STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

June 29, 2018 - 10:12 a.m.
Concord, New Hampshire

RE: DE 16-576
ELECTRIC DISTRIBUTION UTILITIES:
Development of New Alternative Net Metering Tariffs and/or Other Regulatory Mechanisms and Tariffs for Customer-Generators.
(Hearing on the Merits)

PRESENT: Chairman Martin P. Honigberg, Presiding
Commissioner Kathryn M. Bailey
Commissioner Michael S. Giaimo

Sandy Deno, Clerk

APPEARANCES: ***(No appearances taken - refer to the sign-in sheets*** **posted online.)**

Court Reporter: Susan J. Robidas, NHLCR No. 44

I N D E X

P R O C E E D I N G S

CHAIRMAN HONIGBERG: Good morning, everyone. Please be seated. We're here this morning in Docket 16-576, which is the Alternative Net Metering docket. We have a lot of things going on in that docket. This is to take public comment on Staff's report regarding the Value of DER Study. I have up here some sign-in sheets which we'll deal with momentarily.

Mr. Weisner, you want to do a little bit of a scene setup for us?

MR. WEISNER: Yes, Mr. Chairman. Thank you.

What you have before you is Staff's final report summarizing the proposed scope and timeline of the Value of Distributed Energy Resources Study which is required to be performed in this docket. That report reflects the work that was done over a period of time, a number of months, in a working group setting with interested stakeholders representing a broad and diverse range of interested parties. And I'm pleased to note

that in the report, a number of study design components are listed as being subject to consensus among those working group participants. Other design issues were not the subject of consensus, and those are noted as well. In those cases, Staff has made a recommendation for the Commission's consideration, and I expect that those non-consensus items will be the focus of the comments that we hear today.

We also have a proposed timeline. It's very preliminary. It's very conditional and dependent on some other moving parts in this complex proceeding, as you observed. So I just want to offer that. That's our current thinking -- or it was our current thinking in May, and it's subject to change. This is a very dynamic process, as I'm sure the Commission can appreciate.

I also want to notice -- note that the Commission, in April, issued an order which refocused what was anticipated to be the non-wires alternative pilot program into a locational value study of the distribution

level impacts of distributed generation. One of the questions that's outstanding, as noted in that order, is whether or not that would be a stand-alone study or whether that would be included in this study. And that issue has not yet been resolved, but will be important in determining the final scope of the Value of DER Study. I think it's safe to say that what we're trying to do here is design the scope of work that would be included in a request for proposals to engage a consultant to perform the study of valuation using data and analysis that was not available last year when the Commission made its decision regarding the Alternative Net Metering tariff which is currently in effect. And so the issuance of the RFP would be the next step. I think it's fair to say that that RFP should not be issued until that other issue is resolved, but we expect to continue working on that and seek resolution within the next few months.

CHAIRMAN HONIGBERG: The Staff's recommendation, which was filed in May, if

you look on Page 17, there's a flow chart of sorts. If you were to take a "You Are Here" sticker, where would it go on the flow chart?

MR. WEISNER: In terms of the Value of DER Study, we are between the box that says "Scope and Timeline Report Filed with the commission" and the one that says "Commission Approves, Modifies or Rejects..." On the right hand of that chart are all the other things that are going on. And the first one on the left side is what I just referred to, the Distribution Locational Value Study. Now, the way it's listed here and the way we have it in the timeline assumes that it will be a separate study on a separate track. As I noted, that may not be the case, but that's still an unresolved issue at this point. So that study, plus the pilot programs, marginal cost of service studies -- and Eversource is filing a new one within the next few weeks -- and other data collection as noted in the big box, that all feeds into this Value of DER Study to be performed by the Commission's independent

consultant. That study then gets filed with the Commission and becomes the subject of a new proceeding a few years from now that will reconsider net metering with that information available.

CHAIRMAN HONIGBERG: Thank you. I think that was helpful to orient all of us on the map, such as it is.

I have two lists, and I'm assuming that they were separate lists --

(Discussion off the record)

CHAIRMAN HONIGBERG: So we're going to take -- we're just going to bounce back and forth between the two sheets. So the first name on the first sheet I have is Henry Herndon. And I'll call three people so people can get prepared. So, Henry Herndon is first, to be followed by Melissa Birchard and then Clyde Carson.

MR. HERNDON: So I think my comments -- I'm Henry Herndon, by the way. I think my comments might be more valuable for the Commission following Clyde Carson, sort of with him providing some initial input and

then --

CHAIRMAN HONIGBERG: All rightie. Why don't we take the two of you together. Why don't we have Mr. Carson go first, and then we'll have Mr. Herndon, and then, Ms. Birchard, you can follow them.

MR. CARSON: Good enough. My name's Clyde Carson. I'm a state representative from Merrimack District 7, representing the towns of Warner and Webster. I'm also a selectmen in the town of Warner and a founding member of the Warner Energy Committee.

In my understanding, this hearing is to provide comments on the scope and timeline for the Value of Distributed Energy Resources Study, and my comments on behalf of the town of Warner pertain specifically to a proposal for a pilot project that will collect data that can be used to help inform that study in accordance with the schematic that we talked about just before.

CHAIRMAN HONIGBERG: Can you slow down just a little 'cause the stenographer's

trying to get every word.

MR. CARSON: Yeah, sorry. I'll go slower.

Geographically, Warner is located in Merrimack County, along the Route 89 corridor. Warner has roughly 3,000 residents and is typical of many New Hampshire towns. The Currier & Ives Scenic Byway passes through the town. It's home to five museums, a small college. The town has a vibrant downtown village and, most importantly for today, is deeply committed to sustainable energy.

At the town's 2007 town meeting, voters established the Warner Energy Committee to support the town's commitment to energy conservation, security, sustainability and responsible energy usage. This committee actively supports that charge.

One of our early projects resulted from a grant from the PUC to perform an energy audit on our town buildings. Margaret Dillon's audit report that came from that study provides a basis for multiple projects

to improve the energy efficiency of our building envelopes. And we've done a lot of those projects over the last few years.

More recently, the town has pursued municipal solar, taking advantage of the state's group net metering program. In 2016, the Warner Village Water Precinct approved a 100 kW solar array located at our waste water treatment facility. And last year, the town voters approved a second 100 kW solar array located at the town's transfer station. The town is proud of these arrays, which produce enough electricity to cover a hundred percent of our municipal usage and have been cash positive since day one. So, they've been good projects.

The array at our transfer station is also a part of a plan to integrate the town's support for recycling, renewable energy, sustainable gardening in an educational setting, as well as providing a pollinator-friendly habitat. The point that I want to make is that Warner has a vision and is committed to sustainable practices and

that we have a track record to successfully deliver projects related to that vision.

And that brings me to today's purpose, which is to put a proposal on the table for a pilot project in support of DE 16-576. Our proposal is to develop a model that uses solar panels in combination with battery storage, smart meters and time-of-use pricing.

The Warner Municipal Power Project was initiated over the past year. Our team includes members of the Warner Energy Committee and sustainable energy experts, Henry Herndon from the New Hampshire Sustainable Energy Association, as well as support from Roy Morrison and Pentti Aalto.

In addition, we have been extremely fortunate to have the advice and participation of Cliff Below. We are closely following his project between City of Lebanon and Liberty Utilities and hope to learn from his project and utilize applicable pieces for our project.

The Warner Municipal Power Project

has also attracted interest and advice from Michael Swack, Carsey Institute; Don Kreis, New Hampshire Consumer Advocate; and Scott Maslansky from CDFA.

And I'd like to highlight some of the key points that we thought about in our proposal. We want this to be a collaborative effort with Eversource; they're our default utility. Henry Herndon and I met and had a preliminary meeting with Eversource representatives, and the proposal is actively being considered within the company. Participants for the pilot would come from low- to moderate-income families and non-profits located in Warner. We envision the number of participant locations would be limited to around 24 single family homes, multi-family homes and non-profit business locations. In parallel, the Warner Energy Committee wants to pursue a project to improve the energy efficiency of the participating building envelopes. There may be some benefit to some participants by including heat pumps, electrical vehicle

charging as part of the model, and we want to consider that option as well.

The sixth point I want to make is we would like to seek funding so that there would be no upfront cost to the participants. CDFA has expressed interest in providing financing for projects such as this one. We would work collaboratively to find with Eversource which data would be collected as part of this pilot and supply it to the PUC VDR study. A municipal project with Warner would not preclude Eversource from pursuing other pilot projects, such as one that would be scattered across the state geographically.

And a key goal of this pilot would be that the resulting model would serve as a standard VDER model that could be expanded within Warner and replicated across the state.

So, in summary, we believe that a small, focused pilot project with Warner offers a high probability of success due to our track record and would use useful data to the PUC VDER study, and it could be used to

build momentum for expansion of the resulting model across the state. And our hope is that the Commission and Eversource will support our proposal and work with us to make it successful.

And I conclude my comments with that and turn it over to Henry.

CHAIRMAN HONIGBERG: If you have written comments that you were reading from, if you could provide them to the stenographer, everybody will be happier.

MR. CARSON: Yeah.

CHAIRMAN HONIGBERG: Mr. Herndon.

MR. HERNDON: Good morning. My name is Henry Herndon. I work for New Hampshire Sustainable Energy Association as Director for Local Energy Solutions, and my job is to provide technical assistance to cities and towns across the state seeking to implement energy projects. So I've been working closely with Representative Carson on this project.

I've also been engaged in Public Utility Commission proceedings for three

years now, participating in the Energy Efficiency Resource Standard, the Grid Modernization Working Group and this Net Metering docket. And as Representative Carson stated, the purpose of these comments are mostly aligned with providing some context for that project as that -- in line with this schematic on Page 17, doing pilot projects to generate data that can then inform the VDER study.

So I think there's been a lot of progress over the past year, particularly leadership from Cliff Below in Lebanon and the Liberty Battery Storage Project, as well as some progress on low and moderate income programs. I think there's still a lot of room for progress on some areas such as time of use and doing actually more to expand access for low and moderate income communities, and I think that's really where the Warner project can provide value to this docket. Obviously, any successful pilot requires close collaboration with the utilities. So, again, I'd like to sort of

reiterate our appreciation to Rick Labrecque and Matthew Fossum for engaging us in preliminary conversations, and we hope to continue to collaborate with Eversource closely moving forward on this.

Beyond the partnership with Eversource, I think there's a lot of potential to build a broad coalition of support around this project. Representative Carson sort of alluded to some of the engagements we've had already, so we're appreciative of the advisory role that Clifton Below is playing and the support we've received from the Consumer Advocate and other stakeholders thus far, and we hope to continue to work to do an inclusive, participatory pilot project.

So I'll just be quick and I'll sort of summarize. I think our goals are to design a project that is beneficial to the community of Warner, that is beneficial to the electricity grid as a whole, that meets interests of numerous stakeholders involved in this proceeding, and that rewards the

utility in the process for facilitating such a project. And we believe that such a project could then be replicated across the state to the benefit of the many, many cities and towns that are very interested in doing innovative and modern technology deployment and distributed energy resources.

So, to conclude, we hope we can continue to rely on the support from the Commission, from Eversource and the other stakeholders, and hope to continue to work collaboratively with all parties. Thank you.

CHAIRMAN HONIGBERG: Ms. Birchard, before you start, I'd like to add a couple of question marks and "maybes" here.

Mr. Hayden, are you going to be speaking?

MR. HAYDEN: I pass.

CHAIRMAN HONIGBERG: How about Jack Ruderman?

MR. RUDERMAN: I'm also just going to submit written comments.

CHAIRMAN HONIGBERG: I should have noted that there is a written comment

deadline. Mr. Weisner, when is it? July 10th, was it?

MR. WEISNER: July 10th. That is correct.

CHAIRMAN HONIGBERG: So, anyone here or not can submit written comments by July 10.

All right. So, Ms. Birchard, you're up, to be followed by Mr. Fossum and then Kevin Sprague.

MS. BIRCHARD: Thank you for the opportunity to speak today. My name is Melissa Birchard, and I am an attorney for Conservation Law Foundation. CLF is a New England-wide organization that works for the interests of the environment, public health and communities. Our members are particularly interested in addressing climate change through market-based innovation.

I have just a handful of brief comments today and will deliver more detailed comments in writing. Conservation Law Foundation applauds the Commission for its efforts to provide a neutral forum for

consensus-based decision-making regarding the scope of the upcoming Value of DER Study. We have found this process to be engaging and informative. We believe that Staff's recommendations reflect the efforts of the parties to achieve consensus wherever possible. And Staff's recommendations do, in fact, reflect consensus on all but a handful of issues to the general scope of the study -- as to the general scope of the study of the Value of DER.

I believe all parties agree that the independent consultant retained by the Commission should have further input into the scope of this study that will be valuable. In addition, I believe all parties agree that there should be significant opportunities for further stakeholder engagement and input as to the development of study parameters and details. In general, CLF is quite supportive of Staff's recommendations, with a few exceptions and nuances that we will largely address in written comments.

One issue that Staff and

stakeholders have wrestled with in earnest is a very practical one, and that is how to keep the cost of this study within reasonable range. One result of the effort to keep costs within a reasonable range is that in a number of instances the recommendations do seek qualitative/quantitative proxy estimates. This approach has a number of benefits in cases where, for instance, New Hampshire-specific data may be limited at this time. While we naturally need to be careful about settling for less than complete accuracy, regulation at a reasonable cost generally does require some amount of pragmatism. Indeed, it is well established that proxy values can sometimes be appropriate in valuation processes such as these. Likewise, it is well established that no material, non-zero values should be entirely excluded from such valuations.

The National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources, which presents an objective and neutral resource valuation

framework, includes this among its six so-called "universal principles." So, that National Standard Practice Manual was developed by the National Efficiency Screening Project. You may be aware of it. Specifically with respect to hard-to-quantify impacts, the manual states as follows: "Cost-effectiveness practices should account for all relevant, substantive impacts (as identified based on policy goals) even those that are difficult to quantify and monetize. Using best-available information, proxies, alternative thresholds or qualitative considerations to approximate hard-to-monetize impacts is preferable to assuming those costs and benefits do not exist or have no value."

We concur that it is essential to include material, but hard-to-quantify impacts even if a proxy estimate provides the greatest degree of accuracy that we can reasonably achieve at this time.

Finally, my last comment pertains to environmental and public health

externalities. It is widely understood that these externalities are not fully included in existing pricing and, in particular, the region's wholesale markets. It is in part for this reason that regional stakeholders, including Conservation Law Foundation, have proposed a market-based solution called the "Dynamic Forward Clean Energy Market," that would better value low-emissions resources. I will comment further on this subject in my detailed written comments.

In conclusion, I thank the Commissioners for their time and look forward to continuing to engage on this subject.

CHAIRMAN HONIGBERG: Thank you, Ms. Birchard.

Before we get to you, Mr. Fossum, Mr. Aalto, you didn't say one way or the other whether you wanted to speak. You just wrote something else.

MR. AALTO: My apologies. I did want to speak.

CHAIRMAN HONIGBERG: All right. So we'll do Mr. Fossum, then Mr. Sprague and

then Mr. Aalto.

MR. FOSSUM: Do the mic check.

Good morning, and thank you for the opportunity to comment. Eversource does have a few comments this morning and concerns to raise regarding the proposed study scope. And we'll keep our comments pretty well confined to the Staff proposal this morning. We do also, along with some of the other parties, intend to follow with written comments by the deadline, and so today we'll just highlight some of the concerns that we have.

First, and most generally, and as Mr. Weisner noted this morning, there are a number of places in the report that referenced a "group consensus" on recommended approaches. We just wanted to highlight that, due to the need to attend to certain storm restoration activities in March of this year, essentially there were effectively no utility representation at one of the meetings where some of the consensus was reached. In general, Eversource does not have any

significant problem with what is proposed to be in scope but wanted to clarify that our agreement on what's within the scope of the study is not necessarily agreement on the recommended study approach. We want to be sure to inform the Commission of that this morning not to unnecessarily inject controversy, but to frame our understanding of this document and the study to follow and to give some context for some of our comments this morning.

With that said, turning to a few of the specific items contained in the Staff report and proposal, looking at the tables that were included, and looking specifically at Page 6, Table 1, Item 2, there's references in there to the use of the AESC study "where appropriate." We just wanted to highlight that item because, as the Commission is aware, the AESC study is really aimed at energy efficiency, not distributed energy resources, and serious consideration should be given on whether and how to use the AESC in this case.

Next, looking at Pages 7 and 8 on Table 2 there, and Items 1 through 5, the report discusses the use of projections to study things like energy capacity, ancillary services, RPS and RNS and LNS. On these items, there is actual current and historic data that exists and we believe should be the basis for evaluating these items. As we're all aware, any projections will ultimately prove to be inaccurate. And in this case, the items being evaluated are subject to very significant levels of uncertainty. Attempting to forecast those items over the long term will take likely a lot of time, effort and cost and may lead to results that can be the subject of much future debate. Eversource would prefer that future projections that are subject to great uncertainty not be the basis for setting of future tariffs due to that very uncertainty. If, however, these market-priced items are to be included in the analysis, we believe all relevant market-based items should be included, including those relating to the

declining cost of solar equipment and installations.

Looking next at Page 12, Table 2 and Item 16, under the Externality Benefits, in that recommendation it states that the Staff recommends that avoided environmental externalities not already included in energy prices be analyzed as a study sensitivity. In the column right next to it, there is a quote there from the underlying Commission order, Order 26,029 which includes the statement that the study may include, "demonstrable and quantifiable" net benefits associated with relevant externalities, such as environmental or public health benefits, provided that the potential for double-counting of such externalities is adequately mitigated.

Including the externalities that were identified by Staff, it appears not to line up entirely with what was pointed out in the order. For example, RPS markets covered include environmental attributes for certain sources, RGGIs that set price for carbon

reduction, NOx, SO2 costs are encountered in ISO-New England market price formation. It appears in our initial analysis that some of these externality benefits, if not all of them, may be already accounted for and should not be included in the study scope.

And finally for this morning, looking at Page 14, Table 2, Item 19, relating to Customer Installed Net Costs, Order 26-029 states that New Hampshire-specific or industry estimates of customer installed system costs are appropriate and should be included in the study. And in discussing the approach to the study, back on Page 4 of the Staff recommendation, it notes that the study would assess the relative benefits and costs of net metered DG from the perspective of the utility system as a whole, participating NEM customer-generators and other electric utility ratepayers. And it also says that the Staff notes that participant cost valuation criteria in particular may be used to evaluate how NEM crediting and

compensation may affect reasonable opportunities to invest and receive fair compensation.

In our comments this morning, we just want to highlight and signal our agreement with this aspect of the study. We are all hearing regularly of the substantial decrease in the cost of installed systems under a variety metrics. Information on installed costs to the end customer -- the end-user customer would be very helpful in designing the next iteration of net metering tariffs, assuring a fair and appropriate compensation scheme.

Thank you. That's what I have for this morning, and we'll follow with additional written comments by the deadline.

CHAIRMAN HONIGBERG: Thank you, Mr. Fossum.

Mr. Sprague, to be followed by Mr. Aalto and then Brydon Ross.

MR. SPRAGUE: Thank you. My name is Kevin Sprague. I'm the director of engineering at Unitil. Unitil would like to

thank the Commission for the opportunity to provide comments to the Value of DER Study Scope and Timeline Final Report. Unitil was an active participant in the stakeholder process for developing the recommended project scope which has been presented to the Commission for consideration. Unitil also would like to thank the New Hampshire PUC Staff, OCA and other stakeholders for their efforts in developing this recommendation.

Unitil is in general agreement with the approach to the Value of DER Study. However, Unitil will reserve its right to agree or disagree with the assumptions and/or results presented in the study. Unitil would also like to reiterate the point made that the study results are not intended to predetermine future NEM, net energy metering, tariff designs or applicable rates, but rather to inform further NEM tariff development proceedings before the Commission.

Unitil hopes that the evaluation used in the study includes a rigorous

sensitivity analysis to determine the impact of all assumptions. A sensitivity analysis will be useful to the Commission Staff and all stakeholders to determine the demonstrable and quantifiable net benefits. The study should focus its efforts on quantifiable net benefits as opposed to qualitative benefits that may be more vague or not translate into direct monetary benefits. If a value cannot be quantified, the study should not include those criteria for consideration.

Unitil would also like to point out that there is a cost associated with DG interconnections. Those costs are real and can be rather significant depending on the location of the interconnection. It is important for the study to identify the net benefits -- meaning the total benefits minus the total cost -- with respect to DG interconnections. In some locations, the analysis could result in a negative value.

Unitil would like to take the opportunity to identify a few elements of the

study and how those elements should be treated in the study scope.

So, No. 5 in the table, Transmission Capacity, this element should be out of scope. Regional transmission planning is conducted by ISO-New England using rigid modeling criteria. It is not reasonable to expect that random deployment of DER based upon retail net metering tariff in New Hampshire will result in the avoidance of future unidentified transmission system expansion.

No. 8, Distribution System Operating Expenses. This element should be in scope, but should be expanded to also consider potential increases in operating expenses, in addition to potential decreases or deferrals.

No. 12, Hedging and Wholesale Risk Premium. This element should be out of scope. The risk premium in the retail default energy service prices is related to the market and customer load volatility. High penetrations of solar may increase

market volatility and increase risk premiums that are paid by non-participants that must pay the default energy prices. As for hedging, the distribution utilities do not engage in long-term energy supply hedging; thus, there are no hedging costs that will be avoided.

No. 16, Externality Benefits. This element should be out of scope. DER is currently supported by several incentive programs, such as rebates, tax incentives, renewable energy credits, et cetera. These programs, especially the renewable energy credits, are primarily a reflection of the value of these externality benefits. As such, it seems unlikely that any such benefits would satisfy the "double-counting" language in the PUC order.

CHAIRMAN HONIGBERG: Wait. On that one, the order specifically contemplates that being in scope. Now, it may be that the conclusion may be that the particular elements have to be excluded as double-counted. But you're saying that the

order, we should just -- the study should ignore that part of the order? That seems a little extreme.

MR. SPRAGUE: We believe that it's going to be difficult for the working group or the consultant to meet the double-counting aspect of the order.

CHAIRMAN HONIGBERG: So they shouldn't even look at it. So it should be out of scope -- you said out of scope.

MR. SPRAGUE: We believe it should be out of scope.

CHAIRMAN HONIGBERG: Okay. Thanks.

MR. SPRAGUE: No. 19, Estimate of Customer Installed Costs, this. Element should be in scope. Page 61 of the Order states that the New Hampshire-specific or industry estimates of customer installed systems costs are appropriate and should be included in the study. Unitil suggests a review of various categories of solar -- for example, a residential, a small commercial or a large host project -- to examine the installed costs, net of all possible subsidy

and incentive programs, and preferential accounting treatment. The review results should be in standard metrics, such as levelized cost of electricity and/or investment payback period under various net metering tariff scenarios.

Once again, Unitil would like to thank the Commission, Staff, OCA and other stakeholders for all their efforts in this report.

CHAIRMAN HONIGBERG: If you wouldn't mind leaving your written remarks for the stenographer, that would be helpful.

All right. Mr. Aalto, to be followed by Brydon Ross, and then I think Mr. Kreis.

MR. AALTO: Thank you very much for the opportunity to speak. I'd like to focus specifically on the wires part of the business. But first, more generally, I believe that the broad issue of value of these various types of generation is a very broad one and is probably best handled at another level -- that is to say, at a

legislative, societal level that says solar is useful for one reason or another, or a fuel cell is useful for some other reason. And NE subsidiaries that we might provide should be done, I believe, outside of a more market-oriented structure. And I believe that from that point of view that we should be focusing on the development of a pricing structure that represents a market for power.

Net metering, as we have it, is indeed that type of price because it is effectively a spot market. It is not a guaranty of anything to anyone either buying or selling. Prices could change. Contracts for power should be done, I believe, ultimately between customers and suppliers, not through the utility, if we can avoid that.

So the fundamental issue that we have is in the value of the wires aspect of the business. Much of the discussion is focused on the fact that in one example something like 50 feeders were looked at, and it was found that three of them might benefit

from distributed generation. The implication of that is that the distributed generation has no value toward distribution cost. If we accept that, we can basically hang up a good part of this process.

I would say that a better approach would be, since we have now a very substantial amount of what I call "excess capacity" that we're all paying for now, and the distributed generation would tend to add to that, we have to ask: Is there some way that we can control those costs through this process? And that argues for developing, or perhaps on a more specific basis, the value of power in the system. And that, in effect, becomes the price. Toward that end, time-dependent, system-status dependent and locational pricing becomes important. In the situation where we already have excess capacity on a feeder or other portion of the system, what I would argue is price it as if it had been competitive in the past -- that is to say, it has a price curve attached to the system. If the loading on the system is

zero, the price is zero. If the wire's ready to melt, the price is infinite. And a curve connects those that shows the usual congestion types of characteristics -- that is, it rises slowly with use and then rises rapidly as congestion appears.

Pricing. Each of our separate segments of our system going forward with that type of pricing structure, scale it so that it provides for the revenue requirements of the utility as a system as a whole. Some feeders would show low cost because they're dramatically in excess. Some would show higher prices because they need power. To those customers that choose to enter into this type of highly volatile pricing, they have the ability to shift load, generate power and respond to the pricing that's there. If we can do that effectively, and I believe it's relatively easy to do that -- and let me go and branch a bit into that.

If we put on each feeder a power-measuring system that looks very much like the meter that a large primary service

customer would have, we can in real time provide the loading, assign a price to go with that loading level, and make that available to all other customers on that feeder. If it's scaled properly, the feeder will sometimes under-recover and sometimes over-recover its appropriate cost. A feeder that is dramatically overbuilt will not recover its cost. One that is way underbuilt and overloaded will recover more cost. Scale the whole system ultimately so that the utilities' revenue requirement are met. What this gives us is an ability to control costs going forward so that we can include beneficial uses of electricity to increase load where it makes sense to do that, and to provide the proper price signals for that without adding necessarily to the cost of the distribution system; that way, we have a way to absorb some of the potential shift of generation within the system. With luck, there'll be a good balance for some years going forward. That gives us time to work off the excess capacity and get to a

structure where the system has appropriate matching of capacity with consumer response, which we've never had in the past, so that we can control the cost on that system and also simultaneously provide the pricing signal for people that are generating.

Effectively what I'm speaking to here is that we now, by doing this, we begin to develop a retail market for electricity that customers can respond to with their own generation or with their own heat pumps or electric cars or whatever method makes the most sense in a given area, and decisions will be made based on those.

So, in terms of what the scope of the study should be, we should include those types of factors. This is the main piece that in many of the studies that I've reviewed has missing. The assumption is we have all the sunk costs. We'll just do a fixed cost and recover it. That will not work in this case because it doesn't provide the proper pricing signals for either the general -- either the utility or customers

going forward. We need to be able to control the cost of distribution, or we will ultimately end up with people defecting from the grid, to general problems for everyone. It would be an unnecessary waste of the existing structure we have. And I would hope that we don't go the way of the railroads in this process, which I believe we have potential to do. We're not there yet. But if we work now, we may be able to shape our pricing structure so that it properly reflects a market value for power at NE location, at NE time, and allows the customer effectively to compete for the electric service that is provided by the wires business. We do that now with our energy efficiency by not buying at kilowatt hour. I don't pay because the utility doesn't provide the service. A generated kilowatt hour looks exactly the same. My neighbor may use it and pay full price for it. That is not a cost to the utility. The only issue is revenue loss for distribution service or wires service.

Thank you again for the opportunity to

speak. If I can answer NE questions, I will try. I should point out that I'm quite dyslexic, so I have a great deal of difficulty getting anything written. But I will try to provide something to describe a method for payment for capital asset distributed based on loading. Thank you.

CHAIRMAN HONIGBERG: Thank you, Mr. Aalto. Brydon Ross, Don Kreis, Ellen Hawes.

MR. ROSS: Can you hear me?

CHAIRMAN HONIGBERG: So far.

MR. ROSS: Members of the Commission, my name is Brydon Ross, and I'm the vice-president of State Affairs for Consumer Energy Alliance. As an interested party and member of the Commission's Working Group on the Value of DER Study, CEA appreciates this opportunity to participate in today's proceedings and share its comments. We also want to thank the Staff for the hard work on these efforts as well.

(Discussion off the record.)

CEA is a national non-partisan, non-profit trade association which has long

advocated for national and state energy policies which focus on creating a diverse portfolio of energy supplies from all resources, including wind and solar, to biofuels, petroleum, nuclear, clear-burning natural gas, as well as energy efficiency. We present energy consumers and end users across the nation, and CEA strongly supports the increased use of solar and distributed energy options. It is proud to advocate for the utilization of solar energy resources that help meet our energy demands, temper volatile energy prices and ensure fair access to energy for everybody.

As part of its Solar Energy Future campaign, CEA advocates on behalf of policies that are pro-solar, pro-grid and pro-consumer. We believe solar will provide long-term health, environmental and cost-saving benefits for families and businesses across the country and New Hampshire.

CEA released a new report entitled, "Incentivizing Solar Energy: An In-Depth

Analysis of U.S. Solar Incentives," which updates the first-ever comprehensive review it conducted in 2016 to quantify solar incentives across multiple states.

Our new report expands its analysis to 25 states, and includes New Hampshire, and it details the federal, state and local incentives for rooftop solar photovoltaic systems that have seen tremendous growth across the country. I've provided a copy of the entire report as part of my statement today, but I wanted to share a few highlights that are relevant to this hearing as the Commission and Staff continues this important work.

Among the study's key findings: Existing incentives for residential solar are significant. In all but five of the states that were analyzed, direct owners receive at least 75 percent of their total system costs back through incentives under a standard rate structure.

Utility-scale solar installations overall are less expensive to install and are

incentivized at lower rates per watt than rooftop solar systems. Nationally, our study found that residential solar systems receive on average between 104 percent and 140 percent of their total system costs back in incentives. Utility-scale solar installations receive roughly 45 percent of their total system costs back incentives.

Our study found that third-party-owned solar receives the most significant incentives nationwide, and that's largely due to the accelerated depreciation from tax benefits.

Solar installation may also shift costs in some states, and in some cases to other customers. Some states' net metering programs which pay residential solar customers at full retail rates for their excess electricity production can shift fixed utility infrastructure costs onto other non-solar customers. And our analysis found that residential solar programs unsurprisingly vary across the country. But in New Hampshire specifically, a single

6.1-kilowatt direct-owned system receives $23,254 in taxpayer and net metering incentives, or about $3.81 in incentives per watt, which represents 118 percent of the actual cost of the system. A single 6.1-kilowatt third-party-owner of a rooftop system in New Hampshire receives $24,741 in taxpayer and net metering incentives, or about $4.06 in incentives per watt. That represents 148 percent of the actual costs in the system. That's our study's analysis.

As this Commission knows, New Hampshire already has some of the highest residential, commercial and industrial electric rates in the United States. According to the most recent data from the Department of Energy, electric rates in New Hampshire are 53 percent more than the national average. CEA's primary interest as the study process develops is insuring costs remain fair and equitable for everyone as solar distributed options continue to grow. It is important that New Hampshire's existing incentive policies keep pace with tremendous

changes occurring in our dynamic electricity markets. The PUC is in the unique position through the Value of DER study process to address these energy costs while also promoting the continued growth of distributed energy, solar deployment, and modernizing New Hampshire's electricity grid.

CEA has greatly appreciated the opportunity to be a part of the Commission's working group and the chance to share its input today. We look forward to continuing this work together, with the development of a study that encourages New Hampshire's future incentive policies to strike a thoughtful balance in promoting distributed options with the need to maintain a reliable and resilient electricity grid that keeps overall rates as low as possible for families and businesses that may be struggling to make ends meet. Thank you for your time today.

CHAIRMAN HONIGBERG: Thank you, Mr. Ross. Mr. Kreis and then Ms. Hawes.

MR. KREIS: Thank you Mr. Chairman. Guess it might make sense for me to do a mic

check like Mr. Ross did. I think everybody can hear me.

CHAIRMAN HONIGBERG: Yours sounds great.

MR. KREIS: Thank you. Mr. Chairman, this public comment hearing is an excellent opportunity to take stock of where we are in the process of moving forward with the instructions issued by the General Court back in 2016 via the adoption of House Bill 1116. As you know, HB1116 instructed the Commission to open what became Docket No. DE 16-576. What public policy has guided this docket since its inception? The legislature declared, and I quote, "It is in the public interest to continue to provide reasonable opportunities for electric customers to invest in and interconnect customer-generator facilities and receive fair compensation for such locally-produced power while insuring costs and benefits are fairly and transparently allocated among all customers. The General Court continues to promote a balanced energy policy that

supports economic growth and promotes energy diversity, independence, reliability, efficiency, regulatory predictability, environmental benefits, a fair allocation of costs and benefits, and a modern and flexible electric grid that provides benefits for all ratepayers."

The key phrase is, of course, "reasonable opportunities, fair compensation, fair allocation of costs and benefits," and from the perspective of the Office of the Consumer Advocate, "benefits for all ratepayers." By those standards, the scope and timeline for the Value of Distributed Energy Resources Study issued by the Staff is well worthy of your approval.

As the document indicates, there is consensus among the stakeholders about the study parameters. There's also broad consensus on most of what deserves to be in the VDER value stack.

And I have to say here that I'm a little disappointed to hear Eversource say that because of a winter storm that diverted

the company's resources during one of the working group meetings, they don't necessarily support what Staff indicates to be the broad consensus on a bunch of issues in the report that Staff issued. You know, I understand -- this is equivalent to saying, well, you know, I couldn't make it to school even though there wasn't a snow day because I couldn't make it to school; so, therefore, everything that happened at school during that snow day shouldn't count. In reality, when you can't make it to school because there was a snow day, you have to make up the work later. And we have lots of stakeholder processes that go on here at the PUC, and not everybody can make every meeting. But there are opportunities to catch up and to bring your views to bear on documents like the one we're talking about here today. And I'm sorry that Eversource did not take the opportunity to do that.

With respect to that value stack, though, the consensus was attained I think on 13 of 19 items. As to most of the remaining

six, the question is not whether to include the item, but how. And the Staff approach of developing a qualitative and quantitative proxy estimate is reasonable.

And here I have to pause and say that I'm disappointed to hear what Unitil had to say because, as Chairman Honigberg suggested, certain items that Unitil would like you to declare to be out of scope are really a form of bootstrapping because some elements in the value stack will indeed be hard to quantify. But this kind of effort is exactly what the consultant the Commission is about to hire is going to undertake. And assuming that just because it's going to be difficult it doesn't belong in the study is basically an exercise in putting the cart before the horse.

As with net energy benefits in the energy -- or non-energy benefits, excuse me, in the energy efficiency realm, on behalf of residential customers, we look with favor on Staff's general emphasis on evidence-based assessments of impacts. The Staff's proposal

reasonably accommodates this imperative which we deem appropriate in light of the policy and political climate within which we all work.

And I would also like to say I was very pleased to hear what Selectman Carson and Mr. Herndon had to say about what's been going on in Warner. I think it is really encouraging to see these individual pilot proposals popping up in various regions of the state. I think the Commission should do everything it can to encourage that kind of stuff. I think it would behoove Eversource to be as cooperative as possible with what the folks in Warner are trying to do, and I think that it is useful to think about that today in the context of the scoping document that Staff has placed before you. The efforts that have taken place so far on teeing up the VDER study might just be the best example I have seen since I've been hanging around here of the collaboration between Staff of the PUC and the Office of Consumer Advocate that I now head. We had

the good sense to hire a consultant who's among the best in the business, and the Staff had the good sense to take his advice very seriously. We believe that, going forward, the VDER study will become the high water mark of a consensus-based approach in which stakeholders work together under the PUC's aegis to deliver benefits to all ratepayers by making sure that distributed energy resources assume their well-deserved place as the key customer-empowering element of the 21st Century electricity grid.

CHAIRMAN HONIGBERG: Thank you, Mr. Kreis.

Ms. Hawes.

MS. HAWES: Good morning. This seems to be working. I'm Ellen Hawes from Acadia Center. We focus on clean energy economies in the northeast states by providing policy and data analysis. Thank you for this opportunity to speak. I will be submitting joint written comments with some of the other parties on the 10th, so I will try to be brief-ish.

In general, Acadia Center strongly supports the study scope and the Staff recommendations on the non-consensus items. We believe there is a high level of consensus on the components that perhaps had the most significant values and are the most straightforward to quantify.

In terms of the less certain items, we support the Staff recommendation for qualitative/quantitative proxies, and we think an approach that incorporates sensitivity analysis and some sort of recommended path forward for establishing more set values in the future makes sense and would be a good use of resources. Most of these values we're certain are not zero. So, for that reason they shouldn't be excluded.

As Mr. Sprague noted, this is not a tariff proceeding. For that reason, Acadia Center thinks, to the extent feasible, each element should be separately and transparently quantified and studied with the decision about which and how much will be compensated with ratepayer funds to be

decided at a later date. But at this point, we think the study should include all of the value, whether or not it's appropriate to ultimately incorporate it in a tariff or not.

In particular, looking at Item 16, Externality Benefits, we think it's appropriate given the language in the order and in HB 1116. To conduct a sensitivity analysis looking at the values, the consultant and the Staff recommendations have mentioned a number of models to look at. We think that's a reasonable approach. We think the concern about double-counting is unwarranted. It's very straightforward to subtract things like RGGI, compliance costs, and REC prices. In our own study on the value of distributed generation, we did something similar and came up with a positive net value. And again, the entire range of externality benefits and the social cost of carbon, the social cost of NOx and SOx, that might not ultimately be paid for through net metering compensation, but it is a positive net value. It's easy to subtract out

anything else that would be double-counted. So at this stage we think it's appropriate to include it.

A couple other items that were raised by Unitil on the transmission capacity, and perhaps I misunderstood the remarks. But currently ISO-New England does include behind-the-meter solar PV in its forecasts, so I think it's appropriate to include avoided transmission costs.

And also on the hedging, I think it's not so much an issue of whether the distribution utilities are themselves hedging, but whether that hedging value is included in the wholesale energy cost. So I think we'll leave it at that.

Overall, I think the study scope that Staff submitted is strong and I think has a good balance between costs and feasibility. Thank you.

CHAIRMAN HONIGBERG: Thank you, Ms. Hawes.

That is everyone who signed up and said they did or might want to speak. Is

there anyone else who would like to say anything, or anyone who would like to say anything on top of what they've already said?

[No verbal response]

CHAIRMAN HONIGBERG: All right. We will close this portion of the public comment. Written comments can be filed up to July 10, and we will issue an appropriate order then as quickly as we can. Thank you all.

(Hearing concluded at 11:12 a.m.)

C E R T I F I C A T E

I, Susan J. Robidas, a Licensed Shorthand Court Reporter and Notary Public of the State of New Hampshire, do hereby certify that the foregoing is a true and accurate transcript of my stenographic notes of these proceedings taken at the place and on the date hereinbefore set forth, to the best of my skill and ability under the conditions present at the time.

I further certify that I am neither attorney or counsel for, nor related to or employed by any of the parties to the action; and further, that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

_____

Susan J. Robidas, LCR/RPR
Licensed Shorthand Court Reporter
Registered Professional Reporter
N.H. LCR No. 44 (RSA 310-A:173)

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