

STATE OF NEW HAMPSHIRE
SITE EVALUATION COMMITTEE

October 27, 2017 - 9:05 a.m. DAY 53
49 Donovan Street Morning Session ONLY
Concord, New Hampshire

{Electronically filed with SEC 11-10-17}

IN RE: SEC DOCKET NO. 2015-06
NORTHERN PASS TRANSMISSION -
EVERSOURCE; Joint Application of
Northern Pass Transmission LLC and
Public Service of New Hampshire d/b/a
Eversource Energy for a
Certificate of Site and Facility
(Hearing on the Merits)

PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:

Chmn. Martin Honigberg <i>(Presiding Officer)</i>	Public Utilities Comm.
Cmsr. Kathryn M. Bailey	Public Utilities Comm.
Dir. Craig Wright, Designee	Dept. of Environ. Serv.
Christopher Way, Designee	Dept. of Business & Economic Affairs.
William Oldenburg, Designee	Dept. of Transportation
Patricia Weathersby	Public Member
Rachel Dandeneau	Alternate Public Member

ALSO PRESENT FOR THE SEC:

Michael J. Iacopino, Esq. Counsel for SEC
(Brennan, Caron, Lenehan & Iacopino)

Pamela G. Monroe, SEC Administrator

(No Appearances Taken)

COURT REPORTER: Cynthia Foster, LCR No. 14

I N D E X

WITNESS PANEL	JURGEN WEISS	PAGE NO.
	SAMUEL NEWELL	

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P R O C E E D I N G S

(Hearing resumed at 9:05 a.m.)

COMMISSIONER BAILEY: Good morning, everyone. Welcome to Day 53. The Chairman is in the other room conducting some PUC business so we're going to get started without him, but he can hear us.

We are up to questions from the Committee for the Panel of witnesses, and we're going to start with me.

QUESTIONS BY COMMISSIONER BAILEY:

Q Can we look at your Supplemental Report, and that's CFP Exhibit 145 is the confidential version. I understand that the redacted version is attached to 144, but I'm using 145. So if we can go to Table ES 1 in the Executive Summary, page IV, are you there?

A (Newell) Yes.

Q You say that, in this table it shows that the energy market savings are \$8, and that's an average figure over 13 years, right?

A (Newell) Well, actually, \$8 million.

Q Thank you. Yes. That's a big difference.

A (Newell) Yes, on average. And in real terms,

1 constant dollars.

2 Q Nominal?

3 A (Newell) No. If you did it in nominal dollars,
4 it would be a higher number, but it would be
5 harder to think about what that means.

6 Q Okay. So is \$8 the average of the present value
7 figure?

8 A (Newell) No.

9 Q Can you help me understand that?

10 A (Newell) It is --

11 Q And \$8 million. Sorry.

12 A (Newell) Yes. If you do the model every year,
13 and one way to model every year is in the
14 dollars as they would be defined in that year
15 given inflation. The other way to do it is then
16 to just express each of those in terms of
17 constant 2020 dollars. So, you know, by 2030,
18 10 million sounds, ooh, that sounds like that's
19 more money. Well, that's actually about the
20 same. So you sort of correct it back to the
21 kind of dollars we think about today or in 2020.

22 Q Isn't that what you do when you calculate a
23 present value?

24 A (Newell) No. So this is just dealing with

1 inflation. Present value is also the time value
2 of money. The cost of capital, you know, that
3 depending on the risk that you need to -- it's
4 not just inflation. It's also the real cost of
5 capital. So that if inflation is two percent,
6 the cost of capital, the real cost of capital if
7 you were investing money is something like,
8 depending on the risk, called four or five
9 percent, and then the nominal cost of capital
10 like you would, long-term returns on the stock
11 market might be more like, you know, 7 or 8
12 percent of which about 2 or 3 is inflation and
13 the other is real. But anyway, real versus
14 nominal only deals with the inflation part.

15 Q Okay.

16 A (Newell) And so then once we've done that,
17 expressed each of the year's impacts in dollars
18 that we're familiar with, the constant 2020
19 dollars, all we did was take an average.

20 Now, separately, we did do a net present
21 value calculation, and that does discount the
22 future values and not just deal with inflation
23 but also the cost of capital.

24 Q And when you do that, do you take the real

1 number for each year and convert it to a present
2 value number and then add it up?

3 A (Newell) Well, sure. You can do it that way,
4 but then you need to use a real cost of capital
5 which is lower than what people are familiar
6 with. So instead of the 7 or 8 percent, it's
7 going to be five percent.

8 Q Okay.

9 A (Newell) Or equivalently, you could do a
10 discount all the nominal figures but then you
11 would have to discount it using the 7 or 8
12 percent rate, but it gives you the same answer.

13 Q Okay.

14 A (Newell) And we expressed that, too, the net
15 present value.

16 Q Okay. So when you figured out the net present
17 value for Scenario 1 that's \$307 million over 13
18 years; is that right?

19 A (Newell) That's -- hold on just a sec. Correct.
20 Yes.

21 Q Okay. Did you take 34 million which is the
22 total market savings times 13 and then
23 present-value that figure?

24 A (Newell) Not exactly. The calculation is

1 different from that because we have different
2 values in different years and each one of those
3 years you can take a present value by
4 discounting it all the way back to the present.
5 Then you add them all up. It's just, it's a
6 little bit different mechanics from what you
7 just said, and it gives you a more correct
8 answer.

9 Q All right. But if I asked you --

10 A But it's roughly, conceptually, you can think of
11 it almost like what you said.

12 Q Okay. If I ask you to give me the present value
13 total market savings over the 13-year period for
14 Scenario 2 and Scenario 3, you wouldn't apply a
15 7 percent discount to the numbers on this table,
16 right? Would you apply a five percent discount
17 because of the inflation?

18 A (Newell) Oh, I see what you're saying. So think
19 about Scenario 2 is really, it's really just
20 about half the value of Scenario 1 so the
21 easiest way is take that 307 and cut it in half.

22 Q Okay.

23 A (Newell) Oh, sorry. It's not exactly half.

24 That's just the capacity market savings. Total

1 savings, the capacity market savings in Scenario
2 2 is half?

3 Q Yes.

4 A (Newell) But the total savings is a little more
5 than half. You see if you look in the rightmost
6 column of the table?

7 Q Um-hum. Right.

8 A (Newell) Because the energy savings are just as
9 big.

10 Q Yes.

11 A (Newell) So it's, the present value of Scenario
12 2 would be a little higher than what I just
13 said.

14 Q Could you calculate that for me and give it,
15 submit it?

16 A (Newell) Sure.

17 Q And the same thing with Scenario 3 which just
18 has savings from the energy market.

19 A (Newell) Yes.

20 Q Okay. Thanks.

21 A (Newell) Now, let's see. We may have it here.
22 Actually, if you could, please, turn to -- we
23 already have the answer.

24 Q Oh, good. All right.

1 A (Newell) If you could please turn to, I believe
2 it's page 41 although my pagination here seems
3 possibly different.

4 Q The pagination is different between 144 and 145,
5 and I don't know why. I haven't looked at that.
6 I noticed that yesterday.

7 A (Newell) But the table is the same.

8 Q Right. Which table are we looking at?

9 A (Newell) If could you turn to Table 10, please?

10 Q Okay. That is in Exhibit 145. Oh, okay.

11 A (Newell) So we have it right there.

12 Q Okay. Thank you. Okay. Yesterday there was a
13 discussion about \$9 million as the energy market
14 savings instead of 8 million. Do you remember
15 that?

16 A (Newell) I think so. Yeah.

17 Q Can you tell me why? What you were talking
18 about with 9 million instead of 8 million?

19 A (Newell) What I think that was referring to was
20 an average over, that may have been the number
21 directly from LEI, and there were several things
22 we did to that. One is we converted it to we're
23 expressing it as an average of real dollars as
24 opposed to nominal.

1 Q Okay.

2 A (Newell) And we're also looking at a 13-year
3 average instead of 11. So but I don't know for
4 sure if the 9 that you're referring to had to do
5 with that or the prior analysis which was 9.

6 Q All right. But your testimony as of today is
7 that it's 8 million.

8 A (Newell) Yes.

9 Q For the energy market?

10 A (Newell) Yes.

11 Q Why did you average things over 13 years instead
12 of 11?

13 A (Newell) We, the time, we had to look at 13
14 years to see the full effect because in the
15 scenarios where Northern Pass is participating
16 in clearing the Capacity Market, we were finding
17 price impacts that extended out to or, you know,
18 13 years.

19 Q Okay.

20 A (Newell) And so if we had cut it off. We would
21 have been missing some of the benefits. And LEI
22 had a shorter, it's not that they were cutting
23 it off. It's just that I think mostly because
24 they were, they didn't have energy efficiency in

1 their forecast. It ended up causing all the
2 effects for them to be a little more
3 front-loaded a little earlier.

4 Q Okay. All right. So you think that these
5 numbers are comparable to LEI's numbers that
6 were done over 11 years?

7 A (Newell) Total. Yes.

8 Q All right.

9 A (Newell) You know, once we've converted it, so
10 we're expressed in this, just below the table
11 you were looking at before in the Executive
12 Summary.

13 Q Right.

14 A (Newell) If you look at Figure ES 1.

15 Q Okay. Which is confidential.

16 A (Newell) Okay. But let's just imagine there's a
17 bar chart.

18 Q Yes.

19 A (Newell) And I just want to be clear. What I
20 was just saying, our numbers are not comparable
21 to the numbers that LEI presented as presented
22 because --

23 Q They're nominal.

24 A (Newell) They're nominal. It's an 11-year as

1 opposed to a 13-year. Once we say oh, you get
2 it for 13 years, we had to sort of dilute what
3 they were presenting. Right? Because if you're
4 getting it over 11, a high number, but we were
5 saying we're going to present it as a 13-year
6 benefit, you have to convert it to a lower
7 number.

8 Q Okay.

9 A (Newell) You see what I mean per year? It's
10 something that you could sort of multiply by 13?

11 Q I'm not sure I'm getting your point.

12 A (Newell) So if we're saying if they -- you want
13 to try?

14 A (Weiss) Yeah, sure. So if you have a hundred
15 million dollars, this is hypothetical. Hundred
16 million dollars of benefits overall. If you
17 divide it by ten years, you get \$10 million of
18 benefits. If you calculate the average over 20
19 years, you'd get \$5 million on average, right?
20 So those two numbers are not comparable. So in
21 some sense LEI did the 5 million per year or the
22 10 million per year and we did the 5 million per
23 year because we used a different number of
24 years. It's the same -- for the same benefit

1 you just, if you calculate it as an average
2 annual benefit, it matters by how many years you
3 divide. If you divide by more years you get a
4 lower average annual benefit, even if the total
5 benefit is the same.

6 Q Okay. So if I'm comparing the total benefit?

7 A (Weiss) Right.

8 Q Over your 13-year period and their 11-year old,
9 is it fair to compare those numbers?

10 A (Newell) So --

11 Q Because in their scenario, there aren't any
12 benefits past 11 years. In your scenario there
13 aren't any benefits past 13 years. So those are
14 the total benefits?

15 A (Newell) Yes. Yes. And so, you know, again,
16 without saying the numbers, LEI said that there
17 was this, you know, X.

18 Q I don't think the total savings numbers are
19 confidential.

20 A (Newell) Okay. All right. So whereas LEI said
21 it was something like 60 million a year?

22 Q Right.

23 A (Newell) For 11 years?

24 Q Yes.

1 A (Newell) So we just said convert that to, well,
2 that's equivalent to getting a little less than
3 50 but getting it for 13 years.

4 Q Okay.

5 A (Newell) And now once we've converted theirs,
6 there's just a, it's not, it's just expressing
7 their same value in a different way. Once we've
8 converted to that, now we have a number that we
9 can compare it to our 13-year average.

10 Q Okay.

11 A (Newell) But you can't simply take our 13-year
12 average and compare it to their 11-year average,
13 and I don't think they, I'm not aware of their
14 having objected to the way we re-expressed their
15 number, but you do have to re-express their
16 value in order for it to be something you can
17 compare to others that is a 13-year real dollar
18 average.

19 Q Okay. That makes it hard for us.

20 A (Newell) Well, it would make it hard for you if
21 we didn't if we just presented ours with
22 different units without then also expressing
23 theirs in the same, you know, in the same
24 comparable way. Leaving that to you. We did

1 that for you. They are truly comparable, and I
2 don't think LEI has objected to the way we
3 re-expressed theirs. Now you can really compare
4 what we are saying was LEI's, the result of
5 LEI's analysis to what's the result of our
6 analysis. If you look at our table, our figure,
7 ES 1, that's apples to apples.

8 Q With what?

9 A (Newell) So if you look at the bar chart, you'll
10 see bars for, you'll see that the bar, I won't
11 say the number, but the bar for Brattle Scenario
12 1, it's a little below. It's not totally
13 different ballpark, but it's a little below the
14 bar for LEI.

15 Q Where is the bar for LEI? Can you show me that?

16 A (Newell) All the way on the left on Figure ES 1.

17 Q I'm on ES 1. Oh, the left. That's my other
18 right.

19 A (Newell) Your other left.

20 Q Thank you. Okay. All right.

21 A (Newell) And the other way we could have done it
22 is we could have said all right, if we take all
23 our benefits and we said somehow let's try to
24 concentrate them in an 11-year we would have

1 instead increased ours, but whatever it is you
2 have to make it apples to apples, and we did
3 that. And Jurgen makes a great point.

4 A (Weiss) Yes, I mean, you could compare the NPVs.
5 So we just pointed you to the Table 10.

6 Q Right.

7 A (Weiss) So we used the same, I believe used the
8 same discount rate that LEI did so the NPV
9 numbers should be directly comparable.

10 A (Newell) Great point.

11 Q Thank you. That's helpful. Did you put LEI's
12 numbers into net present value or did you use --
13 have you seen, I asked Ms. Frayer to put her
14 numbers in net present value. No. You didn't
15 have those.

16 A (Weiss) No. I'm not aware that we did. But you
17 could directly take, what I'm saying is you
18 could take the NPV numbers from LEI and directly
19 compare those to the NPV numbers here.

20 Q All right.

21 A (Newell) Because NPV-ing takes care of all those
22 issues; time frame, inflation, cost of capital,
23 everything.

24 Q Okay.

1 A (Newell) And I'm sorry my answer was long to get
2 there. Jurgen is a little --

3 Q You guys are dealing with a novice here.

4 A (Newell) Jurgen's a little better at explaining
5 it, I guess.

6 Q All right. Let's talk a little bit about
7 Scenario 4. Tell me where I'm wrong in my
8 understanding of this. What you did for
9 Scenario 4 is you compared a case where another
10 project was built and that was the Base Case to
11 the savings that Northern Pass would add if that
12 other project was built. And so --

13 A (Weiss) So I didn't quite understand your Base
14 Case. Let me try very simply. What Scenario 4
15 does, it asks -- so we're trying to estimate the
16 energy market, energy and capacity electric
17 market impacts and emissions impacts of Northern
18 Pass. Okay? That's the basic task.

19 Q Right.

20 A (Weiss) So in order to estimate those, you have
21 to ask, well, if Northern Pass does not get
22 built, what happens. What happens in a world
23 where Northern Pass does not get built. And in
24 the Scenario 4, the assumption is if Northern

1 Pass does not get built, something like, another
2 project of similar size that brings similar
3 clean energy to New England will get built
4 instead. That's, so in that sense you're right,
5 the Base Case, the Project Case is Northern Pass
6 gets built. The Base Case is some other
7 comparable Project is in the Base Case so that's
8 correct.

9 Q Okay.

10 A (Weiss) If that's what you --

11 Q I think that's what I meant.

12 A (Newell) Just to be clear, that's how we have to
13 construct it because we always have to have a
14 change case and a base case.

15 Q Um-hum.

16 A (Newell) But what it's really expressing is the
17 question, what if Northern Pass gets built but
18 it's really just outcompeting another project so
19 you've got the line here instead of the line
20 through Vermont or Maine. How different is the
21 world. Well, you've got a line here instead of
22 there, but the electricity market benefits, the
23 electric market prices in that case, they would
24 be the same.

1 Q Okay.

2 A (Newell) That's all that expresses.

3 Q And Dr. Weiss, you said that you were analyzing
4 the impact on the electricity market and the
5 emissions?

6 A (Weiss) Right. So the three things that we --
7 LEI looked at more things in their report -- but
8 that we looked at were capacity market impacts,
9 energy market impacts and greenhouse gas
10 emissions.

11 Q How did you figure the greenhouse gas emissions
12 reduction benefit into your model. Is there any
13 financial consequence of that in any of the
14 numbers that you calculated?

15 A (Weiss) We estimated in general greenhouse gas
16 emissions in two ways. And the same way LEI
17 did. One was just estimating the quantity, how
18 many tons of greenhouse gas emissions might be
19 reduced. And the second trying to express that
20 in a value, in a dollar value either, you know,
21 globally or regionally and then what might that
22 mean for New Hampshire. We did not break it
23 down into a specific value for New Hampshire for
24 the reasons we explained I think primarily in

1 our Original Testimony in February.

2 Q Okay.

3 A (Weiss) It's a complicated issue.

4 Q Can we go to Applicant's Exhibit 102, page 30.

5 A (Weiss) We definitely don't have it.

6 Q Any way we can get it up on the screen?

7 A (Weiss) The screen would be good.

8 A (Newell) Or if you name what it is, we might
9 have it.

10 Q It's the LEI Supplemental Report from April.

11 A (Newell) Sure. We have that.

12 Q So on page 30, the first full paragraph says LEI
13 concluded that HQP's surplus capacity generation
14 available for firm exports to neighboring
15 jurisdictions will equal at least 1527 megawatts
16 from 2021 onward during the winter peak period.

17 So doesn't that suggest that they're
18 diverting power that's already being used
19 somewhere else?

20 A (Weiss) Can I ask you a question in this
21 context?

22 Q I don't know. You can ask, and I'll see.
23 You're not supposed to ask me questions, but if
24 it's to clarify the question, sure.

1 A (Weiss) I'm just trying to understand why you're
2 drawing that conclusion from that sentence.

3 Q Because it seems to me to say, and that's why I
4 want you to tell me why I'm wrong, it seems to
5 me to say that they're sure they're going to
6 have surplus capacity because it's going to be
7 available from exports to neighboring
8 jurisdictions. So if they're exporting it to
9 neighboring jurisdictions today, but after 2021
10 they're going to use it for this Project, to me
11 that seems to suggest that they are diverting
12 the capacity. So the capacity is already being
13 used.

14 A (Weiss) So while we disagree with the conclusion
15 of the 1527 megawatts or more, I don't read from
16 that sentence that LEI would assume that because
17 it says it's available for firm exports to
18 jurisdictions, to neighboring jurisdictions. It
19 doesn't say anything about whether that capacity
20 would currently be exported some place else.

21 Q So you think it's just being spilled over and
22 not used and they're not making any money on it?

23 A (Weiss). No. I'm not saying that.

24 Q But this says surplus capacity.

1 A (Weiss) This is about capacity.

2 A (Newell) I know, but capacity really isn't about
3 spilling. Capacity, and I think we probably
4 still have to get back to your question very
5 specifically, but this is a foundational point
6 that capacity really has to do with you have
7 something you're quite sure you won't use for
8 another purpose at that moment when things are
9 the toughest in the whole year. It really
10 doesn't correspond very closely to energy. And
11 all year where is this, if you're sending most
12 of the time power down this line, where is that
13 coming from. Is that coming from, is that
14 diverted? Is that coming -- and this really
15 speaks to emissions questions. Is that coming
16 from something you would have sent somewhere
17 else, is it coming from new dam? I just want to
18 clarify that that is a different question, an
19 important question, but it's a different one
20 that this does not speak to. This is purely a
21 capacity analysis right here.

22 Q I think I understand that. Do you want to add
23 something?

24 A (Weiss) Yes. So, for example, I think there

1 would be absolutely no question by either us or
2 LEI that in the summer Hydro-Quebec Production
3 has a lot of excess capacity in the sense
4 that --

5 A (Newell) And energy.

6 A (Weiss) And energy. Right. But in the sense
7 that the dams that they have, they're using the
8 capacity of the turbines if you want less than
9 100 percent. Okay? Because the demand in
10 Quebec is just much lower than the capacity for
11 generating electric at any given hour during the
12 summer months. So if for some reason in the
13 summer, there was a spike in demand, they could
14 very easily increase the power generation almost
15 instantaneously from their generation
16 facilities. So it's the, that's sort of the
17 capacity, the ability to instantaneously
18 generate a certain amount of power, and what
19 matters for the capacity benefits is that you
20 can do that any time. So the fact, if you were
21 spilling in the winter, let's just say you were
22 spilling in the winter, then that actually
23 doesn't mean you could increase capacity because
24 in the winter your turbine is already running at

1 full speed if you want.

2 Q Okay. So my question was trying to get at the
3 emissions question.

4 A (Weiss) Okay.

5 Q So really then we to look at the energy, not the
6 capacity. That's what you're telling me.

7 A (Weiss) Right.

8 Q That's a good thing for me to know.

9 A (Newell) Although I think where they may relate
10 is I think -- can I try from a different angle
11 your question?

12 Q Sure.

13 A (Newell) I mean, if somebody comes to you and
14 says, oh, with Northern Pass they already have
15 everything they need for that anyway. They
16 already have the dams, they already have the
17 water behind the dams.

18 Q Right, and that seems to be LEI's position.

19 A (Newell) And I think I see what you mean. If
20 that were the case, there's no, where is the
21 incremental clean energy --

22 Q Yes.

23 A (Newell) -- that is displacing fossil generation
24 in New England without changing their exports to

1 somebody else.

2 Q Yes.

3 A (Newell) I think that is a very fair question.

4 I have --

5 Q So what's the answer?

6 A (Newell) -- a response on two levels. One is
7 it's possible, I don't think anybody's, it's
8 possible that they're spilling a lot of water
9 right now. Again, Jurgen looked for that and
10 hasn't found any evidence of that. In other
11 words, they've sort of got production they're
12 just not using. That's possible.

13 Q But not likely?

14 A (Weiss) Pretty unlikely. So what you can find
15 is Hydro-Quebec, I assume it's actually
16 Hydro-Quebec Production that reports it, but you
17 can see as part of the submissions to the
18 regulator in Quebec charts that show the levels
19 of the reservoirs over time, right? And if you
20 had spillage, presumably you could get spillage
21 when the levels of the reservoirs are basically
22 higher than the capacity.

23 A (Newell) Or if they have minimum flow
24 requirements down below so we don't know.

1 A (Weiss) The point is the reservoir levels just
2 rise and fall over the seasons as you would
3 expect because, you know, you have excess
4 hydropower in the summer and you have not enough
5 inflow into the reservoirs in the winter.

6 Q So have you looked at those?

7 A (Weiss) Yes.

8 Q Did you see any evidence of spillage?

9 A (Weiss) So I think Sam's comment is a good one
10 that those by themselves may not be a perfect
11 indicator or a reliable indicator of whether
12 there is spillage for those kinds of reasons.
13 But to your larger point, if you had a problem
14 that every year Hydro-Quebec is, you know, has
15 too much energy at some point.

16 A (Newell) Massive amounts.

17 A (Weiss) At some point all the reservoirs would
18 have to be overflowing, and there certainly are
19 not. So you see sort of a relatively stable up
20 and down and up and down.

21 Q Which is what you would expect to see if they
22 were using the energy?

23 A (Weiss) Right.

24 Q Dr. Newell?

1 A (Newell) Can I take a step back and address a
2 separate point?

3 Q Yes.

4 A (Newell) We may be being too exact about this.
5 What I think is a very important underlying
6 point is if Quebec has a policy of actually, you
7 know, building hydrogeneration for export and
8 not necessarily tied to a specific project. I
9 mean, the thing is they have discussions with
10 the governors of New York and Massachusetts and
11 Connecticut, and, sure, there's only one
12 solicitation right now, but they've been having,
13 they already do sell. I mean, this has been
14 going on for a while. They already do sell a
15 lot. And they've been having renewed
16 discussions about selling more, and they have a
17 policy to be a hydro exporter, and we've seen, I
18 think, statements that they, that's a plan.
19 They want to do more of that.

20 So we're being a little bit too exact and
21 static in how we're looking at this if we just
22 say, you know, if we just look at something like
23 this table. And, you know, so sure, it's, it
24 would be nice to tie Northern Pass to, yup, and

1 we built that dam and specifically to export,
2 you know, make new clean energy, and it's not
3 like that. But it still could be that in a
4 looser sense, you know, they get more exports,
5 they're going to be building some more. It's
6 just not one-for-one. And I think that is
7 likely the case that is consistent with, in
8 fact, I think we saw a letter yesterday that in
9 a part that wasn't highlighted spoke of a
10 policy.

11 Q Um-hum.

12 A (Newell) Of doing that. And so I'm just
13 cautioning against looking in too static, too
14 static a sense.

15 Q So you think if Northern Pass gets built and
16 they use existing supply they're going to add to
17 their supply so eventually we are going to
18 reduce greenhouse gas.

19 A (Newell) That's the more dynamic way of looking
20 at it. Now, unfortunately, it's not like
21 there's a promise. You do Northern Pass, we'll
22 do this extra. You know, so it's not like
23 there's a promise there, but in sort of a sort
24 of looser sense, yes, the way you said it.

1 Q So then we should count the greenhouse gas
2 reduction as a benefit.

3 A (Weiss) So I'm going to try, so the thing, the
4 question, our discussion is kind of illustrative
5 of an important issue which is that it's
6 entirely possible that over time with a long
7 view, it will lead to greenhouse gas emissions
8 reductions. It's a lot harder to say that those
9 will occur without in the long run Hydro-Quebec
10 also adding new hydro capacity. And it's, as
11 you know, as Sam said that's a provincial policy
12 to do that over time. But that creates an issue
13 not so much for greenhouse gasses but it may
14 create an issue with respect to how one looks at
15 the MOPR discussion.

16 A (Newell) Hold on before we get to that. I do
17 think that's really important. I just think
18 that to fully, Commissioner, to fully answer
19 your question because you asked should we count
20 them. And I would say, you know, again, if you
21 believe that this is part of a policy, they
22 build a little more, export a little more over
23 time, if you believe that long-term dynamic and
24 these are long-lived assets, sure, yeah. And if

1 you think that's the right way to think about
2 it, then do you want to count the greenhouse gas
3 emissions. If you think well, it's sort of
4 loosely tied and I can't be sure, you know, you
5 sort of in your mind you have to discount it a
6 little bit. But that's, I think that's the
7 bottom line. If you believe that it's part of,
8 you know, a loosely tied policy, build more,
9 export more, then yes, you definitely would want
10 to count the greenhouse gas emissions if that's
11 the way you think about it.

12 Q Okay. Mr. Wright is going to ask some followup
13 questions on this topic.

14 **QUESTIONS BY DIR. WRIGHT:**

15 Q Thank you. This is the exact discussion I
16 wanted to get into with you guys so Commissioner
17 Bailey has done a great job. But as a followup
18 to that, can I just ask, so do you believe LEI's
19 analysis that if this is incremental power, that
20 it will displace fossil plants in New England
21 and not other zero emitting sources in New
22 England?

23 A (Newell) So it depends.

24 Q I knew that was going to be the answer.

1 A (Newell) Well, you know, this gets to another
2 issue that we talked about which is about
3 Northern Pass. So first of all, let me break it
4 down.

5 If Hydro-Quebec is producing incremental
6 clean energy and sending it to New England, then
7 yes, that will primarily displace fossil
8 generation in New England. However, the
9 question that we're asking here is not exactly
10 that. It's what are the benefits of Northern
11 Pass. And this gets us back to our Scenario 4
12 point and which is do you need Northern Pass to
13 get that incremental hydro or might somebody
14 just build a competing project instead. So that
15 question is sitting there, too.

16 But if you've put that aside and you're
17 just saying oh, imagine that getting the
18 incremental hydro depends on Northern Pass, and
19 so Northern Pass would enable all that
20 hydropower to come down that otherwise wouldn't,
21 then the answer to your question is yes. It
22 would be primarily. Primarily. Overwhelmingly
23 displacing fossil.

24 A (Weiss) So I can elaborate a little bit the

1 reason for that. So even though the costs of
2 renewables in New England are also coming down,
3 all the renewables essentially have zero
4 variable cost. And they produce, you know, they
5 produce when the wind blows and the sun shines,
6 by and large. So in the market, those resources
7 which be used when they're available for quite a
8 long time, and the resources that get displaced
9 are the resources that have variable costs. So
10 that's fossil generation.

11 So fossil generation in New England sets
12 the market price. They're the last resources to
13 be called to produce electricity to meet demand.
14 So if you add new resources that have a low
15 variable cost, then those more expensive
16 generators, more expensive to run because they
17 have fuel costs, those will no longer be used in
18 periods when you add this new energy so in that
19 sense. They will be displaced, it will be
20 displacing fossil generation primarily until you
21 get to a point where, and this happens now
22 occasionally, not in New England, I believe, but
23 in other parts of the country, where some
24 nonemitting resource is setting, is the last

1 resource that you call upon.

2 So you might have heard about, you know, in
3 the midwest or in Texas there are now some hours
4 of the year when the entire supply is basically,
5 you might have a couple of existing fossil
6 generators that have to run in the minimum
7 generation levels, and so and everything else is
8 basically renewable. So then if you added
9 hydropower then, then you have no option but you
10 would essentially curtail the renewables output,
11 but I think in New England we're quite a bit
12 away from that being a possibility.

13 Q Does it help in New England that most states
14 have renewable energy policies like Renewable
15 Energy Credits to the zero emitting sources, are
16 they more likely to stay on line and not be
17 displaced because of those policies?

18 A (Weiss) So it does in some ways. So the reason,
19 so it's, it could be the RECs and it could be
20 the existence of the Production Tax Credit for
21 wind that that creates incentives for those
22 generators to stay on line even if prices were
23 zero in the market or even sometimes negative.
24 Just so they can earn the Production Tax Credit

1 for the RECs. But again, that's a situation
2 that is not likely to be very relevant in New
3 England over the next decade or two.

4 Q Does it matter if it's Northern Pass or if it's
5 another Project, would the greenhouse gas
6 benefits be the same for Northern Pass, assuming
7 the same size versus another project the same
8 size? Would there be a difference in greenhouse
9 gas emissions?

10 A (Newell) When you say another project being same
11 size, do you mean a transmission project
12 bringing power down from Quebec?

13 Q Yes.

14 A (Newell) Probably. I mean, we don't know if
15 there are different commercial arrangements, but
16 if we're assuming that they're both connecting
17 to the same portfolio of current and future
18 hydro, then sure, the emissions impacts would be
19 the same, I think.

20 Q Do you disagree?

21 A (Weiss) No, I don't disagree. It's a
22 theoretical possibility in practice. I mean,
23 it's a nodal market in New England so if an
24 alternative line connected some place else and

1 you had a lot of congestion in the system, but
2 it would -- practically no difference.

3 A (Newell) The only interesting point here about
4 where it might not be as much emissions
5 reduction as it seems is if it's displacing the
6 existence of other clean projects. So again
7 this is our Scenario 4. Through competing with
8 them. This Project versus that project. A
9 transmission and hydro project versus a whole
10 lot of wind, you know, winning the same
11 solicitation. That's where it gets interesting.

12 Q Okay. Thank you.

13 **QUESTIONS BY COMMISSIONER BAILEY:**

14 Q So one of the areas that I was going to cover
15 later but I think I'll cover now because I think
16 you just sort of touched on it is that of
17 production costs and when you were talking about
18 the variable costs for renewable are zero. Can
19 you explain to me what production costs savings
20 are?

21 A (Weiss) Sure.

22 A (Newell) This is a very standard metric for
23 evaluating the economic impacts of a project,
24 and it really expresses the total cost of

1 producing electricity.

2 Q For all the generators in the region?

3 A (Newell) Yeah, I mean, so one of the tricky
4 things about doing this is where do you define
5 your circle. You know. So if you define it as
6 the whole world that's sort of the most easy to
7 understand. If you're doing just New England
8 and you have to think about how do you count the
9 imports, it gets a little more complicated.

10 But the concept, just put that aside, the
11 concept is it's really in its most basic form
12 total fuel costs. So then, and so, for example,
13 there have been all these studies that show if
14 you build a wind, it has huge production cost
15 savings. Of course it does because it's zero
16 fuel, zero variable cost and it's displacing
17 what's at the margin in the electricity market
18 is usually fossil. And so, yeah, you're
19 replacing whatever it is. Say \$40 generation
20 per megawatt hour with zero, times all the
21 megawatt hours. It's a lot of production cost
22 savings.

23 One problem with the production, there are
24 a couple of issues with the production cost

1 savings. So that's in the form it's often
2 expressed. As a measure of total economic
3 savings, sometimes we talk about something else,
4 total resource cost savings, and that would
5 include, well, the wind actually costs something
6 to build so you could think about including
7 that, too.

8 Q But we're not talking about that here so let's
9 not get too deep in the woods.

10 A (Newell) Okay. Well, the reason it comes up is
11 because when LEI estimated production cost
12 savings, they said yeah, in New England you're
13 going to be whatever the price, whatever is the
14 cost of the marginal unit, say \$50 a megawatt
15 hour, that's what you're saving and you're
16 replacing it with what. And they in one
17 instance they, I won't say the number, in one
18 instance they assume the "what" is, the hydro is
19 a very, very, very low number and counted all
20 that as savings. And I really question that
21 because you either have to think about a total
22 economic cost, either you have to build hydro to
23 produce that, you know, and/or if it's from
24 existing, you have to count the opportunity

1 costs, and that's selling it to New York or
2 Ontario.

3 Q We're going to get into that in a minute.

4 A (Newell) But that is what they did. That is
5 what's fairly typical is to look at the cost of
6 what you're able to turn down. That's the \$50
7 stuff.

8 Q So say it's a coal plant and so you're saving
9 the cost of the coal for the region.

10 A (Newell) Basically. Yes.

11 Q Okay. Do consumers benefit from that savings?

12 A (Newell) So that comes to the next question.
13 Not directly but perhaps indirectly.

14 Q Okay. So the generators would benefit. Well,
15 no. Because the generator is going to be out of
16 business.

17 A (Newell) Not necessarily. Not necessarily. The
18 thing is, yeah, exactly, yeah. I mean the
19 generator, the one who, you're burning less and
20 it's not coal in New England, it's natural gas.
21 You're burning less natural gas. That is, it
22 doesn't, production cost savings does not
23 describe what happens to consumers versus
24 producers. It just doesn't describe that. It's

1 really, really think of it as the cost of, you
2 know, the fuel in other inputs. You know, some
3 variable costs.

4 Q But how does a reduction in the overall cost of
5 fuel in New England impact retail customers?

6 A (Newell) I'll give you an example here. Suppose
7 the, think about the hydro coming in at \$28 a
8 megawatt hour. Suppose that we think that's the
9 right number to count it, whether it's
10 opportunity cost or whatever. Let's just say
11 that's the right number. And then suppose in
12 New England the price and the cost of the
13 marginal generator that might be able to ramp
14 down is \$40. So if we've replacing \$40
15 generation with \$28 generation, the production
16 cost savings is 12.

17 Q Well, we've already counted for that in the
18 reduction in the energy market prices, haven't
19 we?

20 A (Newell) Yes. It's definitely not additive.
21 Here's what -- but now let me get to what's
22 happening from a consumer standpoint. By
23 sending in a little more power, and you turn
24 down the \$40 a megawatt hour unit, it could be

1 that oh, now, you just got rid of the \$40 unit.
2 The next guy who is still generating and setting
3 the price is a \$39 unit. Now they're setting
4 the price in New England. They're setting it at
5 39. So the customer is getting the \$1 reduction
6 in price in this example, you know, and that
7 affects all of their consumption.

8 Q And that gets counted in the energy market
9 savings?

10 A (Newell) Yes.

11 Q So how do we count the production cost savings?

12 A (Newell) You cannot add them. You can never add
13 them.

14 Q Okay. So if we count the energy market savings,
15 we don't count the production cost savings?

16 A (Newell) Right. Right. And I think the only
17 reason -- what? I mean, the only reason --

18 Q Dr. Weiss, you can talk.

19 A (Weiss) No. It's just --

20 A (Newell) The only reason to think about the
21 production cost savings is it's a question is it
22 an indicator of maybe a long-term benefit. So
23 imagine we get to in a very distant future where
24 maybe with other clean energy, you know, you

1 don't have the \$40. You don't have a \$39 unit
2 on the margin. You've displaced all of them.
3 Maybe it comes down to, the hydro might have
4 helped you bring it back, bring it to 28. Maybe
5 that's setting the price at that point. You
6 know, so maybe in the long run it's an indicator
7 of customer savings.

8 I mean, to my mind it's a very meaningful
9 economic indicator, sort of economic wide how
10 much, what's happening, total cost, but if,
11 ultimately, all you're interested in translating
12 it to customers, we have definitely already
13 counted that. We didn't really think through
14 what it might be in the very long-term, and
15 perhaps you could think of the production cost
16 savings as becoming a substitute indicator for
17 the very long-term, perhaps. But you must not,
18 you cannot ever add production cost savings to
19 the market savings.

20 Another thing that's different about them,
21 too, I mean if you want to get into it, the
22 production cost savings is really just about the
23 quantities displaced. So one megawatt hour of
24 production, you know, in my example, the 39, the

1 28 to 39, that's a \$12 per megawatt hour savings
2 on if you just sent one megawatt hour that's a
3 \$12 dollar savings.

4 When we do the customer impact and we say
5 it brought down the price from 40 to 39, we're
6 actually going to multiply that dollar savings
7 and we already did, that's what the calculation
8 does, multiplies that by the entire customer
9 load because they paid the market price on all
10 of it so you see that the volumes are different?
11 It's just a totally different concept, but you
12 can't add them.

13 A (Weiss) I'll add something since I started
14 whispering, and it's going to be an attempt at
15 ECON 101 a little bit.

16 Q Uh-oh.

17 A (Weiss) No, I'm going to try and make it really,
18 really simple. So as we try to say production
19 cost savings are really a measure of the savings
20 to society. And as Sam said, it doesn't really
21 tell you who those savings go to at all.
22 Because who those savings go to gets determined
23 by the market forces. Okay? And so in that
24 instance, in that sense, they're definitely not

1 additive. It's, for society, you know, total,
2 sort of production cost savings are a pretty
3 good measure. Figuring out what impact it is on
4 customers, production cost savings doesn't say
5 much. To economists, the price impacts that
6 we're mostly talking about are actually a
7 concept that are not considered a particularly
8 powerful concept because, and Sam mentioned the
9 long-term, so there is a question, and we have
10 this in our report, one thing that happens when
11 there are energy price reductions or capacity
12 price reductions, when we say they benefit
13 consumers, you mentioned it yourself. They
14 don't benefit producers.

15 So when economists think about whether a
16 project is a good project for Society or not,
17 they're primarily interested in society savings
18 as opposed to one part of society is a saving at
19 the expense of another part of society. So
20 that's why the two are really very different
21 concepts and why it's completely standard for
22 economists to look at production cost savings as
23 a measure of whether a project is beneficial for
24 Society overall. It's only when you're getting

1 to what does it do to ratepayers or customers,
2 then it doesn't help you.

3 Q Okay.

4 A (Newell) I want to add to that, too, because we
5 have done many studies where we are looking at
6 just the societal metrics. We often are arguing
7 that that's a good way to look, make sure this
8 project is adding value to society rather than
9 just, you know, transferring, destroying value
10 and transferring wealth in your metric that just
11 looks at customers as ooh, that's good. So
12 we're often doing that, and benefit cost
13 analysis is often that approach.

14 Our understanding in this assignment is
15 that the Site Evaluation Committee would be
16 primarily interested in what this Project does
17 to New Hampshire ratepayers, and so that's the
18 question we focused on.

19 Q Okay. Thank you.

20 Let's go to your Supplemental Report Table
21 1, page 15. In the first section of that table,
22 existing year-round surplus, you have a low
23 energy and a high energy cost scenario, and is
24 this when you're figuring out the overall cost,

1 low energy cost is when the price that you
2 assume the energy market will generate for this
3 Project is low and then you do a high end?

4 A (Newell) Just to be clear, you're asking about
5 the low versus high energy cost.

6 Q Right.

7 A (Newell) This is referring to opportunity cost.

8 Q Oh, okay. All right. So let's talk a little
9 bit about opportunity cost. And why do you call
10 that low energy cost and high energy cost?

11 A (Newell) You mean as opposed to opportunity
12 cost? Maybe just didn't fit in the row.

13 Q So what you mean here is low opportunity cost
14 versus high opportunity cost?

15 A (Newell) Right.

16 Q Okay. And let me see if I understand what
17 opportunity cost is. And then you can tell me
18 what I have wrong.

19 So as I understand it, if Hydro-Quebec
20 Production is selling energy to somebody today,
21 and they're making revenue from that sale, and
22 then they stop making that sale because they're
23 going to sell it to Northern Pass, then the
24 revenue that they're losing by selling it to

1 somebody else gets counted as a cost?

2 A (Newell) Sure. Yes.

3 Q And that's part of the MOPR analysis or the
4 minimum price floor threshold?

5 A (Newell) Yes, And to be clear, when LEI did its
6 MOPR analysis it did the same thing.

7 Q Right. Okay. So in these two scenarios in the
8 existing year-round surplus, you see what
9 happens if the opportunity cost was \$22 versus
10 what it is at \$28.

11 A (Newell) Yes.

12 Q And why did you pick those two numbers?

13 A (Newell) That's not confidential.

14 Q No. This table is not confidential.

15 A (Newell) We haven't made any of our analyses
16 confidential.

17 Q Well, the next page. Table 2 is confidential.
18 But --

19 A (Newell) Well, that could be because that's
20 using the transmission costs.

21 Q All right. For right now, tell me why you
22 picked \$22 as the low opportunity cost and \$28
23 for the high opportunity cost.

24 A (Newell) So the high is, and we described this

1 on page 17 to 18, and so the \$28 per megawatt,
2 let me make sure this isn't redacted, where we
3 got this from.

4 Q Oh, it is.

5 A (Newell) Is it?

6 Q The last sentence on that page?

7 A (Newell) That would be the one.

8 Q All right. That's confidential. I got that.

9 A (Newell) Yes, and then the --

10 Q Okay, so --

11 A (Newell) I can tell you where the low comes
12 from.

13 Q It's also shaded as confidential, but I see it.
14 The last sentence in the paragraph? First
15 paragraph on page 18.

16 A (Newell) That one really shouldn't be shaded,
17 but that is exactly where to look.

18 PRESIDING OFFICER HONIGBERG: Hang on.
19 Mr. Pappas? This is marked "confidential." I
20 think Mr. Needleman is, I'm not sure exactly why
21 it's marked confidential, but it appears that
22 the witness doesn't think it's confidential.

23 Q I think probably because you could derive the
24 confidential number if you knew what --

1 A (Newell) Ooh, yeah. I think I need to practice
2 my arithmetic. You're right. You really could.
3 Thank you.

4 PRESIDING OFFICER HONIGBERG: So it is not
5 confidential because the number could be derived
6 from publicly available information?

7 A (Newell) No, no, no, no.

8 PRESIDING OFFICER HONIGBERG: The other way
9 around. It's confidential because it's derived
10 from using confidential information.

11 Q Correct.

12 A (Newell) And thank you for figuring that out for
13 us.

14 Q Okay. All right. So the high opportunity cost
15 produces offer floor price of \$4.40 a kilowatt
16 month, right?

17 A (Newell) Right.

18 Q And on the bottom of that page 15, you say the
19 bottom line is that Northern Pass will have
20 trouble clearing the capacity market -- no,
21 that's my shading. I highlighted it, and it's
22 in yellow. Will have trouble clearing the
23 capacity market unless its offer is based on
24 existing generation with a low end opportunity

1 cost and some form of revenue credit for the
2 Project's environmental attributes.

3 Does that mean it has to have low end
4 opportunity cost-plus like REC revenue?

5 A (Newell) As I look at this sentence, I think I
6 was trying to combine too many cases into one.

7 Q Okay.

8 A (Newell) So in the table, as you pointed out, it
9 would have a low enough Minimum Offer Price of
10 the 4.4 even with the high energy opportunity
11 cost.

12 Q Okay.

13 A (Newell) So at 4.4 it would clear.

14 Q That's what I thought. Okay.

15 A (Newell) Yes. And you know, maybe I was trying
16 to do too much in that sentence because the
17 next, you know, if you -- well, I'll just leave
18 it at that. It think we'd like to correct or
19 clarify that sentence to reflect what's in the
20 table.

21 Q Okay. So really the sentence should say it will
22 have trouble clearing capacity market unless its
23 offer is based on existing generation, skip the
24 "with low end opportunity cost."

1 A (Newell) Yes. Exactly.

2 Q So for all the other scenarios to clear, it
3 needs REC credits. Is that what?

4 A (Newell) Well, there's another scenario here.

5 Q The second one?

6 A (Newell) Yes. The 5.9.

7 Q I don't understand that one either.

8 A (Newell) So in that case, the number would be
9 low enough it would probably clear and have the
10 full benefit that we estimated or nearly full.

11 Q Wait, wait, wait. Say that again?

12 A (Newell) The scenario with the 5.9, I mean, the
13 5.9 is pretty low, and you'd pretty much get the
14 full benefit and it would clear.

15 Q That would also clear.

16 A (Newell) Yes.

17 Q Let's look at page 29, figure 7, which is a
18 confidential table.

19 A (Newell) Okay.

20 Q Okay. It doesn't look like 5.9 would clear.

21 A (Newell) I'm sorry. Which table are you looking
22 at?

23 Q Figure 7 on page 29.

24 A (Newell) Right, it would clear at least in the

1 later years when the bigger benefits are there.

2 Q Right. But not until like FCA 21.

3 A (Newell) No. I think it would clear and set the
4 price starting in probably FCA 17.

5 Q Hmm. Because I asked Mr. Pappas to give me the
6 exact numbers, the clearing numbers, and did he
7 give you those numbers?

8 A (Newell) Yes, but it doesn't have to be below
9 the Clearing Price. It could be -- so notice
10 the Base Case, the price has gone well above the
11 590 starting in FCA 18.

12 Q Yes.

13 A (Newell) So it could very well be that at 590
14 the Northern Pass would clear and it would set
15 the price at 590.

16 Q Right. Okay.

17 A (Newell) And then we'd have not the full
18 benefits we show here but almost.

19 Q Okay. All right. So you think 590, well, I
20 mean, do I count that if it doesn't clear until
21 FCA --

22 A (Newell) Yeah.

23 Q -- 18?

24 A (Newell) Yeah. Most of the benefits wouldn't

1 occur until then anyway. Really, the benefits
2 occur when absent this project, look eventually
3 load growth and retirements mean the prices will
4 rise. Right now we've in surplus conditions,
5 prices are kind of in the low end, but
6 eventually, there's low growth and retirement
7 prices will rise until a new entry caps it,
8 right? And that is when you get the benefits
9 and Northern Pass prolongs the surplus
10 conditions for about four years.

11 Q Okay. Okay. All right. Yesterday you said
12 that the cost of the transmission to be built in
13 Canada at 600 million Canadian dollars
14 translates to \$4 a kilowatt month. Do I have
15 that right?

16 A (Newell) Right.

17 Q Okay. Now, Ms. Frayer calculates the offer
18 floor price at a confidential number, and if I
19 add \$4 to that that's what you would recommend
20 because she doesn't count the cost of
21 transmission. Is that right?

22 A (Newell) Mechanically, yes. You mean assuming
23 that we agree with everything else she did to
24 get to that confidential number?

1 Q Yes.

2 A (Newell) Right.

3 Q Okay. Well, that number is significantly higher
4 than your 4.4 and so can we talk about what the
5 differences are without talking about
6 confidential?

7 A (Newell) Yes. I have to say I don't exactly
8 know. So we may have a little bit difference in
9 the energy opportunity costs that we're using.

10 Q I don't think so.

11 A (Newell) Well, right, because --

12 Q Those numbers seem familiar, but I haven't
13 reviewed them recently.

14 A (Newell) So hers start, I think, at 22 or so but
15 then they go up. But I don't think that is the,
16 I also don't think that's the main reason. I'm
17 just not sure. They may have, I think it has
18 something to do with the transmission revenue
19 requirements for the, what's counted as the
20 transmission cost. I mean, I believe we used
21 what we got from, you know, would be the
22 transmission revenue requirements for Northern
23 Pass.

24 Q Well, she used 1.6 billion and you used 1.6

1 billion.

2 A It's not just the 1.6 billion. It's also the
3 ongoing operating and maintenance costs. I
4 mean, there are a number of elements that come
5 into play in the transmission revenue
6 requirement and both of us included that full
7 requirement, not just the 1.6 billion. You
8 don't just have to pay for the building.

9 Q Right. I know. You have to pay for the
10 operating costs and the investment costs.

11 A (Newell) Because we looked at this, too. We
12 wondered, why is it that when it seems that we
13 have basically very similar assumptions, why are
14 we getting the 4.4 with the transmission and
15 she's getting a confidential number, but let's
16 just say --

17 Q I know what the number is.

18 A (Newell) Without the transmission, and that's
19 where we looked into it, too, and I actually
20 don't know for sure.

21 Q I think this is a really important point because
22 you're saying that -- well, are you saying we
23 should use your number or we should use her
24 number plus four?

1 A (Newell) I think you mean given all those other
2 assumptions, that it's based on existing, you
3 don't have to count new generation, yeah, in
4 this scenario.

5 Q Because one of the things we have to figure out
6 is whether the Project will clear the capacity
7 market.

8 A (Newell) Yes.

9 Q And this number determines that.

10 A (Newell) Well, remember, this is already, this
11 is assuming the Market Monitor doesn't count any
12 of the much higher costs of new generation, this
13 assumes that he's not giving some special credit
14 for clean energy. But given all that, in that
15 scenario, then you're right, and I don't have an
16 answer for you right now. Is there a process
17 where we can dig into it further and get back to
18 you? I mean, this is only one, yeah, I don't
19 know if we'd get it today, but --

20 Q Well, can --

21 A (Newell) Because we looked into it. I'm not
22 sure we have all the information we need to
23 tell, I'm not sure we have all the information
24 to compare, to know the details of what LEI did

1 that got to that.

2 Q Okay. Well, let me try it this way. Yesterday
3 you said there was an error in LEI's model.

4 Were you talking about the minimum?

5 A (Newell) I wasn't talking about that. No.

6 Q I'll ask you about that later.

7 A (Newell) I'll tell you this. I'm confident that
8 given the assumptions that we said that we did
9 it right including translating what we had as
10 the revenue requirements for the transmission
11 project. So I'd say, you know, use our number.

12 Q Okay. So then you think it's going to clear,
13 and we will have capacity market savings.

14 A (Newell) Under those assumptions, if the Market
15 Monitor treated all those other things the same,
16 no new generation costs, but also no credit for
17 clean energy. Who knows if he'll use the same
18 thing on energy opportunity costs, but given all
19 those assumptions, then yup, I think it would
20 clear.

21 Q Okay. What about the 40-year life of the
22 transmission project? How confident are you
23 that the Market Monitor is going to accept that
24 number?

1 A (Newell) Don't know. I think it would be
2 reasonable to accept it, but I don't know if
3 there's precedent for doing that. You know, I
4 think the fact that I think in the workbook
5 there may be a dropdown menu or something.

6 Q There is, yes.

7 A (Newell) It suggests there's openness to using
8 that. I mean, if the Market Monitor used 20, I
9 would argue you shouldn't use 20, but I just
10 can't know for sure what the Market Monitor will
11 do. I mean the reason we picked 40 is because
12 we think it's more reasonable, probably more
13 likely, that the Market Monitor would end up
14 using that.

15 Q Okay. There's a term, and I'm not sure if I
16 have it right, but elective transmission, is it
17 project?

18 A (Newell) Upgrade.

19 Q Upgrade. Okay. Elective transmission upgrade
20 and that's what the starting point for the ORTP,
21 the Offer Review Trigger Price, that the Market
22 Monitor would use if Northern Pass didn't want
23 to mitigate that lower to prove that its costs
24 were lower, they would use that price? Is that

1 right? Am I totally --

2 A (Newell) Let me just say it slightly
3 differently.

4 Q Okay.

5 A (Newell) So the Offer Review Trigger Price for
6 elective transmission upgrades is the starting
7 price of the Auction that is, it's about I think
8 about \$14 a kilowatt month. And that is to say
9 any ETU that wants to come in and offer at a
10 lower price than that needs to go through a very
11 detailed review.

12 Q And that's the workbook that's Applicant's
13 Exhibit 140.

14 A (Newell) Yes. That's right.

15 Q Okay. And what number of years did that
16 analysis use? Do you know?

17 A (Newell) No. I don't think, so the Offer Review
18 Trigger Prices for a number of the standard,
19 more standard technologies, gas-fired combined
20 cycles, combustion turbines, even onshore wind,
21 go through that same kind of workbook analysis
22 and develop a number. I don't think any such
23 process was used for the ETUs. They just said
24 these are all going to be so case specific, they

1 all have to come in for review. So it's not
2 like they did some calculation, and it happened
3 to be \$14 a kilowatt month.

4 Q \$14 was random?

5 A (Newell) No, no, no. It's the highest price
6 that the Auction could be at. The Auction can't
7 clear higher than that so basically just says,
8 it's just a mechanistic way of saying you guys
9 have to come in for a review.

10 Q Okay. All right.

11 A (Newell) By the way, I think with the
12 terminology I think I can give you a little help
13 here. So with the gas-fired unit, I don't
14 remember what the exact number is right now, but
15 the ORTP, the Offer Review Trigger Price so say
16 that's \$7 a kilowatt month, that says hey, if
17 you're offering it 9 above it, no problem. You
18 don't need to come in for review. This is just
19 a trigger price for review. If you want to come
20 in at 3, you've got to come in and show me these
21 are your real costs.

22 Q Right. So Northern Pass, the trigger price is
23 \$14, and if they want to show that it's less
24 than that, then they have to prove all these

1 assumptions.

2 A (Newell) Right.

3 Q I really wish I could figure out why their
4 number is so different than your number.

5 A (Newell) Well, you mean, differ by, when you say
6 "so different," I know we can't talk about it,
7 but --

8 Q I'm talking about different than your number if
9 you add \$4 for the transmission.

10 A (Newell) That it doesn't line up exactly.

11 Q Yes. Well, and it's sort of on the threshold
12 between clear and not clear which is why it's
13 important to understand it.

14 A (Newell) Yes. And we can, we did look into
15 this, and I don't think we had a definitive
16 answer, and we assumed it has to do with
17 differences in the transmission revenue
18 requirement or something that, O&M or something,
19 but just as a reminder though, you really need
20 to understand there are a lot of moving pieces.
21 I mean, these are indicative estimates. I mean,
22 very easily, the energy opportunity cost could
23 be different. The inclusion of generation
24 capital could be there, and that would hugely

1 raise the number. They could, they might think
2 of the transmission revenue requirement
3 differently because they say oh, well, that's as
4 low as it is because it's based upon a utility
5 cost of capital, as if there's a very low risk
6 on return on the revenues, but if you treat it
7 like a merchant project, they need much higher
8 payments because it's risky. So I just don't
9 know. That's one of the -- do you follow my
10 point on that?

11 Q I do, but did you look at Applicant's Exhibit
12 140?

13 A Remind me which one it is.

14 Q That's the workbook that Ms. Frayer filled out?

15 A (Newell) Yes.

16 Q And you couldn't figure it out from that?

17 A (Newell) Couldn't figure out the difference that
18 you were asking about.

19 Q Okay.

20 A (Newell) But, again, I'm confident that we
21 properly translated the revenue requirements
22 that we had for the Project.

23 Q Why would her revenue requirements be lower?

24 A (Newell) I just don't know. No. They were

1 actually, her revenue requirements were actually
2 higher.

3 Q Oh, oh. Right. That's right.

4 A (Newell) And I just don't know. She might have
5 a more updated version.

6 Q Okay.

7 A (Newell) I don't know.

8 Q All right. Are you familiar with the CASPR
9 proposal? Competitive Auctions with Sponsored
10 Policy Resources?

11 A (Newell) Yes.

12 Q That's the most recent suggestion to the IMAPP
13 problem. Is that right?

14 A (Newell) That is the most -- kind of, yes. I
15 mean, the IMAPP is broader than that, but for
16 the part that ISO New England is really focusing
17 on, that's their latest suggestion. Yes.

18 Q Okay. And if Northern Pass wins the
19 Massachusetts RFP?

20 A (Newell) Um-hum.

21 Q And they don't clear the capacity auction, but
22 they get capacity revenue from the substitution
23 action from CASPR, that doesn't give us any
24 savings from the capacity market, correct?

1 A (Newell) No. I would think about it differently
2 than that. First of all, I just want to be
3 clear that CASPR is just a proposal.

4 Q Right.

5 A (Newell) What it does do is something that I
6 think is really important for the region to do,
7 for the market to do which is it says look,
8 we've got to recognize, if people are building
9 these clean energy projects, it's not to try to
10 manipulate the market or something. I mean,
11 these are filling clean energy goals. You can't
12 just not have them clear and pretend that
13 they're not there from a reliability standpoint.
14 We have to have some way of admitting them into
15 the process. You know, not excluding them
16 forever through some MOPR. That's the concept.
17 But to try to do it in a way so that it doesn't
18 really kill the competitive price, and this is
19 the compromise that they've come up with. Now,
20 what does it mean?

21 Q Before you tell me what it means.

22 A (Newell) Well, so the point is you still, if
23 this goes ahead, it becomes a way to admit a
24 Project like Northern Pass and you could largely

1 get the benefits.

2 Q How?

3 A (Newell) Because so what it does is it, the idea
4 of CASPR again, it's just a proposal, but the
5 idea is that there would be two stages in the
6 Auction. The first one is fully with the MOPR
7 just like we've talked about. The second stage
8 would be where the state-sponsored resources --

9 Q That didn't clear.

10 A (Newell) -- that didn't clear have a chance to
11 come in and get paid in that Auction and clear
12 forevermore, those megawatts, without any, then
13 they're just treated like existing. They're
14 just going to be in the first stage from then
15 on.

16 And here's the rub. It's only to the
17 extent that they're replacing somebody who's
18 willing to retire. They sort of swap out, and
19 that's sort of the idea. You couldn't be
20 completely destroying the price if you're just
21 replacing somebody else, but you could keep
22 prices low. You're not going to make prices
23 much lower than they were before, but what would
24 happen if people retired, and you didn't, you

1 know, get to replace them. The prices would go
2 up. And this allows you oh, you can substitute
3 for those folks who are retiring. And sure,
4 you're not going to plunge prices down to zero
5 or something, but you might keep prices where
6 they would be if those folks had not retired.

7 So it actually, there would be a way, if
8 CASPR goes forward, it means there is a way, you
9 know, assuming that somebody else is willing to
10 retire and get sort of bought out of their
11 position, there is a way for even completely
12 MOPR'd resources to come in. And the more
13 somebody else is willing to retire, the more
14 room for somebody else to come in, and possibly
15 keep prices at the lower level.

16 Q So if we keep the prices at the level that it
17 would have been without Northern Pass and no
18 retirements, then how is Northern Pass giving us
19 capacity market benefits?

20 A (Newell) What it does is it, again, there are
21 two reasons that the price eventually rises
22 absent Northern Pass and Northern Pass might
23 keep prices low. Why do prices eventually rise?

24 Q What prices?

1 A (Newell) Capacity prices. I think I had the
2 wrong word in there. Capacity prices eventually
3 rise. Because of load growth and because of
4 retirements. And retirements have been, on
5 average, couple hundred megawatts a year of some
6 of the old steam plants and who knows. They're
7 in chunks. There's probably 5,000 megawatts
8 kind of at risk in New England, but it's really
9 the combination of it. So say you might have
10 zero, you might have a few hundred, you might
11 have several hundred megawatts of retirements a
12 year. Now, meanwhile, load growth is projected
13 to be net of energy efficiency and photovoltaics
14 and everything is projected to be, I forgot, 250
15 megawatts a year. So it doesn't kill the load
16 growth impact on prices, but it could kill the
17 retirement impact on raising prices.

18 Q And how do we quantify that? Because it would,
19 would it be different than the capacity market
20 savings that you've calculated?

21 A (Newell) Yes, it would.

22 Q Would it be lower or higher? How would it be
23 different?

24 A (Newell) If we were to rerun the analysis, it

1 would be lower than the capacity market savings
2 we calculated, but it would mean you're not in
3 Scenario 3 which says oh, you don't clear,
4 there's no capacity market impact.

5 Q Okay.

6 A (Newell) Yeah.

7 A (Weiss) Or in Scenario 4.

8 Q Or what?

9 A (Weiss) Or Scenario 4.

10 Q Right.

11 A (Newell) And I want to clarify for folks that
12 this proposal doesn't even come out until after
13 our report.

14 Q Right, but I'm aware of it so --

15 A (Newell) So, for example, we were trying to
16 guess, how is the region going to accommodate
17 this because you can't just, it's strange policy
18 to just say I don't care what the states want to
19 do. For clean energy reasons, we're just going
20 to exclude it. So that's why we imagined a
21 different path which was say, okay, we'll give
22 them some sort of clean energy credit like you
23 do for Class I renewables. So that's what we
24 imagined in our rightmost column of that table

1 we were looking at before.

2 Q Okay.

3 A (Newell) That doesn't seem to be the direction
4 they're talking about, but it was our guess at
5 the time. And this idea of CASPR was since
6 then.

7 Q Okay. Let's talk a little bit about Scenario 4.
8 Can we look at page 44 of your Supplemental
9 Report? At the bottom of, at the end of
10 paragraph 3, you say since no bids have been
11 submitted or accepted, and since the evaluation
12 criteria in Massachusetts and elsewhere are as
13 of yet not fully known, it remains possible that
14 scenarios other than Scenario 4 are the relevant
15 ones.

16 Now, yesterday we talked about the fact
17 that the Mass. RFP has been issued and that
18 discovery there were a significant number of
19 responses. I think you said between 10 and 20.
20 Is your opinion still the same or do you think
21 Scenario 4 really now is the relevant one?

22 A (Weiss) So I think Scenario 4 is relevant. I
23 don't know whether it's the relevant one. It
24 remains relevant. I think what has happened

1 since we submitted the report is, as you said,
2 bids have been submitted. There are evaluation
3 criteria, although since we don't know the
4 results and we also, having been a part of sort
5 of evaluating proposals, I know that how
6 criteria are ultimately applied is not
7 necessarily transparent.

8 Q But it seems like something is going to be built
9 to meet the criteria that Northern Pass is
10 trying to meet.

11 A (Weiss) So until and unless, well, until they
12 announce that they have selected a project, we
13 don't know.

14 Q Why?

15 A (Weiss) Because part of the evaluation criteria
16 is it has to be beneficial.

17 Q Oh, okay. So if the result of their analysis is
18 that none of the 10 or 20 projects that have
19 been submitted are beneficial, then Scenario 4
20 doesn't apply?

21 A (Newell) Right.

22 Q But if they pick somebody, and it's not Northern
23 Pass, then Scenario 4 does apply?

24 A (Weiss) No. So, by the way, first when, I'm

1 going to, when I said yes, so yes is only true
2 with respect to the Mass. RFP, and we're talking
3 a lot about Mass. RFP. But the Scenario 4 in
4 some sense is broader than the Mass. RFP.

5 Q But let's apply it to the Mass. RFP.

6 A (Weiss) So if you apply it to the Mass. RFP,
7 right? So if no project is submitted, then it's
8 not clear whether we're in Scenario 4 or not.
9 We just know that neither Northern Pass nor any
10 of the other bids was selected. It doesn't mean
11 whether Northern Pass will get built. It
12 doesn't mean that in the absence of Northern
13 Pass one of the other competing projects would
14 get built. We have no additional information in
15 some ways.

16 Q Let's assume that a project gets selected from
17 the Mass. RFP, and it's not Northern Pass. Does
18 that make Scenario 4 the most relevant scenario?

19 A (Newell) You know, unfortunately, you can't say
20 it in a deterministic way. It has to be in a
21 forward-looking, uncertain way. If we're in a
22 world where there's -- no, really. I mean, you
23 don't know -- there are other solicitations,
24 too.

1 Q But I asked you --

2 A (Newell) What makes Scenario 4 relevant is if
3 it's, if Northern Pass is competing with another
4 project that will, all right, will turn out to
5 have been viable.

6 Q Which is what the Mass. RFP really is.

7 A (Newell) Sure. Hold on just a second.

8 Q Okay.

9 A (Weiss) So yes. I think if the hypothetical is
10 true, that in the Mass. RFP a project other than
11 Northern Pass gets picked, and just limiting
12 this to Massachusetts RFP, then we are in
13 Scenario 4. In the sense that we know there is
14 at least one project other than Northern Pass
15 that's deemed beneficial. So, you know, that
16 means if for whatever reason Northern Pass had
17 decided not to bid into the Mass. RFP, for
18 example, there was another competing project
19 that is viable in that Mass. RFP.

20 Q But it did.

21 A (Weiss). Right, right, right, right. So that
22 means it is a substitute. In Massachusetts, I
23 mean, I don't know from another state's
24 perspective but from the Massachusetts

1 perspective, it is deemed a, you know, more
2 appealing Project. That doesn't mean in another
3 solicitation Northern Pass would not be deemed a
4 more appealing project.

5 A (Newell) Or the only.

6 A (Weiss) Or the only. But there's at least one
7 here, one situation where it is clear there's
8 one project that is deemed more appealing, and
9 it's, therefore, a, call it a perfect substitute
10 for Northern Pass, and that is the Scenario 4.

11 Q Okay. Thank you. All right. Can we look at, I
12 think it was your Original Testimony on page 6
13 where you're talking about the benefits for
14 residential customers in a year. Do you see
15 that? It's around lines 11 through 17 on page
16 6?

17 A (Newell) Yes. It's funny. Our pages aren't
18 numbered, but I think we're there.

19 Q Okay. CFP 142?

20 A (Newell) You know what? That's easier. Let's
21 just look at that. Yes. Thanks.

22 Q So here you talk about residential savings on an
23 annual basis may be between zero and \$41, and
24 that's based on an average or a consumer who

1 uses 621 kilowatt hours per month, right?

2 A (Newell) Right.

3 Q Did you do any analysis for what the impact
4 would be for commercial and industrial
5 customers?

6 A (Newell) Implicitly, because we did this rate
7 impact was really an average number that could
8 apply to anybody.

9 Q So I would just take the savings and multiply it
10 by a commercial and industrial load?

11 A (Newell) Pretty much although I'm actually
12 remembering we did actually break it down by
13 class for the purposes of the analysis we handed
14 to Kavet & Rockler for the economic impact
15 analysis. So that actually, the breakdown, I
16 believe, is in our workbook somewhere.

17 Q I'm not sure I have that.

18 A (Newell) Okay. But it's essentially what you
19 just said.

20 Q Okay. So I would take \$.55 per kilowatt hour
21 and multiply it by a commercial load to figure
22 out what the savings for a commercial customer
23 might be?

24 A (Newell) Yes. You could do that. And to be

1 clear, that \$.55 corresponds to our highest
2 scenario, highest sensitivity.

3 Q Okay. All right.

4 A (Newell) And from the original analysis, but
5 it's, I mean, so I would take from our latest
6 report instead.

7 Q Oh, okay. And what's that number? Do you know
8 off the top of your head?

9 A (Newell) Well, it was --

10 Q Is it on page 2 of your Supplemental Testimony?
11 Line 25?

12 A (Newell) The one I like is on page 41.

13 Q Of the report?

14 A (Newell) Yes. That's the more detailed version
15 of the table and it shows the NPV, shows the
16 average rate impact.

17 Q Which table?

18 A (Newell) It's Table 10 on page 41.

19 A (Weiss) The next to the last column on the
20 right.

21 Q And this is not a confidential table. So the
22 last column on the right?

23 A (Weiss) The next to the last column on the
24 right.

1 Q Okay. So if we were going to look at the
2 savings from Scenario 1 it would be \$.28 per
3 kilowatt hour times a commercial load. Okay.

4 A (Weiss) Yes.

5 Q I think I can figure that out. Okay.

6 My last question is about the energy market
7 impacts that you mentioned yesterday that don't
8 include the possible benefits during extreme
9 weather conditions. Is there any way we can
10 quantify that?

11 A (Newell) Well, sure. So remember LEI did an
12 analysis of what the value would have been
13 during the polar vortex, and they came up with,
14 and also during summer heat wave, and in each
15 instance they came up with \$50 million customer
16 savings New England wide so about \$5 million
17 customers savings in New Hampshire in one of
18 these events, and you can imagine, first of all,
19 I mean, there's a question, you know, even if
20 you had similar weather in the future, would the
21 price impact be the same? Don't know. But just
22 as an order of magnitude way of thinking about
23 this, what if you think there is going to be one
24 of those events every year. Hope we don't have

1 that every year, but if you have one of those
2 every year and it would add \$5 million a year to
3 the benefits?

4 Q Okay.

5 A (Newell) And compare that to, you know, in or
6 Scenario 1 it's about \$30 million a year of
7 benefits or in LEI's it's close to \$50 million
8 of benefits. So, you know, that would be in
9 that case significant. I mean, it doesn't
10 completely change the nature of the total
11 number.

12 It's also worth pointing out, I think I
13 mentioned before, that when LEI analyzed the
14 polar vortex, they were holding gas prices the
15 same. Actually, what would happen if you had
16 more nongas generation available in one of those
17 instances, gas prices would also come down, and
18 that would translate to further electric
19 reductions. So I think probably, if you really
20 replicated everything in the polar vortex, you
21 know, it would probably be a bigger impact than
22 this.

23 Q Bigger than 5 million?

24 A I think so. Yes.

1 Q So 5 million would be a reasonable number to
2 count as benefit because we don't know all these
3 other things?

4 A (Newell) Reasonable number to what?

5 Q To count as a benefit?

6 A (Weiss) No. So as Sam pointed out, so that's,
7 you know, that's assuming you have a polar
8 vortex-like event every year.

9 Q Right.

10 A (Weiss) So one of the things that was missing in
11 LEI's analysis, if LEI really had attempted to
12 estimate the benefits to New Hampshire, you have
13 to go beyond just calculating the hypothetical
14 savings during a polar vortex-like event in the
15 past. You also, you have to estimate how likely
16 it is for these things to happen. So one way to
17 kind of help you figure, kind of back of the
18 envelope, is okay, let's just assume that the 5
19 million or the 50 million are kind of, you know,
20 a good estimate.

21 Q The 50 million?

22 A (Weiss) The 50 million per event New England
23 wide. So if you assume that's a good estimate,
24 then you have to sort of apply judgment as to

1 how likely that is. I think neither LEI nor the
2 Brattle Group would claim that we're experts in
3 predicting extreme weather events. So does that
4 happen every five years? It would be 20
5 percent.

6 Q Do you think the Committee should count it as a
7 benefit?

8 A (Newell) So the answer is yes. It's just, it's
9 hard to put your number on exactly what you'd be
10 willing to pay for that. I think it's helpful
11 as an indicator, you know, just to know that, I
12 mean, does this put us in the unknown where it
13 could be, I don't know, the benefits could be
14 ten times, and my example was I'm not asserting
15 that one of those events a year of that nature
16 with the same impacts is the right number. I'm
17 just, as an illustrative way to think about it,
18 if you did, I'm saying that would add say ten
19 percent to what LEI said is the benefit or if
20 you looked at ours, you know, the 30 million a
21 year, it would add what's one-sixth, you know.

22 Q Yes.

23 A (Newell) And it's an indicator. Nobody is going
24 to be able to tell you exactly what's the right

1 number, but as an indicator, maybe that's
2 helpful.

3 Q Okay. Thank you.

4 COMMISSIONER BAILEY: Mr. Chairman, or
5 perhaps Attorney Iacopino, I really would like
6 them to figure out what the difference between
7 their analysis and LEI's analysis on the MOPR
8 is. Is that a record request? Do they need to
9 work with Ms. Frayer? What's the best way to
10 get that information on the record, do you
11 think?

12 PRESIDING OFFICER HONIGBERG: Mr. Iacopino.

13 MR. IACOPINO: I think they're going to
14 have to tell you what they would have to do to
15 do that and then we can see if that's
16 something --

17 A (Newell) I think we'd have to see more details
18 on what LEI did with that input, and this is
19 something we noticed and we looked into, and I
20 don't think we had all the information.

21 First of all, we'd have to go back and
22 double-check that we really, really don't have
23 the information. And if we don't, we'd have to
24 work with LEI to see exactly what they did for

1 all their pieces, but it's probably in the
2 transmission piece.

3 COMMISSIONER BAILEY: Is that something the
4 Applicant might be willing to work with them on?

5 MR. NEEDLEMAN: I mean, sure. We can
6 certainly work with them on it. I'm at a
7 disadvantage because Ms. Frayer is not here
8 right now, and it may be that there is more
9 information currently available than I realize,
10 but we'll figure it out.

11 A (Newell) And maybe there's more than we realize,
12 too. So I want to first check that, that we
13 didn't miss something when we looked into this,
14 and, second, we would be more than happy to
15 confer with LEI on why they were, all else
16 equal, getting a higher number than we were.

17 COMMISSIONER BAILEY: And that's a higher
18 number assuming that LEI added \$4 per kilowatt
19 month for the cost of transmission?

20 A (Newell) That's what I meant by all else equal,
21 yes.

22 MR. IACOPINO: So what exactly do you have
23 to do in order to do that first check? Is that
24 something you can do from here in the building?

1 A (Newell) Oh, that first check meaning do we
2 already have that information?

3 MR. IACOPINO: Correct.

4 A (Newell) I just don't know because we already
5 looked into it and didn't think we had the
6 answer. So we'll have to look deeper at all the
7 things we got.

8 MR. IACOPINO: So you're not talking about
9 something that could be answered today?

10 A (Newell) I just don't know. So we can try and
11 we'll just get back to you as soon as we can.

12 MR. IACOPINO: Thank you.

13 PRESIDING OFFICER HONIGBERG: Well, getting
14 back to us as soon as you can is an issue. And
15 I don't, since none of us knows what's going to
16 be required, I think what I'd like to see happen
17 is for you to do the work you need to do, confer
18 with Counsel for the Public, and then have
19 whatever quick evaluation can be done to
20 determine how long this is going to take.

21 A (Newell) Sure.

22 PRESIDING OFFICER HONIGBERG: Then make a
23 judgment about how to proceed in terms of
24 putting a time limit or putting a deadline in

1 for a response. So Mr. Pappas and Mr.
2 Needleman, in the second instance. The first
3 instance is the witnesses and Mr. Pappas. The
4 second instance is Mr. Needleman and Mr. Pappas
5 conferring about what schedule is going to make
6 sense and then others who are part of this are
7 probably going to have to have a say in what
8 happens after that. But my expectation is we
9 want to get this information sooner rather than
10 later. Like in the next week.

11 A (Newell) By the way, one thing you need to
12 understand is this is not a very complicated
13 analysis. This isn't doing a whole huge model
14 run. This is going to come down to this is the
15 spreadsheet. You know, this is looking at some
16 costs. It's really just a matter of can we put
17 our information against theirs, and we have to
18 see if we have all theirs, and, if not, just ask
19 for it.

20 PRESIDING OFFICER HONIGBERG: That's what I
21 was hoping you would be saying. So let's get as
22 many heads together as need to be gotten
23 together and then provide a report probably from
24 you, Mr. Pappas, about what's going to be

1 required and when it will happen.

2 MR. PAPPAS: We'll do that.

3 PRESIDING OFFICER HONIGBERG: All right.

4 Thank you.

5 COMMISSIONER BAILEY: All right. With
6 that, I don't have any further questions. Thank
7 you so much.

8 PRESIDING OFFICER HONIGBERG: Who else on
9 the Committee has questions? Let's take a
10 ten-minute break.

11 (Recess taken 10:47 - 11:07 a.m.)

12 **QUESTIONS BY PRESIDING OFFICER HONIGBERG:**

13 Q Gentlemen, I want to follow up a little bit on
14 what Commissioner Bailey was asking you;
15 specifically, about how CASPR would affect this
16 situation or could affect this situation. But I
17 want to back up a little bit and make sure I and
18 everybody else understands how things would go
19 in the capacity market, assuming little or no
20 load growth, which I think is the assumption
21 generally prevalent in New England what would be
22 the circumstances going forward as generation
23 retires, an expectation that capacity prices
24 would go up. Can you explain a little bit about

1 how that works and why that is the expectation?

2 A (Newell) And I want to understand. You started
3 mentioning CASPR but your question before that
4 is, your question actually immediately is not
5 about CASPR.

6 Q Correct. I want to get to CASPR and what
7 CASPR's effect would be because you explained it
8 a little bit for Commissioner Bailey, but it's
9 not inherently obvious to me why that's the
10 answer, and I want to make sure I understand how
11 you got from her question to your answer, and I
12 think I need to understand your view of the
13 capacity market going forward without anything
14 from the IMAPP process.

15 A (Newell) Right. Could you turn to figure 7 in
16 our Supplemental Report? Because that has our
17 price forecast over time. In fact, I'm going to
18 flip between that and -- do you have that in
19 front of you? And also the page before that
20 that has table 4. That would show the
21 supply/demand details.

22 So first let's look at the price
23 trajectory. So what we're showing is that you
24 see how it goes from FCA 10 to FCA 23, and, of

1 course, those are for delivery years, FCA 10 is
2 for delivery years 2019 to '20. That Auction
3 already took place. We're just showing the
4 actual price there. Same thing with FCA 11.
5 We're just showing the actual price there. It
6 was 5.30. And then the rest of the blue curve
7 is our forecast for the capacity market. Okay?
8 And what we're showing here is that prices would
9 stay low for quite a few years. They'd stay
10 below \$6 all the way through 2017.

11 Q Just reminding myself that the one you're
12 talking about right now is confidential.

13 A (Newell) Hmm.

14 Q It may be that the specific, it's the specific
15 numbers that are confidential whereas the trend
16 is not? I'm not quite sure.

17 A (Newell) Okay. I want to look for a second at
18 the redacted version so I just know which parts
19 are redacted and which are not. Yeah. Okay.
20 Well, I'm going to describe what's in figure 7.
21 And then we'll go back to -- fortunately, the
22 table is not redacted that's in the prior.

23 Now, what this figure shows is prices.

24 What the table shows is quantities. Okay? And

1 what we're showing in the prices is that prices
2 would remain low for several years. And that
3 then, eventually, there would be enough load
4 growth and retirements that prices would be
5 higher, and they would just keep rising. If
6 supply stayed the same and, well, back up.

7 If load growth keeps occurring and
8 retirements keep occurring, that prices would
9 keep rising except to the extent that new supply
10 comes in and sort of caps it. So eventually, by
11 FCA 20, we say prices stop rising and they cap
12 out at whatever you think net CONE is or the
13 long-run marginal cost of capacity, and they
14 don't go above that because if they did, more
15 new capacity would enter.

16 And I think your question is why is it that
17 they rise from these low levels to the, why do
18 you ever need new capacity in a market with low
19 load growth, lot of photovoltaics and all that.
20 And that does come down to the assumption so on
21 load growth, I'm going to turn back to the table
22 now. Table 4. This shows the ISO New England
23 load forecast, we took that as given. The very
24 top row of the table is last year's load

1 forecast for the next ten years from ISO New
2 England, and it does not show zero load growth,
3 even net of photovoltaics. It shows load growth
4 of about roughly 300 megawatts a year. Gets to
5 be a little less.

6 Now, you may not believe that, but this is
7 their forecast net of photovoltaics, and then
8 there's another element here that we're also
9 accounting for that most normal people, I
10 suppose, would also consider part of the demand
11 which basically erases a lot of that load growth
12 which is energy efficiency. It just so happens
13 that ISO New England counts that on the supply
14 side of the market, but we've got that several
15 rows down. I'm sorry. That is, hold on just a
16 second. That is the teal, if you have a color
17 version. It says new EE, and that is coming in
18 every year. And counteracting most of the load
19 growth, right? So as you said, if you counted
20 that, I mean that's really just a reduction in
21 the load. If you counted that, there's not much
22 load growth so why do you even expect the prices
23 to rise?

24 And they wouldn't, absent of another

1 assumption that we made which is that you see
2 this row here, it's several numbers down, that
3 we're going to keep having retirements, and I
4 think that's a reasonable assumption. Exactly
5 how much when is uncertain. The amount that we
6 assumed is based on the average over the last
7 several years of retirements of steam units,
8 steam-type generators in New England.

9 I'll point out that we did a sensitivity
10 analysis. What if we're wrong? What if it's
11 not 200 a year? What if it's 100, what if it's
12 400, and I can show you those, but that's,
13 obviously, that is the driver of prices
14 eventually rising, and it's uncertain so we
15 looked into it.

16 Q So absent any effort to subsidize new resources,
17 new resources start to think about coming into
18 the market to replace the retiring generation?

19 A (Newell) Basically, yes.

20 Q And I think what your figure 7 shows that at
21 some point it gets high enough that the new
22 generation enters the market.

23 A (Newell) Yes. Yes. Actually, can I tell you
24 something helpful?

1 Q Always.

2 A (Newell) We've just seen this happen in the
3 market. So a lot of people's forecasts,
4 including, I think, our own when we have done
5 some studies would be the prices would be, turn
6 the clock back to before FCA 8. The prices
7 would be, they had been at the price of floor.
8 They were really low. The prices would stay
9 really low. And then Brayton Point retired at
10 about 1500 megawatts. All of a sudden, we're in
11 higher price territory, and then by FCA 10 now
12 we're seeing, we saw 1400 megawatts of new
13 capacity enter. And so that is, that's the
14 dynamic that could happen again.

15 Q And so the new capacity wants to enter, and it
16 goes through the process with the Internal
17 Market Monitor to say we want to qualify, we
18 intend to bid in the next auction, we want to go
19 through this qualification process with you. So
20 how far in advance of the Auction does that take
21 place? The Auction is in February of each year.
22 How many months in advance does that process
23 start?

24 A (Newell) I don't remember exactly, but it's

1 something like nine or ten.

2 Q Basically the previous summer.

3 A Yes. And there's a lot of interest for new
4 entrants. There's a deal available to them that
5 they love which is a 7-year price lock-in. I
6 mean, I've worked with developers, they realize
7 they would be derelict in their jobs as a
8 developer not to have a project that they're,
9 you know, they're offering, they're ready to
10 bring into the market in case the market
11 conditions improve.

12 Q So the new ones that come in have this projected
13 effect of stabilizing the capacity market or
14 even bringing it down if the numbers work out
15 right.

16 A (Newell) Yes.

17 Q In a broad sense.

18 A (Newell) Yes. I tend to think of it as they cap
19 prices. I wouldn't expect a lot of new entry,
20 you know, coming in and limiting prices say to
21 550. We've been wrong. You know. Sometimes
22 they come in at really low prices. We've seen
23 that in New England in PGM, but I think our
24 forecast is that they sort of wouldn't come in

1 until the prices rise to a little higher and
2 then they would basically be capping what you
3 expect the price to get to.

4 Q And your projections as to how Northern Pass
5 would affect the capacity market are all working
6 within this framework that we've just been
7 talking about, right?

8 A (Newell) Right.

9 Q Commissioner Bailey asked you about the CASPR
10 proposal which is one of the proposals from the
11 IMAPP process. It's had a lot of discussion,
12 and I understood you to be saying to
13 Commissioner Bailey that it would have some
14 effect on the market even if it came in during
15 the secondary Auction that's contemplated by
16 CASPR, and I'm not sure I understood your
17 answer.

18 A (Newell) Yes. It would not have, anything that
19 comes in in the second round does not affect the
20 price in the first stage which is really the
21 vast majority of the volume that customers will
22 pay. But that's okay. Because once it's come
23 in, forevermore it's treated as existing. It
24 can play in the first stage without being

1 MOPR'd.

2 Q Oh, without being MOPR'd? So it doesn't have to
3 hold that MOPR'd price at the next Auction?

4 A (Newell) No.

5 Q Oh.

6 A (Newell) But that would be only, so suppose
7 there were 300 megawatts of retirements. And
8 that let the first 300 megawatts of Northern
9 Pass come in. That 300 is forevermore going to
10 come in without being MOPR'd, but you still
11 might take, it might take a couple more Auctions
12 to bring in the next 700 megawatts.

13 Q And so once -- oh, I see. So if the project's
14 megawatts come in at different times in
15 different secondary Auctions, that doesn't then
16 set their price. Their minimum. Their minimum
17 drops down to whatever their actual bid is at
18 that point going forward. That is something, I
19 did not understand that subtlety of CASPR.

20 A (Newell) Although I'm not sure I, the way you
21 just phrased it, I wasn't able to follow.

22 Q I probably phrased it poorly.

23 A Well, I don't know, but could you say it again
24 if you want confirmation of that?

1 Q No. I think I can go back and read what you
2 said and understand it.

3 Maybe it would be helpful for others. I
4 know just enough to be dangerous on this stuff.
5 But can you briefly describe that
6 primary/secondary Auction process so others in
7 the room understand what you and I just talked
8 about?

9 A (Newell) Yes, and I'll tell you my
10 understanding. You know, I'm not intimately
11 involved in this, but I'm observing that it's --
12 so you just have to understand that what I'm
13 telling you is based on my understanding of the
14 current proposal and that it is just a proposal,
15 and some of the details have really been
16 changing over time. I don't know whether to
17 consider that sort of what I'm telling you right
18 now is what something ISO New England will file,
19 whether stakeholders will approve it, whether
20 they'll change the terms, I just don't know.
21 But I think you're just asking the current
22 proposal. What's the basic idea. That's your
23 question? Okay.

24 Before getting into the mechanics, I think

1 I just have to say what the premise is. The
2 premise is about things like Northern Pass, and
3 if states are doing, if they want a lot of clean
4 energy, you know, you want to have a competitive
5 market and sort of protect the price, not have
6 it sort of artificially suppressed, but, you
7 know, if the states have these policy objectives
8 to bring in clean energy, you know, should the
9 market be setting up something to stop it? I
10 mean, and what if they're always MOPR'd? You're
11 in effect going to double-buy capacity, right?
12 Because you're basically saying oh, you can't
13 clear. We're going to have to get all our
14 capacity from somebody else and then you kind of
15 have both? And then even in your reliability
16 studies you ignore that that's there? It feels
17 not sustainable.

18 So they have, so they thought, you know,
19 the MOPR, should we just keep going with the
20 MOPR as is or should we think of a way that sort
21 of compromises, you know, maybe eventually those
22 resources affect the price. Maybe that's the
23 right thing. And so that's the nature, that's
24 the starting point. Okay.

1 Now the mechanics. There would be an
2 Auction. The stage 1 is just like everything we
3 talked about. So-called state-sponsored
4 resources would be subject to the MOPR. So if
5 there's some portion of their cost that's
6 subsidized, they're having revenues, sort of
7 special revenues nobody else gets, the Market
8 Monitor will look at that and say got to look at
9 what you really, if you were a competitive
10 provider what would your cost be. How, what
11 price would you be offering. And they enforce
12 that. And in stage 1 they might not clear. And
13 that's just like what we've been talking about
14 so far. Stage 1 is really like everything we've
15 been talking about.

16 Now, stage 2 would say now let's take this,
17 given what happened in stage 1, and by the way,
18 stage 1 pretty much everything that cleared
19 there, that's going to be most of the resources
20 in New England. They'll get paid that price.
21 And everybody who cleared will also have a
22 capacity supply obligation except, let's go to
23 stage 2, where those that put in a de-list bid,
24 and I have to double-check, but something to the

1 effect, I think it's the effect of a de-list,
2 you know, the willingness to permanently retire.
3 And I just don't remember if their term for it
4 is still a permanent de-list bid, but it's
5 basically that. You know.

6 Q It's a statement that "I want to retire."

7 A (Newell) Yes. So maybe the price cleared at \$7
8 but I, and I need it at least 6 because if they
9 were below that I would retire. So that's in
10 there. They cleared. But they told you yeah, I
11 was willing to stay for 7, but I wouldn't have
12 for 6. You say okay, hold that thought. Let's
13 go to stage 2.

14 Stage 2 says they can be, let's see. It's
15 basically saying that somebody else who wants to
16 come in, I can buy them out of their capacity.
17 I can buy them out of their capacity supply
18 obligation. Yeah, they made a buck already,
19 they already made money on stage 1 because they
20 get, they still get that price, and now in stage
21 2, basically they're allowed, it's actually
22 they're allowed to buy out of their obligation
23 by paying somebody like Northern Pass. You can
24 substitute for me. And I'll pay you to

1 substitute to me. I'm not going to pay you the
2 \$7 I just got, and I'll make the difference.
3 It's sort of this "cash for clunkers" idea.
4 They call it that sometimes. And you know maybe
5 it cleared at 7 but if you're willing to, but
6 I'll pay you two. Actually, I think the way it
7 actually goes in is they say I'd be willing to
8 pay you 6. Remember that was there. But
9 anyway, there are several of them and there's
10 another, there's, all those, you know, you can
11 substitute for me, it creates -- so this gets
12 sort of detailed. You want me to go into this
13 level of detail?

14 Q No. You don't need to go into this level of
15 detail. Just the concept is that in the
16 substitution Auction, the second Auction, you
17 need to have someone who wants to retire.

18 A (Newell) Exactly.

19 Q And a subsidized resource that's in a position
20 to step in and assume that obligation.

21 A (Newell) I wish I'd said it that way myself.

22 Q And so that the new resource then is in for all
23 subsequent Auctions.

24 A (Newell) The number of megawatts that

1 substituted.

2 Q Good point. And so with that background, I want
3 to circle back to the answer you gave to
4 Commissioner Bailey's question about the
5 beneficial effects of the project like Northern
6 Pass in the capacity market if something like
7 CASPR goes into place.

8 A (Newell) Yes. And I think, and what I said is
9 that it's still, there would be benefits where
10 basically, if this happens it's no more Scenario
11 3 which says oh, you never clear, never any
12 benefits. Where, instead, in Scenario 1 or
13 Scenario 2, there are benefits, and I said they
14 would be similar to what we calculated but
15 probably a little less. And it depends on the
16 availability of those folks willing to retire.
17 How many of them are willing to retire and how
18 quickly Northern Pass or others like Northern
19 Pass could come in.

20 Q So you use the phrase "a little," would be a
21 little less. And that's, is that as precise as
22 you can be in determining how much the benefits
23 would be?

24 A (Newell) Yeah, I can actually give you a really

1 good indicator. So if you go to table 4, this
2 shows how many megawatts we assume are retiring.
3 Do you see? Do you see about, I don't know,
4 four rows down or so the number of retirements?
5 So I believe, so see how in FCA 12 there's
6 already been an announcement from Bridgeport
7 Harbor to retire. That's 383 megawatts, I
8 believe. I don't think that would be eligible
9 for this substitution thing. You know, I don't
10 think, but I don't know. But every year under
11 our assumption that there are 200 a year, you
12 can see how even if it's just the 200, even if
13 Bridgeport Harbor somehow didn't count and then
14 again, I don't know. Well, maybe they could.
15 Let's assume for now that Bridgeport Harbor
16 could. That says you could bring in half of
17 Northern Pass in the first year. You see? If
18 it could substitute? Do you see that? If 583
19 are retiring, that would give a chance for
20 Northern Pass. You know, and maybe there are
21 other resources like Northern Pass, but that
22 would give a chance for them to come in even if
23 they were MOPR'd. They could come in in stage
24 2.

1 Q FCA 12 for 2021 and 2022, that's the Auction
2 that's going to take place in February of '18?

3 A (Newell) That's a great point. And I don't
4 think they've, I don't think they're going to be
5 participating in that one. So starting in the
6 next year you could see that over the course of
7 five years there's, under our base assumption,
8 there's enough retiring, and under our
9 assumption they would be fully in by 1, 2, 3, 4,
10 5. They would be fully in as an existing
11 resource by FCA 18, and then I know figure 7 is
12 redacted, but most of the benefits under our
13 forecast, again, our FCA 18 forward so does that
14 give you a sense?

15 Q It does. I understand what you're saying.

16 A (Newell) And it's going to hinge on were we
17 right about the 200 per year, but that's why I
18 was vague saying "a little."

19 **QUESTIONS BY MR. IACOPINO:**

20 Q I have just one question about that CASPR thing.
21 Is Northern Pass being a large hydro
22 transmission project I guess, is that eligible
23 for this whole secondary Auction? This CASPR
24 program? I thought it would have to be state

1 subsidized.

2 A (Newell) That's my understanding. Yes. My
3 understanding is it would. Now hold on just a
4 second. I'm getting a question from Jurgen.

5 Without all the rules being nailed down,
6 can't say for sure, but my understanding, I
7 mean, this is what this CASPR is about. Yes.

8 **QUESTIONS BY CHAIRMAN HONIGBERG:**

9 Q It's really what the whole IMAPP process was
10 about.

11 A (Newell) Yes.

12 Q And CASPR is one of the proposals that has come
13 out of the IMAPP process.

14 A (Newell) Yes. That's right.

15 Q Okay. That's what I wanted to ask about.

16 Do any members of the Committee or Mr.
17 Iacopino have further questions for the Panel?
18 Ms. Weathersby?

19 **QUESTIONS BY MS. WEATHERSBY:**

20 Q Much less technical question. Am I correct that
21 you believe that Hydro-Quebec would be unable to
22 supply power to the Northern Pass Project and
23 another one of the competing transmission line
24 projects without either diverting energy its

1 supplying somewhere else or building new supply?

2 A (Weiss) So I'm not sure we're saying that.

3 We're saying we're unsure, and it's actually a
4 little stricter than what you suggest. What
5 we're saying is it doesn't seem that it has been
6 demonstrated that Hydro-Quebec would have enough
7 resources to provide sufficient capacity for
8 just Northern Pass Project in addition to its
9 existing obligations. So it's not Northern Pass
10 plus another one of these. It's given its
11 obligations today, we haven't seen evidence that
12 makes it clear that they have sufficient
13 capacity to also service the full 1090 megawatts
14 for Northern Pass.

15 Q So if they can't --

16 A (Weiss) Without adding new resources or without
17 diverting existing commitments.

18 Q So if they can't, if they have insufficient
19 capacity for Northern Pass, they could not then
20 do Northern Pass and TDI or one of the others?

21 A (Weiss) That would be true by extension. If
22 they couldn't even do Northern Pass entirely,
23 then they could not do Northern Pass plus.

24 Q So it's really a choice. It's really unlikely

1 that both, that more than one large transmission
2 project will be built.

3 A (Weiss) No. No. So it depends on, for example,
4 right, so I think it's been stated multiple
5 times that Hydro-Quebec has the ability to build
6 a lot more hydro resources. So in terms of the
7 potential to have capacity from hydro projects
8 in Quebec, there is probably no limit over a
9 significantly long time horizon. It's just
10 given their existing resources today, there is
11 some question of whether they have sufficient
12 capacity to do one, and if they did one, then
13 from that Hydro-Quebec system you would not get,
14 you would less likely get more than one if you
15 get one.

16 But of course there are other resources,
17 you know. So we talked about the Mass. RFP bids
18 a little bit, and the fact that there are some
19 bids that are just hydro from Quebec but other
20 bids that are either a mix of hydro and new wind
21 resources, and there are bids that are just a
22 mix of renewable resources. So, you know, using
23 those to have clean energy flow over either
24 Northern Pass or competing transmission line

1 aren't limited by Hydro-Quebec's current
2 capacity. Right? Somebody else could just
3 build new wind and solar projects in Quebec if
4 that were a good place to do that and then send
5 the power over any of these lines.

6 Q So then what do you believe would be the likely
7 effects on the energy markets in New England if
8 Northern Pass and another of these
9 thousand-megawatt transmission projects are also
10 delivering that energy to New England?

11 A (Weiss) Just to clarify. Kind of interested
12 in -- so we have, the energy price impacts have
13 been estimated for Northern Pass. You're asking
14 how those would change if you had Northern Pass
15 plus some other similar project in addition to
16 that. Is that what you're asking?

17 Q Correct. In general.

18 A (Newell) They'd be a little bit lower, but they
19 wouldn't be all that different.

20 A (Weiss) The energy price impacts. The capacity
21 market impacts might be harder to, but as long
22 as, so conceptually as long as that energy
23 that's delivered over the next line after
24 Northern Pass is similarly, you know, it's low

1 variable cost, either it's hydro or wind or
2 solar, so, you know, would still displace fossil
3 capacity that sets the market price and that
4 fossil capacity, that fossil energy is very
5 likely still natural gas. So in other words,
6 that's the same impact.

7 A (Newell) So in general the energy prices, yeah,
8 if you bring in more supply they come down a
9 little bit. But they're just not
10 super-sensitive. So, you know, you add a little
11 bit more, you know, then adding a little bit
12 more, there's some diminishing returns, but it
13 will be similar to the effect we saw.

14 Q Thank you.

15 **QUESTIONS BY MR. IACOPINO:**

16 Q I'm sorry. I just want to follow up with one
17 thing, and it might help to explain for the
18 Committee, but you talked about in response to
19 Ms. Weathersby's question, you talk about
20 whether or not there's any increase in capacity.
21 And I was just looking at Applicant's Exhibit
22 102 which is Ms. Frayer's Rebuttal Report. On
23 page 30, I think it is, there's a Footnote
24 number 40 that discusses Hydro-Quebec's

1 Strategic Plan and specifically indicates that
2 part of their Strategic Plan is to increase the
3 capacity of existing assets by 500 megawatts by
4 2025, and I guess she suggests that it's
5 possible some of that might come on line before
6 2025. Is that the type of increasing of
7 existing assets that you were referencing both
8 in response to Ms. Bailey's questions and in
9 response to Ms. Weathersby?

10 A (Weiss) I think in some sense, yes, so it's
11 important to sort of distinguish between
12 greenhouse gas and sort of MOPR impacts, right?
13 So on the greenhouse gas side, I think that,
14 right, if you could somehow add a way to capture
15 more energy over the course of the year from
16 your existing resources, then that would make it
17 more likely you'd get the greenhouse gas
18 emissions reductions.

19 Q Was there more of an answer?

20 A (Weiss) Right, so just making sure I'm answering
21 your question actually. So that is right, so as
22 opposed, so we've mostly talked about do they
23 use their existing resources or do they have to
24 build new dams, right? And this is sort of one

1 of these of in-between cases where they might be
2 able to do something to their existing
3 facilities that increases either the capacity of
4 the facilities or it increases the amount of
5 energy they can capture, and if they can do
6 that --

7 A (Newell) Maybe new turbines or something.

8 A (Weiss) Right.

9 **QUESTIONS BY COMMISSIONER BAILEY:**

10 Q While we're on that page, yesterday I think when
11 Mr. Needleman showed you this footnote perhaps,
12 I noticed Footnote 44 that says that the Brattle
13 Group helped develop the template workbooks used
14 by ISO New England Internal Market Monitor to
15 perform the MOPR analysis. Is that the workbook
16 that is the source of Applicant's Exhibit 140?

17 A (Newell) No. I think they have updated it or, I
18 think the version they're currently using is not
19 the version that we gave them and they were
20 using for a few years, but I think it's very
21 similar.

22 Q So that was, did you, was it you specifically
23 who did that?

24 A (Newell) It was my, I mean, with staff, but

1 actually same staff who worked on this Project.

2 Q Okay.

3 A (Newell) But yes, it was my testimony before the
4 Federal Energy Regulatory Commission that
5 established the Offer Review Trigger Prices for
6 a number of types of resources, and ISO New
7 England filed to adopt those and to use this
8 tool that would be the basis for any individual
9 resources review.

10 Q And the tool has been updated since your
11 Original Testimony?

12 A (Newell) I believe so. I think this version is
13 not the one we gave them.

14 Q But is it based on the one you gave them?

15 A (Newell) It's very similar.

16 Q Okay. Thank you.

17 PRESIDING OFFICER HONIGBERG: Anything else
18 from members of the Committee? Mr. Pappas? I
19 assume you have some redirect?

20 MR. PAPPAS: Briefly.

21 **REDIRECT EXAMINATION**

22 **BY MR. PAPPAS:**

23 Q Gentlemen, do you have something in front of you
24 on the screen?

1 A (Weiss) Yes.

2 Q What's on the screen in front of you now is
3 Counsel for the Public's Exhibit 601.

4 Dr. Weiss, could you explain to the
5 Committee what this document is?

6 A (Weiss) Yes. So this is the, what I believe,
7 although it's hard to tell because it has a
8 French title as opposed to an English title, I
9 believe that's the document that Ms. Frayer
10 cites in her Figure 18. It's basically a Supply
11 Plan by Hydro-Quebec Distribution from 2017
12 through 2026.

13 Q Okay. So I want to ask you some questions
14 related to that issue about the ability to,
15 capacity and whether or not, you know, you can
16 qualify. So if you would turn to, I suppose I
17 could give it to you first.

18 What's on the screen now in front of you is
19 page 19 from this document. Could you just
20 briefly tell the Committee what is included in
21 this table?

22 A (Weiss) Sure. So this table 7 --

23 MR. NEEDLEMAN: Mr. Chair?

24 PRESIDING OFFICER HONIGBERG: Mr.

1 Needleman?

2 MR. NEEDLEMAN: Could Mr. Pappas explain
3 what specific testimony this is responding to as
4 opposed to just adding on to testimony?

5 PRESIDING OFFICER HONIGBERG: Mr. Pappas?

6 MR. PAPPAS: Sure. There were a lot of
7 questions about LEI's chart or actually it's
8 Figure 18 about the ability to qualify in the
9 forward capacity market and specifically whether
10 or not there are sufficient excess capacity in
11 which to qualify. And this witness was asked
12 questions about Figure 18, and about the ability
13 to actually have access capacity and that's what
14 this issue goes to. Following up on that.

15 PRESIDING OFFICER HONIGBERG: Mr.
16 Needleman?

17 MR. NEEDLEMAN: I guess I'll wait and see
18 what comes.

19 PRESIDING OFFICER HONIGBERG: Yes,
20 Mr. Pappas, I think it would be helpful, in fact
21 I was just saying to Mr. Iacopino, it would be
22 helpful if when you introduce a subject you can
23 tie it to some questions that your witnesses
24 were asked during their various

1 cross-examinations and questions from the
2 Committee.

3 MR. PAPPAS: I agree. In my effort to be
4 brief, I neglected to do that.

5 MR. IACOPINO: And also we probably want to
6 point out that the document before the witnesses
7 is in French as well.

8 MR. PAPPAS: That's fine.

9 A (Weiss) That is correct.

10 BY MR. PAPPAS:

11 Q So what I want to ask you about is in Figure 18
12 in LEI's Supplemental Report, you were asked
13 some questions yesterday about the ability of
14 Northern Pass or actually, I guess, HQP to
15 qualify in the capacity markets, and,
16 specifically, you were asked some questions, for
17 instance, about whether they had sufficient
18 capacity, and you were asked, on Figure 18 there
19 were a number of items you were asked about.
20 And you indicated a moment ago, this document is
21 one of the documents cited in Figure 18. Is
22 that right?

23 A (Weiss) That is correct.

24 Q And this document, is this document a ten-year

1 outlook for HQD?

2 A (Weiss) It is.

3 Q And table, it's on the screen now, table 7, does
4 that show the ten-year Outlook 2016 starting
5 2016/2017 and going out ten years?

6 A (Weiss) It does for Hydro-Quebec Distribution.

7 Q And in terms of demand, what does this table
8 tell you? Or tell us?

9 MR. NEEDLEMAN: So Mr. Chair, I am going to
10 object now because he wasn't asked about this
11 issue or this document. He was certainly asked
12 about the table, and I asked him specific
13 questions about the table. But it seems like
14 we're introducing new information that could
15 have and should have been introduced before.
16 We're not responding to questions he was asked
17 specifically.

18 PRESIDING OFFICER HONIGBERG: Mr. Pappas?

19 MR. PAPPAS: Yesterday this witness was
20 asked about HQD's Strategic Plan, and he was
21 asked about whether or not HQD could fulfill
22 Quebec's energy needs, and he was asked about
23 their planning which this document talks to.
24 And so what this is in response to are those

1 questions about HQD and its ability to meet its
2 demand going forward and whether it has capacity
3 to do so. So he's asked about those issues and
4 that's what this goes to, and this is one of the
5 documents that is cited repeatedly in that
6 Figure 18 that was shown to him and he was asked
7 questions about.

8 PRESIDING OFFICER HONIGBERG: Mr.
9 Needleman, you want to add anything?

10 MR. NEEDLEMAN: That's a fair assessment.
11 I mean, I can't read French so assuming it
12 speaks to it, I guess we'll hear what comes
13 next.

14 PRESIDING OFFICER HONIGBERG: All right.
15 Mr. Pappas, you may proceed.

16 MR. PAPPAS: Thank you.

17 BY MR. PAPPAS:

18 Q Dr. Weiss, could you tell us in terms of demand
19 what HQD is indicating in this table?

20 A (Weiss) I am not sure I understood the question.

21 Q I tried to remember the question.

22 My understanding is on this chart there is
23 an indication of what HQD projects for its going
24 forward for its demand. Can you tell us what

1 the table tells us?

2 A (Weiss) All right. All right. Okay. So this
3 is a table that projects the capacity needs and
4 not the energy needs which is important, and the
5 very first line (speaking French) that's the
6 peak demand. So that's what they need the
7 capacity for. And so in answer to a bunch of
8 the questions that were asked yesterday we had a
9 discussion yesterday in the Strategic Plan
10 document that was a question about, A, whether
11 and how much demand in Quebec would increase
12 over time and, B, I was asked about whether or
13 not the fact that there were efforts to increase
14 energy efficiency would not eliminate any future
15 needs to increase the procurement of capacity in
16 Quebec itself.

17 And so what this document shows in the
18 first line, so that's the peak demand. And it
19 starts 2016/2017. That's the last year for
20 which Hydro-Quebec Production had actually
21 produced. So submitted a document that we
22 looked at yesterday.

23 And so the first thing one can see that
24 over the next ten years there is a projection of

1 an increase in peak demand, peak demand in
2 Quebec of a little over 2,000 megawatts from
3 37630 to 39931 so that's the top line.

4 Along with that, the second line is the
5 reserve requirement that you need in addition to
6 that capacity to make sure that in unforeseen
7 circumstances you still have enough capacity,
8 and so what one can also see is that reserve
9 requirement increases from about 3450 megawatts
10 to 4377.

11 COURT REPORTER: Can you give me those
12 numbers again, please?

13 A 3457 to 4377.

14 COURT REPORTER: Thank you.

15 Q So the first thing to note here is in relation
16 to the discussion we had yesterday is that
17 demand indeed continues to increase, peak demand
18 is projected to continue to increase in Quebec.
19 So the rest of the table has individual supplies
20 that HDQ projects to use to meet that capacity,
21 that peak demand, and we don't have to go into
22 detail. Many of these rows are reflected on
23 LEI's Figure 18 or some of them are.

24 But yesterday we talked about energy

1 efficiency so it's unclear whether energy
2 efficiency is directly reflected. The Strategic
3 Plan mentioned 1000 megawatts of energy
4 efficiency over time. You can see the one, two,
5 kind of the third indented block says (speaking
6 French) so that's basically peak demand
7 management. And you can see there as the first
8 row (speaking French) so that's interruptible
9 load that is projected to go from 850 to 1000
10 megawatts. I do not know whether that's the
11 thousand megawatts of energy efficiency that are
12 specified in the Strategic Plan.

13 But you would think that if it's not that
14 HQD would include its own energy efficiency
15 measures in how it projects out peak demand or
16 the impact of energy efficiency measures on its
17 peak demand would be included in this.

18 So then the final point I want to make is
19 the bottom line, it says (speaking French).
20 That says additional required capacity which is
21 projected to be zero or was projected to be zero
22 for the winter of 2016/'17 and it increases
23 until it reaches 1650 megawatts in 2025/2026.

24 Q So does that appear to you that HQD needs to

1 have more capacity each year over the next ten
2 years to meet its internal demand?

3 A (Weiss) That's what that document shows. And so
4 to relate it back to yesterday's question and
5 answer session, it does suggest that HQD will
6 continue to have additional capacity needs which
7 it has to meet from some source. Now, it
8 doesn't mean that that reduces the capacity that
9 HQP has for export markets, but it does suggest
10 that there is value to capacity in Quebec, and
11 recall yesterday we had a discussion about
12 whether the relatively recent procurement by HQD
13 from HQP, the price of which was roughly 10
14 Canadian dollars a kilowatt month, had any value
15 for figuring out, you know, the opportunity cost
16 of capacity going forward, and so this document
17 at least to me suggests that there is going to
18 be ongoing demand for more capacity in Quebec,
19 and, therefore, capacity in Quebec has value in
20 Quebec.

21 Q Thank you. Gentlemen, what's in front of you
22 now on the screen is Counsel for the Public's
23 Exhibit 266 which is Figure 18 from LEI's
24 Supplemental Report. Do you see that?

1 A (Weiss) Yes, I do.

2 Q First, Dr. Weiss, when you look at item 6, 7, 8,
3 9 and 10, and it refers to HQD Supply Plan
4 2017-2026, is that the document we just saw
5 before?

6 A (Weiss) I don't know.

7 Q But is that the same title?

8 A (Weiss) So that assumption is my point. So it
9 is the only document that I could find that
10 logically would be this, but since that document
11 you saw has a title that few in the room can
12 read because it's in French, so it's impossible
13 to know for sure whether the document LEI cites
14 is actually this document.

15 Q Okay. Now, have you looked at the document, the
16 various documents that are cited in Figure 18?

17 A (Weiss) I've certainly attempted to do that,
18 yes.

19 Q And have you also looked at additional public
20 documents from HQ to look at this issue of
21 capacity?

22 A (Weiss) Yes.

23 Q And yesterday you were asked whether or not
24 you're convinced that HQP has sufficient

1 capacity to bid the Northern Pass Project into
2 the ISO New England Forward Capacity Auction and
3 you indicated you were not convinced. Do you
4 remember that?

5 A (Weiss) I think that's correct.

6 Q Could you simply briefly explain to the
7 Committee why it is you're not convinced?

8 A (Weiss) Yes. I'll try. Also, I mean, I was
9 asked by Mr. Needleman whether I was
10 essentially, would agree that Ms. Frayer was
11 convinced that her number was correct, and so I
12 think this figure is important since it claims
13 to demonstrate that HQP will have sufficient
14 excess capacity to sell 1090 megawatts over
15 Northern Pass and meet capacity requirements in
16 the capacity market.

17 So I looked at this in great detail and
18 have to admit that it did not convince me that
19 this is a positive demonstration for a number of
20 reasons. So first, if you just, and we went
21 through this a little bit yesterday, if you look
22 at how this table is structured, it starts with
23 HQP's winter resources. It subtracts from that
24 HQP's domestic commitments to calculate excess

1 capacity.

2 From that it subtracts two more items, and
3 I'll get back to those, relatively small, to
4 calculate the excess capacity for exports.

5 One category that's entirely missing from
6 this table is HQP's nondomestic commitments to
7 the extent they exist. Yesterday we had a
8 discussion about that with Mr. Needleman. We
9 also showed some exhibits that show HQP's kind
10 of capacity balance for the winter of 2016 and
11 2017, and we noted that there are other
12 commitments, commitments to other parties than
13 HQD in there that were significantly larger than
14 the potential 94 megawatts that are on line 11
15 of this exhibit.

16 So, conceptually, I found it surprising and
17 not very convincing that an estimation of a
18 capacity supply and demand balance for HQP does
19 not even have a category that discusses HQP's
20 commitment to parties outside of Quebec since
21 they certainly are shown to exist as of today.
22 So that's one.

23 So as somebody who puts together these
24 kinds of exhibits a lot, there were a number of

1 other things that made me somewhat suspicious of
2 the reliability. First of all, as you can see,
3 I already mentioned the fact that the sourcing
4 is not particularly insightful. So one of the
5 purposes of this kind of proceeding is to have
6 witnesses from various parties give evidence in
7 a manner that other Intervenors and the
8 Committee can check and verify.

9 So the way all the sources are referenced
10 here is such that a normal person, and by that I
11 mean a non-French speaking person, is
12 essentially, it's impossible to verify since, as
13 I said, with the exception of the ISEO 18-month
14 outlook, there is actually no document that is
15 sourced here that exists with that name. So
16 that's one.

17 The second issue is it's not sufficient to
18 point to a general website as where the document
19 is. It's like saying there is a document, the
20 name of which I give you in another language,
21 and the reference is *www.ferc.gov*, right? So
22 that's not sufficient to find the document. I
23 spent hours having nice conversations with staff
24 at the Quebec regulator to sort of track down

1 these documents. So I think in terms of
2 providing a clear sort of track record of these
3 are the documents I used, these are the sources,
4 this is lacking.

5 Third, you see the very first two rows have
6 the HQP capacity demonstration, December 2016,
7 as the cited document. We looked at a couple of
8 the Annex C and one Annex E sort of Appendix
9 from that document. It is surprising that on
10 row 14 I would use the same document but a
11 December 2014 version, and then on row 5, I
12 would use unspecified historical versions of the
13 same document.

14 That document we saw yesterday, that
15 document looks exactly the same every year.
16 It's the most up-to-date representation of
17 Hydro-Quebec Production's view of the supply and
18 demand balance for the forthcoming winter. It's
19 entirely unclear why any document other than the
20 most recent version of that would have any
21 relevance for projecting a supply and demand
22 balance five years in the future. Presumably
23 anything that's in the 2014 version that's no
24 longer in the 2016 version has no relevance for

1 the future. So that's surprising that I'd use
2 the same document but from different years. I'm
3 not sure what I make with information in an old
4 document in what way that would still be
5 relevant in the future documents.

6 It also does turn out that some of the
7 source documents are just wrong. So, for
8 example, row 14, Cornwall Electric, cites the
9 2014, December 2014 version of this Annex C.
10 The word "Cornwall" does not show up. It's just
11 not mentioned on that document. So that's
12 either misrepresenting a source or evidence that
13 this is improperly sourced since that's the only
14 document I could find with the help of somebody
15 there.

16 I'll give you one final one that makes me
17 suspicious. Oh, by the way, that Cornwall
18 Electric obligation based on other research, and
19 I think that came out in cross yesterday and in
20 some sense admitted by LEI or by the Applicants,
21 is actually no longer relevant. That obligation
22 is going away before 2021. So it's unclear why
23 it's in here. It would increase the capacity
24 available, but it's unclear why it would show up

1 here.

2 The final one that I puzzled over is row
3 16, losses on exports, of 107 megawatts. It's
4 puzzling since there are no exports on this
5 chart so far. So it could be that it's
6 accounting for the losses that would occur under
7 Northern Pass because Northern Pass would be
8 exporting power and the source document here
9 actually doesn't say, doesn't have 107 in it,
10 but the source document only shows is that HQ
11 applies a 6 percent losses to exports, but it
12 doesn't apply the 6 percent to domestic sales.

13 So if I believe the 6 percent, I can sort
14 of back out out of the 107 how many exports I'm
15 actually talking about. And if I do that, I get
16 to a number that's more like 1750 or between
17 1750 and 1800 megawatts. So even assuming that
18 this is representing Northern Pass, and if you
19 want the capacity reserves I have to have in
20 addition to Northern Pass to account for the
21 losses, those losses represent an extra 700
22 megawatts of export obligations that are just
23 not here.

24 So all these things together suggest to me

1 that it's possible that Ms. Frayer is convinced
2 that this is evidence. Me, as an independent
3 analyst trying to understand this, am not
4 convinced by it, and I think there's just not
5 sufficient information that has been provided to
6 make anybody else confident.

7 Q Thank you. Gentleman, what's in front of you
8 now on the screen is Applicant's Exhibit 128. I
9 just want to ask you a few questions about this
10 that you were shown yesterday.

11 Now, if you look at the third paragraph on
12 the first page, the paragraph that begins with
13 the word first, you see that?

14 A (Weiss) Yes.

15 Q And if you drop down to that second sentence
16 that says, quote, "In its 2006-2015 energy
17 strategy document," quote, "Using Energy to
18 Build the Quebec of Tomorrow", close quote, the
19 Government of Quebec announced a policy to
20 rapidly expand hydroelectric power generation in
21 the province, not only to meet growing domestic
22 demand but also to support increased exports,"
23 close quote. Do you see that?

24 A (Newell) Yes.

1 A (Weiss) Yes.

2 Q On the screen now is page 2 of this letter, and
3 this is a June 2016 letter from Hydro-Quebec
4 Production to the US Department of Energy. And
5 on page 2 in the second paragraph, do you see
6 where it says, quote, "In its 2009-2013
7 Strategic Plan, Hydro-Quebec reaffirmed that its
8 top two, quote, "production," close quote,
9 objectives were to increase hydroelectric
10 generating capacity, and, quote, "step up
11 exports," close quotes. Do you see that?

12 A (Weiss) Yes.

13 Q So yesterday you were asked about the next
14 paragraph that says "In short, Northern Pass is
15 not the cause of the development of Canadian
16 hydropower resources. Rather that development
17 is the result of a long-standing policy of the
18 Government of Quebec." Do you see that?

19 A (Weiss) Yes.

20 Q Okay. So I'm interested in the question about
21 what you were asked yesterday about whether or
22 not the IMM when considering in its MOPR
23 analysis the cost of new production in part of
24 the MOPR analysis. So given what is stated in

1 this letter about a longstanding policy in
2 Quebec to develop more hydropower, although
3 HQP's investment cost to develop more hydropower
4 may not be specifically only because of Northern
5 Pass, can the IMM still include some of those
6 investment costs in its MOPR analysis if HQP
7 were to bid into the Forward Capacity Auction?

8 A (Newell) You asked "can" the IMM?

9 Q Yes.

10 A (Newell) I'm having trouble with that word. I
11 mean, what the IMM does is ultimately also under
12 the jurisdiction of the Federal Energy
13 Regulatory Commission, but might they?

14 Q Maybe a better word.

15 A (Newell) Okay. From our perspective, we have to
16 say yes. This issue has not been, I don't
17 think, addressed before by the IMM. I don't
18 think they have a resolved statement on this.
19 And I believe the IMM could say okay, it's not
20 one-for-one if you look at a more dynamic sense.
21 The, you know, the Government is supporting, the
22 Government is supporting generation, and that's
23 the source of generation, and if we're still in
24 today's MOPR world, you know, that's the spirit

1 of the MOPR. You can't ignore those subsidized,
2 you know, creations of generating capacity that
3 competitive producers don't enjoy.

4 Q Thank you, gentlemen. I have no other
5 questions.

6 PRESIDING OFFICER HONIGBERG: I think we
7 are done with this Panel. Thank you, gentlemen,
8 for your testimony. We're going to take our
9 lunch break and return around quarter after 1.

10 (Lunch recess taken at 12:12
11 p.m. and concludes the **Day 53**
12 **Morning Session**. The hearing
13 continues under separate cover
14 in the transcript noted as **Day**
15 **53 Afternoon Session ONLY**.)
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C E R T I F I C A T E

I, Cynthia Foster, Registered Professional Reporter and Licensed Court Reporter, duly authorized to practice Shorthand Court Reporting in the State of New Hampshire, hereby certify that the foregoing pages are a true and accurate transcription of my stenographic notes of the hearing for use in the matter indicated on the title sheet, as to which a transcript was duly ordered;

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

Dated at West Lebanon, New Hampshire, this 8th day of November, 2017.

Cynthia Foster, LCR