenue stream to the

21   utility and provide value, you know, base services to these

22   third parties.

23                   MR. BROOKS:  Well, I just want to offer a

24   couple remarks and -- and maybe ask a question.  I think it's

25   important to note that Con Ed in your recent AMI filing has

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2  indicated a fee for Green Button Connect.  So if you're

3  saying something different here today that that would be

4  provided without a fee, maybe that represents a chance of

5  policy.  But it clearly states that a charge for Green Button

6  Connect is contemplated.

7              As I've said before, we think that that's

8  completely antithetical to the basic idea that the

9  information belongs to the consumer and they should be able

10 to do with it what they will, and that they shouldn't have a

11 governor on what they find to be valuable.

12             I guess the last thing I would say is any

13 fees, and I think that there's a point that we tried to

14 clarify around our concerns of platform functions, any fees

15 associated should be related somehow to the cost of

16 implementing that service.  So to -- to assess a fee for

17 Green Button Connect simply because it's determined to be of

18 value isn't an appropriate way to set policy or to set rates.

19             It should be determined based on what the

20 cost of implementing that function for the consumer.  If

21 those costs are -- are exorbitant then fine.  Perhaps a fee

22 is appropriate.  But I'll tell you that every smart meter

23 that's gone into the field over the last ten years includes a

24 radio to communicate directly into the home at a minimal cost

25 of a dollar or two per meter.  And those are all dark to the

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2    consumer.

3                    I have a smart meter on the side of my house

4    that could be delivering the real time information which

5    might be valuable to a solar installer to let me identify

6    what my peak really looks like because -- as opposed to an

7    hourly or fifteen minute.  And -- and the fact that I'm not

8    allowed to have that information isn't based somehow on cost.

9    It's based just on an arbitrary decision.

10                    So I, again, I think it's really important to

11   identify what are the actual costs and what does it take to

12   deliver it, and does the consumer have that right or don't

13   they.

14                    MR. MURPHY:  So -- so let me just elaborate

15   quickly a couple points.  So as I said, I don't have the

16   wording of the AMI business case with me.  That was a pretty

17   long document so I would never be able to recall everything

18   that was in there.  But I can clarify that there will be base

19   services that -- of data access that if we move forward with

20   Green Button we -- we plan to include base services at no

21   cost.

22                    Again, we think those -- those base services

23   would be, you know, sufficient in many of the use cases.

24   Now, you know, we are pursuing with an analysis of -- of --

25   of the market pace value of the data.  That's been discussed

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2  widely in -- in a lot of the REV proceedings and that is why

3  we're pursuing that and we think that's a valid approach.  I

4  won't debate you on that point.

5                    But on your second point, there are certainly

6  additional costs associated with providing real time access

7  to data to customers.  You have to build a different kind of

8  infrastructure.  You have to, you know, provide different

9  types of data stores.  You double your -- you quadruple your

10  data when you go from hourly -- transmitting from hourly to

11  fifteen minutes.  They all may be well worth doing but they

12  are costly and -- and so, you know, there are certainly

13  additional costs.

14                    And, in fact, we've benchmarked with lots of

15  utilities across the country and they -- we've yet to find a

16  utility who is providing, you know, this granular of data

17  specifically through Green Button and -- and we believe that

18  cost drivers, you know, and the technical complexities

19  associated with that.  So we're committed in our filing to

20  say that we -- we understand real time access has some value

21  and we want to go above what others are doing in this space

22  and providing that real time data.

23                    But I don't think we can sell short the

24  complexity of providing that since it's not really been

25  delivered widespread in any of my programs.  Most of them are

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2    focused on day behind data.  So there will be costs

3    associated with -- with -- with delivering real time data.

4                    MS. HOGAN:  Can I just -- I'm starting to get

5    nervous hearing about the cost that this could be costly.

6    And so obviously we don't want to be an impediment to getting

7    the information to people who want it.  But at the same time,

8    to spread something that's costly to people who do not want

9    it doesn't seem rational either.  And as Mike Novak pointed

10   out, you know, there are a lot of people in New York who may

11   not be interested in it.  So socializing those costs seems to

12   me, in -- in just the rates, may not be appropriate at this

13   juncture, until we get a critical mass where it would be more

14   equitable.

15                   MR. ELFNER:  We're going to talk about cost

16   estimates next.  But is there anybody else who wants to speak

17   about the appropriateness or inappropriateness of a per-

18   transaction fee associated with this data?

19                   MR. LEONHARDT:  Actually, I'd like to weigh

20   in on something.

21                   MR. ELFNER:  Something?

22                   MR. LEONHARDT:  I'm not hogging the mic.  I

23   did ask everybody else in New York if they wanted to comment.

24   This is Dan Leonhardt again from Pace Energy and Climate

25   Center.

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2                    Quick question about that.  This goes back to

3    Con Ed's point where perhaps changing from Green Button would

4    be costly and duplicative.  But isn't it also costly and

5    duplicative to have all of the utilities implement this

6    individually?

7                    Might it not make more sense to do this as

8    one central data exchange at the state level?  Perhaps look

9    to competitively procure this then Google, I.B.M., Oracle, et

10   cetera could jump into the ring.  And then one solution is

11   there where all utilities transmit their data into this

12   central repository.  Then also that simplifies things like

13   oversight and enforcement because now you only have to look

14   at one entity rather than all the -- the individual

15   utilities.  Just want to throw that on the table for

16   consideration.

17                   MR. ELFNER:  Okay.  So I'm going to phrase

18   the question more -- more broadly, and to the extent that

19   people can contribute to answering Dan's question please --

20   please do so.

21                   The only cost estimate I saw in the whole --

22   in all the presentations was in Con Edison's where there was

23   a range of four to nineteen million dollars.  And I

24   understood, Michael, when you described that you described

25   that as that was based on benchmarking from other utilities.

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2              So I'm going to ask the question of -- have

3  any of the utilities done real-world estimates for -- for

4  what the base level of Green Button Connect would be -- would

5  cost in New York?  And then let's -- let's go from there.

6  And also want to see -- also in the context of responding,

7  could you also try to address Dan's question?  In

8  benchmarking, what else did you look at?

9              MR. MURPHY:  So let me first say, you know,

10  have we done the analysis that -- that -- that is required to

11  provide, you know, a firm estimate at this time?  No.  We --

12  we need to do that, you know, estimate in the future and

13  that's what we're proposing today that we take a chance to

14  fully evaluate this in a manner that we do with other system

15  -- system development projects.

16              At Con Edison we have robust processes to

17  step us through that analysis.  So, you know, outside of that

18  full analysis, all we really can do is look at our benchmarks

19  that we have out there.  And, you know, develop some high

20  level of understanding of what drove those costs.  And so for

21  Con Ed and O and R, you know, we've done a high-level

22  analysis and we think that the cost of implementation is in

23  the range of twelve- to fifteen-million dollars.

24              That would -- that would be providing the

25  Green Button Connect services for both companies.  And, you

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2   know, we think that -- that would require, you know, an

3   eighteen-month implementation.  So with the information we

4   have now, those are the estimates that I'm willing to

5   provide.

6                   MR. ELFNER:  Can you just clarify both.

7   Twelve -- fifteen for each company or total?

8                   MR. MURPHY:  Not for each.  The investment

9   would support both companies.  And, in fact, we would reuse

10  much of the implementation so, you know, to be efficient.

11                  I'll address quickly the point from -- from

12  New York.  You know, I can't say that I -- you know, we

13  haven't been sent here, asked to evaluate what it would mean

14  for a statewide data exchange.  I think that's a -- a -- a

15  different question.  I would want to make sure that lots of

16  folks internally at Con Edison and O and R took a look at

17  that and what that meant.  And, of course, would want to work

18  with all of our joint utility peers together to understand

19  that.

20                  So I don't really have a full response and --

21  and -- and a position on that.

22                  MR. ELFNER:  Okay.  So, Dan, I'm going to

23  just try to help you out a little -- a little bit in the

24  Track One my recollection it was a staff proposal in Track

25  One.  Staff proposed a data exchange to include among other

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2  things what you're discussing, and the vast majority of

3  parties thought that that would be very costly, inefficient

4  and maybe premature at this time.

5           So the Commission went down a track in the

6  Track One order of saying we haven't ruled it out but we're

7  going to try to explore other means in -- in the interim.  So

8  back to the utility cost data.

9           MR. BURNS:  Yeah, hello.  Thanks for the

10 opportunity to speak.  This is Marty -- I'm Marty Burns with

11 the National Institute of Standards and Technology.  I've

12 been involved in the Green Button with Chris since its

13 inception.

14           And I just wonder in your cost estimates did

15 you consider the open source reference implementation that's

16 -- that's free as a basis of implementing Green Button?

17           MR. MURPHY:  I'm not aware of an open source

18 implementation.

19           MR. BURNS:  Right.

20           MR. MURPHY:  We've reviewed -- our IT folks

21 have reviewed a lot of the protocols and the different API

22 standards that are out there that we can, you know, look at

23 and analyze to help us build our estimate.  But we have not -

24 - I have not -- I'm not aware of that.

25           MR. BURNS:  Sure.

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2            MR. MURPHY:  And like I mentioned, we have

3  not done a high-level analysis.  We're benching that those --

4  those estimates that I presented were based on benchmarks

5  with other utilities.

6            MR. BURNS:  Okay.  So London Hydro in Ontario

7  has implemented a -- a full Green Button Connect My Data

8  certification compliance service based on the open source

9  reference implementation that's available to any and all for

10  any purpose.  So I just mention that.

11            UNIDENTIFIED SPEAKER:  Do you have any of

12  their costs?

13            MR. BURNS:  I -- I don't but you might --

14  might be able to contact them.  A couple of other quick --

15  quick points.  Things that people may not be aware of.  First

16  of all, Green Button supports all utility measurements

17  including demand and -- and power factor and, in fact,

18  temperature and -- and gas and water.

19            There's also Green Button certification that

20  is -- is one level of oversight that ensures consistency of

21  implementation data as well as a guarantee that -- that the

22  PII constraints on Green Button data are not violated through

23  implementations.

24            There's also a community that works on Green

25  Button.  There's an ecosystem that includes an ANSI

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2   accredited certification process, a technical committee and

3   standards evolution -- ongoing standards evolution.  There

4   are extensions going into the standards process now that are

5   available for certification now, that includes full -- full

6   bill rendering and customer detailed information through a

7   separate API, so that it can't be mixed with PII information

8   that addresses a lot of the features that early adopters of

9   Green Button in 2011 have been desiring and are now at

10  maturity.

11              And then finally aggregation of Green Button

12  data is directly supported by the standard.

13              MR. IRWIN:  So just one thing I wanted to --

14  to add to the conversation because of the fact that there's

15  some due-diligence issues that are cropping up here.  And one

16  thing that I -- I want to do very assertively is to see the

17  New York utility participants active in the customer data-

18  access dialogue.  Active in the forums in which these tough

19  discussions are already being held.

20              I know that we're -- you know, customer data

21  accesses may be perhaps a budding issue in New York but

22  nonetheless is that to see the implementing utilities of REV

23  participating in NASBE where Green Button was born.  In the

24  UCA where open data exchange is actively being debated and

25  where they're shaping the characteristics of it.  And where

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2   they're debating the elements of restful implementation

3   versus some other perhaps more expensive things.

4              So to the extent that they don't have enough

5   information to contribute certain details here today, if they

6   don't get involved in those communities actively and

7   personally, they will continue to be under-informed on this

8   issue.

9              MR. BROOKS:  This is Cameron again.  I'll

10  back up what Chris offered here in terms of being active

11  participants.  And I think in the context of the Commission

12  discussions, any estimates that have been done or that would

13  be done in the future I think need to be brought forward in a

14  publically accessible manner so that they can be addressed.

15             The costs that are being presented right now

16  are -- are similar in scale to what it costs the state of

17  California to implement, and that was several years ago.  And

18  costs have only fallen since then.

19             The other point that I would offer is that

20  cost really only have a meaning in the context of the value

21  of the benefit.  So -- so these are really properly

22  considered as investments in the modern grid and the animated

23  grid that New York is looking to develop.  And while costs

24  that range into the single digit or tens of millions in -- of

25  dollars, certainly might sound high, and I know that I

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2   personally would cash that check when it showed up in my

3   mailbox, compared to the hundreds of millions of dollars that

4   are potentially available as benefits to consumers, one

5   percent energy reduction in the residential sector in New

6   York is a hundred million dollars.

7                    One percent.  Most of the energy feedback

8   companies that offer simple things like home energy reports

9   claim single digit percentages.  So now we're talking

10  hundreds of millions of dollars of potential customer

11  benefit.  And so I don't think that you can have a discussion

12  about cost, unless you're going to do it in an open forum

13  where you can also talk about the benefits.

14                   And the question to me is, what is New York

15  going to invest in?  You can't build a house unless you pour

16  a foundation.

17                   There's no way that New York can build an

18  animated market unless it pours a foundation into the data.

19  The customer data needs to precede every other value that's

20  going to come.  To me the costs that have been put forward

21  sound small compared to the benefit and compared to the

22  overall value of the asset base that we have in New York

23  State which is billions if not trillions of dollars.

24                   A couple million dollars here and there

25  doesn't sound like a lot to me.  That sounds like a really

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2   good investment.

3               MR. ELFNER:  Thanks, Marty.  So we've only

4   got a few more minutes.  Is there any -- any other

5   implementation questions that -- issues that people want to

6   address?  This is kind of a last call on this subject.  Go

7   ahead.

8               MS. LUBIN:  Hi.  My name is Heidy Lubin from

9   Utility API also to that end and I'll be very brief.  One of

10  the points we wanted to make about the benefit is, yes, you

11  know, there may be some costs but we've seen in our

12  experience that those have also been offset by savings that

13  have accrued to the utilities.

14              While some customers do want to use the call

15  centers, we've heard from both third parties, from customers

16  and some of the utilities themselves that this has been of

17  great assistance in managing some of the more specific

18  requests around third party data sharing.  And so, again, you

19  know, we -- we think we can potentially assist in -- in

20  implementing this very affordably but also that as part of

21  the conversation about cost, irrespective of our work that we

22  would respectfully ask that we weigh the benefits to the

23  utility in terms of current functionalities.

24              MR. HALLY:  I'd just like to talk a little

25  bit about benefits.  I think when we're talking about data I

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2   think data provides benefits in coordination with other

3   programs.

4                    And I think it's only fair to mention that

5   all the utilities in New York State have active energy-

6   efficiency programs.  Some of the utilities in the state have

7   behavioral programs that have features such as home energy

8   reports and -- and other things that are providing customers

9   with information that should provide savings and -- and do

10  provide savings in those service territories.

11                   So I think it's very difficult to say that

12  just providing data in one new format provides all these

13  benefits.  I think those benefits are through the provision

14  of data and the coordination of active energy-efficiency

15  programs that allow customers to save energy, and to

16  understand exactly what actions they can take to save energy.

17                   So I think it's the combination of those two

18  things.  I think it's data, but I think that data needs to be

19  actionable.  I think customers need to know what actions they

20  can take.  And I think those actions that they can take are

21  generally through the active energy-efficiency programs of

22  the utilities or NYSERDA or other agencies in the state --

23  and I think that's -- that's something important.  I don't

24  think you can count all the benefits just through the

25  provision of data.

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2            MS. SCHORR:  I -- I have a comment from New

3    York City.  Can you hear me?

4            MR. ELFNER:  Go ahead.  Please identify

5    yourself.

6            MS. SCHORR:  Okay.  Great.  This is Angela

7    Schorr from Direct Energy, and I just had a couple comments

8    regarding our experience with Green Button.  So we have

9    experienced in other states utilizing the Green Button

10   platform, and while we think it's a wonderful tool for

11   customers to access their data, it's not always the best way

12   for ESCOs or third-party suppliers to -- to utilize that

13   data.  And that's a concern that we have.

14            And it could just be possible that the way it

15   was implemented in other states that it was implemented

16   differently and -- and perhaps in New York it would -- it

17   would be -- you know, different.  I -- I don't know, but the

18   experience that we've had is that the data that we get from

19   the Green Button platform is not billing quality data.

20            And that becomes a problem because we are

21   selling all of these innovative products to customers

22   including time-of-use products.  And if we can't use that

23   data to build those products, then we have an issue.  The

24   other issue that we've experienced is with the customer

25   authorization piece of it.  When we sign up a customer we are

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2   getting them to sign, you know, documentation that gives us

3   authorization to their data.  But yet with -- with the Green

4   Button platform, the customer has to take an additional step

5   and they have to go and log in and assign their information

6   to a third party.

7               And while that doesn't sound like a -- like a

8   problem for a small customer, if -- if there's a large

9   customer that has multiple accounts, that could become a very

10  manual process and that could be time consuming and -- and --

11  and, you know, it also -- what if -- what if a customer signs

12  up for a time-of-use product but then does not designate

13  their ESCO, you know, to get that information.  You know,

14  then what happens in that situation?  So I definitely think

15  we have some things to think about and some things to work

16  on.

17              We are in favor of a combination approach

18  which would include EDI and perhaps some sort of file

19  transfer -- transfer protocol site where we could get the

20  data and where the data would be billing-quality data, and

21  where we could utilize the data to bill these innovative

22  products for customers.  Thank you.

23              MR. ELFNER:  Okay, Angela.  Thanks.  Anyone

24  else from New York City or Albany or Buffalo?  Well, I'm

25  going to -- I'm going to ask parties to -- to -- panelists to

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2  wrap up.  And Cameron wants to say something so I'll give you

3  another thirty seconds.

4                  MR. BROOKS:  Well, I just want to offer a

5  quick clarification.  There's nothing inherent in the Green

6  Button standard that requires customer authorization.  That's

7  specific to the implementation.  So it certainly is flexible

8  enough to be able to accommodate bulk authorizations, if the

9  Commission was to choose that route.

10                 MR. ELFNER:  Good.  Good, thanks.  So

11 quickly, can -- can each of you take no more than a minute

12 and just summarize what you think the -- what you would

13 recommend the Commission do next?  Not what the utilities do

14 next, but what the Commission do next.

15                 Is more information needed?  Should we wait

16 for AMI?  Those kind of issues in -- in as concise a format

17 as you possibly can.  Thank you.

18                 MR. IRWIN:  I'll conveniently gloss over some

19 of the hard issues for you, Doug, and just go to the factors

20 that when we -- when we consider sort of a go/no-go decision

21 on this, I don't -- I don't think the perspective is -- is --

22 reflects what REV is pursuing in terms of its basically a how

23 -- how do we go forward thing.  It's just simply leaving it

24 as it is is simply going to be insufficient to meet the needs

25 of the state regardless of -- of -- of REV itself.

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2              The second thing is the fact that I think

3    that we need to take a look at the -- the privacy issues and

4    solve those.  We've got active forums, of course, through

5    Data Guard.  And, of course, FC -- the F -- Federal Trade

6    Commission back- stops some of these enforcement activities

7    but it doesn't displace the sort of the local needs of

8    oversight that we're already talking about here.  So I think

9    we're in good shape.

10             The final observation that I had is that when

11   the -- when the Commission considers data access, as far as

12   I've been able to discern from this discussion is that EDI in

13   and of itself does not constitute direct customer access.

14   And that's a giant gap.

15             And so it's -- it's valid for a set of use

16   cases to be debated, but it seems to be invalid for the

17   discussion of customer data access.

18             MR. BROOKS:  Get my thirty seconds of

19   clarification.  So this is my minute of what the Commission

20   should do.  I think the Commission should do three things,

21   and I think we laid these out in our presentation.

22             First, the Commission should update and

23   clarify and confirm its already existing policies around data

24   access, and they should make sure that the customer clearly

25   has an affirmative right to their information and the ability

2  to share it.

3                Second, the Commission should require

4  implementation of the best practices available to achieve

5  what can be done today towards reaching that vision.  As

6  we've laid out, we think Green Button Connect is an existing

7  protocol that can and should be implemented right away.  And

8  -- and as a beginning to that process, any cost analysis and

9  benefit analysis should be started.

10               And, third, the Commission should integrate

11 these data policies into all other utility planning as it

12 goes forward which includes, in the case of the REV

13 proceeding, things like the distribution system

14 implementation plans.  In other proceedings presumably it's

15 easy to integrate how can these -- the -- the goals of these

16 proceedings work towards the established policy?

17               So those are three things I think the

18 Commission can and should do today.  There's nothing

19 stopping.

20               MS. HOGAN:  I won't reiterate, you know, the

21 security issues.  I guess the one thing with regards to the

22 voluntary code of conduct and where I think our UBP maybe is

23 insufficient is the notice and awareness.  And I'll probably

24 try to touch base with some of you folks after the conference

25 to understand better on how the Green Button really

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2    communicates the notice -- notice and awareness of what the

3    data is being used for and how it's being handled.

4                But I think more importantly, and it's

5    something that I've learned today is, first of all, how

6    little I know about computers and like the languages and the

7    acronyms that you folks use.

8                But, secondly, is that there's a cost

9    commitment.  And while it may be small we did hear that it's

10   putting us on a path and a direction.  And I just think we

11   need to understand the timing of making a decision in this

12   investment, and it's not to say that at some point we

13   shouldn't.  I certainly agree if not -- if something like

14   this is not implemented, it will be an impediment.

15               But the question is is are those investments

16   needed now or is it prudent to wait maybe a year or two and

17   rely on the antiquated processes that are viewed as

18   antiquated -- until maybe there are other -- other

19   advancements made?

20               So that's the one thing that I learned and I

21   think the Commission should take under consideration.

22               MR. MURPHY:  So, as I mentioned, you know,

23   Con Ed and O and R, you know, support data access for

24   customers.  You know, we do plan to continue evaluation of

25   Green Button Connect.  To me, you know, it's about the

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2   details and the outstanding issues that I noted, which I

3   don't think we fully addressed here today.  So I think in

4   terms of what the Commission should do, I think there --

5   there are, you know, probably two approaches.

6               You know, we can continue our evaluation and

7   specifically for Con Ed and O and R we can be, you know,

8   required to file an implementation plan that -- that proposes

9   how to deal with those issues.  Or we could have additional,

10  you know, discussions at technical conferences where we come

11  to some conclusion on those.

12              Because one -- one of the concerns that we

13  have is to the extent that those issues aren't identified and

14  we -- we show -- we have the details of what we are being

15  asked to implement, I'm concerned that they drive cost.  And

16  we need to answer those issues and -- and make sure we have

17  clarity at the detail level, what we are being asked to

18  implement.

19              As we've noted here today and as -- as many

20  of the folks around Green Button have noted, this is a

21  protocol and a standard but there's a lot of flexibility and

22  implementation and we need to address, you know, exactly, you

23  know, what we -- what are we being asked to evaluate.

24              MR. HALLY:  I think at this time we heard

25  that there's a lot of uncertainty.  We -- we heard that

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2   there's a lot of uncertainty about cost.  We heard that

3   there's a lot of uncertainty about the benefits of Green

4   Button Connect, whether it's a retail-access provider or

5   whether it's a customer.  So I think we heard that there's a

6   lot uncertainty.

7                    And I think that based on that uncertainty

8   it's probably a little bit premature to say that there's a

9   one-size- fits-all solution that we can enact today and be

10  one hundred percent confident that that was the right

11  decision.  So I think we need to learn a little bit more, and

12  I think we need to experiment.

13                    And I think at this point there's at least

14  one utility in the room that's willing to put together an

15  implementation plan, and I think we should learn from that

16  implementation plan.  I think we should do some fact finding

17  and -- and use that almost as a demonstration project within

18  the state to learn information that we need to know.

19                    I think that we also need to really

20  understand the data needs that each third party has within

21  the state.  And I think we need to really take a close look

22  at that to ensure that we're really fitting all of those data

23  needs into whatever standard we go forward across the state

24  so that we're not revisiting the standard and -- and

25  constantly spending more money or upgrading a platform that

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2  might not have been built to suit those needs originally.

3              And then I think we should probably take some

4  time to inventory the -- the ways that we are providing

5  customers with access to their data today.  I don't think

6  everyone has a full understanding of what the current methods

7  are or what customers can see today or how they can access

8  their data today.  Or even the tools, you know, built into

9  just Excel today, that customers have access to that they can

10 pull data from, you know, charts on -- on the Internet pretty

11 easily, and then manipulate that data however they'd like.

12             So I think there are things that we probably

13 need to understand and -- and pretty low-tech solutions to

14 some hurdles.  And then I think that at the end of this we

15 should look at cost-benefit analysis.  And we should really

16 understand the cost of implementation, and then we should

17 really understand the benefits and understand how closely

18 they may or may not be tied to other technologies such as

19 AMI.

20             So if a utility is not deploying that AMI is

21 Green Button Connect better than Green Button Download My

22 Data.  I think, you know, in Central Hudson's opinion, Green

23 Button Download My Data would be the way to go in that

24 scenario.

25             MR. ELFNER:  Good.  Thanks again.  Thanks to

2   all the panelists and lots of very -- very informative

3   question -- very helpful questions from -- from the other

4   attendees.  So we're taking a break.  We'll be back at one

5   thirty.  See you then.

6                    (Off the record)

7                    (On the record 1:35 p.m.)

8                    MS. PALMERO:  Like to get started.  So if

9   people could please come into the room and take a seat we can

10  get underway with the second panel.

11                   Thank you.

12                   All righty.  Again, my name is Tina Palmero.  I

13  am an acting deputy director in the Office of Clean Energy in

14  the Office of Markets and Innovation.

15                   We're going to be continuing our discussion on

16  customer data, but now in the aggregate.

17                   There are a number of initiatives going on here

18  at the Department through the REV proceeding and also at other

19  agencies where aggregated energy usage data would greatly

20  facilitate energy planning for communities and municipalities

21  to manage their energy usage and bills, promote wider

22  deployment of distributed energy resources and increase

23  participation of and benefits for residential and small

24  nonresidential customers in those markets.

25                   While high level aggregated customer energy use

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2   data has been provided by the utilities for various

3   initiatives, which we will hear about today, there's also

4   questions on the need and support of the utilities to provide

5   this data on a more statewide basis perhaps, updated

6   periodically and in an easy to use format to, again, help to

7   facilitate good community and municipal energy planning

8   efforts.

9                   We're going to be hearing from a group of

10  panelists who have either engaged in initiatives where data --

11  aggregated data was needed or used.  And we're going to be

12  hearing from the utilities on their thoughts about providing

13  this data and all the issues that go along with that.

14                  So starting on my left our first panelist is

15  Jen Manierre.

16                  Jen is a project manager in the Communities and

17  Local Government Group at NYSERDA.  She was the lead manager

18  for NYSERDA's recent Climate Smart Communities Regional

19  Coordinated -- Coordinators Pilot Program.  She also works on

20  Phase Two of New York State's Cleaner Greener Communities

21  Program which provides competitive grant funding to projects in

22  New York State that support the regional sustainability goals

23  identified during the Phase One of the sustainability planning

24  process.

25                  Next to Jen is Jim Yienger.  Jim is a principal

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2   of Climate Action Associates, a Capital District energy policy

3   and planning consulting firm that recently served as a Climate

4   Smart Communities coordinator for NYSERDA.

5                    Jim has worked with communities and utilities

6   on data development for advanced energy and sustainability

7   planning for fifteen years.

8                    Next to Jim is Mike Gordon.  Mike is the

9   cochair of Sustainable Westchester and is the C.E.O. and

10  cofounder of Joule Associates -- I'm sorry, Joule Assets

11  Incorporated.  In his role of Sustainable Westchester, Mike has

12  been instrumental in fostering progressive opportunities for

13  New York State municipalities such as the recently approved

14  Community Choice Aggregation Program.  So we're going to be

15  very interested in hearing about his experience getting that

16  program together.

17                    Next to Mike is Marc Webster.  Marc is the

18  manager of Retail Access Customer Satisfaction and Appeals for

19  NYSEG and RG&E.  Marc has been with NYSEG and RG&E for the past

20  twenty-one years, and in the energy industry for twenty-seven

21  years.

22                    And in addition to his current role, Marc's

23  experience includes rate design, cost of service analysis,

24  forecasting, metering and billing.

25                    And finally we have Mike Novak.  Mike is

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2   assistant general manager for National Fuel Gas Distribution

3   Corporation and within National Fuel Gas, Rate and Regulatory

4   Affairs Department, Mike is responsible for federal regulatory

5   affairs.  His career at National Fuel includes positions in gas

6   control, gas supply administration and transportation services

7   among other things.

8                    So, panelists, welcome.

9                    We're going to start with Jen, and you will

10  have ten minutes and we will give you the two-minute buzzer and

11  which will be a ding on Kelly's cell phone.  So that is just to

12  let you know that you will have two minutes remaining.

13                   Thank you.

14                   MS. MANIERRE:  Thank you.  Can everyone hear me

15  okay?  Yes.

16                   I'm Jen Manierre, and I'm a project manager at

17  NYSERDA's Communities and Local Government Group.  NYSERDA has

18  been working with communities for many years now, but in the

19  past four years or so we've become more intimately involved

20  through both the Climate Smart Communities and the Cleaner

21  Greener Communities Programs.  Both of those programs as well

22  as some if not all of the new programs that we're planning

23  under the clean energy fund require some level of access to

24  energy data in order to be successful.

25                   We would like to propose that aggregated

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2  community level utility energy use data is needed to help

3  communities and New York State plan for, implement and track

4  progress of clean energy initiatives associated with Reforming

5  the Energy Vision or REV.

6              To illustrate how we came to this conclusion,

7  I'd like to give you a little bit of background on what we've

8  done with respect to aggregated or what we might call

9  exploratory energy data so far.  And when I say exploratory I

10  mean it's in the public interest and it's the type of data

11  that's needed prior to even beginning to think about planning a

12  project.

13              Later on I'll talk about what I'm going to

14  refer to as implementation-level data which is what the more

15  detailed custom data and analytics needed to make a project

16  actually go forward and be successful.  So back in about --

17  around 2012 both the Cleaner Greener Communities and Climate

18  Smart Communities Programs were in the process of developing

19  regional greenhouse gas inventories, many of which had

20  breakdowns to the municipal level and to lay the foundation for

21  these programs we did those inventories.  And that foundation

22  is the baseline from which we could strategize and against

23  which we would measure progress in the out years.

24              There was one major sticking point though to

25  ensure high quality bottoms-up inventories and accurate

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2    municipal breakouts we needed raw but aggregated utility energy

3    use data for every community.  To avoid inundating the

4    utilities with one of request from each community, NYSERDA

5    worked with the utilities to develop a standardized reporting

6    format that would only need to be generated one time saving

7    time and money for NYSERDA, the communities and probably most

8    importantly, I think the utilities.

9                   That process also ensured that all the data

10   that we got was relatively consistent.  Access to this data

11   proved valuable enough to communities that they continued to

12   request it in the out years, and many utilities were happy to

13   continue their support and allowing NYSERDA to serve as sort of

14   a broker for the data.

15                  So, in fact, today many utilities have been

16   voluntarily providing NYSERDA with this information ever since

17   that original effort, even in the absence of a formal policy.

18                  One utility in particular has even gone from

19   generating the data via manual queries to creating an automated

20   query that essentially produces the data we are looking for

21   with a click of a single button.

22                  So in addition to saving time and money, we

23   think the utilities that have been participating so far are

24   also participating because they genuinely want to be a partner

25   and help the state realize its clean energy goals.  We'd like

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2   to thank these early adopter utilities that are helping the

3   state move toward a clean-energy future.  It's been great so

4   far.

5                     So but despite some of that progress made, the

6   data collection was still a major challenge during the more

7   recent five cities energy planning process.  All of the

8   affected utilities demonstrated a willingness to be strong

9   partners throughout the process, however, much of the needed

10  data took significantly longer than expected to receive due to

11  a number of things.  The availability of the data or the

12  resources to collect the data within the utilities, so perhaps

13  the ease of using internal systems to pull the requested data.

14                    The ability to provide it for security reasons

15  or other concerns such as giving the data to a consultant, lack

16  of standardization of the data, what geographic area was

17  requested, what level of data, how many years, et cetera which

18  all added to the complication of the request.  Some of this is

19  likely due to the fact that the five cities needed additional

20  types of data.

21                    Perhaps more implementation level on top of

22  what we needed originally for the regional inventories.  But

23  it's also possible that some of the difficulty was due to

24  different staff working on the requests and not knowing about

25  the previous work that was done.

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2  For example, one of the five cities told us

3  that they received data by zip code but had difficulty teasing

4  out how the zip codes overlapped their city boundaries, and

5  this is one of the issues we had already mostly solved with

6  some of the other utilities.

7  So while we aren't at least not immediately

8  aiming to solve every single issue associated with updating all

9  levels and types of data, it's clear that some sort of

10  standardized process here would have been a big fat time saver

11  for the cities and it seems also the utilities as well.

12  So to ensure that communities continue to have

13  access to this important data, we need to standardize and

14  institutionalize a process for utilities to generate and report

15  aggregated community-level energies data at least at the

16  exploratory level.  That very basic stuff we talked about

17  before.  It also needs to be made publically available so that

18  NYSERDA does not have or some other entity does not have to

19  continue to serve as a broker of the data which adds an

20  unnecessary layer of complexity.  And standardizing and

21  institutionalizing the process will also protect the integrity

22  of the data.

23  This more exploratory aggregated electricity

24  and natural gas usage information, it's important for municipal

25  leaders to understand how their communities are using energy,

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2   where and how they might most effectively implement efficiency,

3   renewable energy and community choice aggregation efforts.

4                    It's also a simple way for them to track

5   progress over time and compare similar communities to one

6   another.  It's also valuable to NYSERDA as we aim to be more

7   responsive to the market in our programs.  Having access to

8   this information helps us to target high potential communities

9   and also to see the effect our strategies are having in

10   different areas.

11                    This is the type of information that will allow

12   us, NYSERDA and the state to adjust our strategies over time to

13   be more effective.  It will also make it easy to see which

14   communities or regions are on track to meet our eighty by fifty

15   goals and perhaps offer targeted assistance to those that

16   appear to be need it.

17                    We think the following attributes or

18   recommendations would help to ensure the most meaningful data

19   if we go through with this.  And, again, here we're really only

20   talking about that basic exploratory level of data, not the

21   really detailed stuff that you need to actually implement

22   projects.  We recommend a geopolitical roll up so a village,

23   city, a town and county of aggregated service classification

24   specific data.  It should include privacy rules to make sure

25   that confidential customer data is not released, of course, and

1

2  the data should be in a standardized format.

3              Should probably be reported annually, perhaps

4  with a monthly breakdown.  Should be mandatory.  Should be

5  publically available.  Should be accessed through a single

6  portal and communities should not have to pay a fee for access

7  to this particular level of data.  And, again, these are our

8  recommendations.

9              And, of course, and I'm sure you're thinking

10 this while you're looking up here right now, there are pros and

11 cons associated with all of these attributes, so in the next

12 slide we'll go over some of those pros and cons and offer

13 potential solutions to them.

14             Nobody can read that, but I think we may have

15 access to the slides afterwards if you're interested in digging

16 down a little deeper.  But my comments are just going to

17 address the attributes going down the list and sort of

18 summarizing what's in there anyway.  So to address the first

19 attribute, only asking for data that's rolled up by

20 geopolitical boundaries, protects individual customer privacy.

21 It gets local governments enough information to start planning

22 for their clean energy futures and allows the state to have an

23 additional tool to track progress to our eighty by fifty goals

24 and also to adjust our strategies as needed.

25             For larger municipalities though, a higher

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2   level of resolution might be more meaningful.  Implementing

3   privacy rules such as the four eighty rule which allow for

4   optional -- while allowing for optional zip code level

5   reporting would allow for detailed enough data without

6   compromising privacy.  The four eighty rule is an example, if

7   you're not familiar with it, says that if four or less accounts

8   make up eighty percent or more of the energy use in any given

9   sector that sector gets rolled up into a new one until that new

10  bucket passes the four eighty test.

11              Second, annual reporting is relatively easy we

12  think and provides the minimum resolution of data needed for

13  clean energy planning.  However, it won't high light any

14  seasonal outliers and so entities needing a higher resolution

15  could simply pay for access to that additional data.

16              Similarly, if we were to require monthly

17  reporting it would ensure higher resolution data but would be

18  more burdensome for utilities to produce on an ongoing basis.

19  We'd suggest only asking for monthly data to be published on an

20  annual basis.

21              In order to ensure that we have a consistent

22  quality picture of community energies across the state, it

23  would be best if reporting this data was made mandatory.  The

24  data is in the public interest.  However, utilities will need

25  to develop the capacity for this reporting, much like we heard

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2    this morning, which will certainly take time and money.  So the

3    state could collaborate with utilities to generate automatic

4    queries that produce the requested data, like I mentioned one

5    utility was already able to do.

6                    Because this data is in the public interest, we

7    think it should be made publically available, and this

8    eliminates the need for utilities to respond to one of requests

9    and could even spark competition among municipalities with

10   respect to reducing energy use.

11                   We do realize, however, that some communities

12   do not want their data public regardless of the reason, and

13   there should be a way for those communities to opt out, while

14   hopefully still allowing the state access to the data for

15   program planning purposes.

16                   Making this data accessible in a single portal

17   makes it easy for all parties to access it.  The model could be

18   replicated to other states and even has the ability to become

19   self-sustaining as a nonprofit or some other business model.

20                   Of course that means we need a dedicated entity

21   to develop and manage such a portal, and we actually have a

22   prototype of a potential model already developed and

23   functioning.  So we know it's at least possible to do this.

24                   Climate Action Associates, sitting next to me

25   here, through their NYSERDA's Climate Smart Communities

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2   contract has been developing an online registry to which

3   utilities could upload their data in a standardized format and

4   from which communities could easily download or view their data

5   by filtering for year's energy sources, utility, geopolitical

6   boundaries and a number of other things.

7                    The prototype is functional, like I said

8   before, and it's already prepopulated with whatever utility

9   data we already have from the effort that I discussed earlier.

10  However, the registry is not yet public and I'm not going to

11  talk about it too much because you're going to hear about it in

12  a few minutes from Jim Yienger of Climate Action Associates.

13                   And, finally, because this data is, again, in

14  the public interest, NYSERDA believes that it should be made

15  available for free.  Access to this basic exploratory level of

16  data has the potential to increase or create demand for a more

17  detailed implementation level data and analysis for which

18  utilities could charge a fee.  We realize that providing it for

19  free could somewhat limit the available sources of revenue for

20  utilities, but we also believe that if support is available to

21  utilities to develop the initial queries, the resulting demand

22  for more fee-based implementation data will more than make up

23  for it.

24                   And perhaps most importantly, access to energy

25  data will help to ensure success in New York's Reforming the

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2  Energy Vision or REV.  Almost done.

3                    So community participation in particular in REV

4  requires access to data that has been historically unavailable.

5  They need to be able to see how they measure up against their

6  peers, they need to be able to see their own largest energy

7  using sectors and track their own progress over time.

8                    For the state to be successful, we need access

9  to data to inform our program development, effectively target

10 our marketing efforts, design our implementation programs,

11 track success or perhaps lack thereof sometimes over time and

12 adjust accordingly.

13                   So like I mentioned before, in this

14 conversation right now, we're really only focusing on some

15 basic demographic or exploratory level data needs.  But going

16 forward it's also important to keep in mind some other related

17 issues, so I'll -- I'll tee some of those up as well.  Like I

18 said, while not a focus here right now, communities will also

19 eventually need a way to access other data such as load profile

20 information, energy cost information, renewable energy

21 interconnection data and customer analytics.

22                   For example, perhaps the percent of customers

23 in their community that are being served by ESCOs.  That type

24 of more specific information will also be instrumental in

25 facilitating community choice aggregation, implementation and

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2  microgrid development and will give the states and communities

3  a more complete energy and emissions picture.

4               So regardless of whether or not publishing

5  certain aggregated data becomes mandatory or remains voluntary,

6  we, NYSERDA, hopes to continue working with utilities to

7  explore pushing more and more of this demographic or

8  exploratory level energy data into the public sphere.  We view

9  this as a relatively simple and necessary first step in a two-

10  step process of first equipping communities with the

11  information they need to get started.  And, second, figuring

12  out the best way to provide the more detailed information or

13  that implementation level data that communities need to make

14  decisions and be successful in reforming the energy -- energy

15  vision.

16               That's all I have.

17               MS. PALMERO:  Thanks, Jen.

18               MR. YIENGER:  Hello.  Thank you and thank you

19  to the Commission for inviting me to present today.  I'm going

20  to talk a little bit more and expand upon what Jen just

21  presented and give more details about the aggregated energy

22  data project that we've been working on for the last couple

23  years.

24               So first, to -- to reiterate what Jen has

25  already said, this is a very exciting project.  This was a

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2   first in the nation attempt to work with -- voluntarily with

3   our utilities.  And, again, I express my thanks to the

4   utilities for being very supportive of this effort.

5               All the utilities that we approached about this

6   did agree to engage.  And the basis of the -- the project was,

7   as Jen said, we -- there was a tremendous need for policy-

8   relevant aggregated energy data to support local governments,

9   regional governments and planning all throughout the state.

10              And we've -- we've come up with a process now

11  in which we think we can automate this and solve this moving

12  forward.  And given the fact that we've had such good voluntary

13  engagement already, we're very hopeful that this continued --

14  can continue to move forward with as less regulation as

15  possible.  So we think we should leverage the fact that we've

16  had voluntary engagement to try to continue that before

17  necessarily trying to create too many rules about it.  But what

18  obviously is for -- for discussion.

19              In our opinion -- slides are out of order --

20  having worked on this voluntarily so far with utilities, there

21  is a question on whether or not they should be paid for data,

22  and I know that is one of the questions.  Our opinion has

23  evolved and we're in favor of the idea of utilities creating a

24  revenue center with their data.  We have no problem with that

25  at all.

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2                    What we've seen naturally though is we think

3    the market's going to evolve around the idea of energy

4    demographics, which are what Jen has just spoken about, which

5    are aggregated forms of energy, information about how

6    communities are performing.  These are likely to be provided

7    free of charge or at nominal costs just due to economies of

8    scale.  Trying to deal with these requests from public

9    officials or private officials for these kinds of information

10   will likely be provided this way.  It is the standard around

11   the country.  Data like this is transacted routinely and in New

12   York and throughout the country.

13                   The issue now is just making it more effective

14   because large -- you know, if we move within the REV framework

15   to localize the DNA of energy use in this country we're going

16   to have to make energy information and demographics available

17   and open to the maximum extent possible.  These metrics will be

18   critical for -- in driving local policy decisions.

19                   Now, again, having said that, we certainly see

20   the advent route for why there would be a -- a significant

21   commercial tiers for data where there's lots of transactions,

22   customer accounts, thousands of customers, you know, being

23   aggregated in one way or the other.  Absolutely we think there

24   could be a market-based approach for that.

25                   For demographics we think it's likely going to

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2   be better for utilities to voluntarily work together as you

3   have to define what those could be.

4                    So it sometimes helps to visualize the problem

5   when you think about aggregating data and -- and the -- and the

6   complexity of this.  If you look at this figure here, all those

7   little boxes represent the thousand local governments, the

8   municipalities and private organizations and counties that

9   represent them and whole bunch of tiers of complexity.

10                   Without any sort of centralized process, what

11  has typically happened, and this is the standard around the --

12  the country, is that it's just a random transaction of -- of

13  people and representatives reaching out to the utility customer

14  service line, trying to find something, making requests that

15  aren't consistent with each other and the utilities.

16                   You guys have to deal with this.  It's very

17  transaction heavy and expensive to -- to figure it out.  And

18  it's -- and ultimately what we found is there's good will on

19  both sides.  Utilities we found generally have been supportive

20  of their communities and have done it.  It takes time, and

21  ultimately if you look at this figure, you can realize that the

22  data that comes out of this will never be good.  It will never

23  be consistent.

24                   And as much as you want to base your policies

25  on this, it's never going to be high quality year after year.

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2   You need a process to take out this complexity and move it into

3   a -- into a better way.

4                   And that's what we did when we started this

5   process.  We -- we decided -- if we're going to do this

6   voluntarily we need a win-win proposition for everyone.  We

7   can't just say you have to do this.  We didn't have the

8   bandwidth to do it.

9                   So how we did it is we worked together with all

10  the regional planners, all the local communities through

11  Climate Smart representing hundreds if not thousands of policy

12  makers, and we said, okay, hold -- hold your horses.  We know

13  you want your data but don't go after your utilities.

14                  Don't go pester them right now.  Let's -- let's

15  create value for them and we step back, decided let's organize

16  a common ask and that's what we did.  We said -- we sat down,

17  we said here's the -- the demographics that we want.  Then we

18  organized a working group of utilities.  Reached out to the

19  executive and then to the technical groups and then separately

20  vetted that -- that list and let them in the comfort of their

21  own space decide what could be done.

22                  And they lined item off several things that

23  they just didn't feel were possible.  Fair enough, this is

24  voluntary.  And we ended up agreeing that revenue class based

25  aggregations at a city, town and -- and village level would be

2   adequate.  And we figured out technically how to do it.  There

3   were obviously challenges, we know with the tax IDs.  And we

4   worked with your utility in particular a lot on this.  And,

5   yes, and so there were challenges in doing it.  But we moved

6   forward and started producing the data.

7                   And what was important here is that it was a

8   win-win in the end.  I think everyone felt that this was the

9   best way to move forward.  So there's obviously advantages to

10  centralizing this.  As I've said, you're just going to create

11  better data.  A utility can transact all of this on one shot,

12  one time, one instance in one year and produce enough data

13  that's adequate for demographics for the whole state, as

14  opposed to responding one off and trying to do it that way.

15                  And, as you can see, this figure here shows --

16  and it's a small figure, but this is the -- the number of

17  utilities that serve each community.  And you can see several

18  hundred of them have two, three or four utilities.  And just

19  imagine trying for them to transact independently with their

20  utilities to get data that even is consistent.  So you can see

21  the big data problem that has emerged here.

22                  So the issue here and -- and we know this is

23  outstanding, data privacy is an issue.  We're an advocate for

24  making this open as open as possible.  However, we realize

25  there is data privacy issues.  We've worked on this for twenty

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2   years around the nation, and -- and we've never seen an

3   instance of data provided this way that's been reverse

4   engineered in a way that's compromised privacy.  Now that

5   doesn't mean it's not possible and we should move forward with

6   caution.  But we should take a stance where we move forward

7   with this with caution as opposed to being too worried about it

8   and not moving forward, just because the market needs this

9   information right now.

10                  And so our opinion of -- of privacy, because

11  we've done this voluntarily, is perhaps the Commission make

12  recommendations on what privacy might be, but provide leeway to

13  the utilities to decide what's appropriate for them to do on

14  their -- their side.  Because we've seen such good volunteer

15  engagement, we're comfortable recommending that.  This -- this

16  case, for example, if a utility has small communities that may

17  be concerned about releasing private data that, for whatever

18  reason, they would then have the leeway to withhold that.

19                  We think over -- on the way this has moved

20  forward, most of the state will get data anyway and it will

21  evolve naturally that way.  And so we don't -- we're not in

22  favor of restrictive privacy rules just from our experience on

23  this.  We're not in favor at all of those save for the

24  Commission implementing a rule where community must formally

25  request the data through a process with DPS involved.  It just,

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2   again, adds a lot more, in our opinion, unnecessary bureaucracy

3   in the process.

4                We've demonstrated this can be done easily and

5   simply with zero transactions of anybody involved.  And that we

6   think is going to be the best moving forward.

7                We're going to show you some screen shots of

8   the actual application.  It's fully live now.  It has data for

9   thirteen hundred communities in it, but we can't show it live

10  because the laptop doesn't allow it.  But we can demonstrate it

11  in our other laptop for those who want to see it later.

12                We think -- this slide here, we think there's

13  strong possibilities to -- to move forward with this in the

14  future with an independent nonprofit like the smart grid

15  consortium where utilities can engage voluntarily on this with

16  stakeholders to continue to drive the discussion on what is

17  needed out there.  And then they in their comfortable space can

18  decide what they can actually do on their time frame and engage

19  in a way that makes sense.

20                This data issue is ongoing and it will not be

21  solved in one specific rule.  And so we need to address the

22  fact it needs to continuously update.  So does that one minute

23  -- do I have a one minute warning?

24                MS. PALMERO:  No, you -- that's your three

25  minute warning.

2                   MR. YIENGER:  Oh, I have a three minute

3   warning.  Nice.  Nice.  So as I said, we have a live version of

4   this running on my other laptop, but we'll do some screenshots

5   of the actual thing.  I'm going to throw in real fast in

6   fifteen seconds, we would recommend the Commission consider

7   adopting or developing a roadmap for data, ten year and two

8   year increments.  Largely having worked with our utilities, we

9   now -- we know that they're routinely updating their

10  infrastructure for their own purposes, for their own

11  efficiency.  And if they have some objectives in place that

12  everyone has agreed on, they can then incorporate those as part

13  of a routine update as opposed to trying to respond to a

14  mandate.  But that would just be sort of an idea.

15                  So, finally, here's an example.  The

16  application is at Utilityregistry.org.  It is password

17  protected so it is not open right now but it does contain quite

18  a lot of data in it.  And so we have an example -- this is an

19  example of -- of communities can see if they went in here what

20  utilities have provided information and if the utilities that

21  they're serving are participating they're light -- lit up as

22  green so a community can go in and say, hey, our utility's

23  giving information.  We -- we -- we appreciate that and -- and

24  we -- we respect that.

25                  And then you can go into the application and

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2   see very granular.  You can zoom in and look at layers of

3   energy by revenue class, residential, commercial, industrial

4   broken down into whether its zip codes or -- it's very flexible

5   so that communities or counties or census tracks, however it's

6   been provided.  And you can go through and take a look at the

7   different kinds of demographics are available.

8                    This is an example of it is a registry.  It is

9   not meant to make up data.  And so if data has been provided,

10  it's in there.  If it hasn't been provided it's not.  And this

11  is an example of the -- the picture before was two thousand

12  four ten which we have all the data for 2014.

13                   We haven't received an update from Central

14  Hudson, Orange and Rockland and -- and P Seg.  Not because they

15  haven't been willing, but we literally have been so overwhelmed

16  with trying to get this going we haven't even reached out.  So

17  it's not a -- that's not an indication of -- of lack of

18  willingness.  But we just haven't had the bandwidth.

19                   But it's to show you that if data's in there,

20  it's in there.  If it's not, it's not.  So you can filter.

21  Here's National Grid's service territory.  It shows you -- I

22  think this is -- it's hard to read it, but it's -- it's

23  residential in this particular case.  You can then zoom in and

24  roll over and look at an individual community, and this is

25  where the real value is.  You can click and look at trends.

2              And so here's an example.  Saratoga Springs,

3    natural gas usage.  You can filter by revenue class.  They can

4    see, you know, obviously they're -- you know, it's varying by

5    weather and whatever, but the point of the registry is not to

6    tell the story but it's to provide the information to policy

7    makers that can then tell the story and act on it.

8              Here's an example of Rochester.  They have a

9    energy plan funded by NYPA.  Their electricity use is trending

10   down last five years.  I have no idea why.  Again, it's not my

11   job to tell the story of why that's happening, but we are

12   making the data transparently available for them to -- to be

13   able to validate those plans, et cetera moving forward.

14             Here's an example, our registry is completely

15   flexible in all dimensions.  You can publish monthly data to

16   this.  This would be a monthly stream for -- for city.

17             Ultimately it could be interval or daily.  But,

18   again, we see this as a -- as a -- an evolving thing.  Here's

19   an example of National Grid's gas data for Brooklyn and Staten

20   Island.  This was published at a zip code level.  Again, this

21   is far more granular than a city.  Obviously, New York City is

22   -- is big.  And so this data is available when we talk to them

23   at a -- at a zip code level for -- for certain parts of their

24   service territory.

25             And, again, depending on how this rolls out, if

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2  we can figure out how to make this available working with our

3  utilities in some way, we would imagine the data then could

4  just be filterable.  Here's a grid of it.  This literally is

5  downloadable the way it's configured right now.

6               And then finally we've automated all the -- you

7  can log in as a utility and all of this is completely

8  automated.  You can go in, set up your service territory, click

9  on your communities.

10              Go through and then just literally say, okay,

11 I'm going to publish 2010 data.  You click on a template,

12 download it.  It's completely preformatted and everything is

13 defined.  You prepare the data, click upload and it shoots it

14 back in the system.  The data -- the model is -- is -- the --

15 the data model is so awesome.  This was designed by the -- the

16 now principal engineer at Amazon Corporation who's a friend of

17 mine who did it pretty much as a favor.  He got a little bit

18 out of it, but pretty much a favor.

19              And so there's a lot of data brainpower back

20 here in how to -- in -- in having had, you know, trying to

21 figure out how to make this work.  So anyway with that I think

22 I'm out of time.  I appreciate it.  We have a live demo of this

23 thing, so if anyone's interested we can show it when we're

24 done.

25              (On the record)

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2              MR. GORDON:  I'm going to challenge you,

3   because I -- our presentation is really just for people to look

4   up later who's going to be popping around throughout different

5   slides in this presentation. So you can always refer to it

6   later online, but I'm just going to, you know, tell the story

7   of -- of, you know, where we are and some of the challenges we

8   face.  And as well, some of our perspectives on some of these

9   issues.  Sadly, I will not confine myself to aggregate because

10  I do think those two issues, individual and aggregate are

11  interrelated.

12              So just I'm Mike Gordon.  I'm cochair of

13  Sustainable Westchester, you know.  Just as an orienting piece

14  -- well, we are deeply engaged in Community Choice Aggregation.

15  Deeply engaged in ten microgrid feasibility studies, and a

16  couple of quick thank yous.

17              One, thank you very much for inviting us here

18  today.  Appreciative for this opportunity.  And I as well want

19  to say that throughout this Community Choice Aggregation

20  process, the utilities have been -- while we do not agree on

21  everything, the utilities have been remarkably cooperative.

22              And I think that as we move along you'll see

23  that we have a lot of interests aligned.  We think there's

24  value that utilities can get from this process from the

25  Community Choice Aggregation as well as microgrid process, and

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2  we feel that -- that that value clearly will be more than

3  shared by our consumers and municipal base.

4                    Sustainable Westchester is a membership

5  organization.  Dues paying members forty of the forty-four

6  municipalities in Westchester County are members of Sustainable

7  Westchester.  The focus of Sustainable Westchester is to

8  collectively reduce our greenhouse gas emissions to identify

9  and take advantage of synergies and as well to create a -- a

10 sustain -- an -- an enriched sustainability economy.

11                   And so -- so just quickly with respect to

12 Community Choice Aggregation, we got an order -- we petitioned

13 in December of last year we got an order allowing us two pieces

14 of relief from the Uniform Business Practices on February 26th

15 of 2015 allowing us to create a Community Choice Aggregation

16 entity.

17                   We are going out to bid by my estimate on

18 January 19th.  The expectation is that we will go out to bid

19 with roughly a hundred and fifty thousand homes and businesses

20 in Westchester County.

21                   It will be the first CCA in New York State and

22 -- and we're -- you know, this is -- I want to underscore that

23 the -- the planning process and a lot of these decisions have

24 to be made with gravity.  Meaning that you get far deeper

25 engagement in the planning process if you're actually working

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2   through issues that are going to have some impact.

3                   You can ask people where they stand on an

4   issue, they won't engage.  If you're going to change their

5   electricity supplier, they will engage.

6                   And so I think it's critical learning as we go

7   forth in the -- in the entire REV process to allow that

8   parallel track of action connected with planning.  And I think

9   that's a critical piece of the learning to date.

10                  So we look at these data issues with a kind of

11  matrix.  So we -- we see it akin to what the Commission and --

12  and the DPS sees this as, we see it as individual data and

13  aggregated data on one hand.  And then we see a continuum as

14  well with static and historical data, and then real time data.

15                  So that's kind of the way we think of it as an

16  overarching.  And we'll explore -- I'll explore just basically

17  where we stand on a lot of these issues with respect to cost

18  and -- and access.

19                  So I'll give you an example of a current

20  challenge that we're facing.  And I think it will inform some

21  of our -- our issues.  We, as an organization, don't really

22  want to touch individual data at this stage.  We don't want it.

23  It is more of an exposure than it is an opportunity.

24                  So here we've got this aggregated data of a

25  hundred and fifty thousand customers, which one of the Uniform

1

2   Business Practices relief is that the Commission ask the DPS to

3   then order the utilities to turn over to us first aggregated

4   and then individual data.

5                    But the utilities were asked to turn over

6   aggregated data, and that's of all the people who are buying

7   bundled currently.  And that's a superset of those who will not

8   opt out and participate in Community Choice Aggregation.

9                    And so the idea is that those folks who are

10  going to opt out, those are the sensitive folks with respect to

11  the -- the data.  And the utilities have been quite sensitive

12  with respect to -- we don't just want to dump all of that data

13  with your winning ESCO including people who are eventually

14  going to opt out.

15                   So I think it's a -- it's a critical getting

16  from that superset to that subset which is going to be roughly

17  eighty percent of that superset, is a critical challenge.  And

18  that's where we may well need a -- a separate data authority or

19  perhaps, you know, with cyber security who will then destroy

20  the data of those who -- who end up opting out.  I think that a

21  lot of the challenges come from that, and that's one of the

22  things that we've learned in the doing.

23                   And -- and -- and more generally with respect

24  to cost there, we're paying seven cents now.  I think we paid

25  you.  I don't know whether we have, but you will.  You will

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2    you'll get it.  I don't think you've invoiced us yet actually.

3                    But -- but we'll pay you within reasonable time

4    from the invoice.  But -- but that -- but we're paying seven

5    cents for the aggregated data per data record.  It's based on

6    the data records, and then we're paying sixty-five cents once

7    we actually get a contract and are ready to go to contract for

8    the individual data to -- to -- to be transferred.

9                    So generally I would say that what we're

10   looking for is we're looking for to be billed value based.  So

11   the fact that if we don't come to successful contract, we'd

12   prefer not to be billed the seven cents at all ultimately.  Now

13   we can afford it.  We're a membership-based organization, but

14   many entities in the state may well not be able to afford it.

15                   So generally I would like to see the actual

16   billing happen when the value is assured.  I think that's a

17   critical piece.

18                   Now the utilities are also concerned with --

19   with liability here and for good reason.  I think liability is

20   a concern in transferring this -- this data.  And this has to

21   do with some of the geopolitical boundaries that you, Jen, were

22   talking about.  And the fact that this data is not necessarily

23   in perfect condition to say the least, right?  It's been a

24   challenge and we've had joint learning throughout this process.

25                   And there are potentially taxing --

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2    misallocation of taxation that could be going on, and that's a

3    critical concern for utilities.  Don't blame them.  And even

4    potentially some billing implications there.  And so I -- I

5    think that we need to support the utilities, and I think this

6    could be rate based in getting it right.  And maybe there's

7    some liability protection that we can provide to the utilities.

8    It's just something to -- to consider.

9                    Now would an individual data authority be too

10   costly, and this is something that you were talking about

11   earlier?  I -- I think that -- first of all I think that an RFI

12   -- I think that in essence an RFI even -- you know, an RFI

13   would indicate how costly it would be ultimately.  I think that

14   we can consider entities like your own, like a NYSERDA, like a

15   Green Button to be a metered data authority right down to

16   billing.  I think it's something for us to consider, and I'll

17   explore some of the pluses and minuses of that in a little bit.

18                    But -- but I think it's -- just the fact that

19   this is value based.  That the utilities did not have to

20   justify their cost in providing this -- this data, I think is a

21   critical precedent and it's good.  But if you look at it with

22   perspective, Con Edison has four million accounts.  If we had a

23   hundred percent CCA at seventy-two cents a record in New York

24   City, a hundred percent, Con Edison would make less than two

25   point nine million dollars one time.

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2                   So it's a nice precedent, but I don't think it

3   solves our REV challenges.  And so I would encourage the

4   utilities to look closely at some real deep value-based

5   opportunities with revenue.  And one of the things that I said

6   that we would explore with you later, before this meeting is

7   this capacity tag.

8                   We've got -- we can adjust our capacity tag

9   allocations and create peak demand reduction products with a

10  peak-demand reduction challenge in New York State.

11                  And I think that the utilities are uniquely

12  positioned to verify peak demand reductions in that one

13  capacity tag hour, and I see no reason that we as consumers

14  shouldn't be sharing a portion of that value with the utility

15  which, by the way, would be a hundred percent margin product

16  for the utility uniquely capable for the utility to deliver

17  that product.  That's an opportunity that we've together

18  discovered in the REV processes that really does begin it's a

19  recurring revenue opportunity.  It does begin to address this

20  opportunity for utilities to -- to make some -- some good

21  dollars throughout this process.

22                  And I think some of the services that the

23  utilities offer, with respect to that, that's a credible piece

24  when they're confirming the capacity tag reduction.  It

25  actually can provide AMI savings.  We don't necessarily need to

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2    meter every single blanking home.  It isn't necessarily cost

3    effective.  We can gain access to most of the value streams,

4    particularly if we start to look at microgrids.

5                And it's also an equitability -- a poverty

6    equitability piece in terms of gaining access to many of these

7    value streams for folks who cannot install that infrastructure.

8                And we do have to determine I think that the

9    utility will make good money by taking a miserably small

10   percentage of the value created.  And obviously we're going to

11   be discussing what that percentage is, but -- but I think it --

12   you know, it -- it is reasonably a small percentage and

13   utilities can do quite well.

14                I don't see security issues, so that with

15   respect to the -- there's one other piece that I think is

16   critical that the utilities can get into.  I think that the

17   utilities with -- should be developing a what your bill would

18   have been versus what your bill is, kind of a product for

19   energy efficiency.  And actually have it on the bill, clarified

20   and -- and I think that it will drive MESA structures, Manage

21   Energy Service Agreement structures in the small and medium

22   enterprise business.

23                And we can explore the degree to which you do

24   have it and the degree to which you do not yet have it.  But I

25   think that that would be a critical value piece that would be

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2    unique to the utilities.  I think with respect to microgrids,

3    the historic data with respect to a distribution list should

4    absolutely be free.  It's a public good as you were referring.

5                    Much of this historic aggregated data is a

6    public good.

7                    And with the real time data on these

8    distribution loops, we would like at a minimum the right to

9    real time meter, particularly for municipalities.  But look, if

10   it's a central data repository which has an API and a service

11   level agreement, whether it's a utility or it's a separate

12   entity, I'm concerned.  But we need access to that two second

13   data to have access to all of the cash flow streams that flow

14   from that two second data.

15                   Now I do think though that if this sits with

16   the utility, in my past life I founded the first demand

17   response aggregator in the United States, consumer power line

18   later See Power  and we actually had a certain sense with a

19   utility, remain unnamed here, where we were waiting for a year

20   and a half to get granular meter data.  A year and a half when

21   we actually had put in for fifteen minute meters.

22                   It is not their core business.  This isn't

23   going to be where they're -- you know, even with a service

24   level agreement, what's the consequence of not meeting a

25   service level agreement?  I think it's something to keep in

2   mind when we consider if this is properly placed with -- with

3   the utility.

4                    MS. PALMERO:  Mike, you need to wrap this up

5   please.

6                    MR. GORDON:  I'm leaving it there.

7                    MS. PALMERO:  Great.

8                    MR. GORDON:  We can explore more later, but

9   those are some of the issues that we see -- that we see coming

10  up and --

11                   MS. PALMERO:  Great.

12                   MR. GORDON:  -- that's it.

13                   MS. PALMERO:  Great.  Thanks very much.  Thank

14  you.  Thank you for muting your phone, New York City.  Marc,

15  you're up.

16                   MR. WEBSTER:  All right.  Thank you very much.

17  And I want to thank you very much for having me here today.

18  Appreciate the ability to speak and especially coming after

19  Mike because I think some of what you're going to here is kind

20  of a utility perspective of what we encountered with

21  Sustainable Westchester.  And let me -- let me start with that.

22                   I want to lead off with a discussion as to what

23  we the utility learned from our experience with Sustainable

24  Westchester.  You know, this was obviously our first foray into

25  Community Choice Aggregation.  We worked very closely with Con

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2   Edison and I want to thank them for all of their work, because

3   this really ended up being, for want of a better word, a three-

4   headed monster.  We all worked together to achieve this goal.

5                   And as Mike said, arriving at the data was not

6   easy.  This was a significant -- a significant effort.  Trying

7   to find out the data at the municipal level, trying to figure

8   out where those borders occurred, getting it down.  We

9   ultimately chose tax district level data, and for us I think

10  the data was pretty -- we were able to make sure and validate

11  and make sure it was robust.  But it wasn't easy.  You know, we

12  had things to worry about like borderline agreements, and --

13  and all the rest where you would have overlap.

14                  Likewise, we started going down the list and I

15  remember a discussion where we talked about, you know, Mike

16  wanting to find out what the eligible load is.  And then he

17  said well what about the ineligible load.  And my inner

18  dialogue was going, oh gosh.

19                  You know -- you know, how are we going to get

20  that?  And so, you know, really was parsing that data even

21  further into those customers who were, you know -- even the

22  eligible load included customers who were with ESCOs, and also

23  customers who may have not been with ESCOs but had asked the

24  utility to put a block in their accounts so that they couldn't

25  be switched in any way.

2                So we really needed to differentiate that

3    because from that perspective a customer with a block in their

4    account could work with Sustainable Westchester and maybe be

5    persuaded to remove that block to become part of the pool, you

6    know, working with their municipality, you know, without taking

7    any of the load that already existed in some of the ESCOs away.

8    So -- so we -- we struggled with that.

9                But -- but to me the biggest takeaway in this

10   whole thing, and I think Mike touched upon it, is that it is

11   truly worthwhile however you're going to do this to spend a lot

12   of time up front, you know, working with this.  So this is not

13   something where I think it can be resolved in a -- you know,

14   simple notice and comment.  As we -- as we go down this line

15   and start talking about data needs, we're talking about, you

16   know, face-to-face, sitting down, working with people to define

17   this -- this data up front.  To the extent that the data needs

18   to be customized.

19                To the extent that there is going to be value

20   above and beyond something that could be standardized, you need

21   to talk about that and really kind of get a little ugly with

22   the data.  Because without that you're not going to get a

23   success.  I think that if we hadn't worked as closely as we did

24   together, you know, Mike would not have been quite as effusive

25   as he was today about our working together.  So I would say

2  that, spend the time and -- and work together on that.

3              With respect to -- you know, that leads me to

4  talk about defining the role of aggregated data.  We've all

5  been dancing around this or at least hitting it from different

6  angles.  You know, initially obviously the -- the whole point

7  -- you know, when we started talking about this with the CCA,

8  being able to get this data to -- to get an ESCO.  We're now

9  wading into potentially non CCA waters and looking for other

10 uses and, you know, other -- you know, other applications for

11 this data.

12             And I think we need to ask ourselves, you know,

13 what are -- you know, is it worthwhile to distinguish between

14 what is a -- you know, CCA level aggregated data and other

15 uses?  Do we need to have that dialogue to start figuring out

16 where do you -- you know, where do you draw the line?  What

17 data sets do we need for what?  You know, I think that -- you

18 know, when Jim was talking about some of his -- his data, you

19 know, there were some specific needs and some -- some

20 requirements.

21             And to the extent that, you know, we may have

22 different needs as this market evolves, I think we need to be

23 open to that.  One size will not, in my mind, fit all.

24             And I think that trying to do that is going to

25 potentially be a problem down the road.  And -- and as such,

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2   you know, I believe that we've had collaborative discussions.

3   I know when we've been talking about customer data, and I will

4   -- I see, you know, Ed Brolin (phonetic spelling) here.

5                    I -- I saw -- I heard Angela Shore on the

6   phone.  We've all sat around the table here in this room and --

7   and talked about that within the context of retail access.  And

8   you do not get to a -- a solution overnight.  It takes a lot of

9   discussion.  It takes compromise.  It takes recognizing and

10  describing why you need this information.

11                   And I think that would be a very worthwhile

12  endeavor on everybody's part to get around the table and start

13  identifying what this data is and -- and -- and the scenarios

14  under which it would be useful.

15                   Utilities are not here to be a roadblock.

16  Rather we are here to work with you to try and get the data in

17  the -- in a sane, logical fashion, in a cost-effective fashion

18  and in a secure manner.  I think that message has gotten out

19  pretty clearly today.

20                   And -- and so as I -- as I continue on, I do

21  want to talk about the security of the data.  We've beaten this

22  to death.  I won't go too much further into it other than to

23  say, security is key.  As we go through all the data and, you

24  know, I -- I did hear earlier on, and forgive me, I don't know

25  whether it was Jen or Jim who was talking about some of these

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2   -- you know, where you have a small community who may have had

3   this, you know, only a few customers, aggregated data may

4   actually end up -- start approximating personally identifiable

5   information, so we have to be very careful of that.

6                    And so considering characterizing and -- and

7   addressing each piece of data is going to be valuable.  So,

8   again, cookie cutter does not necessarily mean -- may not be

9   the right answer I should say.  And the only other piece I want

10  to talk about on that topic is -- you know, we're talking about

11  allowing the data to be available to all communities all the

12  time or at least in some sort of standardized format.

13                   To me if we go down that road -- I'm not saying

14  you can't by any means -- we'd have to recognize that we start

15  moving away from the idea of customization and we start moving

16  down the road towards standardization which, again, creates

17  some limitations down the road.  We just have to be aware of

18  those limitations.

19                   Also we start talking about data getting stale.

20  If data is out there, how frequently would we have to revise

21  it?  And as we experienced going back to Sustainable

22  Westchester, data can get stale relatively quickly.  Customers

23  move in, they move out.  Businesses open and close.  You have

24  to be cognizant of that.  There has to be an understanding of

25  timelines and how quickly data needs to be revised and

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2    available.

3                    So as we start going down that road, recognize

4    there are going to be certain -- certain limitations on that.

5    I heard the beeper, so --

6                    MS. PALMERO:  Yes.

7                    MR. WEBSTER: -- what am I getting?  Two

8    minutes, three minutes?

9                    MS. PALMERO:  No, you're getting about thirty

10   seconds.

11                   MR. WEBSTER:  Oh, man.  Wow.  All right.  I'll

12   be quick.  Last slide.  The -- the last thing I wanted to say

13   is that NYSEG and RG&E we're very pleased that staff supported

14   the REV initiative and recognize that we could pursue market

15   based fees.  I think Mike identified the fact that, you know, a

16   -- a one-time nominal fee doesn't necessarily get you to, you

17   know, long term financial stability.

18                   So as a result I think that, you know, we -- we

19   do have to recognize this data does have value.  The retail

20   access market has had eighteen years to mature.  It is clearly

21   identified that there -- there is value in this data and the

22   ESCOs have been able to leverage a lot of that to create a very

23   strong market that's vibrant.  And as a result, I think that,

24   you know, utilities and -- and the other parties should be

25   allowed to discuss that to kind of find where that market value

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2  point is.

3                    As -- as Mike pointed out, we negotiated a

4  price with them.  And that's the first step to finding a market

5  clearing price for this data.  And I believe that as we start

6  getting more of these data points we'll start seeing perhaps a

7  set point for the value of this data and -- and potentially

8  even future revenue streams and ongoing revenue streams.  So I

9  just ask that as we go through this rather than making a

10 definitive yay or nay on whether utilities can or can't charge

11 for the data, I would suggest rather that what we do is start

12 looking at what are the revenue streams, and what would the

13 value of this data be otherwise?  And start figuring out how

14 that could be leveraged to the benefit of all the parties.  So,

15 again, thank you very much.  I will turn it over to Mr. Novak.

16                    MS. PALMERO:  Great.  Very good.  Thank you

17 very much, Marc.

18                    MR. NOVAK:  Well, good afternoon.  I'm Mike

19 Novak from National Fuel Gas.  And we'd like to present a gas-

20 only spin on Community Choice Aggregation.  This morning one of

21 the panelists encouraged people with regard to Green Button to

22 get involved in organizations like NAESB (phonetic spelling).

23 And as a board member of NAESB, I appreciated the plug, so but

24 I want to explain.  I'm a guy who likes standardization.

25                    I've been involved with NAESB since its

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2   inception.  But you have to understand where -- where

3   standardization is appropriate, where it's inappropriate.  So

4   if we look at customer level transactions, you know, I look at

5   National Fuel in New York, we have about a half million

6   customers.  Whether it's annual or monthly that's a lot of

7   transactions, so standardization probably is part of the --

8   part of the solution.

9              When you get down to what we're looking at with

10  Community Choice -- Choice Aggregation, well, it's a provider

11  level thing.  And it's low volume, because whether we're

12  looking at the number of ESCOs active in our territory, about

13  fifty, or the number of municipalities, about two hundred, you

14  know, if you get too far into the water on standardization you

15  actually create barriers.

16             So I -- I think that Marc's advice to take it

17  slow and see how this evolves probably makes a lot of sense.

18  Eighteen years for Customer Choice I'd like to think we can get

19  this one done a lot quicker, but, you know, there's always

20  unexpected turns.

21             So when I first read the notice, you know, I --

22  I looked at what was on it.  I says, well, wait a second.  We

23  already do this.  Not exactly but we have programs that we use

24  for gas capacity release programs that provide the data by ESCO

25  but we aggregate all the customers wherever they may be in

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2   territories.  And we determine where -- you know, what their

3   capacity requirements are and do capacity release transactions.

4                    And we have also had communities come to us and

5   -- and I -- I'm sorry this is nothing of -- you know, but

6   upstate we had Community Choice Aggregations back in the early

7   part of last decade.  But you have the first electric one.  We

8   had a couple villages that did gas aggregations.  One of them

9   is still active.

10                   MR. GORDON:  Opt out?  Opt out?

11                   MR. NOVAK:  No.

12                   MR. GORDON:  Okay.

13                   MR. NOVAK:  Yeah, that's -- and that's a big

14  difference.  But we think the key to this -- we're all for

15  Community Choice Aggregation, but we -- the key we think is

16  that people really have to want to do it and people in this

17  case might be the municipalities.

18                   So if you limit the provision of the data to

19  the party that's requesting the service and or they're

20  authorized representative, you've knocked out a ton of that

21  level of -- of -- of customer privacy concerns.

22                   So essentially those parties they're the

23  volunteers.  They're opting in.  So within our existing

24  capacity release program which we're going to propose that we

25  would modify this to comply with the -- you know, requirements.

2   And -- and I'm going to -- in a second I'm going to

3   differentiate between, you know, the -- the colorful database

4   and -- and what's here.

5                   We can produce twelve month load profiles.  We

6   do that today.  We can throw any mix of customers into this.

7   It's a manual process.  We would want to automate that.  Right

8   now, for example, if I want to do residential customers who

9   were not served by ESCOs, I'd have to filter the data and then

10  plug in the numbers.  That's the type of enhancement we would

11  want to put in to this program to make it more suitable for the

12  goals of Community Choice Aggregation program.

13                  But we can do the monthly baseload factors,

14  heat degree day factors, peak day load projections, anything

15  whose -- anything that anybody who wants to prepare a bid for

16  an ESCO to come in and bid on a community would need to

17  reasonably price the gas.

18                  Now we think that when you get down to -- we've

19  talked about rules, the granularity of data and so forth, that

20  you have to have a very flexible view on what -- who or what

21  the community is.  And also the data.  You know, for example,

22  in a postal set service class, well when you get down to a

23  small town where we have less than a hundred customers and --

24  and service class, you -- you are getting into PII because it

25  might just be one customer in a service class.

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2                  We think, for example we can help this by

3   ramping up -- not just to -- to revenue class but maybe just to

4   residential versus nonresidential.  And at least for gas, you

5   know, we can tell you right now that when you're talking

6   nonresidential in National Fuel's territory, odds are they're

7   already with an ESCO.  It's the residential market that's

8   probably only about twenty to twenty-five percent with ESCOs

9   today.

10                  So it -- it's that type of adjustment that, you

11  know, I think we can make to make this work.

12                  Now where I get back down to the state level

13  projections.  I think that, you know, where communities opt in

14  we're more than willing.  If they've told us they wanted to, if

15  they're interest in put the data up there  but we think that

16  that's just -- you know, when it gets down to actually getting

17  this thing up and running you can't do that off a graphic

18  presentation.  You really need to talk to the utility, learn

19  the ins and outs, how the programs work and we're more than

20  willing to do that.

21                  So ultimately we see our existing program as --

22  as something that we can build upon, you know, as long as we

23  keep it very flexible, oriented towards our service territory

24  at this point.  In the initial stages we think that in -- in

25  relative terms we can do it fairly inexpensively.  But if we

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2   start talking about standardization, transferring data, share

3   parties and so forth, those are all costs that, you know, we --

4   particularly in the gas types, most of the REV opportunities

5   aren't applicable to us.

6               We -- we would want cost recovery for that and

7   -- and we're not clear with the historically low gas prices

8   that we have that people are even interested in this at this

9   point -- these days.  And that's -- that's just the state of

10  the market.  We have an abundance of shale gas in western New

11  York.  It's available to our market.  Prices are historically

12  low.  It's -- this is -- this is a tough time to put this

13  concept -- even though it may make sense in other parts of the

14  state, this is a very tough time to produce this concept.

15              Yet, you know, from time to time, we do get

16  requests.  And, you know, basically more about our service

17  territory we've got two hundred different municipalities in

18  portions of eleven counties.  They're urban, suburban, rural.

19  Many of the rural municipalities, relatively large cities have

20  very small customer accounts.  That makes sense.  But what the

21  real complication is that the municipal boundaries overlap.

22              A village can be located in more than one town,

23  and a town can contain more than one village or city.  So --

24  and that gets down to like NYSEG, we do the sales taxes

25  approach.  And so any community really is a combination of --

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2   of sales tax districts unless it's one of those rare

3   communities that it's all one.  That does happen once in a

4   while.

5                    So, you know, with this map of Erie County here

6   which is the largest county in our service territory, this --

7   this just gives you an idea of what -- you know, who is the

8   community.  And -- and, I mean, I -- I can tell you the

9   politician -- we all know what our local politicians are like.

10                   Village people don't want to let the town

11  people tell them what to do and -- and the town people don't

12  like the county telling them what to do.

13                   To put this data out, you know, without people

14  asking for it or knowing what the aggregation is, we just think

15  we're -- we're throwing away the data.  On the other hand, if

16  someone comes to us and says, hey I'm going to work -- you

17  know, I'm working.  Or maybe it's a couple towns that work

18  together or the town with the villages in there work together

19  and come to us, we've got a plan.  And that -- that's how the

20  two communities in our area have got it rolling.

21                   We just had another town come to us last year.

22  We work with them.  They looked at it.  They decided not to go

23  ahead, but that's just the way it works and so forth.  We're

24  always willing to share the data and see where it goes.  But

25  the key is that they have the interest in the data, and from

2   there, you know, it's -- it's just like a new ESCO coming into

3   our territory.  We love that.  We'll show them everything, how

4   everything works, do what we can to get them up and running.

5                   But sending data to people who aren't

6   interested in receiving it it just -- it just doesn't seem to

7   provide any value.  So in our view the first thing is that the

8   community has to form itself.  And I -- and I think that one of

9   the reasons that we do get requests from time to time is that

10  because of the two villages, it's known that, you know, we

11  support municipalities so people will look at it.

12                  In other cases, I mean, like the town that I

13  live in, they've aggregated the school districts, the -- the

14  SUNY facilities and so forth.  All the municipal level

15  buildings and so forth, they are in residential and small

16  businesses but this concept is no.  So, you know, if that town

17  came and said to us, okay we want to get into this.  Well,

18  certainly.  We'd work with them and -- and get them the data

19  that they needed to do it.  But the key is we don't know until

20  they come to us, you know, what exactly they want.

21                  And I guess the other thing with flexibility,

22  we have what I would call a Community Choice Aggregation.

23  Should be starting up next year, and this has to do with the

24  Erie County Low-income Program for Sustainable Energy Project,

25  and it's an aggregation of -- of HEAP recipients.

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2                The county has the -- the account numbers

3    because they're part of the process to get for the HEAP

4    application.  They know who their potential customers are.

5                Many of these customers are with ESCOs now.

6    Some are with us, but they're going to test the proposition

7    that by aggregating their load and so forth they'll have bulk

8    purchasing power and, you know, be able to get a rate.  And it

9    seems reasonable that they -- they should be able to -- to do

10   that.  And, well, we got to have a good test to this.  And --

11   and this is all without the standardization and so forth, we

12   sat down.  We provided them the data that they needed, as they

13   get closer to -- to sending these outright to bid.

14                We'll give them a refresh on that data.  So it

15   -- it's not just a once a year thing.  It's really dependent

16   upon the project and what your timing is.  And, you know, for

17   example, if you're going to do an aggregation in gas,

18   particularly in a company like ours that releases storage, it

19   makes sense to start in April.  So next slide.

20                So to our view, pushing data on every -- to

21   every municipality or even at a municipality boundary level on

22   -- I said a monthly schedule here, but if it's an annual

23   schedule, and we'll do it if we're ordered to do it.  Just to

24   us, we just don't see the business case for it.  But at a -- at

25   a state level aggregation, high level, you know -- you know, it

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2    -- it -- we just don't see the opportunity to collect a fee for

3    this from anyone.

4                    And when it gets down to someone who's truly

5    interested, it -- it's almost -- I -- I suppose that, you know,

6    we could charge them something.  But it almost seems like we're

7    putting an impediment in front of them, just say, you've got

8    potentially a thousand customers here, a dollar a customer,

9    give us a thousand dollars.  You know, that -- that's not --

10   not what the relationship's about.

11                   So, you know, we think for the rural areas, the

12   -- the potential CCA could be at a county level or maybe it's a

13   group of contiguous municipalities and -- and that's to, you

14   know, try and meet the fifteen -- fifteen rule or the four

15   eighty rule.  And I said earlier, rather than a service

16   classification level, we'd do it maybe residential versus

17   nonresidential.

18                   In terms of security, because we're dealing

19   with people who are interested in the data, probably a password

20   protected PDF or an Excel spreadsheet is sufficient.  And, you

21   know, in other words, just keep it simple.  There -- there's an

22   express one used for the Buffalo waterfront, you know, faster,

23   cheaper, simpler, you know, and -- and it's just getting it

24   done rather than the grand projects.

25                   And I think at this early stage we do have some

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2   grand project things here that we have to be careful to make

3   sure that they don't interfere with the ultimate goal of what's

4   trying to be achieved.

5                    So, you know, and as I said, a lot of it

6   depends on the potential CCA.  So this very busy report is what

7   we provide to ESCOs or we provided to Erie County, for example.

8   This is an example.  Now this is a moderate sized suburb in our

9   territory and it didn't pass one of the tests for -- for

10  security.  So it makes me somewhat concerned that we really

11  have to figure the security out.  Now whether they aggregate

12  with somebody else or the county gets going, we'll see what

13  happens and so forth.

14                    But we need to be careful on that and -- and

15  it's just -- you know, each service territory is different.

16  Upstate is very different from downstate and -- and -- and we

17  need some flexibility on these things to make sure we're doing

18  what's right for the -- for the communities.

19                    MS. PALMERO:  Great.  We need to wrap up.

20                    MR. NOVAK:  Okay.  I'll do it real quick.

21                    MS. PALMERO:  Great.  Thank you.

22                    MR. NOVAK:  Okay.  We are all willing to do

23  this.  We don't -- and for -- for anybody who's truly

24  interested, we going to make sure we're dealing with the

25  community leaders or their authorized designees, and to counter

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2   a different message, here's my message to the communities who

3   want to do CCAs, go ahead and ask us.  We're happy to help.  We

4   won't be bothered.

5                    In fact, we'll -- we -- we'll provide as much

6   help as we possibly can, just as we would do for any ESCO that

7   wanted to come into our territory, so.

8                    MS. PALMERO:  Great.  Thank you everybody.

9                    We're going to jump right into the discussion.

10  Kelly's going to lead that so, Kelly.

11                    MS. CONNELL:  I just want to remind you guys

12  again that this is on the record and that we have invited

13  written comments to be submitted by December 30th if you do not

14  want to speak today or you cannot speak.  Staff's main

15  objective today is to develop a record of the four main

16  questions identified in the November 3rd notice.

17                    The first question is how can utilities prepare

18  and provide electronic access to aggregated data by

19  municipality in the standard format in an efficient manner?

20                    The second question was should utilities be

21  permitted to charge municipalities or other third parties for

22  providing this aggregated data?  If so why and how should these

23  charges be determined.

24                    The third question was should the Commission

25  consider a privacy standard to ensure customer confidentiality

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2   when aggregated data is released to third parties without

3   customer consent.  If so what rules should be adopted.

4                And finally the fourth one was what other

5   issues regarding providing aggregated data to third parties

6   should be addressed and how should they be resolved.

7                So we'll start with the first one.  How can

8   utilities prepare and provide the data to municipalities in a

9   standard format?

10                You heard Jim's solution and if anyone else has

11   anything to offer, please speak up.

12                MR. BURNS:  Hi.  Marty Burns again from the

13   National Institute of Standards and Technologies.  I'm -- I'm

14   sure up here that the old adage, you know, when you're a hammer

15   you -- you tend to see nails everywhere.  But Green Button was

16   designed with aggregation in mind as an application.  The

17   initial implementations are, you know, customer access,

18   customer specific, authorized access.

19                But I think if you look you'll find that in

20   terms of the actual information on -- on usage that you're

21   aggregating, it probably has a really good fit.  And you might

22   be able to build on that profile with the -- with the

23   authorization protocols in place and the access controls and

24   the -- and the standardized security might be a -- a building

25   block you could use.

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2               MS. CONNELL:  Thank you.

3               MR. LANG:  Good afternoon.  Kevin Lang on

4   behalf of the City of New York.  A lot of this conversation was

5   focused on CCA.  There are other uses and Jennifer alluded to

6   it.  Our focus is really not on CCA at this point although it's

7   something the city may be interested in.  But it's on

8   benchmarking and being able to figure out what usage is and how

9   it can be -- how customers are using energy and where

10  opportunities for energy efficiency are.

11              We note that EPA has a portfolio manager

12  program that is currently being used in a number of major

13  cities including Chicago, Philadelphia, Washington, Seattle and

14  I believe Boston that many utilities are dealing with this

15  issue and they have successfully worked with municipalities to

16  provide data.  New York is not that different.  They could be

17  able to use something whether it's portfolio manager or

18  something very similar to be able to provide aggregated data to

19  municipalities.

20              I agree with what Mike and -- and I think Marc

21  were saying.  To just put data out there if people aren't

22  asking for it, aren't using it, probably doesn't provide value.

23  But where you have municipalities such as the city that are

24  specifically looking for the data, there should be interactions

25  there and that data should be provided.

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2                   And there is certainly in the -- the concern

3   over customized versus standardized formats, I think for

4   purposes of benchmarking, a standardized format would work fine

5   for the purposes that we're looking for and to our knowledge

6   what other municipalities might be looking -- excuse me --

7   looking for in terms of benchmarking purposes.  And if you

8   create a standardized format it's easily repeatable,

9   reproducible over time.

10                  And the cost once you have it set up, should

11  not be significant to then populate that data or populate the

12  -- the data tool.  Thank you.

13                  MS. CONNELL:  Thank you.  Okay.  We'll -- we'll

14  jump to the second one which deals with the value.  How should

15  you --?

16                  MR. GORDON:  May I just say something --

17                  MS. CONNELL:  Yeah, go ahead.

18                  MR. GORDON:  -- connected with that?  I think

19  that we have to underscore what the Commission is ultimately

20  dealing with here.  It's the difference between the opt in and

21  the opt out so that folks really understand.  So Community

22  Choice Aggregation, as an example, is defined as an opt out

23  program.

24                  And so clearly we're able to aggregate -- we've

25  been able to aggregate for many years.  But the opt out nature

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2    of it means that we need relief under the Uniform Business

3    Practices.  And that's why it's a different animal than what

4    you're discussing, Mike.

5                    And this is akin to when people -- it's akin to

6    what you're saying here when you're talking about when people

7    aren't asking for it, it matters not.  I just thinks it's a --

8    it's a critical differentiating point, because it matters.

9    Peoples -- people are being included in that aggregation

10   because they are eventually going to be included in movement

11   from one ESCO to another.

12                   MS. CONNELL:  Thank you.  Mike.

13                   MR. NOVAK:  Yes, and I'd like to counter that.

14                   The pilot program in Westchester County is opt

15   out.  But the matter of opt in or opt out is a matter that's

16   before the Commission.  And we believe that an opt in approach

17   at National Fuel has already proven to be successful and so, I

18   mean, that's the basis of our regulatory position.  I mean, we

19   can go on and on about opt in versus opt out.  It's still a

20   community choice aggregation any way you want to -- you know,

21   whether you call it --.

22                   MR. GORDON:  Okay.  Hey, no worries.

23                   MR. NOVAK:  Yeah, yeah.

24                   MR. GORDON:  I mean, we're not -- we -- we can

25   call it something else, whatever, but the Commission's

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2    procedure is about the whether to do opt out or not.  And

3    that's relief from the Uniform Business Practices around

4    slamming and provision of data.  Those are the two components,

5    and I think --.

6                    MR. NOVAK:  Those are components of your pilot

7    program.

8                    MR. GORDON:  And they are precisely the

9    components that have worked in the six CCA states around the

10   country, and that's what we're dealing with.  I mean, we don't

11   need anything if there's no UBP relief.  Ultimately we can call

12   it whatever you want.  And you can oppose it, no worries.  We

13   feel it provides great value.

14                   MR. NOVAK:  That's your opinion.

15                   MS. CONNELL:  Thank you guys.

16                   MR. NOVAK:  We think -- yeah, well.  Okay.

17   We'll save it for comments.

18                   MS. CONNELL:  Does anyone in New York or

19   Buffalo have anything?  Okay.  We'll jump to number two.

20                   Should the utilities be permitted to charge

21   municipalities or other third parties for providing this

22   aggregated data?  If so why and how should these charges be

23   determined?

24                   MR. LANG:  Kevin Lang for the city again.  So

25   I'll differentiate between municipalities and what I'll call

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2   competitive entities, third parties, DER parties, ESCOs, CCA

3   because I don't think that they're on the same footing.  When

4   municipalities are looking for it not in the CCA context but as

5   I'm referring to it in the benchmarking context, there's a

6   public need there.  There's a public purpose that they're

7   looking at it for.

8                   CCA, while it's to benefit their communities is

9   still a competitive type service as an alternative to the

10  utility.  So I actually don't have any comments on whether or

11  not there should be charges in that context at this time.  But

12  as to the benchmarking purposes, what I'll consider the public

13  purpose, we don't believe that there should be any charges.

14  And we have some experience with this.

15                  New York City has a local law, Local Law

16  Eighty-four which requires benchmarking by large buildings.

17                  Con Edison is currently charging customers for

18  the data to comply with it.  And what we found is that Con

19  Edison's charges have become a barrier to implementation of the

20  program.  Customers are not willing to pay this fee.  They're

21  finding it to be an impediment and an unreasonable request.

22                  Our belief is that for public purposes, the

23  data should be provided for free to both customers, right now

24  Con Ed charges their own customers for their data, and it

25  should also be free to the municipalities for these public

2   purposes.  The data itself was compiled through utility

3   functions.  Customers have already paid those costs.

4                   It's their data and there should not be an

5   added cost to access the data that they've already really paid

6   for through their rates.

7                   Similarly for the municipalities, if we're

8   acting on a public purpose and the public is being best served,

9   there's really nothing to be gained by charging municipalities

10  for that data in our view.  So I know some folks talked earlier

11  about it would be okay for the utilities to charge this.  In

12  the competitive setting perhaps that may be true.  In this

13  setting we don't think it's true at all.

14                  In the first panel, a number of people talked

15  about the importance of free access to the data, and I think

16  Jennifer spoke to that as well and we would certainly agree

17  with that and support that.  One added piece.  There was

18  discussion earlier of new revenue streams potentially being

19  created by data.

20                  I'm not sure exactly what is being considered

21  there, but I think those need to be looked at very carefully.

22  And if customers are going to start incurring additional costs

23  on top of the rates that they're already paying for data that

24  they've already really supported through their rates, they

25  should be the ones getting those revenues and not the utility

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2   shareholders.

3                    MS. METZKER:  Hi. Jennifer Metzker with

4   Citizens for Local Power.  I agree with the previous speaker

5   about municipalities really should be getting this access to

6   data for free.  I disagree that -- that we should distinguish

7   between CCAs and municipalities because CCAs are municipalities

8   and they're being created for a public good, a public benefit.

9   It's the same mission that the Public Service Commission has

10  which is to serve and protect their customers, their rate

11  payers.

12                    So I do think that it's a very important that

13  the data be -- be free to CCAs, and I think that it can be a

14  real inhibition to the spread of CCAs.  And just to connect it

15  with a comment by our -- our utility, Joe Hally earlier said

16  that, you know, for a small -- we're in the Central Hudson

17  service area, and, you know, it's a -- it's a smaller utility

18  with a smaller customer base.  And CCA is really kind of --

19  because of it's an aggregation I actually think that it can --

20  its spread in the service area can be a cost saver for

21  utilities.

22                    And I think that we have to consider all the

23  benefits of C.C.A. not just the cost.  Thank you.

24                    MR. GORDON:  I want to add one thing.  I -- I

25  want to make sure that we understand that we absolutely agree

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2   that this aggregated data at the least should be free.  That

3   we've negotiated seventy-two cents for it.  But another benefit

4   of CCA is that fixed rate which utilities are limited in being

5   able to provide is that fixed rate offering beyond the Uniform

6   Business Practices relief.

7                   MR. DWYER:  Do we have any other comments on

8   the second question?  Looking also at New York City and

9   Buffalo.  All right.  Well, then turning to the third question,

10  this is Tom Dwyer from staff.  And we've had some discussion

11  today regarding a standard that would ensure that each

12  individual customer within an aggregated data set could remain

13  anonymous.  I think it was Jen who mentioned the four eighty

14  rule, and I also heard might have been Mike Novak mention the

15  fifteen fifteen rule.

16                  And for those that may not be familiar with

17  these standards, they would essentially ensure that customers

18  remain anonymous by requiring that each data set for the

19  fifteen fifteen rule, for example has at least fifteen

20  customers in it, and that no one customer makes -- their load

21  makes up fifteen percent of -- or more of the aggregated load.

22                  So I pose the question to the -- the panelists

23  and to the rest of the group here, should the Commission

24  consider such a standard?  And if so what would that look like?

25                  MR. NOVAK:  Mike Novak for National Fuel.  The

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2   Commission should impose a standard but it needs to be flexible

3   on the definition of municipalities because some municipalities

4   just structurally can't meet any standard that would meet that.

5   So it -- it's -- they're two bad choices.  Either you don't

6   provide the data -- if you don't provide the restrictions,

7   there's a problem.  But you can't have a situation where a

8   municipality can't form its own CCA or at least be able to work

9   in conjunction with others.  There's -- there's got to be opt

10  outs and flexibility in that direction.

11                    MR. YIENGER:  Yeah, on the issue of privacy

12  rule for aggregated community wide data, based on our

13  experience we would recommend something four eighty or less.

14                    Fifteen by fifteen is very strict rule and,

15  again, to our experience we've never seen a reverse engineered

16  data set compromise privacy in twenty years we've been doing

17  this.  So I -- I followed California's process.  California

18  went through this and they -- they made it very complicated and

19  -- and -- and filled up the process with a lot of fear and

20  possibility of what-ifs.

21                    And in this particular case I

22  think with the track record we have of already supporting our

23  regional plans, local governments, climate plans already for so

24  long on this, we would -- we -- you want to be careful not to

25  actually reverse a lot of access that's already been provided.

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2            So I would also second the motion.  I would not

3  put a rule which is hard and fast, like four by eighty is

4  required.  There's just a lot of variability in data.  There's

5  a lot of odd things that can crop up that might fail any rule.

6            And so I would leave everything as a guideline

7  and allow some leeway to a utility to make some decisions if

8  necessary.  Perhaps maybe it's you have to justify it, but we

9  know that hard and fast rules in data never, never hard and

10 fast.  And so we would recommend flexibility.

11           MR. LANG:  So, Kevin Lang for the city again.

12 We would certainly echo the need for flexibility, although I

13 would disagree that it should be a unilateral utility decision.

14 I think that there's a role for the Commission here.  It's not

15 that every request needs to go to them, but there should be

16 some standards that the utilities are held to.  And, they can't

17 just exercise unfettered discretion to say we're going to give

18 it, we're not going to give it.  Because there's no

19 transparency there, there's no certainty and there's no

20 standards that you can determine guide those kinds of decisions

21 as to whether they're reasonable or not.

22           Ultimately I think it's a role for the

23 Commission to decide what can be provided.  We disagree that

24 there needs to be any hard and fast standards.  Again, the

25 city's local law on benchmarking is a building by building

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2   requirement.  There might be single tenants in some buildings.

3   There might be two tenants.

4               So right off the bat there's going to be

5   certain buildings then that can't have aggregated data.

6               The purpose that we're seeking it for is to

7   help guide energy efficiency needs to look at what's being done

8   on a city wide basis.  This is the same thing that is being

9   done in cities all over the country and all over the world.

10              The Commission should be supporting such

11  efforts because they're completely consistent with the REV and

12  they're completely consistent with the state's public policies.

13  And it would be very disruptive for the Commission to enact

14  very hard and fast rules then that would disrupt those efforts

15  on more localized basis to achieve the same goals that the city

16  is trying to achieve.

17              At the same time, we're certainly sensitive to

18  the need for customer data.  The city has been a strong

19  advocate of affirmative consent being required for the release

20  of customer data when it's being used for targeting those

21  customers.

22              The benchmarking data we're looking at isn't

23  narrowly focused on specific customers.  It's looking building

24  by building.

25              We also, speaking for our city, and I know from

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2  talking with other cities, we don't release that data and say

3  here is this customer and this is what their usage is. It's

4  used for city planning purposes and only for city planning

5  purposes.  Thank you.

6              MR. GORDON:  I just want -- I wondered if you

7  were going to speak, but I just want to underscore one thing

8  that -- that Jen said earlier.

9              From our perspective, aggregated data is a

10  public good.  And we -- that's why we agreed with the utility

11  that we would not sign an NDA prior to delivery of aggregated

12  utility.  I would agree that we're not looking for hard and

13  fast rules.  On the same side we can use support with respect

14  to standards I think.  But specifically, yeah, that's it.

15              MR. NOVAK:  Let me give a for instance.  You

16  know, we run the data for a particular town and they don't pass

17  -- we'll call it the guideline.  I think our suggestion would

18  be to them saying, look we have these guidelines.  It doesn't

19  pass.  Talk -- can you talk to the neighboring town, see if

20  they're interested?  And maybe they'll do that and that resolve

21  -- you know, because the collection of the data does that.

22              Or maybe the option is to go to the Commission

23  and get a waiver.  You know, it -- it sounds administratively

24  complex, but because ultimately it's customer data it -- it

25  does seem like a regulatory decision if we're going to be

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2   waiving whether it's a rule or -- or a guideline.  And, I mean,

3   the fact of the matter is that sometimes data does do odd

4   things.  So, you know, we want to be -- we need a safety valve

5   on a hard-and-fast rule that makes sense, but we can't just

6   waive the rule because it's inconvenient.

7                MR. GORDON:  I just wanted to add one thing.

8   It's why we ask not to take possession of the data.  We'd like

9   a structure in place where we do not need to take possession of

10  the data prior to contracting.

11               MS. CONNELL:  Does anyone in New York City or

12  Buffalo have anything to say?  Okay.  Well, we'll jump to the

13  last one.

14               Which is a little more generic and are there

15  any other issues regarding providing this aggregated data to

16  third parties that we have not addressed?  Please identify

17  them, and if you have a solution resolve them.

18               MR. OSTER:  Yes, hello.  I'm Jake Oster

19  (phonetic spelling) from Energy Savvy.  I have a -- a very

20  small issue that is kind of tangential to everything that's

21  being discussed here.  In the REV Track One order there's a

22  call to use innovation and technology to enhance even the

23  evaluation measurement and verification of energy efficiencies

24  to the savings.  So this is basically energy efficiency

25  measurement.

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So we're going to measure energy efficiency and we want to use it to enable markets as REV envisions. Got to figure out a way to do that quickly, easily, transparently and accurately. In doing that there's kind of an emerging class of software tools that are out there that are using analytics to measure energy efficiency quickly and easily.

The challenge is all of this works within a utility and uses utility data and is contracted out to utilities. But there are existing rules in place in New York in the evaluation guidelines that prevent the use of nonparticipant data for energy efficiency measurement. Or they hinder the use. They don't prevent it but they hinder the use of energy of nonparticipant data.

These are rules that can be changed quickly and easily. To the best of my knowledge they don't require an order. They don't require Commission decision. They're in existing guidelines that are being followed now. So as the Commission considers changes to their rules, we'd ask that you include this and consider this as part of that decision.

MR. LANG: So my last one on this one. Kevin Lang for the city again.

We would just like to echo the first panel talked about this a little bit, and this panel did as well. The experiences of the city and in talking with other cities,

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2 it's the type of interfaces and the interactions between

3 whether it's the customers, the municipalities or even third

4 parties in the utilities.

5                 The interfaces, the actual electronic

6 communications between them needs to be easy to understand and

7 easy to use.  The more complicated the systems are, the less

8 consumers or others are going to be able to use them.  And the

9 ability to achieve the goals that are intended by the REV,

10 whether it's for Community Choice Aggregation, benchmark or any

11 other purpose are going to be hindered if not defeated.

12                 I can't sit here and tell you exactly what

13 those interfaces would be.  That's a little bit beyond me.

14 It's an -- more an IT issue, but if you think about a lot of

15 other industries, anyone in this room that, whether it's your

16 credit card or your bank or your cable company or whoever, a

17 lot of times it can be very easy to access things via the

18 Internet, via their web portals.

19                 The same needs to hold true, and I would note

20 the utilities are making some very good strides in terms of the

21 accessibility of information on their portals.  Con Ed's done

22 quite a bit.  I know the upstate utilities have done quite a

23 bit either -- excuse me, as well.

24                 But as we move forward and as we look at what

25 the data is that's going to be shared, whether it's tenant-

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2   level data, building-level data, what -- however it's being

3   aggregated, for the municipality or the customer to contact the

4   utility to say this is what we're looking for, for the utility

5   to compile it and provide it back, it needs to be clear.  It

6   needs to be easily understood.

7                   Earlier this morning there was a conversation I

8   thought it was very interesting about EDI with I think it was

9   the gentleman from DOE saying that's an outdated technology and

10  the utility saying we still want to move forward.  And I think

11  it was the -- the one from Direct Energy that also supported

12  EDI.

13                  We don't have an opinion on whether that's the

14  right technology for certain interactions with very

15  sophisticated people.  But we would submit that EDI is not the

16  right transaction for dealing with customers.

17                  I suspect that most customers have no idea what

18  a capacity tag is.  The fact that you can see that on EDI is

19  going to hold little meaning to them.  And I know in -- in

20  other forums we had a -- a bill format conference.  I know Marc

21  and Gary (phonetic spelling) and others were there.  There was

22  a lot of discussion about putting things in a way that the

23  average customer can understand and that I think applies to

24  this as well.

25                  So we would encourage, as we move forward and

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2   looking at that, that those kinds of issues which are somewhat

3   tangential to this but be considered and be incorporated into

4   this.  Thank you.

5                    MR. NOVAK:  I'd -- I'd like to respond to the

6   EDI comment because it -- it brings up a very good point.  I

7   don't think anybody's advocating that customers hire an EDI

8   service provider to pull this data.  And I think what's being

9   missed is there's really two customers for this data.  There's

10   the -- there's the providers or the ESCOs and the -- the retail

11   customers.

12                    And -- and I -- I think what people are missing

13   on the EDIs, EDI is really good at pulling data out of utility

14   databases.

15                    And so when you're talking about -- and this

16   would get to Ms. Shore's comment, what we have set up with the

17   ESCOs, many of whom were also be DER providers really works,

18   and in some ways if -- if you look at how data is pulled out,

19   it's mapped to an EDI transactional to pull it out of the

20   system.

21                    It could be mapped to an XML schema at some

22   point, you know, whatever.  That's an incremental cost and so

23   forth, but that's where you get into the concept of leveraging

24   off the existing investment in EDI.  But, I mean, it's -- it's

25   to -- I don't -- I don't -- I hope that people don't go -- come

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2   away with and that we're -- we're saying that people have to --

3   you know, have EDI to get data for their house.  I mean, I

4   think that's just a misconception.

5                    MS. CONNELL:  Thank you.  Does anyone in New

6   York or Buffalo have anything to say?  Okay.  I think we'll do

7   the exercise we did during the first panel today.  And each

8   take a minute to summarize what you think the Commission should

9   decide on, if they should decide on anything.  And you can go

10  ahead, Jen.

11                   MS. MANIERRE:  Yeah, so I would probably

12  delineate a little bit between some of the -- the data that's

13  needed specifically for CCA efforts and this -- this public

14  interest or public purpose data that we've also been talking

15  about.  I think the -- the latter is valuable even if

16  individual communities are not asking for it, I think it's

17  still valuable to have out in the public.

18                   It's valuable for the state for planning

19  purposes.  It's valuable to their neighboring communities so

20  they can compare each other and, you know, spark a little bit

21  of competition.  And I think it could even be valuable to the

22  communities that are not asking for it.  They may not even

23  realize that it's of interest to them until they see it out

24  there and then it might spark something in them and make them

25  want to take, you know, clean energy action of one sort or

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2  another.

3              So we'd ask the PSC to help us get into the

4  public realm, the stuff that we've already been working with

5  utilities on for the past few years.  It's this aggregated

6  community level, just aggregate consumption; kWh and therms for

7  city, towns, villages and counties.  Opt out if necessary to

8  protect some of those privacy issues we talked about.

9              If we institute formal policy rules, I'm with

10  Jim.  I would recommend the lowest level possible.  Nothing too

11  strict and have some sort of flexibility where needed while

12  making sure that the guidelines are clear.  I think that's

13  about it.  Am I missing something that you know I wanted to

14  talk about?

15              UNIDENTIFIED SPEAKER:  No, that's pretty good.

16              MS. MANIERRE:  All right.

17              MS. CONNELL:  Thank you.

18              MR. YIENGER:  Okay.  I'll just take a minute.

19              There was -- there was something I wanted to

20  respond to.  Jen's kind of covered it.  There has been some

21  comments today about is there value in just throwing data out

22  there.  And there -- this -- there were concerns that maybe

23  there isn't.  I would agree with that for large amounts of

24  data.  But like Jen, I think we start talking about energy

25  demographics, and that's community performance.  How energies

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2   are being used.

3                   I strongly think that there is a real value for

4   making that open.  You can withdraw communities that don't fail

5   privacy rules and just not release that.  But energy

6   demographics are just as important for comparative reasons, for

7   policy movement not just having, you know, a single point piece

8   of data that you had to request it yet.

9                   It's like going to and requiring a big process

10  to request your employment demographics, household demographics

11  and many of the thousands of demographics that are openly

12  available now.  In energy we need to get there.  We need energy

13  demographics and they need to be available.  So we would ask

14  the -- the Commission to continue the process that we started.

15  Work collectively and voluntarily with the utilities first to

16  find out what's available demographically they'd be willing to

17  do and that would make sense and come up with.

18                   And then try to work voluntarily first before

19  you try to complete a rule that doesn't work.  We think

20  actually there is good scope to -- to get this done.

21                   MS. CONNELL:  Thank you.

22                   MR. GORDON:  Finally figured out I need to push

23  the button.  I hope that -- I -- I want to underscore a couple

24  of things.  One that in working with utilities, you got to

25  recognize that utility personnel are people and they are

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2    excited about what works.

3              And whatever position we hear a utility taking

4    today, when the Commission orders the utility to do something

5    about the Uniform Business Practices, the utility is going to

6    engage and the utility is going to be excited about it and it

7    will be a pleasure to work with that utility, because they will

8    be excited.

9              And from our perspective, opt out absolutely

10   delivers on the value of customer choice.  And specifically it

11   enables cost certainty.  It enables peak energy efficiency.  It

12   enables microgrids and resilience.  It enables far deeper

13   penetration of distributed energy resources, not just in the

14   electricity sector.  It enables deep, renewable penetration.

15   It creates community engagement and it creates what we haven't

16   achieved, which is an adoption and participation level far

17   behind the -- far beyond the twenty to twenty-five percent that

18   we've seen to date in service classification one customers,

19   residential and small business customers.

20             Ultimately the advice to the Commission is that

21   -- is that engaged planning and implementation, it can't happen

22   really sequentially.  That the engagement happens when you're

23   creating something that matters to people.  Where something's

24   going to happen.  And so anything that you do.  I've heard

25   people say elsewhere in the United States that they've been

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2   very positive about the REV process and others have said it's

3   chaos.

4                   But it's chaos in concert would be the way I'd

5   look at it.  And so like, as you have, allow access to these

6   programs and to these enabling tools and to the relief required

7   while we wait for long-term action and while we plan around

8   long-term action.  I think that's a critical learning piece

9   that New York to date has gotten right.

10                  MR. WEBSTER:  I can honestly say that I've --

11  I've heard some very good dialogue here today, and I just want

12  to say that my big takeaway here is I believe it's very

13  important and it's been very clear that we need to get our head

14  -- hands around what data is needed, by whom and for what

15  reason.

16                  I think Kevin Lang may have made a passing

17  comment about needing the data for benchmarking.  And -- and I

18  think he brought that out very nicely, because I -- I think,

19  you know, not seeing it from that perspective it does bring out

20  the need for ongoing dialogue.

21                  This is not something that's going to be

22  resolved, you know, simply and easily in -- in a very short

23  amount of time.  This is an evolutionary process and getting

24  our hands around it and working forward, really getting --

25  understanding who needs it is going to make the difference

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2    going on.  So I'll end it there.

3                    MS. CONNELL:  Thank you.

4                    MR. WEBSTER:  I think there's been a lot of

5    good discussion.  Thank you.

6                    MR. NOVAK:  Go slow.  Let the problem -- let

7    the business processes that underlie the data transfers evolve

8    first.  Let's see what the Westchester pilot ultimately proves

9    before we make decisions.  If -- if Mike is right, well, then I

10   guess I'll become a opt out guy.

11                   But my -- my -- my experience within customer

12   choice since its inception is that there's a reason why the

13   market of penetration is only twenty percent, and I'll leave it

14   at that.

15                   MS. CONNELL:  Okay.  Great.  With that we're

16   going to wrap it up.  And I just want to thank the panelists

17   again.  It's a great job.

18                   (Off the record 3:21 p.m.)

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2   STATE OF NEW YORK

3   I, HANNAH ALLEN, do hereby certify that the foregoing was

4   reported by me, in the cause, at the time and place, as

5   stated in the caption hereto, at Page 1 hereof; that the

6   foregoing typewritten transcription consisting of pages 1

7   through 185, is a true record of all proceedings had at

8   the hearing.

9                 IN WITNESS WHEREOF, I have hereunto

10  subscribed my name, this the 23rd day of December, 2015.

11

12

13  Hannah Allen, Reporter

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