

STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

March 27, 2017 - 1:23 p.m.
Concord, New Hampshire

DAY 1
AFTERNOON SESSION
ONLY

12 APR '17 PM 1:31

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 Robert R. Scott
Commissioner Kathryn M. Bailey

Sandy Deno, Clerk

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**CERTIFIED
ORIGINAL TRANSCRIPT**

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I N D E X

WITNESS PANEL: KATE B. EPSEN
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(via video conf.) R. THOMAS BEACH

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1 (WHEREUPON the hearing resumed at 1:23 p.m.
2 after the lunch break.)

3 P R O C E E D I N G S

4 CHAIRMAN HONIGBERG: We're going to
5 be picking up with Mr. Epler. I understand
6 that Mr. Sununu wishes to ask questions. And
7 I've also been advised that I need to keep in
8 mind who's on what side of every issue and have
9 all the aligned, similarly aligned people ask
10 questions. So, Mr. Sununu and Mr. Voyles will
11 follow Mr. Epler, then Mr. Kries, and then
12 Mr. Below and then Staff. All right.
13 Mr. Epler.

14 MR. EPLER: Mr. Epler is done. Thank
15 you.

16 CHAIRMAN HONIGBERG: Had we but
17 known.

18 MR. EPLER: It was a lunchtime
19 decision.

20 CHAIRMAN HONIGBERG: All right. Mr.
21 Voyles.

1 CROSS-EXAMINATION

2 BY MR. VOYLES:

3 Q. Lady and gentlemen, thank you for being up
4 there today. I definitely appreciate it.
5 Very, very short line of questioning, fairly
6 simple. Just a couple of clarifying points
7 basically from your proposal overall and from
8 the testimony that was filed in support of it.

9 New Hampshire's net-metered customers are
10 currently compensated for generating
11 electricity above wholesale; is that correct?
12 I'm sorry. Yeah, above the wholesale rate; is
13 that correct?

14 A. (Phelps) The current compensation as laid out
15 in the statute, as it currently exists, is
16 based on retail rates. Correct.

17 Q. Okay. And under the proposal that you have
18 submitted, will it continue to be above
19 wholesale?

20 A. (Phelps) The components that are included in
21 the credit calculations are based on retail
22 rates.

23 Q. Thank you. And who pays those retail rates to
24 the net metering consumers?

1 A. (Phelps) Literally? It's the distribution
2 company.

3 Q. Sorry. Like I said, really, really super easy
4 questions, nothing overly complicated.

5 As a general business practice, do you
6 know whether utilities generally buy utility
7 over the wholesale cost?

8 A. (Phelps) It depends on the product.

9 Q. Okay. That's a fair answer.

10 Can paying a higher rate affect the total
11 operating cost of a utility?

12 A. (Phelps) I don't know that --

13 Q. I guess if they're acquiring a product --

14 A. (Phelps) The reason I was hesitant there is you
15 referred to "operating cost."

16 Q. Sure. Cost of doing business generally.

17 A. (Phelps) Yes.

18 Q. If that cost goes up, can it conceivably put
19 upward pressure on consumers' energy bills that
20 are not net metered?

21 A. That would depend on the downward pressure that
22 is also exerted as a result of distributed
23 generation.

24 Q. Are the actual and potential bill impacts of

1 cost shifting generally good for commercial and
2 residential consumers?

3 A. (Phelps) As Mr. Beach has testified, there is a
4 net benefit to all customers. So there is
5 downward pressure as a result of distributed
6 generation on the price to customers.

7 A. (Beach) Yeah, I would just agree with that.
8 Because the benefits outweigh the costs, there
9 will be downward pressure on rates.

10 Q. Okay. But there are costs associated with it
11 that could make bills go up; correct?

12 A. (Phelps) I'm sorry. Can you repeat that,
13 please?

14 Q. When customers are compensated at a rate above
15 wholesale, it can put upward pressure on
16 non-net-metered customers' bills; correct?

17 A. It would depend on the cost/benefit analysis.

18 Q. Okay. And Ms. Epsen, I'll not pick on you
19 necessarily, but I'll ask you the question.

20 Earlier in your testimony and in the
21 proceeding, we talked about reasonableness and
22 the notion that you would have to ask each
23 individual customer what a reasonable rate
24 would look like for them to make it worth it to

1 invest in solar. And I'm just curious as to
2 whether that's a practicality that we need to
3 pursue or if that was merely an off-handed
4 comment as to what a reasonableness standard
5 would look like.

6 A. (Epsen) Practically speaking, I would not
7 recommend pursuing it because we can look at
8 aggregate data to support general, you know,
9 general ideas about what is reasonable and what
10 is not reasonable based on the history of
11 investment rates and such.

12 Q. Okay. Thank you.

13 A. (Mueller) Can I just add to that briefly?

14 Q. If you'd like.

15 A. (Mueller) While obviously it's not practical to
16 go talk to every individual ratepayer in New
17 Hampshire and ask them what their threshold is
18 for making this investment, we do benefit, from
19 experience both in New Hampshire and in lots of
20 other states, knowing sort of what reasonable
21 threshold it takes to get a customer to move on
22 a project with a certain amount of risk. If
23 you either decrease the opportunity for
24 economic return or you substantially increase

1 the risk, you're going to get less. So that's
2 not rocket science. That sort of
3 Economics 101.

4 Q. Understood. Now, part of the guidance for this
5 particular docket from the initiating
6 legislation talked about cost shifting and
7 determining what was just and reasonable. The
8 proposal you've put out, do you consider it to
9 be just and reasonable?

10 A. (Mueller) I think Tom covered this in his
11 opening statement, which is -- and Tom, if you
12 want to speak to this -- the analysis that he
13 did shows that the existing compensation regime
14 for net metering customers' benefits outweigh
15 the costs. Therefore, if the proposal that we
16 put forward reduces those costs further, then
17 by definition they are also just and
18 reasonable.

19 Q. Okay. Just confirming, though, that we had
20 gone through, just like I said, a very brief
21 line of questioning that noted the fact that
22 retail rates can actually make other customers'
23 bills go up. And I was wondering if you could
24 essentially quantify that, as to what is "just

1 and reasonable." Sounds like the answer is --
2 A. (Mueller) I think you maybe mischaracterized
3 the results of the previous line of
4 questioning. Insofar as benefits outweigh
5 costs, buying more solar at that cost does not
6 put upward pressure on retail rates.

7 Q. I think there's conflicting testimony on that,
8 so I'll let it flush itself out. Thank you.

9 CHAIRMAN HONIGBERG: Mr. Sununu.

10 MR. SUNUNU: Thank you.

11 CROSS-EXAMINATION

12 BY MR. SUNUNU:

13 Q. Under your proposed tariff, you're requesting a
14 full retail rate for energy and, at least
15 initially, 75 percent of distribution costs as
16 compensation to the distributed generation
17 customers; correct?

18 A. (Phelps) We are not requesting full retail
19 rate.

20 Q. For the energy portion of that?

21 A. (Phelps) For default service? Is that your
22 question?

23 Q. Under the proposal that you put forward, it was
24 retail on the energy side plus 75 percent of

1 distribution, going down to 50 percent of
2 distribution, and that eventually, after the
3 studies, a distribution number to be determined
4 later.

5 A. (Phelps) Okay. I just wanted to make sure I
6 understand what you're asking. So you're not
7 talking about the energy rate that customers
8 pay for retail. You're talking about --

9 Q. No, this is for the compensation for exported
10 electrons.

11 A. (Phelps) Just the generation portion. That is
12 correct.

13 Q. Okay. So, logically, using Economics 101, what
14 would somebody pay, or what is the value for an
15 electron that's not consumed on site,
16 distributed generation that's exported, but has
17 no distribution system to actually export?

18 A. (Phelps) I'm not sure I understand your
19 question.

20 Q. If I have a stranded electron, you don't have
21 any distribution system to export it, what's
22 the value -- what would somebody pay for that
23 electron?

24 A. (Phelps) Are you saying -- are you trying to

1 refer to a customer that is off the grid?

2 Q. That could be an example of a customer off the
3 grid. But if I am supposedly valuing that
4 electron to anybody except for that person, if
5 they have excess generation, that value I would
6 argue is zero; correct?

7 A. (Phelps) I think that value would depend on
8 what that person values it at. So, for
9 instance --

10 Q. No, it would be the buyer who --

11 MR. EMERSON: Can you allow him to
12 answer the question?

13 CHAIRMAN HONIGBERG: There is a
14 pending question.

15 A. (Phelps) So, for instance, if a customer is off
16 the grid, they would presumably have storage
17 and so they would be able to store that. And
18 whatever that value is, how much value that
19 person assigned --

20 Q. Assuming they don't have storage.

21 A. (Phelps) Then your question is illogical.

22 Q. All right. I don't think it's illogical.
23 Somebody could be off the grid and be able to
24 generate excess generation at their site.

1 A. (Phelps) And --

2 Q. I'm asking what is the value that somebody else
3 would pay for that electron.

4 A. (Phelps) If they're not interconnected with
5 anyone else, the value proposition is strictly
6 tied to that customer.

7 Q. So without the distribution system, the value
8 of any power to be exported by DG customers is
9 essentially zero if they're not storing on
10 site.

11 A. (Rabago) It feels like what you're trying to do
12 is ask -- if a distributed generation customer
13 who exports is "using the grid" and therefore
14 should pay for it.

15 But let's go back to your premise. If
16 they don't have a way to sell it, the value
17 they place is the value they placed in making
18 the investment in the first place. So your --
19 we'll play with your hypothetical for just a
20 minute. The customer provides a 10-kilowatt
21 system. They only have 8 kilowatts of load.
22 They pay \$1,000 per kilowatt. The value to
23 them is \$10,000. And having those extra is
24 worth something to them, probably about \$2,000

1 for the excess capacity. So there is a way to
2 characterize the value, even if there isn't a
3 grid, using the purchase price of the investor.

4 But are you -- you're looking for a market
5 value? Well, their market value to sell to
6 somebody else if you're not interconnected is,
7 as Nathan said, by definition, zero. If you
8 want to get into cost-of-service ratemaking and
9 start figuring out whether or not that
10 distribution system cost should come in place,
11 the first question you'd want to know is
12 whether there is incremental cost to the
13 distribution system incurred by the export of
14 an excess kilowatt hour on the system, given
15 that most systems are somewhat overbuilt and
16 definitely are not already carrying a whole lot
17 of other electricity, if you will, in the
18 backward direction. From a cost-of-service
19 basis, there's no incremental cost, so the
20 value -- oh, I'm sorry. And I want to add, and
21 given the physics that the electricity will
22 likely serve the nearest load, then the value
23 is likely to be very close to the full bundled
24 retail cost of service.

1 CHAIRMAN HONIGBERG: I could be
2 wrong, but at one point it looked like Mr.
3 Beach wanted to say something.

4 A. (Beach) No. I think that Mr. Rabago said what
5 I was going to say. But thank you.

6 BY MR. SUNUNU:

7 Q. But the buyer of this electron is not the
8 existing distributed generation customer. So,
9 to anybody external to that distributed
10 generation customer, without the distribution
11 system that electron has zero value.

12 A. (Rabago) And then that customer buys that -- or
13 let's say goes next door to a customer that
14 does not have distributed generation, and that
15 customer buys it, they're going to pay the
16 local distribution company full retail,
17 including the full cost of the distribution
18 system embedded in those cost-of-service rates.

19 Q. No, my question was not what the customer is
20 going to buy it for, but without that
21 distribution system, that electron has no value
22 to any external customer.

23 A. (Rabago) I can't continue with your --

24 CHAIRMAN HONIGBERG: Hang on. It

1 looks like I'm getting an objection.

2 MR. EMERSON: Well, I think he
3 answered the question to the best that he
4 understood the way it was phrased. So --

5 MR. SUNUNU: That's fine.

6 CHAIRMAN HONIGBERG: All right.
7 You've probably run this aground, Mr. Sununu.

8 MR. SUNUNU: That's fine.

9 BY MR. SUNUNU:

10 Q. So, in essence, though, for that electron to
11 have value, it requires the use of the
12 distribution system to move that electron to
13 somebody who will buy it; correct?

14 A. (Rabago) The distribution system provides value
15 to all interconnected customers by serving as a
16 mechanism for the delivery of electricity, and
17 increasingly today, hopefully, as a mechanism
18 in which to locate distributed generation and
19 also provide value to customers.

20 Q. Under your proposal, though, the distributed
21 generation customer is not reimbursing the
22 utility, or for that matter, any of the
23 non-solar ratepayers, for the use of that
24 distribution system that creates any kind of

1 value for that electron; correct?

2 A. (Phelps) I disagree.

3 A. (Beach) I disagree, too.

4 A. (Phelps) Please, Tom.

5 A. (Beach) The export of electrons from a
6 distributed generation customer down on the
7 distribution system allows the utility to avoid
8 costs upstream from that customer on the
9 upstream portion of the distribution system, on
10 the transmission grid and among the generation
11 resources that serve the utility. It's those
12 benefits that offset the costs of using the
13 distribution network and result in net benefits
14 to the whole system and for non-participating
15 ratepayers. And that's why overall net
16 metering is a benefit to customers. It's not a
17 cost. There is no cost shift.

18 Q. Well, the only way that a distributed customer
19 would be creating that value would be if
20 sometime in the future benefit of reducing
21 congestion on that particular circuit, on what
22 is likely a very brief peak period in the
23 future, is worth more in present value terms
24 than the distributed generator's use of that

1 distribution system day in and day out to
2 export their power over the 25 years or so;
3 correct?

4 A. (Beach) Well, you know, the calculation that
5 we've done considers that. It considers when
6 the exports happen. It considers what the
7 loads are on the system when the exports occur
8 and what the benefits of those exports are in
9 the long run. And yes, those benefits do
10 exceed the costs. The costs of using the
11 distribution system when it's unloaded are very
12 low.

13 Q. But I've seen no modeling that shows any, for
14 lack of a better term, payment back to the
15 utility or non-solar customers for the use of
16 that distribution system that creates value for
17 those electrons in any of those models. They
18 typically only assumed in the future, now
19 present value of lowering congestion. I don't
20 know -- I haven't seen any models that show
21 that. Can you point to where that is?

22 A. (Phelps) I didn't hear a question there.

23 Q. I'd like to know where in the models the
24 assumption is that the distributed generation

1 customers are, in essence, paying to use the
2 distribution system to create value for the
3 electricity that they export, without which
4 that electricity would have no value.

5 MR. EMERSON: Can I actually get a
6 clarification? I think his question -- sorry.
7 This is Eli over here.

8 CHAIRMAN HONIGBERG: Thank you. It
9 is a little hard, 'cause once the voice goes
10 into the microphone and comes out the speakers,
11 it could be anybody.

12 MR. EMERSON: He referred to "where
13 in the model." I guess I'm curious as to what
14 model the question is referring to.

15 CHAIRMAN HONIGBERG: Well, there was
16 a fairly long introduction to a question that
17 was worded that way.

18 Mr. Sununu, why don't you try to
19 focus your question because it may be one
20 directed to Mr. Beach.

21 BY MR. SUNUNU:

22 Q. Where in the testimony and models provided do
23 you calculate and show a cost paid by the
24 distributed generator for the use of the

1 distribution system over the 25 years
2 offsetting or partially offsetting the present
3 value of the benefits that distributed
4 generation provides?

5 A. (Beach) Well, there's no payment by the
6 distributed generator. This is just like
7 energy efficiency. When people don't use
8 energy, it reduces the utility's future costs
9 to provide electric service. That's exactly
10 the same thing that's happening here. Because
11 the distributed generator is putting electrons
12 into the system on the distribution network,
13 it's allowing the utility to provide service to
14 its customers at a lower cost over time than it
15 would if those -- if that DG did not exist.
16 It's an avoided cost. And avoided costs, you
17 never see them as actual payments, but they are
18 nonetheless real cost savings as a result of
19 those resources.

20 Q. So there's no calculation of the value of that
21 distribution system provided by the utility to
22 the DG to reflect, for lack of a better term,
23 the cost of using that system by the DG.

24 A. (Beach) Well, the cost of net metering is the

1 compensation that's paid for the exports. And
2 the compensation includes a distribution
3 component. But that's offset by the avoided
4 cost savings that the utility will realize in
5 the long run.

6 Q. Okay. So, last question here. Again, there's
7 a very disparate view on the value of that
8 distribution and who should be compensating who
9 for it. But without any quantitative analysis
10 from your side showing the specific benefits, I
11 would assume that the compensation actually
12 would be negative here. And given this,
13 shouldn't it be incumbent on your side, who is
14 the beneficiary of the distribution
15 compensation, to show a real benefit to the
16 system, a real benefit to ratepayers before we
17 provide this to a tariff?

18 A. (Beach) I think we have provided that
19 calculation of a real benefit. We are
20 providing electrons delivered into the system
21 close to the point at which they're used. That
22 allows the utility not to have to invest in
23 upstream facilities. And those savings are the
24 value that we're providing.

1 Q. I'm sorry. Last question here. But at the
2 beginning of the testimony, you had indicated
3 that there hasn't been enough quantitative
4 analysis to actually identify the distributing
5 compensation, and that through your tariff, by
6 lowering distribution and eventually doing the
7 studies, that you'd quantify that. That seems
8 to be in direct conflict to what was just said.

9 A. (Beach) Well, we have -- our quantification has
10 been on a system basis. I think there's a lot
11 of interest in quantifying the benefits on a
12 much more granular, locational basis than has
13 been -- we've been able to do in this case.
14 And that's the data discrepancy that we were
15 discussing in our opening statement, is that
16 we'd like to do this value calculation on a
17 more granular, locational basis, as it's being
18 done in New York and California and other parts
19 of the country, but there is simply not data in
20 this docket to do that.

21 MR. SUNUNU: Thank you very much.

22 CHAIRMAN HONIGBERG: Mr. Kreis, to be
23 followed by Mr. Below.

24 MR. AALTO: If I might, sir? I would

1 like to --

2 (Court Reporter inquiry)

3 CHAIRMAN HONIGBERG: That's Mr.
4 Aalto.

5 Mr. Aalto, I'm sorry. You want
6 to ask a question, too?

7 MR. AALTO: Yeah, I would like to, if
8 it's possible.

9 CHAIRMAN HONIGBERG: It is. We'll
10 slide you in there probably before Mr. Below.

11 MR. AALTO: Thank you.

12 MR. KREIS: Thank you, Mr. Chairman.
13 I hopefully won't take up too much time because
14 there have been a lot of useful questions and
15 answers already. And I'd like to butter up the
16 panel by thanking them for their testimony
17 today. I found it very interesting and useful
18 as I struggle to understand the difference
19 between the two settlement agreements that are
20 pending.

21 CROSS-EXAMINATION

22 BY MR. KREIS:

23 Q. I want to just briefly cycle back to the Energy
24 Future Coalition prefiled supplemental

1 settlement testimony, which is Exhibit 1. And
2 I want to focus on a couple of things that I
3 don't think anybody asked about that are of
4 interest to the Office of the Consumer
5 Advocate.

6 The first is on Page 13. There's a
7 question: "How does this settlement propose
8 addressing renewable energy certificates that
9 are associated with net-metered DER
10 production?" And then the witnesses provide an
11 answer that basically says, "The utilities will
12 work with both customers, aggregators and other
13 relevant third parties to better facilitate the
14 creation of RECs by the customer-generator and
15 that utilities may choose to purchase RECs
16 directly from a customer for a fixed fee."

17 My first question is: Is anything like
18 that happening now under the current net
19 metering regime that we are living with?

20 Oh, I should say, unless I specify
21 otherwise, anybody on the panel is welcome to
22 answer.

23 A. (Epsen) I believe New Hampshire Electric Co-op
24 is serving this function.

1 Q. But none of the investor-owned utilities are
2 doing anything like that?

3 A. (Epsen) Correct.

4 Q. Does this proposal in the Energy Future
5 Coalition settlement differ in any material
6 respect, or really in any respect from the
7 similar language in the Utility/Consumer
8 Proposal?

9 A. (Bean) There may be a difference in the terms
10 requiring production meters to be owned by
11 utilities. We did not include language in
12 that.

13 Q. But other than that, the two proposals are
14 essentially identical?

15 A. (Bean) Subject to check, I don't know if they
16 are exactly identical, but they are very
17 similar.

18 Q. Okay. Could you comment on the feasibility of
19 this program that both settlements seem to
20 contemplate?

21 A. (Epsen) I would say that it's highly feasible,
22 considering that it's currently going on at a
23 utility across the state, the New Hampshire
24 Electric Co-op, as I said, and that there are

1 ways to streamline these processes that we've
2 seen in other states, such as Massachusetts.
3 So, yes, highly feasible.

4 Q. And do you have any notion of how much value
5 there is for customers when transferring
6 renewable energy credits?

7 A. (Epsen) Do you mean market value?

8 Q. Any estimate that you might have for what the
9 value is to residential energy customers of
10 having this opportunity to transfer their RECs
11 in exchange for value.

12 A. (Mueller) Presumably that depends on the rate
13 that the utilities will pay to buy that REC.

14 It's also worth noting that certainly it's
15 not every solar customer who intends to or
16 wants to sell the renewable energy associated
17 with their system.

18 Q. What sort of customer would not want to do
19 that?

20 A. (Mueller) In our experience, customers who want
21 to maintain the claim to the environmental
22 attributes of the energy that they generate and
23 export; they want to hold on to the renewable
24 energy certificates.

1 Q. And you would acknowledge -- this sort of goes
2 back to the question of the extent to which the
3 two proposals are identical. There's a
4 difference, from a consumer standpoint, between
5 selling the renewable energy credit to the
6 utility and having the utility help the
7 customer sell the renewable energy credit to
8 some third party.

9 A. (Phelps) Yeah, ultimately RECs are used, for
10 RPS compliance are used by load-serving
11 entities, which could be competitive suppliers
12 or -- I'm not sure how each of the
13 investor-owned utilities works in New
14 Hampshire, but they could also do RPS
15 compliance themselves for default service. But
16 once again, I'm not sure how the investor-owned
17 utilities do their RPS compliance in New
18 Hampshire.

19 Q. Thank you. Switching briefly over to
20 Exhibit 2, which is the sort of chart that lays
21 out the terms of the Energy Future Coalition
22 proposal, on Page 3 there's a reference to the
23 idea that utilities can facilitate customer
24 education on topic and promote program --

1 sorry, my computer's ringing. See if I can
2 make it stop that. Sorry about that.

3 Are you all comfortable with the idea of
4 leaving that task to the utilities?

5 A. (Epsen) I would say the utilities can do it,
6 and they needn't be the sole entity doing it.
7 For example, my organization, NHSEA does a lot
8 of similar-type education.

9 Q. Super. At Page 15 of Exhibit 1 there's a
10 question: "Please describe the low- to
11 moderate-income pilot program." And the first
12 sentence of the answer says, "Adoption of DER
13 by low- to moderate-income customers is
14 currently lagging." Could one of you elaborate
15 on that statement? In other words, I guess my
16 more focused question would be: To what extent
17 does the phrase "is currently lagging" really
18 mean is currently nonexistent?

19 A. (Mueller) I don't know that any of us have the
20 data to support that comment necessarily. I
21 know I can speak for our own organization. We
22 have built a number of solar projects for
23 low-income housing providers; so, serving that
24 population indirectly, if not directly. But I

1 think you're right, and it goes to sort of the
2 economic value proposition we talked of before,
3 because the economic value proposition of a
4 solar, a rooftop solar project under current
5 net metering rules is okay, but not
6 exceptional. There's not a really meaningful
7 opportunity for low- and moderate-income
8 customers to participate. You know, I think
9 it's worth noting the deeper you cut into the
10 rate and the more risk you put into these
11 projects, you hurt those customers from the
12 bottom of the income scale up first. And so,
13 you know, a customer for whom, you know, a
14 \$20,000 solar project is a small, discretionary
15 expense, they still do it if it is totally
16 uncertain, in terms of its economic return.
17 The customer for whom that is a very
18 significant, major life expense, which is most
19 New Hampshire ratepayers, are unlikely to do it
20 when you introduce that kind of uncertainty.
21 And that's central to our idea that these
22 changes ought to be incremental, gradual and
23 understandable for customers.

24 Q. Because you think that would be especially

1 helpful to low- and moderate-income customers?

2 A. In particular, moderate-income customers. You
3 know, middle-income customers under the current
4 set of rules. You know, talking about sort of
5 middle income, probably homeowner customers,
6 because their group net metering rules are
7 problematic in other ways. So, yeah, those
8 customers obviously get hurt more when the
9 economics of the projects are eroded.

10 A. (Phelps) If it pleases you, I'm happy to talk a
11 little bit about low-income customers in
12 general.

13 Q. Of course that would please me.

14 A. (Phelps) Thank you. So, low-income customers
15 tend to be the most vulnerable when it comes to
16 the expenses associated with their electricity
17 bills. They tend to work on margins, as far as
18 what they are taking in and what they're
19 expending. Furthermore, many low-income
20 customers tend to live in areas that may expose
21 them more to emissions from central generation,
22 so they tend to be -- they tend to have high
23 vulnerability associated with their health
24 ultimately when it comes to electricity.

1 Ultimately, distributed generation can help
2 these customers enormously when it comes to
3 their financial security and their health.
4 What I've seen in other jurisdictions, other
5 states, is that, in order to really penetrate
6 into this market, in order to help these
7 customers, it does require additional
8 assistance. Now, that can take the form of
9 additional compensation or higher compensation
10 in order to help out these customers. It can
11 also take the form of education to help them
12 understand how a certain program can actually
13 benefit them. And I will note that we've seen
14 that same type of issue in energy-efficiency
15 programs as well as distributed generation
16 programs.

17 Q. I guess I'm sort of curious about what
18 Mr. Beach has to say about this out in Colorado
19 where he is, because I remember that in his
20 original testimony he described distributed
21 energy resources as a "gateway drug" that would
22 lead people to adopt more and more of this
23 stuff. And I worry that that "gateway drug"
24 won't really help low-income customers very

1 much.

2 A. (Beach) The reference that I had to that is

3 that putting a solar system on their house is a

4 significant investment and requires the

5 consumer to basically gain a lot more knowledge

6 about their utility bill and their energy costs

7 than they would ordinarily. And in the process

8 of doing that research, customers tend to learn

9 more about their energy use and how their

10 utility rates work and to also do more, to do

11 other things to improve the energy efficiency

12 of their homes -- for example, you know,

13 engaging in utility-sponsored energy-efficiency

14 programs, buying more efficient appliances.

15 And sometimes those choices actually are even

16 more cost-effective than putting solar on their

17 house. So it's really in the process of

18 educating themselves that there are these

19 ancillary benefits from customers who are

20 investigating solar. I think there have been

21 studies in California that have showed that

22 solar customers participate more vigorously and

23 to a greater extent in other kinds of

24 efficiency programs than normal customers.

1 A. (Phelps) And Mr. Kreis, you had mentioned
2 Colorado. And I think that that is actually a
3 really good example of how utilities can
4 actually help facilitate adoption by low-income
5 customers. So, for instance, this past year
6 there was a very large settlement in Colorado,
7 that one of the provisions is to help
8 low-income customers adopt solar, specifically
9 shared solar in Colorado -- group net metering
10 here in New Hampshire. What the settlement
11 actually does is helps -- I should say it
12 requires the utilities there to actually
13 purchase portions of shared solar programs in
14 order to help low-income customers individually
15 and as a whole. The benefit of shared solar
16 specifically for low-income customers can be
17 quite large, because while not universal, many
18 low-income customers are actually in living
19 situations that don't allow them to actually
20 install solar on site, whether it be rental
21 properties or condominiums or multi-family
22 living situations where they actually
23 physically don't have ownership rights to the
24 roof or ability for whatever reason. So,

1 shared solar, or group net metering here,
2 provides a method and opportunity for
3 low-income customers to actually avail
4 themselves of solar. And the utilities can
5 actually play an integral part in helping to
6 facilitate this transition for low-income
7 customers.

8 Q. So, given all of that concern, which the Office
9 of the Consumer Advocate obviously shares, what
10 does your settlement proposal do by way of
11 providing help to low-income customers
12 specifically?

13 A. (Bean) We've proposed a pilot that builds off
14 of what you proposed in your testimony, and
15 looks like in your settlement as well, that
16 would provide greater access to these resources
17 for low-income customers. We didn't include
18 specifics on those pilots, but we are looking
19 forward to working with you and others, if that
20 is a pilot that's selected, in order to develop
21 it so that it is reaching as many customers as
22 possible.

23 A. (Rabago) In addition, of course, as I think
24 somebody already discussed, the proposal tries

1 to ensure that exports from solar facilities
2 get their fair value, which improves the
3 economics for those customers who get to invest
4 in it. And that's a big part of making it work
5 for low, moderate and all income customers.

6 A. (Mueller) And finally, of course, insofar as
7 the analysis shows that the benefits of the
8 solar outweigh the costs, those benefits accrue
9 to all ratepayers, regardless of whether
10 they're low or moderate income. And when
11 that's true, more solar means more savings for
12 low-income customers.

13 Q. And just hypothetically, if there were some
14 cost shift here from customers that are
15 customer-generators to other customers, that
16 cost shift, if it existed hypothetically, would
17 be particularly troublesome to low-income
18 customers, wouldn't it?

19 A. (Rabago) It depends which direction it goes;
20 right? Our evidence suggests that the more,
21 the merrier, for all customers.

22 Q. Understood. That's why I asked that question
23 in the hypothetical.

24 So I just want to make sure I understand

1 what it is that you're agreeing to and what
2 we're leaving for future consideration. The
3 Energy Future Coalition is not embracing the
4 proposal reflected in the testimony that Ms.
5 Doherty filed on behalf of the OCA. It's
6 merely suggesting it would consider that should
7 some -- should that kind of a pilot be chosen
8 for possible consideration in the future when
9 we get around to doing pilots.?

10 A. (Bea) Yeah, I think in general we agree with
11 the design. I think it would have to be
12 discussed within the group and obviously
13 approved by the Commission. But generally we
14 endorse a program that increases the access of
15 these resources to every customer.

16 Q. At Page 16 of the supplemental settlement
17 testimony, Exhibit 1, you talk about a TOU
18 pilot and state at Line 6 that the objective of
19 that pilot would be to "create a more
20 actionable TOU rate." What does "more
21 actionable" mean in that context?

22 A. (Bea) Sure. And you said Page 16 and what
23 line again?

24 Q. Six.

1 A. (Bean) Line 6. Yes, so this is really
2 referring to the paragraph previously, where I
3 described -- or where we described two
4 time-of-use rates that are currently available
5 to customers, one with Liberty Utilities and
6 the other with Eversource. The on-peak period
7 for those rates are about 13 hours long. So,
8 for example, Eversource has a 7 a.m. to 8 p.m.
9 peak window. We would say that is too long
10 because it doesn't really give customers a fair
11 opportunity to perhaps shift demand to an
12 off-peak period, just because it covers much of
13 the day that, you know, either they would be
14 home, so they might have to wake up earlier or
15 stay up later at night. So we think that it
16 should be more closely aligned with the system
17 peak, so we said 5 percent maybe, within
18 5 percent of the peak. And I included that in
19 my initial testimony, which is Exhibit 21, what
20 those hours would be. And if you would like me
21 to check, I can get those.

22 Q. Moving on at pages, I think it is... there's a
23 section in your testimony about a non-wires
24 alternative pilot. I forgot what the page

1 number is. Bottom of Page 16. I have that
2 right.

3 Could you give us a few examples of what
4 "non-wires alternatives" mean and what sorts of
5 experiments we might conduct in connection with
6 that pilot?

7 A. (Bean) Sure. And if Karl wants to jump in at
8 any time with experience from New York, he can.

9 So this is really about deploying
10 resources that are distributed energy resources
11 to either defer or replace a traditional
12 utility investment. And there are a number of
13 examples from around the country, most notably
14 the New York Brooklyn/Queens Demand Management
15 Program, which I included in my initial
16 testimony, which is Exhibit 21, with
17 attachments. And what they've done is
18 identified a system need, which, if I recall,
19 was about a billion-dollar investment. And
20 they said it will cost us a billion dollars to
21 upgrade a substation, but we want to test if we
22 can provide incentives, look to the market for
23 resources to come and help us defer that
24 investment. And I believe they committed

1 \$200 million to projects to delay and defer
2 that investment.

3 There's also a nearby example in Booth
4 Bay, Maine, of a non-wires alternative that was
5 delaying or deferring a pricey transmission
6 investment.

7 Q. So I, too, have heard of the Brooklyn/Queens
8 experiment and the Booth Bay experiment over in
9 Maine. Are there others?

10 A. (Phelps) Yeah. This actually is a new idea, to
11 be completely honest. So, in 2007, I actually
12 worked with Eversource. Of course, they
13 weren't Eversource at the time, but
14 specifically NSTAR Electric in Marshfield,
15 Massachusetts. And the idea was the same:
16 Install energy-efficiency, demand response and
17 distribution generation in order to defer and
18 upgrade to a substation in Marshfield,
19 Massachusetts. So the idea is not necessarily
20 novel. It's just we need actually good
21 experience here in New Hampshire to help the
22 utilities identify areas and actually on a
23 granular level actually quantify the value that
24 we can achieve.

1 A. (Rabago) I'll just add generally, this is the
2 principle of integrated resource planning or
3 least-cost planing. So my first experience in
4 this was a case in which I was an attorney in
5 1992, involving five central station power
6 plants and basically identifying how energy
7 efficiency and other resources could defer the
8 need for those plants. In the early days, we
9 also used line-extension policies for rural
10 customers to do exactly the same thing.

11 We documented -- at this level, at the
12 distributed generation level or distributed
13 energy resource level, what we're really
14 looking for is sort of the granular topography
15 of marginal distribution capacity cost. So, in
16 other words, we want to know what the marginal
17 distribution capacity cost is over the short,
18 mid and long term at various nodes or subnodes
19 of the distribution system in order that we can
20 then identify what kinds of customer-owned
21 generation or other distributed energy
22 resources can effectively provide that value at
23 a lower capacity cost than the utility would
24 otherwise face.

1 Q. So if I understand you correctly, Professor
2 Rabago, this is an opportunity to take another
3 new look at the whole notion of least-cost
4 integrated resource planning.

5 A. (Rabago) Add an "L" to it, make it local.

6 Q. Music to my ears.

7 This is back to a general question for the
8 panel. Under your proposal, the Energy Future
9 Coalition proposal, what keeps a solar
10 installer and/or its customer from deploying a
11 system on their premises that's too big?

12 A. (Rabago) Your question was what makes it stop
13 the customer from deploying a system that's too
14 big?

15 Q. Yes.

16 A. (Rabago) Yes, okay. So there are a couple of
17 things going on with that. The first is that
18 if it's a residential customer and they deploy
19 a system that's too big, they may run afoul of
20 the Section 25D regulations from the IRS and
21 find -- or face themselves having to partition
22 their transaction into generation for use and
23 generation for sale, and then thereby become a
24 business generator for the piece that's excess.

1 There's a 80/20 rule of thumb in the QSEP,
2 qualifying solar electric property rule, that
3 the IRS maintains that says that, if your
4 exports are consistently above 20 percent of
5 the total capacity, you may be subject to that
6 parsing of your investment for tax purposes.
7 You also -- if you do too much increase in
8 size, then you will increasingly look like
9 someone who's in the business of selling for
10 wholesale, in which case you may be forced to
11 become a qualifying facility under PURPA and
12 selling your electricity.

13 And then, finally, solar is a high
14 fixed-cost system. You know, you pay for your
15 fuel and everything up front. So it doesn't
16 pencil out. Simple economics will stop you
17 from overbuilding when you can't make a lot of
18 money off of it.

19 Q. So, given that the answer you just gave is
20 grounded in the Internal Revenue Code and/or
21 principle of economics --

22 A. (Rabago) And federal FERC jurisdiction and
23 PURPA law, right.

24 Q. -- and PURPA, the Public Utility Regulatory

1 Policies Act of 1978, it would be fair, then,
2 to say that neither the Energy Future Coalition
3 proposal nor the Utility/Consumer Proposal
4 really constrains or affects the right sizing
5 process.

6 A. (Rabago) You would not want to set the size of
7 the system -- to the extent that economics, for
8 example, impacts it, customers may be
9 undersizing their systems today when it's
10 relatively expensive and may be able to
11 right-size their systems, make them bigger when
12 it's less expensive in the future, for example.
13 Or if smart inverters improve their ability to
14 participate or provide values to the grid, you
15 wouldn't want to have them intentionally
16 undersizing their system. By the way, that's
17 one of the big consequences of having a
18 compensation rate for exported energy that's
19 lower than the retail rate because it tends to
20 cause a high fixed-cost business to
21 uneconomically undersize the system that goes
22 out there. So, setting any number is
23 technologically going to be subject to change
24 and economically subject to change possibly in

1 the near future.

2 Q. So that's one of the critiques, then, of the
3 Utilities/Consumer proposal, that it could lead
4 to the undersizing of distributed energy
5 projects that consumers adopt.

6 A. (Rabago) Yes, sir. And it's a good reason for
7 the value of DER study that's proposed for
8 kicking off Phase 2 in the Energy Future
9 Coalition proposal.

10 Q. Since you mention that value of the DER study,
11 I haven't had time to read that order from New
12 York that got issued earlier this month. The
13 value of the DER study I know a lot about is
14 the one in Maine that set the value of DER at
15 33 cents per kWh.

16 Is the study that -- could you describe
17 the study that you are envisioning will
18 undertake and contrast it with the study in
19 Maine that led to the 33 cents as the rate
20 number?

21 A. (Rabago) Nathan already mentioned one major
22 difference is that what you've seen in other
23 places as a value of solar studies or value of
24 DER studies has been an attempt to

1 comprehensively access every element of the
2 value stack for a retail kilowatt hour of
3 electricity. That proposal from the coalition
4 is just to use that study, at least for now, to
5 quantify the distribution value. So it will
6 take a smaller slice of the stack and try to
7 improve the quantification of that, certainly
8 improve it over the number zero. So that's a
9 big one.

10 A lot of the value in the Maine study
11 related to generation-related issues, like the
12 carbon dioxide and NOx and SOx that are
13 produced when fossil generation operates. That
14 was a big part of the value, as well as the
15 cumulative value of distributed generation on
16 wholesale market price, as well as -- I'm not
17 sure if they came up with a number on
18 pipelines, but we did put a placeholder on
19 pipelines, which would also be fuel-related
20 costs.

21 So, again, it was trying to look at every
22 layer of the parfait glass in Maine, as opposed
23 to the focus of this proposal is just that
24 distribution service slice.

1 Q. Both settlement proposals call for a study of
2 this sort. Is there any material difference
3 between the study the Energy Future Coalition
4 is imagining or envisioning and the study that
5 the Utility/Consumer Coalition is envisioning,
6 to your knowledge?

7 A. (Bean) And Tom might be able to jump in here.
8 So if I recall correctly, the Utility proposal
9 stated that it should be based on real-time
10 prices and not based on long-term forecasts.
11 We would say that our proposal should take a
12 long-term look, similar to a look that
13 utilities have for their own investments, and
14 utilize methodology, whether it's a total
15 resource cost test, which we know New Hampshire
16 already uses for energy-efficiency evaluation
17 of energy-efficiency programs here. So, you
18 know, I think the big difference is probably
19 the scale, the scope, the length of time in
20 which the projects and values are evaluated.
21 But given -- I don't think beyond that there
22 was much detail provided about what the study
23 from the Utility Coalition would be.

24 Q. Is it important to resolve that now, or is that

1 something that could be determined at some
2 later point in time?

3 A. (Rabago) It should be part of the order to set
4 everybody's expectations. We would recommend
5 that that language that we tried to incorporate
6 be adopted to set those expectations.

7 A. (Bean) And part of that reason is so that we
8 collect and monitor the right data in Phase 1
9 so that we can get a better signal in Phase 2,
10 or a more refined signal.

11 A. (Beach) And if I could just jump in here.
12 Also, one of the differences between the two
13 studies is, you know, our study definitely
14 wants to look at long-term values consistent
15 with the economic life of distributed energy
16 resources, whereas the Utility Coalition study
17 wanted to just look at the term values. That's
18 a very important difference.

19 Q. Thank you. You folks are really good at
20 passing the baton amongst each other. That's
21 quite something.

22 A question for Ms. Epsen. Ms. Epsen, you,
23 in your statement this morning, mentioned
24 LEEPA, which is the New Hampshire counterpart

1 to PURPA. Can you tell us which section of
2 LEEPA you were talking about?

3 A. (Epsen) I believe I was looking at Section A:9,
4 III.

5 Q. And that is the section -- is that the Findings
6 section of the statute?

7 A. (Epsen) Oh, it's about how metering practices
8 should occur. There are important parts in
9 LEEPA also in the PURPA section. I don't have
10 that in front of me, though.

11 Q. Understood. I just wanted to know which part
12 of that statute you were invoking.

13 This is now just a general question for
14 the panel, for whoever knows. And let me just
15 say at the outset, I'm going to talk about
16 so-called "instantaneous netting." That's a
17 phrase I don't like that much, but I'm going to
18 use it because I haven't thought of a better
19 one. I've tried to use "no netting," and then
20 people don't like that. So I'm just going to
21 accept -- you know, like Fred Kahn talking
22 about "bananas" instead of inflation, I'm just
23 going to refer to "instantaneous netting" and
24 let other people argue about whether that's the

1 right phrase or not.

2 Are there other states in the United
3 States right now who are using instantaneous
4 netting?

5 A. (Phelps) Sure. And let me just say, Don, I do
6 share your concerns about the terminology
7 there. The "netting" part of "instantaneous
8 netting" can be quite misleading.

9 Anyway, in regard to other states that use
10 it, Arizona recently, a couple months ago --
11 and Tom, I'm not sure if you recall the exact
12 date -- but they changed the structure. And it
13 hasn't been implemented yet, though. In
14 Arizona, it's being implemented in rate cases,
15 as far as transitioning it away from monthly
16 netting to what we will call "instantaneous
17 netting."

18 A. (Bean) And Nathan, I believe that's the APS
19 rate case, and I believe that has not been
20 finalized. The final order hasn't been issued
21 yet.

22 A. (Phelps) Yeah. To be crystal clear, there was
23 a value of solar proceeding in Arizona that
24 wrapped up a couple months ago and is being

1 implemented in the rate cases, including the
2 APS rate case which is currently ongoing.

3 A. (Beach) And if I can jump in. The APS rate
4 case settlement has been announced but not
5 approved.

6 And I think the other point that's
7 important to make about Arizona is that they
8 have smart meters on every customer in Arizona.
9 So, for example, in the APS rate case, we had
10 dual-channel, import and export, data not just
11 on 26,000 solar customers, but on 1 million APS
12 residential customers. So, everybody in
13 Arizona has dual-channel-capable meters.

14 Q. So, just so I understand, with respect to that
15 APS rate case in Arizona, I think I heard the
16 panel say that that's a settlement agreement in
17 Arizona; correct?

18 A. (Phelps) This is very much a breaking-news type
19 of thing. I know that, for instance, my
20 colleague was working on this on Friday. So I
21 don't know exactly how this is all going to
22 play out, but the working presumption at this
23 moment in time is that, yes, it's a settlement
24 proposal in the APS -- for the record, Arizona

1 Public Service.

2 A. (Bean) And I believe the "instantaneous
3 metering" portion of it was decided in the
4 value of solar docket. So, although it's a
5 settlement, that term was already decided in a
6 separate docket.

7 A. (Phelps) And just to build on that, and this is
8 my personal opinion, a lot of the parties in
9 that value of solar docket didn't actually
10 understand what was being proposed in
11 instantaneous netting. So it was very much a
12 concern in Arizona.

13 Q. So, it is also -- you described it here as
14 "arbitrary and shocking." It's also "arbitrary
15 and shocking" in Arizona.

16 A. (Phelps) I would agree with that.

17 A. (Beach) I think the difference in Arizona is
18 that the data is available to be able to
19 understand and to quantify what "instantaneous
20 metering" means for solar customers because
21 everybody has the meters that are capable of
22 that. And, you know, the hourly and the data
23 is available to do the analysis for any
24 customer.

1 Q. Professor Rabago, you said, "Instantaneous
2 netting would be confiscatory if conducted by
3 the government." I found that to be really
4 interesting, and I wanted to make sure I
5 understood what exactly you meant. So what
6 exactly did you mean?

7 A. (Rabago) I mean that customers invest a great
8 deal of money with an expectation that they
9 will have a reasonable opportunity to get a
10 return on that investment, that they have a
11 property interest in that equipment, and that
12 if, for example, a utility had invested in a
13 generating station, and with as little evidence
14 as we have in this record, the Commission, for
15 example, were to drastically reduce the return
16 on those investments or the opportunity to earn
17 those returns, the complaint would be a taking
18 under that constitution. So I was trying to
19 emphasize the gravity of the sort of suddenness
20 of the proposed change that's associated with
21 it and I guess the failure to recognize the
22 benefits and document with data the
23 justification.

24 Q. So, if I might just read back what I think I

1 just heard you say, it's something like, if
2 utility regulators impose rates on
3 investor-owned utilities that are inadequate to
4 allow for an opportunity to earn a reasonable
5 return on their investment, it is confiscatory
6 and therefore unconstitutional under the Fifth
7 and Sixteenth Amendments, and the same
8 principle ought to apply to
9 customer-generators.

10 A. (Rabago) Well, I was drawing a convenient
11 analogy. But the point I guess I was really
12 trying to make is the future, as sort of
13 envisioned I think by HB 1116, is that
14 customers will increasingly invest in resources
15 individually as opposed to solely through the
16 utility. That will benefit competition and
17 it'll make them resource providers. And that's
18 increasingly the framework that I think we
19 should bring to distributed energy resources of
20 all kinds. So, yes.

21 Q. So, is anything before the Commission today in
22 this docket likely to yield rates that are
23 unconstitutional because they are confiscatory?
24 Is that going to be something that this record

1 will establish?

2 A. (Rabago) I don't think so. I don't think
3 we've -- it's a really interesting sort of
4 professor-type question as to whether we can
5 get to that with sort of the private property
6 of people investing and what the status is in
7 terms of takings law. I don't think we're
8 heading in that direction. And the record that
9 we try to support, this coalition proposal, is
10 more than adequate to establish rates that will
11 be just and reasonable for both the utilities
12 providing the service and for the distributed
13 energy resources customers who are making those
14 investments. I don't see us -- I think we're
15 safely within the boundary lines, within the
16 guardrails here. But like I said, I was trying
17 to draw attention to the severity of the
18 proposal.

19 Q. Super. Thank you.

20 The Energy Future Coalition has testified
21 very emphatically against this instantaneous
22 netting concept. Here's an edgy question about
23 that: If we took out "instantaneous netting"
24 and replaced it with "monthly netting," would

1 the proposal of the Consumer/Utility Coalition
2 be acceptable to the Energy Future Coalition?

3 A. (Rabago) It's still going to have zero value
4 for the distributed generation for a
5 distributed energy resource.

6 A. (Bean) And lack of gradualism in that decline.

7 Q. Professor Rabago, you were -- you mentioned
8 that zero earlier in your direct testimony, and
9 you said something like, "One thing we know for
10 sure is that zero is the wrong number." But
11 you would agree with me, as a former
12 commissioner, that it is reasonable as a
13 general idea for commissions to approve
14 compromised proposals, any specific number of
15 which -- in which might not have specific
16 support in the record; would you not?

17 A. (Rabago) I've signed a lot of things as a party
18 in which I stated that this settlement is a
19 process or the result of negotiation. So I
20 understand a little bit about where you're
21 going there. But the thing that's important to
22 remember here is that we do have a credit
23 regime in place. We have net metering. The
24 question before us is whether or not there's an

1 unjust or unreasonable cost shift associated
2 with that as it's operating today. So,
3 somebody's got to put it on, or somebody's got
4 to tell us whether or not it's there. And
5 failure to examine -- the zero for distributed
6 generation is, as I also said in the subsequent
7 sentence, is not just a -- is not even the
8 result of an analysis, all right. Mr. Beach
9 did an analysis, and we came up with a number.
10 It's a result of the derth of data, an absence
11 of actual effort to conduct a cost-of-service
12 study that measures what it costs to serve a
13 distributed generation customer. So in this
14 case, the zero is the most unreasonable outcome
15 on that value we can find.

16 Q. So, with respect to this "derth of data"
17 phenomenon, I guess, I don't know, a
18 philosophical question I have for you and the
19 entire panel might be what makes more sense as
20 a public policy construct? Do we wait until
21 the full and robust deployment of distributed
22 generation in New Hampshire and then look back
23 and try to fix the amount of compensation we
24 provided for it? Or do we try to get it right

1 at the outset so that we make some reasonable
2 projections in light of the lack of data, so
3 that we don't take a substantial risk of
4 overcompensating the owners of distributed
5 energy resources?

6 A. (Phelps) I think some large perspective here is
7 helpful. So, first I would note that currently
8 the penetration levels in New Hampshire are
9 pretty small, in the big scheme of things. And
10 second, I would note that I don't think it's an
11 either/or type of situation. I think
12 ultimately we want to use the best information
13 available to us, or the Commission should use
14 the best information available to them, and
15 then ultimately we can continue to update that
16 information as time goes on. As we have a
17 chance to gather better information, there
18 should be adjustments. So I very much view
19 this as an iterative process, not a beginning
20 or end type of dynamic.

21 A. (Rabago) I'll add that I think that analysis
22 from Mr. Beach and the further analysis and
23 modeling that Mr. Phelps did demonstrate that
24 there is not -- there is not a significant risk

1 of taking the time to do it right. So we
2 don't -- we should not be afraid that there's
3 some kind of runaway train here that will be
4 impossible to call back, because we're starting
5 from small numbers, and even if they double,
6 we're not going to be in the realm of upsetting
7 things. In terms of -- you mentioned public
8 policy. There are far more drivers out there
9 that will have far greater impacts on rates for
10 customers in New Hampshire and served by any
11 utility in the United States than net metering
12 as a relative issue. So, in terms of
13 prioritizing what are always scarce
14 administrative resources, it doesn't -- it
15 doesn't pay, especially with the consequence of
16 the potential damage done to this infant
17 industry, to impose something without good data
18 now. So there's no fire. There's a great
19 adverse risk to an emerging market sector,
20 contrary to the policy preferences of the
21 legislature. Therefore, and finally, our
22 analysis suggests that there may be even net
23 benefits that we're not accounting for.
24 Therefore, take the time, go through Phase 1,

1 get the study done so that we can move to value
2 base rates in Phase 2. And I don't expect
3 under any reasonable scenario there would be
4 major problems for the state of New Hampshire
5 as a result. We have several states that would
6 show us that.

7 Q. So, given the lack of a fire, why not just
8 stick with the current net metering regime and
9 then move to Phase 2?

10 A. (Rabago) Because we wanted to put together a
11 good-faith proposal to address the underlying
12 concerns of HB 1116 and to use this moment to
13 accomplish some good work in terms of
14 establishing a valuation process, getting these
15 pilots underway that would create these
16 pathways to low income and other participation,
17 and to sort of remove the sort of brooding
18 omnipresence of the allegation of the cost
19 shift.

20 Q. So that suggests a degree of compromise and a
21 willingness to not let the perfect become the
22 enemy of the good. That might explain a number
23 like zero that doesn't have a lot of analytical
24 support in your estimation, I would suggest.

1 Or would you agree --

2 A. (Rabago) There's a lot of compromise in the EFC
3 proposal that walks us all the way up to the
4 point where it's not further necessary to
5 compromise on the value. Distribution benefits
6 for a distributed energy resource, I mean,
7 that's what you're really --

8 A. (Mueller) And I think, you know, realistically,
9 our willingness to comprise, even in the
10 absence of a cost shift a little bit, should
11 not make you assume that we will compromise
12 forever, because the real implications are, if
13 you undermine the solar industry today in the
14 hopes of eventually building a more robust and
15 vigorous value of DER, there will be nobody
16 left in New Hampshire to do it. And so, again,
17 gradualism -- and no customers will trust the
18 Commission or anyone else in the state to make
19 reasonable decisions on their behalf. So,
20 gradualism is important, and incremental is
21 important.

22 One last thing. One additional concession
23 that is in the EFC proposal that has not been
24 talked about very much this morning yet is the

1 transition from kilowatt-hour crediting to
2 monetary crediting. And that one is important
3 in particular, in that it points the way
4 towards Phase 2 --

5 Q. Mr. Mueller, if I might, your attorney will
6 have an opportunity to ask you questions on
7 redirect. So if there are things you would
8 like to address that I haven't asked you about,
9 that could come out of his time.

10 A. (Mueller) Yeah, sure. I thought it was in
11 response to your question about why make a
12 change in the near term.

13 Q. Fair enough.

14 CHAIRMAN HONIGBERG: You did kind of
15 invite a little bit of dialogue about people
16 compromising, so --

17 MR. KREIS: Fair enough. I just
18 don't want to make the chairman impatient with
19 how much time I'm taking. And I will say I'm
20 almost done.

21 MR. HINCHMAN: Mr. Chair, if we could
22 do this now, it would save discontinuity --

23 CHAIRMAN HONIGBERG: Don't worry
24 about it.

1 BY MR. KREIS:

2 Q. Yes, Mr. Mueller, I'm sorry. You wanted to
3 finish talking about that.

4 A. (Mueller) Well, my point is just that moving
5 from what is effectively yearly netting in the
6 form of kilowatt-hour credits to monthly
7 netting in the form of dollar credits, monetary
8 credits at the end of the month, you know, it
9 reduces the customer value proposition
10 somewhat. But it's also important because it's
11 compatible, more compatible with future
12 time-differentiated rates and value of DER
13 rates. So, you know, insofar as we take a half
14 a step in one direction or another in Phase 1,
15 it ought to be in the direction of where we
16 want to go in Phase 2. That's my only --

17 Q. And to be fair, that's a feature of both
18 settlement proposals, this transition to
19 monetary crediting; is it not?

20 A. (Mueller) I believe it is.

21 Q. Yes. And would it also be fair to say -- and
22 if somebody wants to object to this question,
23 they can leap out of their chair. But would it
24 fair to say the two settlement proposals here

1 have influenced each other, in generic terms?
2 You know, there was a settlement process in
3 which all of the major parties participated.
4 Everybody had an opportunity to hear each
5 other's perspectives. And as a result, we
6 didn't get one settlement, we got two. But
7 they've had an influence on each other, like
8 two planets that are sort traveling in the same
9 orbit and have some gravitational attraction to
10 each other. Wouldn't that be a fair
11 observation to make about how this has shaken
12 down -- or shaken out, I mean?

13 A. (Phelps) I love your phrasing.

14 I think, without a doubt, that the
15 settlement negotiations that took place,
16 without going into any --

17 MR. HINCHMAN: Mr. Chairman, if I
18 could caution my witnesses. Those discussions
19 were entirely confidential, and you cannot
20 discuss them here.

21 CHAIRMAN HONIGBERG: You understand
22 the guidance you've been given there?

23 WITNESS PHELPS: I do.

24 CHAIRMAN HONIGBERG: Are you

1 comfortable answering further, or do you feel
2 like you're done?

3 WITNESS PHELPS: I guess I will just
4 stop.

5 BY MR. KREIS:

6 Q. Sure. And I just want to be clear. My
7 question is really a "yes" or "no" question.

8 Would it be fair to say, for the
9 Commission to understand and conclude that
10 these two settlements have had an influence on
11 each other, that each of them wasn't developed
12 in a vacuum? That's a "yes" or "no" question.

13 A. (Phelps) Perhaps I will phrase it like this --
14 and pardon me for not answering with "yes" or
15 "no" -- I think that the settlement proposals
16 that the Commission has in front of it today
17 greatly reduced the number of issues that the
18 parties had presented to the Commission at an
19 earlier point in time. So the number of topics
20 that we're discussing in the hearings this week
21 have been narrowed from the original proposals.

22 Q. Thank you. I think I'm almost done.

23 There's a couple of things that I heard
24 this morning that I'm trying to square with

1 each other. And I think I understand, but I
2 want to make sure that I do.

3 I think it was Mr. Phelps who said any
4 greater reductions -- and I think by that he
5 means any reduction in the compensation to be
6 paid to customer-generators -- from what the
7 Energy Future Coalition is suggesting will
8 eliminate, he said, the reasonable opportunity
9 that those customers have to earn a return on
10 the investment that they make in distributed
11 generation. So that suggests to me that it's
12 the considered judgment of the Energy Future
13 Coalition that what they have proposed is
14 absolutely the farthest that they could
15 possibly go without tipping the whole solar
16 industry into a state of failure. Is that a
17 fair statement of what your position on your
18 settlement as opposed to its alternative is?

19 A. (Mueller) I think maybe I said that, not Mr.
20 Phelps. But the residential solar market is
21 obviously not monolithic, and different
22 customers make investments for different
23 reasons, and project economics look different
24 for different customers. But yes, we feel like

1 this settlement proposal includes very
2 significant concessions from the status quo and
3 from what is supported by all the evidence in
4 the record, in terms of the total benefit/cost
5 balance. And so we feel like the combination
6 of moving to monetary crediting, non-bypassable
7 charges and instantaneous netting, and
8 reduction in distribution value for exports
9 represents a significant concession and is at
10 the boundary of what the market can support
11 without significant damage.

12 Q. And yet, though, when you were testifying
13 later, it sounded like what you were really
14 talking about is concern about a lack of data
15 that makes it difficult, or I think you
16 actually said "impossible" for you to state the
17 value proposition to customers with the kind of
18 certainty that you need to be effective
19 persuaders of customers. So those are two
20 different things.

21 A. (Mueller) They are two related things.
22 Obviously, the level of needed customer
23 certainty is not unrelated to the total
24 economic value proposition. I think I said

1 before, if the projects were an absolute
2 no-brainer, then adding a 10-percent scatter to
3 the possible economic outcomes probably is not
4 going to do a huge amount of damage. On the
5 other hand, if you have a project which already
6 has, say, you know, a 10-year-plus ROI or a
7 single-digit expected rate of return for a
8 customer, adding a 10-percent scatter and
9 saying, you know, you have an equal chance of
10 this project costing you money over time or
11 saving you money over time, would make most
12 customers, I think reasonably, not choose to
13 make that investment.

14 Q. So I think this might be my last question.

15 So, assuming that a typical customer is a
16 nuclear family with two grown-ups in it and two
17 kids in it, and the grown ups and the kids are
18 away from home all day because the grown-ups
19 are at work and the kids are at school or day
20 care, and so that everything in the house is
21 pretty shut down all day until everybody gets
22 home and turns everything on to have dinner and
23 do laundry and do everything else that
24 everybody does in their households, is it your

1 testimony that, given what we know now and the
2 degree of data we have now, there is simply no
3 way for a solar provider to provide me with a
4 reasonable estimate that I can act on that will
5 allow me to make an economically prudent
6 decision and become a customer-generator? You
7 simply can't do that under instantaneous
8 netting, I mean?

9 A. (Mueller) So, I'm Swiss. I'm an engineer. I
10 have a personal preference towards precision.
11 I do not feel comfortable giving a customer a
12 value, you know, a savings expectation that is
13 based on a fudge factor. So, if faced with the
14 situation that you described, we do what Mr.
15 Epler described before, which is worst case
16 looks like this and best case looks like this,
17 and you figure where you're going to land in
18 the middle. And that results in a project
19 that, you know, nobody can reasonably do.

20 A. (Bean) If I could jump in. A lot of our
21 jobs -- our industry is about selling a good
22 customer experience. And there may be an issue
23 with asking a customer about their family,
24 whether students are going to -- whether their

1 kids are going to move away, what type of
2 appliances they might have. Those are
3 questions that we probably wouldn't want to
4 start asking of customers because they might be
5 a little bit skeptical of privacy.

6 A. (Mueller) It also represents, frankly -- and I
7 think your office would be concerned about
8 this -- a consumer protection issue when two
9 different solar providers, for example, can go
10 into the same house and both credibly give
11 savings estimates that are different by a
12 significant margin. The result inevitably will
13 be somebody's going to build a solar project
14 and is disappointed by the savings because of
15 the assumptions made by the installer, and then
16 a phone call to the OCA saying these guys are
17 all a bunch of dirt bags, you should rein them
18 in.

19 A. (Rabago) And then one more pile-on. And I
20 guess this would be indelicate. And Fortun
21 said this himself. But requiring -- imposing
22 that burden on distributed solar sellers to do
23 enough to overcome the consumer protection
24 concerns and to confirm for their customer

1 those sales -- that purchase benefit associated
2 with the generation and the offset credits does
3 impose something of a barrier to entry.
4 There's a rich history in PURPA of creating
5 standard offer mechanisms, for example, for
6 small-scale, qualifying renewable energy
7 facilities, recognizing that the transaction
8 costs of participating in the electricity
9 system for small generators are proportionately
10 higher. The term you're probably familiar with
11 is "energy burden" on the low-income consumer
12 side. It's sort of the market burden on a
13 small-scale supplier side.

14 So we just don't believe that imposing all
15 those burdens on this small business sector at
16 this time, with this limited experience, is
17 either fair or supportive of the legislative
18 policy objectives.

19 MR. KREIS: Thank you, Mr. Chairman.
20 That is all the questions I have.

21 CHAIRMAN HONIGBERG: Thank you, Mr.
22 Kreis.

23 Mr. Aalto, would you find a
24 microphone, please.

1 MR. AALTO: Thank you for the
2 opportunity to ask a couple of questions to
3 clarify a few things I heard earlier.

4 CROSS-EXAMINATION

5 BY MR. AALTO:

6 Q. The issue was raised that, if I exported a
7 kilowatt hour, my neighbor probably gets it, my
8 downstream neighbor. And assuming that they're
9 a default service customer, they pay full price
10 for that kilowatt hour to the utility for a
11 service that it didn't provide, ignoring for
12 the moment the couple of hundred feet to their
13 house.

14 If I get the credit for that at full
15 price, what was the cost to the utility?

16 A. (Rabago) I was the one that said it. Who
17 is "if I get the credit"? Who are you talking
18 about?

19 Q. I'm the -- I produce the kilowatt hour. And
20 under traditional net metering, I sell it, it
21 goes into the grid; my neighbor buys it, pays
22 full price for it, and the utility credits me
23 with that full price for that kilowatt hour.
24 What did it cost the utility to do that?

1 A. (Rabago) So I'll go back to that point I made
2 before. Let me just reduce it to simple
3 numbers. Let's say the fully loaded retail
4 rate is 15 cents. So we got 15 cents on one
5 side and 15 cents on the other side. The
6 utility is breaking even at that point, but
7 they have a system that was used. Since we're
8 in a cost-of-service utility structure, we have
9 to ask: Did that, if you will, electron
10 traveling -- we know they don't really travel.
11 But did that electron traveling use the
12 distribution system in such a way that it
13 imposed a cost on it? At some infinitesimal,
14 incremental level, yes. And so that cost
15 should be recoverable, if in fact that's how it
16 comes out. But of course, that's not our
17 proposal, nor is it the reality.

18 Q. Now, the other question that came up also was,
19 since I'm again exporting this kilowatt hour
20 using the system as a generator, what do
21 conventional generators pay you to use the
22 distribution system? I assume it has some
23 value to them or they wouldn't be in business,
24 because they have no way of selling their

1 products. What do the conventional generators
2 pay you to use the distribution system?

3 A. (Beach) The conventional generator does not pay
4 to use the distribution system. A conventional
5 generator sells power to the utility. The
6 title to the power transfers to the utility at
7 the meter of the generator. And at that point
8 the power becomes the utility's, and it's the
9 utility's responsibility to deliver the power.
10 The generator does not use the system at all.

11 Q. But does the generator benefit? I mean, the
12 utility wouldn't buy the power if it didn't
13 have a distribution system to move it through.
14 Without distribution, the generator doesn't
15 have any market. It's a very similar argument
16 that I heard earlier, that the electron is
17 worth nothing.

18 CHAIRMAN HONIGBERG: That's a
19 question?

20 MR. AALTO: I think that's a
21 question. I don't understand --

22 A. (Beach) Well, the service that's being -- it's
23 the utility that provides the service to
24 deliver power from the generator to the

1 customer. So, the utility takes the power up
2 the generator's bus VAR and boosts the power to
3 the customers and is fully compensated for that
4 service. It's not the generator that's
5 providing that delivery service, it's the
6 utility.

7 Q. Okay. I understand that part of it. But --
8 well, put that aside. I guess the other
9 question --

10 A. (Rabago) I'm sorry. Can I just -- we're
11 treading really close to obliterating an
12 essential and important line here, your
13 question, and the gentleman, Mr. Sununu I think
14 it was earlier on. Between net metering as a
15 retail service provided by a distribution
16 utility, as defined in the federal statutes,
17 and the role of a wholesale generator
18 participating in a marketplace, may be even
19 using the transition or other systems as a
20 vehicle for being wholesale generators. Net
21 metering service is a service that a
22 distribution utility provides in which
23 generation that is delivered can generate a
24 credit for consumption that is made later on.

1 That is not a jurisdictional wholesale sale.
2 That is not setting up for business to use the
3 system and add an incremental load to the
4 system that the utility must serve as a
5 transmission or other provider would provide.
6 So, trying to collapse those two into one is
7 the danger that I articulated about the
8 instantaneous netting. It is the tone which
9 pervades the Utility Coalition proposal, and it
10 is violative of the principle of net metering,
11 that we're trying to get better, not
12 obliterate, at least as far as I'm concerned in
13 this proceeding.

14 Q. So, then, if my understanding is correct, the
15 remaining issue then, if not a cost, is the
16 lost revenue that the utility has for its
17 distribution service since none of the other
18 costs would be transmitted through it. It's
19 just lost revenue for its distribution service,
20 which it loses if I turned the lights off when
21 I leave the room.

22 A. (Rabago) To the extent that there is a loss of
23 revenue for a distribution service -- and I'm
24 not conceding there is -- that must be assessed

1 in light of the benefits that also accrue to
2 the distribution system. And those are
3 supposed to be resolved in a cost-of-service
4 ratemaking system by assessing those costs.
5 And assessing those costs and netting them
6 against the benefits should yield us the value.
7 That's why we proposed the study for Phase 2.

8 MR. AALTO: Thank you. That's all my
9 questions.

10 CHAIRMAN HONIGBERG: Let's go off the
11 record.

12 (Discussion off the record.)

13 CHAIRMAN HONIGBERG: This a good time
14 to break. I think we'll take 10 minutes and be
15 back here at 3:15 p.m.

16 (Whereupon a brief recess was taken at
17 3:00 p.m., and the hearing resumed at 3:15
18 p.m.)

19 CHAIRMAN HONIGBERG: A little bit of
20 housekeeping for tomorrow and subsequent days.
21 We're not going to take appearances at the
22 beginning of the day. We're going to create a
23 sign-in sheet for people to just sign in that
24 they're here. If there's somebody new who

1 wasn't here today and shows up, we'll deal with
2 that person sharply. We will be stern, but
3 we'll have them enter an appearance and add
4 them to the list.

5 There's nobody that we're
6 expecting will do that right; Mr. Wiesner?

7 MR. WIESNER: No.

8 CHAIRMAN HONIGBERG: But you never
9 know which of our intervenors has been silent
10 but will now want to speak.

11 Anyway, I think that's all we
12 need to do. Mr. Below, you may proceed.

13 MR. BELOW: Thank you, Mr. Chairman.

14 CROSS-EXAMINATION

15 BY MR. BELOW:

16 Q. Let me start with a little discussion that was
17 had about the value of a distributed energy
18 resources study. And one of the contrasts
19 between the two partial settlements is that the
20 Utility Coalition specifically calls for it to
21 be based on, as closely as possible, to
22 near-term marginal costs. And I think you have
23 suggested that it should also consider
24 long-term marginal costs. And could somebody

1 just elaborate why they feel that it's
2 important for considering mid and long-term
3 marginal costs when looking at the value of
4 distributed resources for distribution
5 services?

6 A. (Beach) Sure, I can handle that. The
7 importance is that distributed energy resources
8 are long-life resources; they're not short-run
9 resources. A solar system will have a useful
10 life of there's or more years. Storage units
11 can have 10-year lives. Other kinds of
12 demand-response technologies can also be
13 relatively long-lived. Just as in the
14 energy-efficiency context, we assess
15 energy-efficiency programs over their -- and
16 energy-efficiency measures over their useful
17 lives. We should do the same thing with
18 distributed energy resources and assess their
19 costs and benefits of their full lives. That's
20 also exactly what we do when the utility comes
21 to the Commission and asks to place new
22 infrastructure or a new plant into rate base.
23 Those investments are assessed over their
24 useful lives. So we should do the same thing

1 with distributed energy resources.

2 Q. And is it important to send consumers or
3 customer-generators price signals or
4 appropriate -- is it appropriate as a price
5 signal to include some reflection of marginal
6 cost, particularly on a temporal basis, in
7 terms of when coincident peaks occur?

8 A. (Beach) Yes.

9 Q. Okay. I have a series of about dozen questions
10 which I think all could be "yes" or "no,"
11 hopefully, so we can get through them. This is
12 for anyone on the panel who might respond.

13 You've proposed that the commodity credit
14 for energy be simply the retail supply rate; is
15 that correct?

16 A. (Bean) Yes.

17 Q. This is on your Exhibit 2, Page 2. At the
18 bottom it says, "Exports credited at retail
19 supply rate."

20 A. (Bean) Yes, that's correct.

21 Q. And for a customer-generator who's on default
22 service, their commodity credit for net exports
23 during a given month under your proposal would
24 be the applicable default service rate for that

1 customer for that month; correct?

2 A. (Bean) Correct.

3 Q. And for a customer-generator on competitive
4 supply, the commodity credit would be whatever
5 their energy service rate is from their
6 supplier for the applicable month in which
7 they're taking service.

8 A. (Bean) Correct.

9 Q. Are you aware that RSA 362-A:9, II provides
10 that, "Competitive electricity suppliers
11 registered under RSA 374-F:7 may determine the
12 terms, conditions and prices under which they
13 agree to provide generation supply to and
14 purchase net generation output from eligible
15 customer-generators"?

16 A. (Bean) Could you repeat the section?

17 Q. RSA 362-A:9, II.

18 A. (Epsen) Yes.

19 Q. Okay. Are you aware that this is not one of
20 the terms of RSA 362-A:9 that the Commission is
21 authorized to waive or modify in this or any
22 other proceeding, pursuant to RSA 362-A:9, XVI,
23 as enacted by HB 1116 of 2016?

24 CHAIRMAN HONIGBERG: I'm sorry, Mr.

1 Below. I'm not sure I understand the question
2 as you read it.

3 MR. BELOW: Okay. House Bill 1116
4 modified RSA 362-A:9, XVI. And in that
5 modification, it set forth the authority of the
6 Commission to modify certain terms of net
7 metering in specific other paragraphs of that
8 section, and that is not one of the sections
9 that the Commission was authorized to modify.

10 CHAIRMAN HONIGBERG: And so your
11 question to the panel is?

12 MR. BELOW: Whether they're aware of
13 that or were of aware of that in putting their
14 proposal together.

15 A. (Bean) Yes.

16 Q. Okay. So, considering that the language of
17 that provision, that you can't -- that the
18 Commission can modify is permissive and not
19 mandatory, in that it states "may determine"
20 rather than "shall determine," is it your
21 intent that your proposed retail supply rate
22 credit for customer-generators taking
23 competitive supply would be a presumptive or
24 default netting terms that could be superseded

1 by competitive suppliers' election to determine
2 some other terms pursuant to that provision of
3 the RSA?

4 A. (Bean) Yes, given that the competitive
5 suppliers can have separate arrangements and
6 that the customer would willingly accept those
7 arrangements.

8 Q. Okay. Your settlement proposal doesn't offer
9 any details as to how these commodity credits
10 would be accounted for or paid for. So I'm
11 wondering if it is your intent that your energy
12 service credit would be accounted for by an
13 equal offset of energy service sales revenues
14 from the retail customers of the same supplier
15 on the same rate for a comparable billing
16 period.

17 A. (Bean) Yes, that was the intent.

18 Q. Okay. So, would a given supplier's wholesale
19 load obligation for a given period be the net
20 of all sales, less credits for customer
21 exports, obviously adjusted for the gross-up
22 from retail sales to wholesale for line losses,
23 such that the supplier's net load obligation
24 would directly match and correspond to their

1 net sales -- retail sales revenue?

2 A. (Bean) Yes, that's correct. And I'm going to
3 use a simple example of two customers. If one
4 has net exports over the month of 100 kilowatt
5 hours and one has imports of 100 kilowatt hours
6 to the default service or competitive supplier,
7 they would see a zero kilowatt-hour
8 application.

9 Q. Okay. So, whether metering and billing for the
10 commodity value is done in monthly netting or
11 bidirectional metering, such as, you know, the
12 so-called instantaneous netting that registers
13 all real-time imports and exports, your
14 proposal would still have each supplier's gross
15 retail sales, in both dollars and kilowatt
16 hours, netted against exports to figure both
17 the net retail revenues and sales and their
18 corresponding wholesale load obligation for the
19 applicable billing period; is that correct?

20 A. (Bean) Could you repeat the second part of that
21 question? I just want to make sure.

22 Q. Sure. So, aside from whether you do the
23 monthly netting or the instantaneous netting
24 that the other settlement proposes -- I mean,

1 for instance, if instantaneous netting was used
2 with the rest of your proposal, for instance,
3 what would occur is that each supplier, default
4 service supplier or competitive supplier, their
5 gross retail sales, in both dollars and
6 kilowatt hours, would be netted against
7 exports, such that their revenues and sales
8 correspond to their net wholesale load
9 obligation for the applicable billing period.

10 A. (Bean) Yes, that's correct.

11 Q. Okay. And so would your approach preserve net
12 metering in a manner that's consistent with the
13 PURPA definition of "net metering service,"
14 which I could give that to you if you'd like --

15 A. (Bean) Yeah, I'm not a lawyer, so I don't know
16 if I could make a statement about it. But to
17 hear the terms of it would be helpful.

18 Q. Sure. Within PURPA there's a definition that
19 says, "Net metering service means" -- and this
20 is a quotation --

21 CHAIRMAN HONIGBERG: Just read
22 slowly.

23 MR. BELOW: Okay.

24 BY MR. BELOW:

1 Q. "Service to an electric consumer under which
2 electric energy generated by that electric
3 consumer from an eligible onsite generating
4 facility and delivered to the local
5 distribution facilities may be used to offset
6 electric energy provided by the electric
7 utility to the electric consumer during the
8 applicable billing period."

9 So, given that definition, is it your
10 understanding that your approach is consistent
11 with that definition, even if only partial or
12 no credit is given for exports with regard to
13 the distribution rate component?

14 A. (Bean) Again, I'm not a lawyer, but it sounds
15 compatible with what we are proposing.

16 Q. Mr. Rabago, could you -- someone who's a lawyer
17 on the panel --

18 A. (Rabago) Rabago.

19 Q. Rabago. Sorry.

20 A. (Rabago) And your question is, even if the
21 value is not the same --

22 Q. Right.

23 A. (Rabago) -- going each direction, is it still
24 within the federal definition -- the PURPA

1 definition of net metering? And the answer is
2 yes. What it just says is you get an offset,
3 and you can recognize energy, you know, all the
4 attributes of energy that are associated with
5 it, as how I would read it. So you've got an
6 offsetting mechanism, not to sales that cross
7 in the night.

8 Q. Okay. So, basically what you're saying is that
9 you would treat credits for exports -- you
10 would not be treating credits for exports as if
11 they were PURPA QF sales to the utility.

12 A. (Rabago) Right.

13 Q. Except if somebody had total annual exports
14 that exceeded their consumption for the year
15 and they end up with a cash payment from the
16 utility for that annual surplus, that might be
17 considered a sale.

18 A. (Rabago) Cash payment for excess is indicative
19 that you have a sales transaction, right. I
20 mean, that's a sort of normal, common-sense
21 indicator that there's a sales relationship
22 going on between people.

23 First, the fact that there might be a
24 cash-out at the end of the year does not

1 necessarily mean that everything that was
2 offset earlier on in the year was in fact a
3 sale. Second, it may be that that sale remains
4 incidental to generation for use and still does
5 not rise to the level of, you know, FERC caring
6 about it, if you will. I don't know of any
7 case where those balances for small residential
8 customers have been treated as FERC
9 jurisdictional sales. But it's an indicator --
10 you know, cash for product is an indicator of a
11 sale.

12 Q. Okay. I do have a document I would like to
13 have marked as an exhibit.

14 CHAIRMAN HONIGBERG: Mr. Aslin will
15 help you transport. So you can stay where you
16 are and let Mr. Aslin do it.

17 MR. BELOW: Okay. I was --

18 CHAIRMAN HONIGBERG: Yes, Mr. Aslin
19 can handle that for you while you get ready to
20 ask your question.

21 MR. BELOW: Okay. And could you give
22 one to the witness, Mr. --

23 A. (Rabago) Rabago.

24 Q. Rabago.

1 CHAIRMAN HONIGBERG: Off the record.

2 (Discussion off the record.)

3 CHAIRMAN HONIGBERG: Mr. Below, are
4 you ready to resume?

5 BY MR. BELOW:

6 Q. This document is an article from a law journal
7 entitled, "Solar Shift: An Analysis of the
8 Federal Income Tax Issues Associated with the
9 Residential Value of Solar Tariff," by an
10 attorney, Kayci Hines. And if you turn to
11 Bates Stamp Page 3, at the very bottom of that
12 page is Footnote 6, and it says, "See Karl R.
13 Rabago, 'The Value of Solar Tariff Net Metering
14 2.0,'" and it references a published article.
15 Is that referring to you and something that you
16 wrote?

17 A. (Rabago) I am Footnote 6. Yes, sir.

18 Q. All right. And if you skip ahead on the
19 following pages, there's repeated references to
20 you and several other publications of you. Is
21 that all referencing writings of you?

22 A. (Rabago) Yes. I think I recall providing some
23 assistance to an inquiry about information
24 about value of solar and may have provided

1 links to these sources.

2 Q. And in your opening critique of the Utility
3 Coalition proposal, you raised a concern about
4 a risk of tax treatment, that if something was
5 construed as a sale, such as a QF sale under
6 PURPA, that there was an increased risk of it
7 being -- those credits or payments being
8 considered taxable income. Could you just
9 elaborate on that? And I guess particularly in
10 your context, I believe your resume that's part
11 of the exhibits here says that you were a
12 vice-president for Distributed Energy Resources
13 [sic] at Austin Energy, a public electric
14 utility that serves over a million people, and
15 that in that capacity you helped design a value
16 of solar tariff that went from kilowatt-hour
17 crediting to a dollar-crediting system. And in
18 designing that, were you cognizant or concerned
19 about the potential tax implications, both in
20 terms of taxable income as well as the federal
21 Section 25D, I think it is, residential tax
22 credit?

23 A. (Rabago) Yes. First, let me be clear that I'm
24 not testifying as a -- offering a formal legal

1 opinion. I'm not a tax lawyer. I have a law
2 degree, but I've also been involved in a lot of
3 regulatory stuff. So I'm testifying as an
4 expert in the field as opposed to offering a
5 formal legal opinion. And those who think to
6 take action on anything I say here should
7 consult with an appropriate attorney prior to
8 doing so.

9 But I was cognizant of this issue, and
10 that's exactly what I did when I was the
11 vice-president of Distributed Energy Services
12 at Austin Energy. And we wanted to substitute
13 the value of solar calculation for the offset
14 credit amount, if you will, the rate
15 applying to -- applied to the net metering
16 generation, net-metered generation billing
17 determinant. I went to our lawyers and asked,
18 "Does changing the amount of the rate applied
19 to that billing determinant for generation do
20 anything to taxes?" And he reviewed the issue
21 and advised me that in his opinion it did not.
22 As I've reviewed things, for me it boils down
23 to the test is: Is it generation for use or
24 generation for sale? And people remember this

1 as the inside-out of the "hobby farm" rule.
2 But it's just basically what's the primary
3 purpose and what are the characteristics of the
4 transaction, and what do they tell us about the
5 primary purpose and the characteristics of the
6 transaction? There is no indication that
7 simply the amount of money would characterize
8 the transaction as being generation for use
9 versus generation for sales, the amount of
10 money provided in the offset credit.

11 As I indicated in the previous question,
12 one thing that might would be a sale for cash,
13 an exchange of title, like at the end of the
14 year, you may have it all, please give me your
15 cash. That might be an indicator. For a while
16 we thought that maybe behind the meter -- this
17 article concludes that behind the meter or not
18 behind the meter as the point of
19 interconnection might be dispositive, but the
20 IRS came out with a letter ruling, subsequent
21 to this article, that said they weren't too
22 concerned about the location of the metering
23 spot -- meaning, the community and shared solar
24 doesn't create a taxable situation. So we

1 looked to the indicators. We looked to the
2 terms of the tariff. The tariff I wrote in
3 Austin said an "offset credit." It never used
4 the word "sales." We actually didn't cash out
5 at the end of the year. We wiped the balances
6 as a tool for doing that.

7 You can look at a sales document, a tariff
8 provision or something and see that transfer of
9 title. Moving RECs automatically is something
10 that has happened in business with sales. So
11 you'll see we avoided that in our proposal
12 here. In Austin, when RECs moved, they were
13 incident to providing a rebate, but not to the
14 tariff itself.

15 So what you try to do with all this stuff
16 is think about net metering is about customers
17 offsetting generation -- "offsetting use with
18 generation." That's the words of the federal
19 PURPA statute. That's generation for use. And
20 you kind of put together all the factors and
21 attributes you can to make it look like that
22 and not look like the other, sales or
23 wholesale.

24 Q. And you referred to an 80/20 standard or rule.

1 Is that something formal that IRS has adopted?

2 A. (Rabago) That is a regulation. It's a
3 presumption that's listed in the federal
4 regulation. It says if more than 20 percent of
5 the output of the facility is exported, then
6 it's an indicator that this is not -- what it
7 indicates is it's not that it's not -- that
8 it's not generation -- boy. I do have legal
9 training. Get all the "nots" there.

10 Exceeding the 20 percent of the total
11 output being exported does not mean that it is
12 not generation for use but that it triggers a
13 responsibility to subdivide the output of the
14 customer-generator into that which is treated
15 for use and that which is treated as sales.

16 Q. So, somebody, for instance, if they were
17 grouped net metering hosts under the New
18 Hampshire law, and they were a residential and
19 they produced maybe four times what they
20 themselves used, they might be able to claim a
21 quarter of that value of that system for the
22 30-percent residential tax credit because that
23 would be used to offset their own load over the
24 course of the year, but the other

1 three-quarters that were going to other
2 households, they couldn't claim -- they would
3 have to count that, properly account for that
4 as sales.

5 A. (Rabago) If that's how the structure -- I'm not
6 familiar with the law in detail. But if it's
7 structured as a sale, if a host is selling to
8 subscribers, if you will, then they will see
9 income that way, and it would be ordinary
10 business income. However, most community solar
11 I've seen, basically all four of the customers
12 stand for their share. And you would measure
13 their share of the output against their
14 consumption, each one after the other. So it
15 just depends on what the statute and the
16 implementation is.

17 Q. So is it your understanding that IRS has
18 allowed the concept of "remote ownership"? You
19 could own a PV system across town, or a slice
20 of it, and take the residential credit, if
21 that's being used in some form of community
22 virtual net metering, to offset your own load?

23 A. (Rabago) I certainly don't want to speak for --
24 first of all, remember that the issue here is

1 it's not what IRS allows, was the second part
2 of your question, and then qualify for the
3 residential tax credit. If you own or have a
4 right to the output of a solar facility and you
5 sell it, it just means you're a business
6 customer. It means you'll depreciate. You'll
7 have to file business income. You'll follow
8 the consequences of being in the business,
9 which for some customers might be kind of
10 complex and onerous. But it doesn't mean
11 you're not allowed to have it. You have to
12 apply for the business tax credit, not the
13 residential tax credit. But as I understand
14 it -- I'll reiterate what I do I understand.

15 What I do understand is that we have at
16 least some guidance. And as I understand,
17 opinions from the IRS are limited in their
18 guidance value unless it's particular to you or
19 as a result of an adjudicated case. But we at
20 least have some guidance that the location of
21 the metering, whether it's -- the generation,
22 whether it's behind your meter or in front of
23 your meter, is not necessarily dispositive of
24 whether or not this is generation for use or

1 generation for sale. It could be a
2 contributing factor, but it's not necessarily.
3 It's not a bright-line test.

4 Q. Okay. Thank you.

5 CHAIRMAN HONIGBERG: Mr. Below,
6 before you go on to something else, has the
7 document you handed out been premarked? I
8 think it had not.

9 MR. BELOW: Right. I asked for it to
10 be marked as an exhibit.

11 CHAIRMAN HONIGBERG: Right. I think
12 we were having a disagreement up here as to
13 what the next number is.

14 (Discussion off the record.)

15 CHAIRMAN HONIGBERG: So this one's
16 66.

17 MR. BELOW: Thank you.

18 (Exhibit 66 marked for identification.)

19 BY MR. BELOW:

20 Q. Let me move on. Mr. Phelps, could you turn to
21 Exhibit 2 -- or, yeah, Exhibit 2, which was
22 your Exhibit 1 --

23 A. (Phelps) Where am I turning? I'm sorry.

24 CHAIRMAN HONIGBERG: Exhibit 2.

1 Q. Exhibit 2, which is the summary of the terms.
2 I'm sorry. I actually mean to refer you to
3 Exhibit 3. Exhibit 3 has the same sequential
4 numbering with Exhibit 1. So it goes along
5 with it. And on Bates Stamp Page 7 of that,
6 you have the summary assumptions for your
7 residential component of your model; correct?

8 A. (Phelps) Correct.

9 Q. And in that, there's the percent of solar
10 consumed on site. And just to be clear, what
11 you're referring to there is an assumption
12 about how much of the output of the solar
13 system would be used instantaneously behind the
14 meter on the site; is that correct?

15 A. (Phelps) That is correct.

16 Q. So it assumes that maybe 80 percent would
17 register in the export channel of a
18 bidirectional meter; correct?

19 A. (Phelps) That is correct.

20 Q. And it assumes a total output for the system
21 for the year of 6,833 kilowatt hours; correct?

22 A. (Phelps) Correct. That is not an input, but it
23 is a result of the system size and the capacity
24 factor.

1 Q. Right. But you have assumed a monthly usage of
2 600 kilowatt hours per month, which works out
3 to 7,200 kilowatt hours per year; is that
4 correct?

5 A. (Phelps) That sounds correct, subject to check.

6 Q. And if we divided the output of the PV system
7 by the annual usage, that would be about
8 95 percent. In other words, in this example,
9 somebody has a system that meets almost their
10 annual load, but not quite.

11 A. (Phelps) That was the intent, to try to show
12 how the impacts would result from a system that
13 is close to a customer's total usage.

14 Q. And if we turn to Bates Stamp Page 11, what you
15 see at the top half of the page is for the same
16 residential set of assumptions, the monthly,
17 what happens each month. And starting in
18 March, there's a line that says "Net Customer
19 Usage By Month," and it has a negative 28. So
20 that presumably means that starting in that
21 month of the calendar year is when there's some
22 net exports over the course of the month;
23 correct?

24 A. (Phelps) Correct.

1 Q. And if we continue across those columns and
2 onto the next page, we see at the end of August
3 we have a small negative amount of export, such
4 that the total accumulated exports over those
5 six months is 662 kilowatt hours; correct?

6 (Witness reviews document.)

7 A. (Phelps) For the end of August.

8 Q. For the end of August. And then, starting in
9 September, it shows net energy imported. So
10 there's no longer exports, and they start
11 working that credit balance down.

12 A. (Phelps) Correct.

13 Q. Okay. So the 622 is the amount of kilowatt
14 hours that would be the total exports over the
15 course of the year under a monthly netting
16 scheme. And that 662 is, if we divided that by
17 the total output of the system, 6,834, that's
18 about 9.7 percent would you believe?

19 A. (Phelps) Subject to check. I will note I think
20 you said 622, and I think the number is 662.

21 Q. Right. I meant to say 662. Thank you.

22 So let's just say roughly 10 percent. So
23 what that means is that roughly 90 percent of
24 the total solar production is being offset

1 within given months, and only about 10 percent
2 gets carried forward from one month to future
3 months. Does that sound correct?

4 A. (Phelps) Correct, in monthly netting with
5 kilowatt-hour credits.

6 Q. Right. So, under the proposed monetized scheme
7 that you've put forth with the 75-percent
8 credit on those exports towards the cost of
9 distribution, that would mean about 7-1/2
10 percent of that 10 percent would be offset.
11 And if you add that to the fact that 90 percent
12 is getting the full distribution credit, you
13 actually end up with about 97.5 percent of the
14 total solar output in this set of assumptions
15 getting the full equivalent, full distribution
16 credit, and only about 2-1/2 percent of the
17 total annual output not getting distribution
18 credit; is that correct?

19 A. (Phelps) There were a few calculations you made
20 there. I would have to do them myself to be
21 sure. But I will take that subject to check.
22 I would have to really run it myself, though,
23 to be sure.

24 Q. Well, let's break it down with the 50-percent

1 credit. If 90 percent, which is -- you know,
2 662 over 6,834, that's less than 10 percent.
3 So, if more than 90 percent of the solar output
4 is actually consumed within the month that it's
5 produced, that only leaves 10 percent of the
6 annual solar output to be subject to a reduced
7 credit, a 50-percent credit let's say, on
8 distribution charges. Does that sound right?

9 A. (Phelps) If you're strictly talking about the
10 reduction in value associated with
11 distribution, that is correct. I will note
12 that we have proposed a reduction in value
13 associated with the non-bypassable charges in
14 addition to that.

15 Q. Right. And if we turn to Page 9 of this same
16 Exhibit 3, you have the summary of the status
17 quo compared to Phase 1, 9/1/17, and Phase 1,
18 1/11/19. And as I take it, the difference
19 between the status quo and the coalition
20 proposal is both the lack of credit on any
21 exports for the non-bypassable charges plus the
22 reduced credit on distribution, and that's what
23 basically accounts for the difference from the
24 status quo; is that correct?

1 A. (Phelps) There's one more component, too, which
2 is the different value associated with monetary
3 crediting versus kilowatt-hour crediting.

4 Q. Okay. And if we look at the Eversource
5 residential line, the amount of the bill under
6 the status quo, they're paying 19.33, and it
7 goes up to 23.70 starting 9/1 under your
8 proposal; is that correct?

9 A. (Phelps) Yeah, I will note that as a result of
10 the errors that Eversource found, those numbers
11 have changed slightly.

12 Q. Just a little bit, though; right?

13 A. (Phelps) I can give you the exact amount if you
14 would like.

15 Q. Yes, please.

16 A. (Phelps) Sure. I will note that the
17 corrections to the model are only for
18 Eversource. The same errors did not manifest
19 in the Liberty and Unitil residential.

20 So, the number for Eversource for Phase 1,
21 starting 9/1/17, decreases from 23.70 to 22.40,
22 and Phase 1, starting on January 1st, 2019,
23 decreases from 24.23 to 22.93. There's also
24 associated changes to the percentage increase,

1 if you would like me to --

2 Q. Sure. Let's go ahead and get those on the
3 record.

4 A. (Phelps) Sure. So, for Eversource --

5 Q. Excuse me. This would be at the top of Page
6 10, Bates Stamp Page 10?

7 A. (Phelps) That is correct.

8 Q. Okay.

9 A. (Phelps) For the Eversource residential line,
10 the percentage increase changes from 22.65,
11 starting on September 1st, 2017, and changes to
12 15.93 percent, and for Phase 1, January 1,
13 2019, it changes from 25.39 percent to
14 18.67 percent. So what these numbers do is
15 they bring Eversource in line with Liberty, so
16 Eversource doesn't -- is no longer an outlier.
17 It's more in line with Liberty.

18 Q. So if we turn back to Page 9 and we look at the
19 difference between the two dates with your
20 proposal, that is a 43-cent decrease for
21 Eversource, when you go from 75 percent to
22 50-percent credit, and 41 cents for Liberty and
23 44 cents for Unitil. Does that sound right?

24 A. (Phelps) You had a few numbers in there. But

1 we can take them one at a time, or I can take
2 them subject to check.

3 Q. Well, just start with Eversource --

4 A. (Phelps) Sure.

5 Q. -- at 50 percent, which is the second part of
6 Phase 1, it would be 22.93.

7 A. (Phelps) Correct.

8 Q. And at 75-percent credit on distribution on
9 exports, it would be 22.40?

10 A. (Phelps) Correct.

11 Q. And the difference between those is 43 cents?

12 A. (Phelps) No, 53 cents.

13 Q. Thank you. 53 cents. And for Liberty, at
14 21.48, the difference between that and 21.07 is
15 41 cents.

16 A. (Phelps) Correct.

17 Q. Okay. So, really, the only change in the
18 assumption between those two scenarios is the
19 50-percent credit versus the 75-percent credit?

20 A. (Phelps) Correct.

21 Q. So, even if there was zero credit, that would
22 only make about a \$2 difference in the monthly
23 bill compared to the current bill just from
24 that one element.

1 A. (Phelps) If you are just taking out the
2 distribution component, that is correct, which
3 that would be per month. So you multiply that
4 by 12 to get the yearly impact. And then, for
5 the life of the system, obviously, you're
6 talking about a 30-year range.

7 Q. Okay. And I guess this is a question for
8 anyone on the panel. Just looking at the
9 difference between the 50-percent credit under
10 your proposal we get to at the start of 2019
11 and the zero-percent credit on exports,
12 assuming monthly netting, that would only be
13 about a dollar and change in the bill, the
14 monthly bill. And the question is: Is that
15 enough difference to make a fundamental
16 difference in the economics in solar, or is it
17 just sort of noise on the margin?

18 A. (Mueller) Obviously, every incremental cut to
19 the value received by the customer is additive,
20 and so it's true that every incremental cut is
21 relatively small. In sum, they affect the
22 value proposition for the customer, and one of
23 those will be the straw that breaks the camel's
24 back.

1 Q. Okay.

2 A. (Rabago) It's also important to add that it's
3 not relevant for the purpose of this
4 proceeding. If you go to zero now, and then
5 let's say you do the value of DER study, right,
6 and you find there is value, then you're
7 seesawing on the net metering value over the
8 course of just a couple years, which is -- and
9 we believe that, based on the evidence that
10 Mr. Beach and others have provided, that in
11 fact zero is the wrong number. So, in terms of
12 ratemaking, there's that consequence.

13 The second consequence I wanted to get on
14 the table is the distribution spending as a
15 share of utility spending today just for --
16 especially just for distribution companies.
17 But all utilities, even vertically integrated
18 utilities, is increasing. It's increasing as a
19 share of their spending. It's increasing with
20 smart grid investments. Therefore, there is
21 more value that is subject to those non-wires
22 alternatives and more value that these
23 distributed resources could substitute for. So
24 there's good reasons to not think that a couple

1 dollars is the only difference it makes in
2 going between zero and what the Coalition
3 proposed.

4 Q. Well, if the value of distributed energy
5 resources came back and said there's, let's
6 just say hypothetically, 50-percent value, but
7 that was based on total exports or total
8 production of the system, then monthly netting
9 would, under this set of assumptions, still be
10 allowing 90-percent offsetting of distribution
11 rates, you know, because most of the netting
12 occurs within the month and doesn't get carried
13 from one month to the next. So, even if a
14 study showed that there's 50-percent value
15 based on instantaneous exports to the grid,
16 then a scheme that, you know, has monthly
17 netting, where many customers might be
18 offsetting 80 to 90 percent within the month,
19 would be giving more than 50-percent value for
20 that total amount of production.

21 A. (Rabago) I think that would reduce the impact,
22 yes.

23 Q. Yeah. And would you say that customers in
24 general have more ability to shift load based

1 on -- within a day, you know, from hours say in
2 the middle of the afternoon, or late afternoon
3 when the system's realizing coincident peaks,
4 that there's more ability to shift it over the
5 course of a day to later at night or earlier in
6 the morning than there is ability to shift from
7 one month to the next month?

8 A. (Rabago) Yes, and hopefully with grid
9 modernization, even more tools to do so on a
10 daily basis. Yeah, we don't -- but your basic
11 question, it's hard to shift load from one
12 month to another unless you play in the billing
13 day.

14 Q. I think I'm almost done here.

15 You have indicated in your proposal that
16 one of the pilots you'd like to see is time of
17 use. And I think I heard in your opening
18 remarks some reference to the City of Lebanon's
19 proposal to do a real-time pricing pilot. And
20 would you expect that that would be something
21 that would be valuable?

22 A. (Bean) Yes. I think that falls under our smart
23 home energy rate, where we said that would be a
24 rate that would have maybe other types of

1 mechanisms that customers can adopt, whether
2 it's real-time pricing, critical peak pricing
3 or demand charges. So I think that proposal
4 would fit within that context.

5 Q. Okay. Actually, I do have one more question,
6 which is, in your proposal there's a statement
7 on lost revenue recovery. It simply says "PUC
8 approval of lost revenue recovery." And what
9 I'm wondering, does that just mean that you
10 would leave that to be resolved in another
11 proceeding, or are you adopting a specific
12 methodology that came out of a Unitil
13 settlement?

14 A. (Bean) We left that open for the Commission to
15 decide on what the appropriate mechanism or
16 approach to recover those costs would be.

17 Q. Okay. And related to that, just a moment... in
18 Exhibit No. 5, which is the other proposed
19 settlement, on Page 9, in the list of proposed
20 data collection and studies by the
21 Utility/Consumer Coalition, under Paragraph E,
22 there's a provision that says the utilities
23 would provide data on annual loads for net
24 metered accounts for one or more years, from

1 both before they interconnect and after, and
2 also provide data that would allow it to be
3 compared to customers that did not adopt net
4 metering, to see if there is a change, I
5 suppose, in usage as a result of or correlated
6 with adoption of net metering. Do you think
7 that would be a useful study? Would you
8 support such a data collection effort?

9 A. (Bean) I'm not sure what the intent of this
10 study was. And that might be better directed
11 to the utilities. But just at a glance, annual
12 loads, maybe not -- don't tell us as much as
13 hourly. So I'm not sure how this would get to
14 more precise price signals and valuations by
15 providing annual loads as opposed to hourly or
16 more granular data.

17 Q. Well, I'm guessing it might have to do with, or
18 something to do with lost revenue, inasmuch as
19 there's some information in prefiled testimony
20 that points to the fact that the Co-op, for
21 instance, found that net-metered customers had
22 a significant increase in their consumption
23 after they adopted that metering. So it might
24 be useful to know how those customers compared

1 to other customers.

2 A. (Epsen) NHSEA would find the study useful. And
3 one of our witnesses who is not here has
4 suggested such a study.

5 MR. BELOW: Okay. Thank you. That's
6 all.

7 CHAIRMAN HONIGBERG: Did I miss
8 anybody, or are we ready for Staff?

9 [No verbal response]

10 CHAIRMAN HONIGBERG: All right. Mr.
11 Wiesner.

12 MR. WEISNER: Thank you. We've
13 already covered a lot of ground that I wanted
14 to go over, so much of the questions, or many
15 of the questions I'll be asking will be in the
16 nature of follow-up and clarification.
17 Shouldn't take more than about 15 minutes or
18 so.

19 CROSS-EXAMINATION

20 BY MR. WEISNER:

21 Q. Going back to a discussion we had earlier about
22 bidirectional meters, it seems that both
23 settling coalitions are proposing that all DG
24 customers have bidirectional meters installed;

1 is that correct?

2 A. (Phelps) That is correct. And --

3 Q. Go ahead.

4 A. (Phelps) -- you sound like you're a little bit
5 under the weather. I hope you're feeling okay.

6 Q. Thank you. Thank you for your concern. Hope I
7 get through this.

8 CHAIRMAN HONIGBERG: Off the record.

9 (Discussion off the record)

10 CHAIRMAN HONIGBERG: Back on the
11 record.

12 A. (Rabago) Just one thing I want to clarify. The
13 functionality of being able to read the two
14 channels separately, it's not -- I didn't want
15 anybody to accidentally think that it's a
16 specific kind of meter. It could be done -- we
17 wouldn't specify the technological mechanism.
18 It's just the functionality that we need in
19 order to do the non-bypassable charges.

20 Q. If functionality of two channels, import and
21 export.

22 A. (Rabago) Yes.

23 Q. Is there any other advanced metering features
24 or components with the bidirectional metering

1 that the Coalition is proposing?

2 A. (Rabago) No.

3 Q. So, essentially, those bidirectional meters
4 already in use by Eversource and other
5 utilities are acceptable for your purposes.

6 Thank you.

7 A. (Rabago) I think so.

8 Q. And I believe I heard Mr. Mueller testify that
9 the Coalition would be interested in having all
10 customers have bidirectional metering. Did I
11 understand that correctly?

12 A. (Mueller) No, I'm sorry if I was unclear about
13 that. I think the point I was trying to make
14 was, in order to have the data to give
15 customers under the instantaneous netting
16 regime -- in order to give customers good
17 information about the economics of their
18 project, we would need interval data --
19 instantaneous, effectively -- interval data for
20 all customers. That's different than
21 bidirectional metering, obviously.

22 Q. Okay. And new metering for other non-DG
23 customers is not actually a component of the
24 settlement proposal. Is that --

1 A. (Mueller) It is not necessary for our
2 settlement proposal. We think it would be
3 necessary for the Utility settlement proposal,
4 if you want to continue to give customers
5 reasonable data.

6 Q. Okay. Thank you.

7 And moving on to the value of DER study,
8 if I understand correctly, it's the Coalition's
9 position that the primary or perhaps sole
10 utility of that study would be to determine the
11 updated distribution credit to be applied in
12 Phase 2; is that correct?

13 A. (Bean) Yes. It would also inform potentially
14 locational-specific incentives or pricing.
15 That would be revealed through the study.

16 Q. And would that limited purpose of the study
17 affect the design of the study?

18 A. (Bean) Yeah, you would have a more bounded
19 scope perhaps on the study. Yes.

20 A. (Beach) If you looked at the study -- or some
21 of the studies done in other states, it would
22 be significantly more focused than studies that
23 looked at all components of utility service.

24 Q. And my question was going to be, would the

1 study we're talking about here be similar to
2 the study Mr. Beach did with, you know, limited
3 data and using assumptions as he concedes he
4 did, or would it be more constrained in its
5 focus?

6 A. (Beach) I think it would definitely be more
7 constrained in its focus just on distribution.
8 I think in looking at distribution, it would be
9 much more detailed.

10 Q. Would it cover transmission at all?

11 A. (Phelps) Not as we have currently envisioned
12 it. I will note, though, stepping back for a
13 second, from a very high level, this is all
14 about moving customers to provide them with
15 price signals in order to empower them to
16 actually be a resource for the utilities and
17 for all ratepayers in general. So, although we
18 are looking at -- or we are proposing looking
19 at value of DER specifically for the
20 distribution component, it's in the context of
21 actually trying to send accurate and actionable
22 price signals to customers.

23 Q. And there was some discussion earlier from
24 Mr. Beach about the appropriate term of such a

1 study. And I think it's his view that it needs
2 to be a long-term study tied to the life cycle
3 of the DG unit. Is that -- do I have that
4 right?

5 A. (Beach) Yes, that certainly would be our goal,
6 is to have a study where you can assess the
7 benefits over a long time horizon.

8 Q. And a long term might be there's years; is that
9 correct?

10 A. (Beach) Conceivably, yes.

11 Q. Okay. Thank you.

12 And moving on to the Smart Energy Home
13 pilot, is it proposed that this pilot would
14 be -- participation in this pilot would be
15 restricted to those who have distributed
16 generation, or would it be open to other
17 customers as well?

18 A. (Bean) This would be open to other customers as
19 well. And the same is true for a Time of Use
20 pilot. As I mentioned in my opening statement,
21 we think this is more about distributed energy
22 resources and the combination of technologies
23 that people may adopt and the importance of
24 sending the same signals. And these pilots

1 would provide valuable experience about a
2 certain type of rate design, how that might
3 impact a customer with an electric vehicle or
4 solar in storage. So the intent is to open it
5 to any customer that would want to sign up for
6 it.

7 Q. Do you have a sense of how many customers would
8 need to participate in order to make the
9 results meaningful?

10 A. (Bean) I do not know that at this time.

11 Q. Have other states adopted similar pilots or
12 programs, to your knowledge?

13 A. (Bean) Yes. In my rebuttal testimony, I
14 included the Xcel Energy settlement from
15 Colorado, which had two pilot studies: One
16 time of use, with the intent that that would be
17 the mandatory rate for all customers going
18 forward, and they also had a demand charge
19 pilot which would be optional for customers in
20 the future. The pilot, I believe, was over
21 three years -- or will be over a three-year
22 period. And they have a quite detailed list of
23 data and objectives of their study.

24 Q. Wouldn't it be more appropriate to conduct such

1 a pilot in the context of the Commission's grid
2 modernization initiatives or perhaps a utility
3 rate case?

4 A. (Bean) Well, you know, we've discussed the grid
5 modernization docket along with this docket,
6 and there is a lot of overlap. And I don't
7 know if anyone on this panel has participated
8 in that docket extensively. But we recognize
9 that there is a lot of overlap and that this
10 provides an opportunity to gain useful
11 experience. And the requirements of HB 1116
12 provide the Commission the opportunity to
13 develop pilot studies. So we thought this
14 would be a good opportunity to present
15 potential pilot studies and get them approved
16 as quickly as possible so we can get that
17 experience.

18 Q. Has the Coalition estimated the potential cost
19 of running such a pilot program?

20 A. (Bean) We have not.

21 Q. Thank you. And I think this is my final
22 question.

23 Is the -- is it the EFC's proposal that
24 Phase 2 must include options for time-of-use

1 rates and Smart Energy Home rates?

2 A. (Bean) Yes, that was our intent, that there
3 would be a standard tariff, but that the
4 customers would be able to move if they so
5 choose to a demand -- to a Smart Home rate, to
6 a time-of-use rate, but to provide customers
7 with more options that send them more dynamic
8 price and precise price signals.

9 Q. Either one of those would be an option for
10 customers in Phase 2?

11 A. (Bean) Correct.

12 Q. And in your view, would that be an opt-in for
13 customers or opt-out model?

14 A. (Bean) For the time of use or any other --

15 Q. Either one.

16 A. (Bean) Yes. So that would be an opt-in. We
17 envision a standard tariff, maybe perhaps based
18 on the value of DER as the study concludes, and
19 then having an optional rate where they can say
20 we're going to leave this program and
21 transition to this time of use or value DER.
22 And this is consistent with some other states
23 that have multiple options for customers to
24 choose the rate design that they would like to

1 be on.

2 Q. And you mentioned Colorado. That's an option
3 in Colorado as well?

4 A. (Bean) In Colorado, if I remember correctly,
5 and it's in my rebuttal testimony, subject to
6 check, all customers, regardless of whether
7 they have DERs, would move eventually to
8 time-of-use rates. They would have the option
9 in the future to move to a demand charge rate.
10 So the utility will provide an optional demand
11 charge rate, yes.

12 Q. Thank you.

13 A. (Phelps) If I may provide a little more color?
14 So, California has also looked at this, Tom
15 Beach's home state, in which he was involved
16 and will probably have some details a little
17 bit better than I. Nonetheless, in California,
18 the commission has approved moving DG customers
19 to a time-of-use rate in advance of all other
20 customers. So, California is on the path of
21 moving to time of use for all customers. But
22 they're implementing that for DG customers in
23 advance of other customers. I think that type
24 of interplay for looking at what in New

1 Hampshire we call a "grid mod," and how DG
2 impacts can work well together, hopefully,
3 although we're not trying to be prescriptive
4 here in what happens in the grid mod docket,
5 hopefully the two can inform each other and
6 help the Commission come to the best possible
7 future energy scenario.

8 MR. WEISNER: I think that's all we
9 have. Thank you.

10 CHAIRMAN HONIGBERG: Commissioner
11 Bailey.

12 INTERROGATORIES BY CMSR. BAILEY:

13 Q. Good afternoon. I have a couple clarifying
14 questions and a couple of detailed questions
15 probably.

16 On the proposed date for the beginning of
17 this, which you say should be September 1st, is
18 that necessary for your sales or for your
19 installations that are in process?

20 A. (Mueller) I believe that the way that the
21 proposal lays it out is that the date is for
22 projects which enter the interconnection queue
23 after that date. So the sort of critical time
24 period is the time period pre-interconnection

1 application for the customer. So, customers
2 who are calling us for the first time in June
3 and who may make a purchasing decision in
4 August for installation in December, those
5 customers would still -- they'd get in before
6 September 1st and would still be in the old
7 tariff. Does that answer your question?

8 Q. I think so. So do you expect a lot of
9 customers to sign up before the change?

10 A. (Mueller) You know, one of the benefits of
11 incrementalism as you make these changes is
12 that you don't get that sort of run for the
13 door, which is not good for anybody. It's not
14 good for the utilities who have to manage that
15 sort of interconnection application. It's not
16 good for businesses who have to scale for a
17 short-term bump in business because that's not
18 durable. So one of the reasons to do this in a
19 phased and deliberate way is to try to prevent
20 that. When the changes are fairly modest and
21 predictable -- I mean, sure, if you're right on
22 the bubble, we will try to get in before the
23 change. But I don't expect in our proposal
24 that will happen. In a more extreme proposal,

1 I think you would certainly see that.

2 A. (Beach) If I could just chime in? I think the
3 change in net metering rules in California that
4 California is going through, which includes,
5 for example, charging non-bypassable charges on
6 imports and not crediting them on exports,
7 similar to what has been proposed here, you
8 know, that was a measured, incremental type of
9 change and has a not produced, you know, a gold
10 rush scenario as the deadline has approached.

11 Q. Okay. Thank you.

12 In the long run, assuming you have
13 historical hourly data, is instantaneous
14 netting better?

15 A. (Mueller) I think it is not better. I think in
16 the long run, the appropriate netting interval
17 probably matches the resolution of the way that
18 we price energy for the customer. So if you
19 have an on-peak period, then you ought to be
20 netting over that on-peak period. If you have
21 an off-peak period, then you ought to be
22 netting over that off-peak period. The
23 instantaneous netting has almost no relation to
24 the costs imposed on the grid by an individual

1 customer. Again, two customers -- one who has
2 a steady 2-kilowatt load, and the other one
3 that has a 4-kilowatt load and then zero and
4 then 4 and then zero -- impose basically the
5 same cost on the distribution circuit. So
6 there's little reason to drive netting interval
7 to that resolution. And it's not practical for
8 customers to make changes to their load in that
9 interval. For example, you know, your dryer is
10 running. And half the time when your dryer is
11 running, the electric element in the dryer is
12 on and half the time it's off because it's, you
13 know, bouncing around the thermostat. So you
14 can spend a bunch of effort to put a variable
15 resistor on that element so that it runs a
16 2-kilowatt steady, as opposed to 4, 0, 4, 0,
17 but it has no benefit for anyone. It's
18 completely wasted effort. So I don't know why
19 you would go to a netting interval that creates
20 the incentive for customers to engage in that
21 kind of foolishness.

22 A. (Phelps) To elaborate on something, Mr.
23 Mueller -- is it Mueller or Muller?

24 A. (Mueller) Mueller.

1 A. (Phelps) I thought it was Mueller. Sorry.

2 It makes sense to keep the netting period
3 over the periods in which customers are charged
4 for their electricity. That's just simply to
5 keep the understanding universal for the
6 customer. If they're charged on a monthly
7 basis, then they should be netted on a monthly
8 basis. Eventually, if we get to real-time
9 pricing, monthly netting wouldn't make any
10 sense anymore because customers are charged on
11 a real-time basis. So it really depends on the
12 amount of information you're providing
13 customers and how you're charging them for
14 their electricity.

15 Q. Okay. The Utility/Consumer proposal everybody
16 says is based on instantaneous netting.
17 Explain to me how that works if they don't have
18 instantaneous meters.

19 A. (Phelps) Sure. One of the problems with the
20 term "instantaneous netting" is because it
21 implies that there's some netting that takes
22 place at the meter. Actually, the netting that
23 takes place is behind the meter. So what
24 happens is, as a customer uses electricity from

1 the grid, that's being measured on the import
2 channel, if you will. Keep in mind,
3 perspective is very important on this. I'm
4 talking from the perspective of the customer.
5 The import channel is electricity that's
6 delivered from the utility to the customer.
7 When they generate electricity above and beyond
8 what they're using, at that moment in time it
9 goes onto the export channel. That happens in
10 real-time, whereas normally when we're talking
11 about meter sampling or sampling sizes, it's
12 normally over some type of predetermined
13 interval. So it could be a five-minute
14 interval, 15-minute interval, hourly, or, for
15 most residential customers, monthly.

16 Fundamentally, to accurately represent how
17 a customer is being compensated, or the value
18 that the customer realizes for their
19 distributed generation, you have to understand
20 in real time their production. So you can
21 think of a PV array and how much electricity
22 it's producing at any point in time for each
23 second and how much electricity they're using
24 in each second. So, any type of levelizing of

1 customer usage across, say, multiple customers
2 or anything doesn't actually represent what the
3 individual impact is for a customer.

4 Now, let me try to explain this a little
5 more and take a different angle. A customer
6 uses all kinds of electricity throughout the
7 day without even necessarily realizing it. So,
8 think of your electric water heater, your
9 refrigerator, if you have a pool, you know, and
10 say your pool pump comes on. Those types of
11 things cycle on and off. You get bumps in
12 electricity usage at one point in time and then
13 it drops. How you are actually seeing that
14 realized in your compensation or your value
15 will vary greatly depending on if you're seeing
16 a lot of these types of loads that are being
17 supplied by the distributed generation or if
18 those loads are being supplied by the actual
19 utility on the import or the export channel.
20 So, ultimately the value proposition is highly
21 dependent on how customers are using their
22 electricity and how the DG customers are
23 generating electricity. And that type of
24 detail is highly customer-specific. I fear I

1 confused you.

2 Q. No, you didn't confuse me. But what kind of
3 customer will not benefit? Like tell me the
4 type of customer that benefits. Do any
5 customers benefit from instantaneous metering?
6 Or would you say -- you know, I mean a customer
7 with a flat usage, does it matter to that
8 customer?

9 A. (Mueller) A customer whose usage -- so, first
10 of all, a customer whose usage always exceeds
11 their generation is indifferent to any
12 interval, right, because everything they make
13 is consumed in real time behind the meter, and
14 so they are never an exporter of power. So a
15 relatively small DG solar system behind a big
16 load -- you know, when we put a 10-kilowatt
17 system at the high school, it never exports,
18 and so it is completely insensitive to netting
19 intervals. It's just offsetting load behind
20 the meter. Pretty much every other system,
21 when the export price is lower than the import
22 price, is penalized by instantaneous netting.
23 If the export price is higher than the import
24 price, as it is in some other jurisdictions,

1 you know, you benefit from the shorter metering
2 interval.

3 A. (Rabago) So, just to play with a few numbers,
4 let's say you designed your rates based on an
5 assumption that the average DG customer had
6 40-percent excess, you know, exports, right,
7 and you divided your -- you allocated your
8 costs among those. So it'd be like, you know,
9 15 cents in the retail, but only 10 cents,
10 something less for the exports. That's how you
11 balance out all your costs. The customer who
12 wins is the customer who can beat that average.
13 And that means, by definition, the
14 instantaneous -- under an instantaneous regime,
15 the winning customer is the customer with
16 purely discretionary load. They can move all
17 their load to the place of the highest value
18 and beat the average. You're going to get more
19 than the average, so they'll get a higher level
20 of compensation relative to the average. The
21 customer who loses is the customer with a
22 completely non-discretionary load. You know,
23 the single mom who works two jobs and from 5 to
24 6, you know, whatever, that's when she's got to

1 do the laundry and cook dinner and all that
2 sort of stuff. Then, if she's got a solar
3 system, you know, she's not going to win in the
4 instantaneous netting situation, because even
5 though she generated a lot at noon, because it
6 was instantaneously netted, that excess solar
7 won't offset that consumption at 5 p.m. So,
8 discretion of load is the major driver.

9 And while it might seem -- well, so the
10 question is -- your first question, in the long
11 run, if you imagine a world in which all our
12 load is purely discretionary, then you could
13 argue that that's where we should be moving.
14 But it will never be that way. And it does
15 kind of raise the question of, well, when you
16 get there, do you have the differences that you
17 were playing for in the first place, in terms
18 of on peak and off peak, 'cause then all you
19 have is everybody just chasing their maximum
20 output. There's all the other factors, too, we
21 said in the morning, which is you lose the
22 opportunity to have free drivers, right.
23 Customers who are producing excess electricity
24 because they're hoarding their kilowatt hours

1 of production when they do actually have
2 discretionary load and other issues that we
3 discussed. Does that help?

4 CMSR. BAILEY: I think so. Thank
5 you. I may come back to it.

6 A. (Rabago) We've been at it awhile and we're not
7 clear.

8 Q. This may have something to do with what we were
9 just discussing. Isn't it true that using your
10 own generated power during peak is better than
11 if you weren't generating any power?

12 A. (Phelps) Well, that depends. I think you're on
13 the right track, as far as how we think about
14 this. But the best outcome would be a customer
15 with distributed generation that's generating
16 on peak and then not using electricity on peak.

17 Q. That was my next question. That would be
18 better.

19 A. (Phelps) That would be the best.

20 A. (Mueller) Even better, yeah. So, using your
21 own generation on peak looks the same to other
22 ratepayers as low production.

23 Q. Right. And so that's --

24 A. (Mueller) That's better than contributing to

1 the peak, but you're not actively helping
2 shrink the peak; whereas, if you can generate
3 and not consume, you're not only not hurting,
4 you're actively helping.

5 A. (Rabago) And that's why more narrowly banded
6 time-of-use-rate-type products are very
7 attractive. You'll hear a lot of solar people
8 advocating them because they think they can
9 take advantage of that, especially with
10 storage.

11 Q. But you said using your own generation doesn't
12 reduce the peak. It would reduce the peak from
13 if I didn't have my own generation.

14 A. (Mueller) That's right, assuming the load has
15 not changed.

16 Q. Right.

17 A. (Mueller) Yeah, so if you hold either one
18 fixed, then -- you know, if you hold the load
19 fixed, then adding generation reduces the peak.
20 And if you hold generation fixed, then moving
21 load produces the peak. The best thing to do
22 is add generation and move load, but to off
23 peak, not to on peak, which is why the
24 instantaneous netting thing is so silly because

1 that creates the opposite incentive.

2 A. (Phelps) Yeah, it creates the suboptimal
3 outcome of motivating customers to use
4 electricity on the peak when they're generating
5 electricity. And that doesn't actually have
6 the same benefits that flow to all ratepayers
7 as if they were motivated to generate
8 electricity on the peak and use electricity off
9 peak.

10 A. (Rabago) There should be a study coming out on
11 all this. But this is the reason why a lot of
12 people are talking about hot water heaters
13 again. All of a sudden they're oversizing hot
14 water heaters 'cause they're thinking: Well,
15 jeez, the solar could be on at noon and you
16 could fill it up and you could ride the hot
17 water heater through shower time or whatever it
18 is at end of the day when the peak prices might
19 be higher. And by riding through that you get
20 the benefit. You've reduced your load on peak,
21 you know, and used that generation for it.

22 A. (Phelps) Fundamentally, this is pulling from
23 longstanding ideas. For instance, shifting
24 load -- or load-shifting technology, such as

1 ice energy or demand response, all are trying
2 to utilize customer response or customer
3 behavior to reduce the load on peak in order to
4 benefit everyone else.

5 Q. Very early in the day, I think when you were
6 giving your original presentation, you talked
7 about 44 states use net monthly -- monthly
8 netting. Are there any states -- I think we
9 talked about Arizona, maybe, that is going to
10 instantaneous netting. Is that the only other
11 one?

12 A. (Phelps) I think so.

13 A. (Mueller) I'm not aware of any others. It's
14 possible that some smaller utilities,
15 non-regulated utilities, do that in some
16 states. But I'm not aware of any state that
17 does it statewide.

18 A. (Phelps) Tom, do you know of any other?

19 A. (Beach) California uses hourly netting. You
20 know, as we discussed earlier, that's
21 appropriate because California is moving to
22 having all solar customers on time-of-use
23 rates. So, I mean, in a regime where the price
24 is going to vary on an hourly basis, then

1 moving to hourly netting is the right thing to
2 do.

3 A. (Rabago) And they've had tiered rates for a
4 while there. I know that some utilities have
5 introduced several proposals by utilities to
6 introduce instantaneous net metering. I'm
7 dealing with one in Arkansas from Entergy right
8 now. But no others that I know have been
9 adopted.

10 A. (Bean) We provided a map. And doing some
11 research on that map, Georgia Power, a utility
12 in Georgia, does instantaneous. But I would
13 point out that they have very little
14 distributed resource -- distributed generation
15 on their system.

16 And then another point, the New York order
17 that we had cited that was earlier this month
18 stated that in 2020 they would move to hourly
19 netting.

20 Q. But they will have time-of-use meters in New
21 York by then? Is that --

22 A. (Rabago) Will be on the way, yes.

23 A. (Bean) I believe that's the intent, right.

24 A. (Phelps) That's the working assumption.

1 I will note real quickly about Georgia.
2 They have an interesting distributed generation
3 program that is not net metering.

4 Q. And I think, Mr. Mueller, you pointed to the
5 graph that showed that Massachusetts had a lot
6 more distributed generation than New
7 Hampshire --

8 A. (Mueller) Yeah.

9 Q. -- and Connecticut and Vermont. Are there
10 reasons other than our net metering policy?
11 Because our net metering policy today is the
12 same as theirs, isn't it?

13 A. (Mueller) Yeah, it's similar. I think not in
14 terms of group net metering, but in terms of
15 rooftop projects, I think that's right, with
16 respect to Massachusetts. Vermont has a
17 different policy. Vermont, you know, provides
18 an incremental adder above the retail rate for
19 solar generation to reflect the benefit to all
20 ratepayers. So, in that case, it's above the
21 retail rate in Vermont.

22 So there's sort of a variety of reasons
23 for the rate of adoption in different
24 jurisdictions. As I said, it is not our

1 proposal that we should recreate the incentive
2 regime that Massachusetts has had -- or that
3 they are working on now, mostly just to put in
4 context rate of adoption of DG solar in New
5 Hampshire compared to the rest of New England.
6 So, net metering underpins all of those
7 incentive or regulatory options. Without net
8 metering, almost nothing else works. Net
9 metering is sort of the basis that you need in
10 order to, if you want to throw gas on the fire,
11 you can throw gas on the fire if you find it in
12 the public interest.

13 Q. Do you think it's surprising the per capita
14 solar installations in Vermont aren't the
15 highest in New England if they get more than
16 the retail rate?

17 A. (Mueller) Do I think it's -- that they aren't
18 the highest?

19 Q. They're not the highest --

20 A. (Mueller) They are the highest. I believe
21 they're the highest per capita --

22 (Court Reporter inquiry)

23 A. (Mueller) I think the chart I included this
24 morning is in absolute terms. I believe per

1 capita, Vermont leads New England.

2 A. (Bean) And we have the numbers on Page 19 of
3 our supplemental settlement testimony, and I'll
4 read them. New Hampshire is about 41 watts of
5 distributed solar per capita compared to 78 in
6 Connecticut, 196 in Massachusetts and 317 in
7 Vermont.

8 Q. Thank you. I knew I read that somewhere, but I
9 got it mixed up with the table on the next
10 page.

11 CHAIRMAN HONIGBERG: Mr. Beach, did
12 you want to add something to that after it got
13 clarified?

14 A. (Beach) No. I just wanted to point out that
15 the per capita numbers were in there.

16 CMSR. BAILEY: Thank you.

17 A. (Phelps) If you want, I can provide a little
18 bit of color about Vermont.

19 Q. No, that's all right. I got it.

20 A. (Phelps) All right.

21 Q. Somebody recommended that the parameters of the
22 value of DERs should be established in the
23 order. And I think, given the difficulty that
24 the parties have had in coming to agreement on

1 this phase of the docket, that's probably also
2 going to be very difficult. So I'd like you to
3 give me -- and Mr. Beach, maybe we'll start
4 with you since it's hard for you to jump in
5 sometimes -- but the most important things that
6 need to be considered in the value of DER study
7 that you contemplate.

8 A. (Beach) Sure. And I've commented on this
9 several times, so I'll sound like a broken
10 record here. From my perspective, the most
11 important thing is the time horizon. And it
12 could be a long-term time horizon.

13 Q. Right. Got that. Anything else?

14 A. (Beach) I think that there needs to be a robust
15 data collection effort so that we can
16 understand what the loadings are on the
17 distribution system at both the substation and
18 circuit level. And I think it's also important
19 for the utilities to have studies of their
20 marginal distribution costs. I think the two
21 smaller utilities have had recent studies of
22 their marginal distribution costs. But
23 Eversource needs to update its 1993 study on
24 marginal distribution costs.

1 Q. Do the utilities have the equipment necessary
2 to collect the data at the substations and at
3 the circuit level?

4 A. (Beach) I think they do at the substation
5 level. The circuit level, that may be more
6 difficult. It might be a situation where you'd
7 have to do some kind of sampling where they
8 have that available.

9 Q. Okay. Anybody else?

10 A. (Phelps) I believe there's discovery on how
11 much metering is on the circuit level.

12 Q. I don't get discovery, though.

13 A. (Phelps) I honestly have no idea if that was
14 admitted into evidence, so... but generally
15 speaking, I believe it's a very small number,
16 as far as number of circuits that actually have
17 metering on them.

18 Q. So it's going to be hard to measure.

19 A. (Phelps) We definitely envision a lot more
20 information, as far as how the distribution
21 system is operating, in order to be able to
22 target certain circuits and provide maximum
23 benefits to all ratepayers.

24 A. (Mueller) But to be clear, if the goal is to

1 reduce the cost of future investments, you got
2 to do it with your eyes open. So, one way or
3 another, you need the data. If you do it
4 without the data, you're not making responsible
5 investments with ratepayer money.

6 A. (Bean) Commissioner, I'd also say the
7 methodology is quite important. And Tom
8 mentioned this in his testimony, of the
9 different types of tests that are available for
10 the cost/benefit analysis. So I don't know if
11 Tom has any thoughts on that.

12 A. (Beach) Well, I think that in looking at the
13 different perspectives -- it's just important
14 to capture everybody's perspective. You don't
15 want to just look at the perspective of
16 non-participating ratepayers in the RIM test.
17 You also want to look at the impact on
18 participants and the participant tests and the
19 impact on all ratepayers, if you will, and the
20 total resource cost.

21 Q. So, TRC and the RIM?

22 A. (Beach) Yeah, you definitely need to look at
23 both of those.

24 A. (Rabago) I'll add that when you go out to the

1 long term, like if you use the there's years
2 under the warranty for solar panels these days,
3 utilities don't often have distribution spend
4 plans that go out that long. So there will be
5 a need for some sensitivity analysis around
6 prospective spending trends on utility
7 distribution system investments that could be
8 avoided, especially out beyond like the five
9 years or so that typically gets embraced in a
10 spend plan from a utility. So, sensitivity
11 analysis around long-term spend plans; revenue
12 requirement, if you will, from the utility on
13 their distribution costs. I don't think -- I
14 think you can probably get away with not
15 looking at societal cost test values if you
16 just focus on the distribution system. But I'd
17 put a placeholder there just in case.

18 I would open -- I would be open to using
19 or adjusting, or perhaps just using
20 sensitivities around discount rates, WACC,
21 weighted cost of capital the utilities
22 typically use when talking about avoiding
23 utility investments. But they're relatively
24 high and tend to obviate the value of long-term

1 offsets and avoidance. And it's not entirely
2 clear, sort of, you know, what the WACC trends
3 are likely to be.

4 And then the -- this is actually probably
5 an early start-up point here, but it gets into
6 one of the major differences between the
7 Utility and the Energy Future Coalition
8 proposal. The Utility proposal about the value
9 of DER is very price-based. But short-run
10 prices reflect not just short run, but they are
11 also very marginal. And when it comes to
12 distribution system costs, there's both
13 marginal and embedded, right, costs that are
14 coming along. So a clear distinction about how
15 distributed resources could help the impacts
16 they could have on both marginal distribution
17 system investments, as well as embedded
18 investments such as life extension, is worth
19 looking at.

20 A. (Phelps) Full disclosure, I'm not an engineer.
21 But I think it would be very valuable, too, to
22 understand -- it would be valuable to
23 understand how the implementation of DG impacts
24 infrastructure life. For instance, can we

1 actually prolong the assets that are currently
2 distributed or currently installed through
3 distributed generation and DER in general?
4 Although that's not talking about system
5 upgrades, we are talking about investments the
6 utilities do have to make.

7 Q. Okay. Now I'm going to go through an exercise
8 that maybe is going to tell us the same thing
9 that Mr. Below did, but I want to try it from a
10 different route to see if I understand what I
11 think I understand, and I'm not a
12 hundred-percent positive, and it has to do a
13 little bit with instantaneous netting.

14 But if you look at Exhibit 3, Page 7, and
15 you divide the annual kilowatt-hours output by
16 12, you get about 569 kilowatt hours. So that
17 would be about the average monthly kilowatt
18 hours; right? And under monthly netting, the
19 way it is today, you would take that 569
20 kilowatt hours, compare it to the 600 that they
21 use, and the difference would be compensated.

22 A. (Phelps) Currently it would be a kilowatt-hour
23 credit on the customer's bill.

24 Q. Oh, okay. Kilowatt-hour credit. But under the

1 monetary crediting, the change would be to
2 convert that to a monetary credit based on
3 whatever we decide the compensation rate is
4 going to be. And if it was under the net
5 metering that was in effect today, it would be
6 at the full retail rate, which -- do you have
7 Exhibit 6?

8 A. (Phelps) I do not believe so.

9 Q. No, not -- hang on a second. It's a chart with
10 the utility rates. I think, yeah, Exhibit 6,
11 Page 10.

12 So, right now, if we changed from
13 kilowatt-hour crediting to a monetary
14 crediting, you would take those 31 kilowatt
15 hours and multiply it by the full retail rate
16 of 18.2 cents.

17 A. (Phelps) Okay.

18 Q. Right?

19 A. (Phelps) Yeah.

20 Q. So, under your proposal, you would exclude in
21 the credit the stranded cost recovery system
22 benefit charge and electricity consumption tax.
23 Anything else? And transmission in your
24 proposal?

1 A. (Phelps) No, we --

2 Q. No, you get credited for transmission.

3 A. (Phelps) Correct.

4 Q. Right. And 75 percent of distribution.

5 A. (Phelps) Correct.

6 Q. Okay. So you would remove from the credit
7 those three non-bypassable charges --

8 A. (Phelps) Correct.

9 Q. -- which are about .00443 cents.

10 A. (Phelps) We can say it's four plus.

11 Q. Okay. So, in the example that we have where
12 there's 31 kilowatt hours produced in excess of
13 what was used, how does that get calculated?
14 How does the monetary credit get calculated
15 under your proposal?

16 A. (Phelps) Exactly like you just laid out. You
17 take out the non-bypassable charges, and you
18 use the discounted, if you will, distribution
19 charge. And then the total kilowatt-hour
20 compensation from that is just multiplied by
21 the kilowatt hours. That would be monthly net
22 excess.

23 Q. Oh, okay.

24 A. (Mueller) To be clear, in our proposal, the

1 stranded cost recovery, system benefit charge
2 and tax are netted instantaneously. So that is
3 not on the 31 kilowatt hours. That's on the
4 entire consumption of that --

5 Q. Okay. So, explain that a little bit. I think
6 I understand that, as the customer is drawing
7 electricity from the system and producing at
8 the same time --

9 A. (Mueller) The customer is never simultaneously
10 exporting and importing. They're doing one or
11 the other.

12 Q. Right. Okay. So how do you net that
13 instantaneously then?

14 A. (Mueller) So, whenever they are net import,
15 whenever the flow of electricity is into the
16 house, they are paying the full cost of
17 stranded cost recovery, system benefit charge
18 and consumption tax. That is not offset by the
19 export credit that they may get from another
20 time of day.

21 Q. So they're paying 18.2 cents when they're
22 importing. No?

23 A. (Phelps) No. Sorry. What you're describing is
24 instantaneous netting, where they pay the full

1 retail rate for when they import, and then they
2 get a separate credit, which on the chart that
3 you were just pointing to -- for instance, the
4 Utility proposal is 13.5 cents -- they get that
5 credit on all exports.

6 Now, what we have proposed is that on all
7 imports, the non-bypassable charges are charged
8 to the customer on all imports. Now, this is
9 where, for instance, in the model that I
10 created and we had discussed earlier, the
11 number of the percent of solar consumed on site
12 becomes really, really important, where if
13 you're using a small percentage of the solar on
14 site and you're exporting most of your
15 electricity, then you end up being charged for
16 the non-bypassable charges for a larger
17 percentage of your total usage; whereas, if you
18 used most of the electricity on site that is
19 generated on site, then you're not being
20 charged those non-bypassable charges on as much
21 or on as many kilowatt hours.

22 Q. I understand that. What I don't understand is
23 how you bill it. How is this bill going to be
24 generated?

1 A. (Bean) Sure. So, maybe an example. We've got
2 a meter with an import channel and an export
3 channel. So on the import channel, let's
4 assume 100 kilowatt hours over the month come
5 in and the export channel, 150 kilowatt hours
6 go out, so under net metering you'd have a net
7 50-kilowatt-hour credit.

8 Q. And that's similar to the example that I
9 started with, where you had the 569 kilowatts
10 exported, 600 kilowatts imported.

11 A. (Bean) So the 50-kilowatt-hour portion to
12 convert to a monetary credit would be the
13 energy rate plus the transmission rate, plus
14 discounted distribution rate. Or another way,
15 retail rate less non-bypassable charges less
16 the reduction in distribution. The import
17 channel of 100 kilowatt hours would be charged
18 the non-bypassable charges.

19 Q. Okay. Thank you.

20 A. (Phelps) If you give me one minute, I can find
21 a page that will help illustrate this. So, if
22 you go to Exhibit 2, Page 160, I think --

23 Q. Exhibit 2?

24 A. (Phelps) It might be Exhibit 3.

1 Q. Your model?

2 A. (Phelps.) Yeah.

3 Q. That's Exhibit 3. So, what page?

4 A. (Phelps) Page 160. Actually, let me find a
5 different page to help illustrate this a little
6 bit better. Please go to Page 158.

7 Q. Okay.

8 A. (Phelps) Let's use June as an example. So, in
9 that month the customer has monthly net excess
10 generation. So they get the credit calculated
11 on the distribution transmission in default
12 service, but they're still charged for all
13 imports. In this example they're charged 2
14 cents for stranded costs, \$1.26 for system
15 benefits charge and 34 cents for the energy
16 consumption tax. And then, together with the
17 customer charge for the month, they have a
18 monetary credit of 45.62. But they're still
19 charged for all input -- all imports for what
20 we have called the "non-bypassable charges."

21 Q. And so does the Utility's proposal for
22 instantaneous netting work the same way?

23 A. (Phelps) It would work the same way if you're
24 just looking at what we have done for the

1 non-bypassable charges. And then there would
2 be a separate credit value for exports, which
3 is not represented in my model.

4 Q. Okay. Thank you.

5 On your proposal for the retail rate, if a
6 customer is a customer of a competitive energy
7 supplier, the utility would have to bill the
8 credit based on the rate that the supplier is
9 charging. But they know that because they bill
10 it anyway; right?

11 A. (Phelps) Theoretically they should know it.
12 Especially -- well, they have to know it if
13 they're doing unified billing or sending one
14 bill. It does get more competitive if the
15 competitive supplier sends a separate bill.

16 Q. Yeah. How would that possibly work?

17 A. (Phelps) I don't have a very good answer for
18 you. I will note that other states, in order
19 for administrative efficiency, they use the
20 default service as the credit value just to
21 make the credit calculation easier for the
22 utility. Now, if we want to keep with what
23 we've proposed, then the utility would have to
24 get the generation rate from the competitive

1 supplier, even if they're not doing unified
2 billing.

3 Q. Ms. Epsen.

4 A. (Epsen) And just to repeat a point that Mr.
5 Below had brought up in RSA 369-A:9, II -- and
6 I'll just read it. It's short. "Competitive
7 electricity suppliers registered under 374-F:7
8 may determine the terms, conditions and prices
9 under which they agree to provide generation
10 supply to and purchase net generation output
11 from eligible customer-generators." So they
12 get to term determine their terms.

13 Q. So could they determine a term that is lower
14 than the retail rate that they provide?

15 A. (Epsen) I believe so, per the statute.

16 A. (Bean) And I'll just add, those terms would be
17 clear to the customer up front, and they could
18 switch suppliers if they didn't like those
19 terms.

20 Q. Okay. I think that's all. Thank you.

21 A. (Phelps) Thank you.

22 CHAIRMAN HONIGBERG: I have no
23 questions for the panel.

24 Before I hand it back to Mr.

1 Buxton or Mr. Emerson for any redirect that
2 they may have, Mr. Below, I want to deal with
3 Exhibit 66. Do you want the I.D. struck on
4 Exhibit 66 and have it admitted?

5 MR. BELOW: Not today. I anticipate
6 referring to it in my testimony.

7 CHAIRMAN HONIGBERG: That doesn't
8 mean it can't be used again. Do you want it to
9 be a full exhibit in this proceeding?

10 MR. BELOW: Yes, please.

11 CHAIRMAN HONIGBERG: Is there
12 objection to that?

13 [No verbal response]

14 CHAIRMAN HONIGBERG: All right.
15 Seeing none, we'll strike the I.D. of 66 and
16 make it a full exhibit. You can come back to
17 it whenever you want.

18 MR. BELOW: Okay. Thank you.

19 (Exhibit 66 admitted as full exhibit.)

20 CHAIRMAN HONIGBERG: Off the record
21 for just a second.

22 (Discussion off the record).

23 CHAIRMAN HONIGBERG: Back on the
24 record. Mr. Buxton or Mr. Emerson, do you have

1 any redirect for your witnesses? Mr. Hinchman?

2 MR. BUXTON: Mr. Hinchman will handle
3 redirect.

4 CHAIRMAN HONIGBERG: All right. You
5 may proceed.

6 MR. HINCHMAN: Good evening, Mr.
7 Chairman and everybody. Thank you for a long
8 day. I'll try to make this quick and concise.

9 REDIRECT EXAMINATION

10 BY MR. HINCHMAN:

11 Q. Mr. Bean, you answered questions from
12 Mr. Fossum about a newspaper headline in Nevada
13 earlier this morning. Have you had the
14 opportunity to review the article since his
15 question?

16 A. (Bean) Yes, I have.

17 Q. And isn't it correct that it was reported that
18 Nevada lost some 2,687 rooftop solar jobs in
19 that article?

20 A. (Bean) Yes, that's correct.

21 Q. And was it also reported that over the same or
22 similar period, Nevada gained about 2300
23 utility-scale solar jobs --

24 A. (Bean) Correct.

1 Q. -- in the same period? So the net reported in
2 the headline would be the lost 400?

3 A. (Bean) Correct.

4 Q. Is it true that a utility-scale solar program
5 is compensated on a completely different scheme
6 than the rooftop residential net metering
7 program?

8 A. (Bean) Yes, that's correct. And I would also
9 say that Nevada is a bit different than New
10 Hampshire, in terms of utility-scale solar.

11 Q. So, a change in the employment rate in one
12 sector would not necessarily be related to the
13 change in employment rate in another sector.

14 A. (Bean) That's correct.

15 Q. And then Nevada reversed its position on rates
16 for rooftop solar?

17 A. (Bean) Yes, that's correct. In the recent
18 Sierra Pacific rate case, the Commission had
19 re-established net metering on a monthly basis.

20 Q. So, turning to Exhibit 6, which is --or
21 Attachment B of Exhibit 6, which is the --
22 includes the chart that Commissioner Bailey had
23 just asked about, if you turn to Page 13 of 13
24 in Exhibit B --

1 A. (Bean) Yes.

2 Q. -- and this was talked about earlier in the
3 day. This line goes towards instantaneous
4 netting issues. So, in this chart the utility
5 parties are suggesting that the relative
6 difference of their rate to the status quo is
7 14 percent?

8 A. (Bean) Yes, I see that.

9 Q. And if you look at the -- the first section is
10 the bill prior to solar. So that's the
11 residential bill with no solar. The second
12 section is the bill with solar. So that's the
13 status quo under today's rules; correct?

14 A. (Bean) Yes, for this example.

15 Q. And then the third section is the proposed
16 settlement.

17 A. (Bean) Correct.

18 Q. Right. So the decrease in value of solar that
19 is identified at the bottom there, \$196.80, is
20 that only a 14-percent change from the status
21 quo number of \$157.04?

22 A. (Bean) No, that would be a 126-percent increase
23 in a customer's bill relative to the current
24 program.

1 Q. And then, if you were to flip back to Page 11
2 of 13, this is a graph of the numbers we were
3 just looking at; correct?

4 A. (Bean) It appears so.

5 Q. And the chart on that, there's a line that
6 reads, "Annual gross usage equals 7,494
7 kilowatt hours."

8 A. (Bean) Yes, I see that.

9 Q. And the bell curve for the peak line is annual
10 gross PV generation of 7,494 kilowatt hours.

11 A. (Bean) Correct. Although, this graph depicts
12 an average day.

13 Q. Well, okay. That's where I was going to go.

14 So the design of the model that they used
15 was to match on an annual basis generation with
16 load.

17 A. (Bean) Yes. And having reviewed their
18 document, they do not use instantaneous netting
19 in their document. They're using hourly. So
20 they're using hourly data and averaging that to
21 create a typical day in a month -- so, having a
22 typical January day of production, typical
23 January day of consumption. And to get to the
24 January total, they would multiply it by the

1 number of days in January, and they would
2 subtract the hourly value to come up with
3 what's billed, which is not, as I mentioned
4 this morning, in the example of five kilowatt
5 hours of consumption, five kilowatt hours of
6 production. You can have very different ways
7 that that is billed on an instantaneous basis;
8 whereas, their model would say your net is zero
9 in that hour.

10 MR. FOSSUM: Mr. Chairman, may I --

11 CHAIRMAN HONIGBERG: Yes, Mr. Fossum.

12 MR. FOSSUM: I'm sorry to interrupt.
13 I'm not sure what Mr. Bean is referring to.
14 There's a graph there. He's referring to a
15 model and some other information that's -- I'm
16 not sure where he's getting that information.
17 So I'm not sure what model he's referring to,
18 what calculations he's referring to.

19 MR. HINCHMAN: So he jumped a little
20 ahead of my line of questioning, so --

21 CHAIRMAN HONIGBERG: "He" being Mr.
22 Bean; correct?

23 MR. HINCHMAN: Mr. Bean. Correct.

24 CHAIRMAN HONIGBERG: It's fair to say

1 Mr. Bean anticipated a series of questions?

2 MR. HINCHMAN: Yes, yes.

3 CHAIRMAN HONIGBERG: Mr. Fossum, do
4 you have an objection to them pursuing this
5 line?

6 MR. FOSSUM: Only insofar as if I
7 presume what model they're referring to, it's
8 not a piece of evidence in the case.

9 CHAIRMAN HONIGBERG: Well, I think if
10 the questions directed to Mr. Bean are, "Can
11 you explain your or give us your understanding
12 of what's going on in the utility and ratepayer
13 settlement documents, Exhibit B," that kind of
14 question he should be allowed to answer; should
15 he not?

16 MR. FOSSUM: He should be. But my
17 understanding is he's doing so by referencing a
18 specific -- something else, some other model or
19 document that is not in evidence. So if he's
20 testifying about I understand the following
21 things, that's one thing. But if he's saying
22 there is a model that shows something that's
23 not here --

24 CHAIRMAN HONIGBERG: You understand

1 the difference, Mr. Hinchman?

2 MR. HINCHMAN: Yes.

3 CHAIRMAN HONIGBERG: Mr. Bean, do you
4 understand the difference?

5 WITNESS BEAN: Yes.

6 CHAIRMAN HONIGBERG: All right.

7 BY MR. HINCHMAN:

8 Q. First of all, Mr. Bean, are you aware that in
9 discovery we asked for the work papers that
10 generated this graph?

11 A. (Bean) Yes.

12 Q. And you're aware that the utilities gave us
13 their work papers?

14 A. (Bean) Yes.

15 Q. And we have a discovery reference, and tomorrow
16 we will bring -- print out all the pages of
17 that and bring it for admission so the model
18 will be in the record.

19 A. (Bean) Yes.

20 Q. So --

21 CHAIRMAN HONIGBERG: Mr. Hinchman, I
22 have a question for you.

23 MR. HINCHMAN: Sure.

24 CHAIRMAN HONIGBERG: Was this any

1 part of cross-examination of this panel?

2 MR. HINCHMAN: Yes. I just want to
3 get to the line that's shown on the graph is
4 not instantaneous netting, it's hourly netting.

5 CHAIRMAN HONIGBERG: I asked a
6 different question. Were the witnesses asked
7 on cross-examination by any of the counsel or
8 Commissioner Bailey something that would lead
9 you to this discussion, other than Commissioner
10 Bailey's discussion of Page 10 of this exhibit?

11 MR. HINCHMAN: Yeah, I am trying to
12 redirect on the question of instantaneous
13 netting and how do you identify how much load
14 is used instantaneously on site at the
15 customer's location behind the meter before
16 it's exported to the grid. The graph shows a
17 smooth curve line of onsite, instantaneous,
18 behind-the-meter usage. If I could transfer to
19 Mr. Mueller, I'd like to ask him if that
20 represents a typical customer on a typical
21 day's residential use profile.

22 CHAIRMAN HONIGBERG: All right. I
23 guess, thinking broadly, this is further to the
24 explanation of how instantaneous netting works?

1 And you're going to -- okay. Go ahead.

2 BY MR. HINCHMAN:

3 Q. So, Mr. Mueller, in your experience, is that
4 line, "annual gross usage" -- and this is an
5 hourly basis, so this would be one day of the
6 year averaged out -- is that a typical
7 customer's use profile?

8 A. (Mueller) No, I don't believe it is. I believe
9 what you're looking at is some sort of class
10 average load shape, which is distinctly
11 different. So the distinction is between an
12 average customer load and a typical or
13 representative customer load.

14 Q. So a typical customer load you were discussing
15 earlier, their appliances in the house that
16 cycle -- a refrigerator, a hot water heater,
17 the well pump -- so the typical load is not a
18 smooth load that looks like this, but rather
19 it's one that might run with very little use
20 and then peak up for a couple minutes while the
21 hot water element cycles and then drop off?

22 A. (Mueller) That's right. So, for example, a
23 water heater is typically a 4-1/2-kilowatt
24 load. So, buried in the 10:00 hour, you know,

1 it might be 15 minutes of, you know, a
2 5-kilowatt load and 45 minutes of 500-watt
3 load.

4 Q. So could you use this graph to show your
5 customers when you're trying to sell a solar
6 project and say, "This is probably the average.
7 This is likely to be the experience you're
8 going to have. This is in Eversource
9 territory. You're an average Eversource
10 customer. This is an average example."

11 A. (Mueller) Definitely not. The average is
12 useful from the utility perspective, in terms
13 of the impacts on, say, a distribution circuit.
14 And as I said before, the benefit of the load
15 diversity and the generation diversity on the
16 residential circuits is that the averages work
17 out on the distribution circuit. For the
18 individual customer, the average means nothing
19 at all. What matters is their own particular
20 load shape, which looks nothing like this.
21 It's much, much noisier. I mean, it would be
22 unrecognizable if you put it on this same
23 graph.

24 Q. So if you use the worst-case scenario suggested

1 by Mr. Epler this morning when you're trying to
2 show a customer the economic potential benefits
3 of a solar project, which would be to zero out
4 on-site demand behind the meter, you would
5 presume in the worst-case scenario that was
6 suggested 100 percent of the generation is
7 exported, and none of it is used on site? I
8 guess I'll direct this at Mr. Bean. If you
9 changed the math on the graphs on Page 13 of
10 13 --

11 A. (Bean) Yes.

12 Q. -- so that it was 100 percent export, zero
13 behind-the-meter usage, what is the percent
14 difference to the status quo under the
15 utility -- using a worst-case scenario under
16 the Utility model?

17 A. (Bean) Based on our calculations, and the way
18 to do this, you would have 7,494 kilowatt hours
19 charged retail, and you would have exports of
20 7,494 getting the proposal from the utilities.
21 That would lead to \$348 of additional costs to
22 the customers, which is a 222-percent increase.

23 Q. Not 14.

24 A. (Bean) Not 14.

1 Q. Thank you.

2 Just one last question about the pilots.
3 Is the Energy Future Coalition proposal
4 designed to be compatible with New Hampshire's
5 overall efforts to modernize its grids and rate
6 offerings? This is to the panel generally.

7 Is it your understanding that the proposal
8 is designed to be compatible with overall
9 efforts statewide to modernize its grid and
10 rate offerings while improving its
11 competitiveness of markets, including the new
12 DER market?

13 A. (Bean) Yes, that's correct.

14 Q. Now, is there a benefit in linking up the
15 pilots proposed in the EFC proposal with the
16 efforts underway in the grid mod and the
17 transition to value of distributed resource
18 rates?

19 A. (Bean) Yes. You can leverage the knowledge and
20 experience in both cases and the call to action
21 that's in this case to bring some of that
22 forward and start to gain experience now in
23 order to move forward to Phase 2.

24 Q. So is it your vision that the pilots would

1 establish data and evidence that would go into
2 a record that would form the basis of a future
3 Phase 2 rate case?

4 A. (Bean) Yes. Our proposal recommends periodic
5 updates of data and experience and to
6 disseminate that publicly so that you can
7 refine the programs, learn from them, and that
8 would ultimately inform Phase 2.

9 MR. HINCHMAN: Thank you, Mr.
10 Chairman.

11 CHAIRMAN HONIGBERG: All right. I
12 think we're done with this panel. The panel
13 I'm sure is happy about that.

14 Before we break, let's go off
15 the record for a minute and talk about what
16 we're doing tomorrow, coming in at 9:00.

17 (Discussion off the record)

18 CHAIRMAN HONIGBERG: We're back on.
19 All right. With that, we will resume tomorrow
20 morning at 9:00 with the Utility/Consumer
21 Settlement witness panel. And we'll adjourn
22 for the day. Thank you all.

23 (WHEREBY, Day 1 Afternoon hearing adjourned
24 at 5:21 p.m.)

**HEARING ON THE MERITS - DAY 1 PM SESSION ONLY - March 27, 2017
DE 16-576 ELECTRIC DISTRIBUTION UTILITIES NEW ALTERNATIVE NET METERING TARIFFS...**

	accidentally (1) 113:15	addition (2) 35:23;102:14	afraid (1) 59:2	59:13;129:10
\$	accomplish (1) 60:13	additional (4) 32:7,9;61:22;	afternoon (4) 109:2,2;122:13;	Amendments (1) 54:7
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