STATE OF NEW HAMPSHIRE
SITE EVALUATION COMMITTEE

June 8, 2017 - 1:45 p.m.  DAY 13
49 Donovan Street  Afternoon Session ONLY
Concord, New Hampshire  {REDACTED - for public use}

{Electronically filed with SEC 07-14-17}

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  Public Utilities Comm.
(Presiding Officer)

Dir. Craig Wright, Designee  Dept. of Environ.Serv.
Christopher Way, Designee  Dept. of Resources &
Economic Development
William Oldenburg, Designee  Dept. of
Transportation
Patricia Weathersby  Public Member
Rachel Whitaker  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
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**WITNESS**  
JULIA FRAYER  
**PAGE NO.**  

(Resumed)

Cross-Examination continued by Mr. Pappas  

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### NOTE TO READER:

CONFIDENTIAL EXCERPTS under separate cover  
containing portions of **Pages 31, 42, 43, 45, 46 and 55**
P R O C E E D I N G S

(Hearing resumed at 1:45 p.m.)

PRESIDING OFFICER HONIGBERG: Mr. Pappas,
you may proceed.

MR. PAPPAS: Thank you, Mr. Chairman.

CROSS-EXAMINATION CONTINUED

BY MR. PAPPAS:

Q Good afternoon, Ms. Frayer. I want to now ask
you some questions about the New England
electricity markets. I'm going to start with
the wholesale electricity markets. Okay?

A Okay.

Q Now, the wholesale electricity markets include
the wholesale energy markets and the wholesale
capacity markets, correct?

A For the purposes of the evaluation that we've
done, that is correct.

Q Thank you. Now, the wholesale energy market,
wholesale energy is supplied by generators of
energy, correct?

A It's supplied by a variety of resources, and
they generate energy measured in megawatt hours.

Q All right. And your report included a chart of
energy production by fuel type. Do you remember
that?

A Yes. I believe my original report included that.

Q Okay. And different suppliers of energy offer energy at different prices, sort of known as the bid stack, correct?

A Yes. Or in economic terms based on their short run marginal costs or opportunity costs.

Q Okay. And ISO New England determines the demand for energy on an hourly basis; is that right?

A ISO New England administers a market that determines a price for energy on an hourly basis.

Q And what, in laymen's terms, what essentially they do is they look at the bid stack, and if they determine, for instance, they need so much energy, the supplier at that point sets the price and everybody below that supplies energy and everybody above it does not, essentially?

A Yes. There's in the energy market a concept of a clearing price. So I think your description for our purposes right now seems to be adequate. There's other complications with marginal costs of congestion marginal losses, but we don't have
to get into that.

Q  Good. So just to use my oversimplification model, what I've done here is under Counsel for the Public's Exhibit 253, a hypothetical bid stack, if you will.

   So, for instance, if ISO New England determines they need 1000 megawatts, and you see my blue line, the suppliers below that line essentially supply clearing price is $0.04 per kilowatt hour, and that's essentially the bid stack we just talked about?

A  I see your illustration, and for the purposes of showing how there are a variety of resources in the market, I'm comfortable. I don't necessarily agree with the relative stacking that you've done for different types of power generators. It's not universal under all conditions, but maybe that's not necessary for your illustration.

Q  Good. So there are high demand periods, are there not?

A  Demand varies.

Q  Yes.

A  From hour to hour and in fact more granularly
than hourly.

Q And in New England, it's typically during the summer months when we have our peak periods, is that right?

A From a electricity load perspective, our load is typical summer peaking on a regional basis.

Q And in Canada, it's typically peaking during the winter months, correct?

A Well, we need to be specific. I assume you're talking about Quebec?

Q Let's talk about Quebec.

A Okay. Yes. Quebec has been historically and is expected to continue to be a winter peaking system because of heating demand. Electric heating demand.

Q So during low demand periods, if you will, price of energy tends to be lower?

A Holding all else constant as long as the fuel cost during low demand periods is also lower because in effect if we look at your exhibit here, the reason that more efficient natural gas unit, for example, would bid three cents per kilowatt hour in your illustration, is because it's determined that it's fuel cost, plus
variable O&M cost, plus carbon emissions and other allowance costs add up to 3 cents.

If gas prices are higher, even though electric load is lower, you might have a much higher price of energy.

Q Okay. Now, in New England, the price of natural gas is the biggest driver of energy prices, is it not?

A Yes. I would agree with that statement in principal.

Q And there are approximately 840 operating power plant units in New England; does that number sound right to you?

A Haven't looked at the unit statistics, but I'll take it subject to check.

Q All right. And the annual demand for energy New England is approximately 36,000 megawatts?

A When you say annual demand, do you mean the summer highest hours demand? I'm a little confused.

Q Laymen's terms sort of the maximum, the summer peak?

A So that number is a little high.

Q Okay.
A: But we can go to the ISO New England, what we call the CELT which basically has their load forecast to get the right number if we needed it.

Q: Okay. My point is, in terms of the energy market, adding 1000 or a 1090 megawatts of new energy doesn't have a significant impact on the wholesale energy market, does it?

A: I would not necessarily agree to that. It really depends not just on supply and demand but also underlying conditions. For example, gas prices. If gas prices are high, even at 1000 megawatts can have a profound effect on energy prices, and, again, we showed this in our original report. We did an analysis of the insurance value under basically under the polar vortex conditions we actually experienced in the region in the winter of 2014/2015.

Q: Okay. Now, the wholesale capacity market is a separate product, correct?

A: Yes. It is a separate wholesale product.

Q: Capacity is the ability to produce electricity at a point in time?

A: I'm fine with that description.
Q And ISO New England procures enough capacity to ensure it can meet the expected and the unexpected peak demands of electricity?
A Yes. ISO New England procures capacity in excess of its expectation of peak demand.
Q Wants to keep the lights on and the AC going when it's really hot?
A I hope so.
Q Me, too. Now, we talked this morning about the Forward Capacity Auction, that's conducted by ISO New England every February, correct?
A Yes.
Q And energy generators bid at the Auction to provide capacity?
A I would use a slightly different set of terms, but energy generators participate in the Auction to provide capacity.
Q Okay. And they have to provide that amount of capacity beginning 40 months later.
A Yes. Approximately. A little over 3 years later.
Q And they're obligated to produce that capacity for a period of three years?
A No. For a period of one year.
Q Period of one year. Okay. And energy suppliers --
A And typically for a period of one year. There are options in New England for new resources to take a longer lock-in, and that would be a longer obligation.
Q Yes.
A But typically for most resources, it's one year.
Q And energy suppliers need to be qualified for the Forward Capacity Auction, correct?
A Yes. Only qualified resources can participate or be successful in the Forward Capacity Auction?
Q Right. So, for instance, NPT would need to go through that qualification stage for its first Auction, correct?
A Yes. The shippers that want to sell capacity on
NPT would need to go through that qualification process.

Q  All right. So I want to just quickly review the results of the Forward Capacity Auction #10 and we put on the screen is the first page of Counsel for the Public Exhibit 261 which is an ISO New England document titled Forward Capacity Auction #10 Results Summary. Do you see that?

A  Yes.

Q  So the second page of this document is a summary of FCA #10. And you see the beginning, the price at the beginning of the Auction, do you see that? The green box up in the left?

A  Yes. The $17.29 per kilowatt-month.

Q  Correct. And then you have the amount of Qualified Resources Entering the Auction, 39,177 megawatts?

A  Yes. I see that.

Q  And then at the end of the Auction, the Auction Clearing Price was $7.03 kilowatt-month. Do you see that?

A  Yes.

Q  And looks like the resources that cleared uncapped were 35,567 megawatts. Correct?
A: Yes.

Q: What we've put up on the screen now is Counsel for the Public's Exhibit 255 which is another ISO New England document summarizing the Forward Capacity Auction #11. Do you see that?

A: Yes. Thank you.

Q: And what's on the screen now is the Summary of FCA #11 where you see the price at the beginning of the Auction and the Auction Clearing Price ends up being $5.297. Do you see that?

A: Yes.

Q: And again, it shows, the Qualified Resources Entering the Auction at 40,421 megawatts, and eventually, 35,835 megawatts cleared, correct?

A: Yes.

Q: And this shows, for instance, new resources that came in, and it also shows in the far right-hand side megawatts that were exiting requesting to be de-listed, do you see that?

A: Yes.

Q: Now, the clearing price for an FCA Auction is essentially where the demand curve intersects the supply curve, correct?

A: I know that's what people have colloquially
described. I disagree with that description because it is imparting some superficially false information to those who aren't familiar with how the New England Descending Clock Auction works.

Q Okay. Well, the demand curve is determined by ISO New England, is it not?

A It is. And I have a picture that, I believe, in my updated analysis from February, from March 2017, we have a graphic of what it looks like.

Q We'll get there. And the demand curve set by ISO New England has prices set?

A The demand curve has price quantity payers. So basically it's representing ISO New England's willingness to pay for capacity. So if we have X megawatts of total capacity at a certain price, that basically is dictating their willingness to pay schedule.

Q Okay. You mentioned the shape of the demand curve. Previously the demand curve for ISO New England was essentially a vertical line, was it not? Before the recent changes?

A It was a downward sloping line.

Q And they have since changed that to more, to a
different configuration, correct?

A It has got some curvature to it now.

Q What we're putting on the screen now is Counsel for the Public's Exhibit 257. You see the shape of the demand curve which is the sort of light blue curve on these two examples?

A Yes. I see it.

Q Is that the shape of the demand curve?

A Yes, although this isn't my exhibit. I have a picture of what the demand curves look like, but I wouldn't disagree with that the demand curve has a bit of a curvature, depending on how you focus into it, and, actually, in the next couple years there's a transition curve so it has a little bit of a shelf in there, too, and so forth.

Q But the demand curve currently has a bit of a slope to it, correct?

A It always had a slope to it, but it has curvature to it.

Q And that's what we're looking here is an example or two examples, actually?

A Not my examples, but yes.

Q Okay.
A: I agree with the demand curve illustration.
Q: Now, you mentioned a moment ago rules for the Forward Capacity Auction, and new bidders, as you indicated, have to be qualified to participate, correct?
A: Yes.
Q: And the ISO New England determines their qualification based on ISO's rules, correct?
A: Yes.
Q: And ISO New England determines a supplier's summer seasonal capability and its winter seasonal capability, correct?
A: Yes.
Q: And ISO New England qualifies its supplier at a minimum of these two seasonal capabilities; is that right?
A: Well, the qualifications for a new participant to engage in the Forward Capacity Auction isn't restricted to their Capacity Supply Obligation rating, the CSO. There's a number of other elements of their project that need to go through review to ensure that they are legitimate suppliers.
Q: Right. I understand. But this is one fact,
this is one part of qualification, correct?

A  Yes.

Q  Another part of qualification is the fact that they have the capacity to be able to supply, correct?

A  Yes.

Q  Now, after a potential new bidder qualifies, their offer of price is reviewed by ISO's Internal Market Monitor; is that right?

A  Yes.

Q  And the Internal Market Monitor reviews prices because they want to make sure that they're, essentially, economically based, right? They don't want, for instance, subsidiaries to affect the price.

A  That's generally correct, yes. I think you're talking about the Minimum Offer Price. So if a resource wants to participate in the Forward Capacity Auction at a price that's different from Offer Trigger Price that ISO sets in advance based on generic information about various technologies, they have to submit information to ISO New England's Internal Market Monitor to qualify.
Q The potential participant provides the Internal Market Monitor with their capital costs, their fixed costs and other cost items, correct?

A Yes. There's a whole list of information that the Project sponsor, the shipper, sorry, the resource that wants to get qualified needs to submit to the Internal Market Monitor.

Q Is it true that for new participants, they're assumed not to qualify until they establish that they, in fact, qualify?

A It is very much true that they have to go what we call a show of interest process where they gather, they gain their qualifications. A resource can't just show up on January 31st and participate, a new resource can't just show up January 31st and participate in the Forward Capacity Auction in February of each year.

Q And after the Internal Market Monitor reviews all of the information required of the new participant, the IMM, Internal Market Monitor, can mitigate the participant's price upward, can it not?

A The IMM has the ability to set what we call a Minimum Offer Price threshold for a Project, and
it will do so on the basis of its review and examination of the data provided by the Project sponsor.

Q So if the IMM mitigates a new participant's price upward, that may knock the participant out of its price clearing in the Auction, correct?

A Well --

Q That can happen?

A It could. It depends on how the price clearing process in the Descending Clock Auction unfolds and whether the prices get below that Minimum Offer Price that has been set by the Internal Market Monitor for the Project.

Q Right. Right. So, and to summarize, a new participant has to qualify, one of the points of qualification is that the IMM looks at a number of things including costs, the IMM sets a minimum price for that new participant, and that minimum price may or may not clear the Auction, correct?

A Yes.

Q Okay.

A That is the process.

Q And for new participants, once the IMM sets
their Minimum Offer Price, that's the price which they submit to the Auction, correct?

A Yes. New participants actually do submit an offer. Existing resources don't submit an offer. They're price taking. They're in the Auction until they decide to leave, but new resources do actually have to put in an offer.

Q Right. And what we just reviewed was for a new participant, at the end of the day, their offer is going to be the Minimum Offer Price set by the IMM, the Internal Market Monitor, correct?

A The Minimum Offer Price approved, yes.

Q So what's on the screen now is Counsel for the Public's Exhibit 258 which is an actual electric bill from Eversource, and I just want to go through it and ask you a few questions about it. Have you seen a Eversource electric bill before?

A Not for very long time. Well, I haven't seen an Eversource electric bill. I remember living in Connecticut at one point in seeing a NU bill, but --

Q Okay. Well, this is a, I'll represent to you, this is an Eversource electric bill for a New
Hampshire customer. Okay? And you see on, for this particular customer you see --

PRESIDING OFFICER HONIGBERG: Mr. Pappas, can you have this expand a little bit?

MR. PAPPAS: Sure.

BY MR. PAPPAS:

Q So if you see on the left-hand side in that little box, this service period was from April 12, 2017, to May 9, 2017, for 27 days. Do you see that?

A Yes, I do.

Q And during that period, this customer used 89 kilowatts, correct?

A 89 kilowatt hours, I believe.

Q Kilowatt hours. Yes. Thank you. And if you go over to the right-hand side, you have the charges. Do you see that?

A Yes.

Q And for supplier, which is Eversource, the Energy Charge for those 89 kilowatt hours is the 89 times roughly 11.2 cents for $9.94 which was the Energy Charge for this bill for this customer, correct?

A I see that. Yes.
Q And then down below you see delivery, and you see a number of other charges such as Distribution Charge, Transmission Charge, Stranded Cost Recovery Charge, Systems Benefits charge, do you see all those?

A Yes.

Q For purposes of our discussion today, and the potential impact of NPT on a customer's bill, would you agree with me that the potential impact would be to the Energy Charge of the bill?

A Theoretically, yes. That's where the wholesale market cost would flow through. I'm just not familiar with rate R. I don't know if there's some exclusions or whatnot to that particular rate schedule.

Q This is a residential customer. And if you look at the second page of this customer's bill, it shows that the Supply charge or Supply cost for this period was $9.94, and all those Delivery charges added up to 19.11 cents. Do you see that?

A Yes. I see that.

Q Okay. So in terms of the Energy Charge for the
supplier, would you agree with me that that Energy Charge includes the cost for the wholesale energy market, a portion of the cost for capacity, and some ancillary services?

A  Yes.

Q  That makes up the Energy Charge, right?

A  I think, again, generically, I would agree. I just am not familiar with the rate R here in New Hampshire, but I'll take that as a subject to check.

Q  Okay. And so in order to provide economic benefit to this customer or any customer, Eversource customer in New Hampshire, the 11.170 charge, that charge, that rate has to come down, correct? That's where the benefit will float through?

A  That's where the wholesale electricity market benefits would flow through, and specifically the market price reduction components of the electricity market benefits. There's other types of benefits that are more system-wide like production cost savings. Those are not reflected directly here.

Q  Right. So as we spoke about this morning, about
90 percent of the benefits are from the wholesale Capacity Market, and the rest from others and it's through that rate that those benefits would flow, correct? The rate being the Energy Charge of roughly 11.02?

A Yes.

Q So when LEI did its analysis, starting with your October 15, 2015, report, you considered that adding 1090 megawatts from the NPT Project would provide some economic benefit, and what you sought to do was to quantify that benefit; is that right?

A Yes. We first quantified the electricity market impacts, estimated whether there would be benefits from the electricity market, and then we considered how those would translate to economic benefits as measured by GDP and employment which we talked about earlier today.

Q Yes. And what you did is that you first forecast what you called was a Base Case for a period of 11 years, correct?

A Yes.

Q And that was your forecast of what the market would look like over the next 11 years or
actually from 2019 going forward if NPT was not built, correct?

A Yes.

Q And then you forecast what you called the Project Case which was your forecast of the same 11-year period as if NPT was built, correct?

A Yes.

Q And in the Project Case, you always assumed that NPT would qualify and clear in the Forward Capacity Auction and that 1000 megawatts would qualify and clear in the Forward Capacity Auction, correct? That was one of the assumptions you used in your Project Case?

A Well, the client provided us, as we described, with a CSO level, 1000 megawatts, and it seemed quite intuitive to me that it would, a competitive Project would like this, would be able to qualify and clear in the Capacity Market.

Q You didn't model or forecast any scenario where NPT was built, but it did not qualify or clear in the Forward Capacity Auction, correct? You didn't model that possible scenario?

A No. We did not.
Q Okay. And you didn't model any scenario where less than 1000 megawatts qualified and cleared in the Forward Capacity Auction, correct?

A No. We did not.

Q So essentially what you modeled was the best case scenario for Northern Pass with respect to the Forward Capacity Auction which is 1000 megawatt qualify and clear in the Forward Capacity Auction, correct?

A Well, I'm not going to describe it as the best case. I modeled what I thought would be the most likely case, the most plausible and realistic case. In fact, if I wanted to be optimistic, I could have discussed with the client modeling it at its notional thermal rating which is more than 1000 megawatts.

Q But any scenario that would be less than 1000 megawatts qualifying clearing would be a less optimistic scenario than you modeled, correct?

A It would have a different set of impacts on the market. I agree. I'm not sure how --

Q Those impacts would be less than the impacts that your model predicted, correct?

A Potentially. Depends on the supply/demand
fundamentals and the conditions that you're thinking of and considering.

Q Now, you would agree with me, would you not, that the ability of any economic model to accurately forecast the future depends upon the quality of the input and the assumption, correct?

A Yes. I would agree that that is the case generically for any type of modeling analysis.

Q Right. Or in laymen's terms, garbage in/garbage out?

A I've used that. Occasionally.

Q You'd also agree with me that there is uncertainty in all future forecasts; is there not?

A I would agree with that as well except the magnitude or relativity of the uncertainty and where it is derived from is not always the same.

Q Things could change that affect the forecast?

A Are you asking about my forecast?

Q I'm asking about your forecast or any forecast. After a forecast is completed, a forecast predicts the future, does it not?

A Yes.
Q And things could change after the forecast is done that could impact that forecast, correct?
A Yes.
Q Would you agree with me that no forecast is 100 percent accurate?
A I would generally agree with that.
Q And do I have it correct that your forecast does not precisely predict the 11-year period forecasted, but it's your best estimate of what will occur in those 11 years?
A I would agree with that characterization as well.
Q Okay.

MR. PAPPAS: Mr. Chairman, at this point I'd request to go into confidential session because from here on in, I'm going to be asking a number of questions that will involve confidential information.

PRESIDING OFFICER HONIGBERG: My understanding is that NEPGA also has questions to be asked in confidential session, and the thinking was to have you do your confidential questions, have NEPGA do its confidential questions, and then we'd see where we are as to
what else might be accomplished today. Is that consistent with everyone's understanding?

MR. PAPPAS: Yes. I actually intend to probably stay in confidential for the rest of my questions and then be done.

PRESIDING OFFICER HONIGBERG: Right. And then we'd be done, we'd pick up with NEPGA and we have the same people in the room.

Mr. Needleman, is that consistent with your understanding?

MR. NEEDLEMAN: Yes, it is.

PRESIDING OFFICER HONIGBERG: Let's go off the record for a minute.

(Discussion off the record)
CONFIDENTIAL

PRESIDING OFFICER HONIGBERG: Mr. Pappas, you may proceed.

MR. PAPPAS: Thank you, Mr. Chairman.

CONTINUED CROSS-EXAMINATION

BY MR. PAPPAS:

Q Ms. Frayer, let me ask you some questions about some of the inputs for your 2015 report.

First, you inputted a load growth for your 2015 report, correct?

A Yes.

Q And for that, you used the 2015 CELT report?

A Yes. That's correct.

Q And CELT report is published by ISO New England?

A It is.

Q And it forecasts capacity, energy loads and transmission for a 10-year period?

A It doesn't forecast generating capacity. It forecasts peak load and total electric consumption.

Q Okay.

A Across different parts of ISO New England.

Q Yes.

A And it provides a snapshot of where capacity
stands today.

Q The 2015 CELT Report which you used forecasted a greater load growth than the 2016 CELT Report forecast contained, correct?

A Yes. I believe that is correct. And it's described, I believe, in our March 2017 report.

Q Right.

A There's a Figure 61 that highlights, I'm sorry. Wrong figure. But there's a figure that describes the date. The differences.

Q The actual load growth did not increase as you had used as an input for your 2015 model, correct?

A Well, I don't know if I would say the actual load growth. I would say ISO New England in 2016 projected a slower peak load forecast than it had back in 2015, and if you go to Figure 4 and Figure 5 on page 13 of our March 2017 report, and I believe it is confidential, confidentially marked, you will see the comparisons.

Q Now, LEI's use of the 2015 CELT Report affected the estimate in your model, correct? In other words, resulted in forecasting some greater
benefits than if you had used the 2016 CELT Report, correct?

A Holding all else constant without making any other changes, a lower demand forecast would mean lower energy market benefits and a lower peak demand forecast, could mean, not necessarily, could mean a different schedule of new entry and a different timing of Capacity Market benefits but not really necessarily lower Capacity Market benefits. It changes generic new entry assumptions and so forth so there's more of a timing effect there than anything else.

(Redacted portion in separate transcript)

Q Yes. Now, after your 2015 forecast was issued, two generators announced their retirements, one being Pilgrim Nuclear Power Plant, and the other being Bridgewater Harbor 3, correct?
A  Bridgeport Harbor, yes.
Q  Thank you. And your model did not predict these two retirements, did it?
A  The model did not predict those specific retirements, but there's further context to that. Pilgrim's a nuclear plant. Our model didn't predict the nuclear plant existing. Bridgeport Harbor 3 is retiring because actually they're building onsite a new facility. So from a net megawatt perspective, it's not that we're losing a resource. They need the space to build a resource in its place.
Q  The point is your models didn't predict these two retirements, did it?
A  Not those specific plants.
Q  Now, you'd agree with me that forecasting plant retirements is a difficult thing to do, is it not?
A  I would agree that it takes a lot of analysis and care.
Q  You need to know an individual plant's costs in order to effectively predict whether they're going to retire or not; isn't that right?
A  Well, I think that in our analysis what's
important is that we capture the general scale of the retirements, the megawatts. We may not be able to necessarily pinpoint which plant is retiring, but I think understanding the candidates for retirement, why a particular plant might choose an economic retirement, you do need to understand cost information. And we do a lot of research to develop those cost projections.

Q The decision whether or not any particular plant retires is unique to that plant, is it not?

A I would always say that the decision is unique to the plant, but it's influenced by the market conditions, and those market conditions aren't unique to the plant. It's more of a question about that plant, how it stacks up to other resources. You introduce new resources that are more competitive. Naturally in any competitive market, older resources that are less competitive will retire. It's understanding those dynamics that are important to a forecast like we've done.

Q But the decision of any individual plant is going to be unique to that plant because it's
going to be unique to that plant's costs and its
cost structure and other things relative to that
plant, correct?

A Well, it's going to be based on the economics of
that plant, but what I'm suggesting is that you
can estimate those economics. A big part of
those economics are market prices that are not
unique to that plant. What is the market
delivering in terms of an energy price, a
capacity price. You need to understand its
operating costs, but we have lots of information
on that. These plants for years and years have
filed very detailed data with FERC. Something
called FERC Form 1 that like boils down to
individual cost line items a lot of this
information.

Q Each plant has individual cost items that they
do not make publicly available, isn't that
correct?

A In recent years, FERC has waived the requirement
to make some of this information available, but
we have very good records and many of these
plants have been around for a very long time.

Q Each plant has a number of cost items that they
don't include in a FERC 1 form, isn't that right?

A  In more recent years, because of the rise of kind of competitive information, FERC, as I said, has not required that certain information be published. For example, the number of staff. You can still see labor expenses, but they don't require you to public number of FTEs. But there are other sources for that. Some of these Projects actually naturally report that in the local press and local newspapers. "We have 200 employees at this plant." So there's other sources for this information.

Q  But there is quite a bit of cost information that each plant keeps pretty confidential because it's part of their operating procedure, or part of their operations, isn't that right?

A  I would not argue against you that there's a lot of commercial sensitivity to this information. What I'm simply saying is that there's a lot of research that we spend in getting good estimates of that information.

Q  So do I understand that what you have are estimates of costs for different plants rather
than the specific cost from the plants themselves?

A That, unless those specific costs have been disclosed in a FERC Form 1 or an EIA form, then we are using estimates. But, again, those estimates have been researched extensively, benchmarked against other third parties and other information.

And we're talking about here, I don't want to make it sound like it's ubiquitous, but there are distinctions in operating costs, for example, for nuclear plant versus gas-fired steam plant. And they're technology specifics. They're size specific. They're vintage specific. And that's the type of information we have collated over the years to support these types of analyses.

Q In the past, LEI has failed to accurately predict plant retirements, is that right?

A Well, I would not say yes to that statement. I think that we have made very accurate projections based on information available at hand. We have sometimes not predicted a specific retirement, but that retirement may
also be due to circumstances beyond just overall market conditions and economics. It may be due to like a catastrophe at the plant, a financing decision independent of wholesale electricity markets. A number of other things. That's just a few examples.

What I'm putting up on the screen now is Counsel for the Public's Exhibit 259 which is an LEI press release dated January 30, 2013. Do you see that?

A Yes, I see the press release.

Q And you see your name on this press release?

A Yes. I'm one of the contacts on the top.

Q And this, in this press release, if you look at the highlighted portion at the bottom, you indicate in this press release that, quote, "As renewable energy capacity increases, total installed coal-fired capacity in New England is expected to drop to 1630 megawatts by 2018 from 2283 megawatts of installed coal-fired capacity as of this year." Close quote. Did I read that correctly?

A Yes.

Q So that was a forecast that you were part of in
January of 2013, correct?
A Yes.
Q Now, a year after you made this forecast, Brayton Point announced that its coal-fired plant would retire in 2017, correct?
A I think that's about right. Yes.
Q And Brayton Point has 1083 megawatts of coal-fired capacity, correct?
A Yes.
Q And so your forecast in January of 2013 did not accurately predict the retirement of that 1083 megawatts of coal of Brayton Point; isn't that right?
A No. It's not right. We actually did. This is a great example of us actually predicting economic retirements. We captured Brayton Point.
Q Well, looking at your press release you say from 2283 megawatts of installed coal-fired capacity is going to go down to 1638, right?
A Yes. But also you need to look at the next line item. Factoring -- and this was, this one sentence talked about it by 2018. This is a ten-year forecast. So it goes on to say in
addition, LEI's forecasting cumulative retirements of roughly 5,200 megawatts in other thermal generation.

Q But you specifically forecasted through --

A We captured Brayton Point. It's just the timing might have been a couple of years off, but Brayton Point was retired in this forecast over the forecast time frame. And Brayton Point as we all know is retiring, given the announcements made about a year later.

Q If you subtract 1638 megawatts from 2283 megawatts, that number is less than the 1083 megawatts retired of coal from Brayton Point, correct?

A Brayton Point was coal and oil-fired.

Q Right.

A Different units. We had a different schedule, but what I'm saying is we did capture it. If you had bought the CMI Forecast which is our multi-client price forecast that had all the detailed retirements for those that paid for the subscription, you would have seen Brayton Point on the list.

Q Brayton Point has got a 1083 megawatts of coal,
correct?
A I'd have to check the numbers. Some is coal, some is listed as oil technically.
Q On the screen now is Counsel for the Public's Exhibit 260, and this is an article where the owner reaffirms 2017 closing of Brayton Point plant. Do you see that?
A I see the -- I don't see the article. I see just the title of the article.
Q We're going to see it in a minute.
And then the first line is that the owner of Brayton Point Power Plant in Somerset said Monday it will retire the coal-fired facility as planned in 2017. Do you see that?
A Yes.
Q I'll represent to you that Brayton Point has 1083 of coal and 446 megawatts of oil.
A And over the forecasting time frame, as I've said earlier, that included ten years, not just the one sentence that was in the press release, we captured the Brayton Point retirement.
Q The press release didn't talk about ten years, did it? It talked about a year.
A Because I was expecting people to buy the full
report. That's why we issue press releases. To
tell people we have a ten-year forecast. Please
purchase it. We think it's very reliable and
very interesting.

Q Now, another thing that your model forecasted
for October, in your October 2015 report, was
the Forward Capacity Auction Clearing Prices,
correct?

A Starting from, I believe, I always get the FCAs
mixed up, but from a future FCA, I believe, let
me just go through it. Starting from 2019
delivery which would be FCA #10.

Q Yes. So what I'm putting up on the screen is
Counsel for the Public Exhibit 265 which is
Figure 21 from your October 2015 report. Do you
recognize that?

A Yes. I do recognize it.

(Redacted portion in separate transcript).
Q What we're putting on the screen now is Counsel for the Public's Exhibit 262 which is a document from ISO New England, and as part of this document is a summary of Forward Capacity Auctions #1 through #11. Do you see that?

A Yes, I do. Well, on the screen right now we have 4 through 11 but yes.

Q If you look at this document, you will see that on the far right side is the Clearing Price. Do you see this?

A Yes, I do see that.

(Redacted portion in separate transcript)

A There were some -- and I can explain the difference.

Q Is that a yes or no?

A Yes to the numerical value, but there's a very good explanation if you're interested in why.
Q Vous'11 have a chance -- we need to get through this. For FCA #11 --

PRESIDING OFFICER HONIGBERG: Mr. Pappas, I think, so we don't forget, if you don't mind, I'd like to have her offer that explanation for the difference. I know it just delays us a moment or two, but if it's okay with you, why don't we hear that explanation now.

MR. PAPPAS: That's fine. If the Committee would like that.

A Thank you, Chairman. I will try to make it brief.

There were a number of changes that happened between prior FCAs and FCA #9, 10 and 11 and in between those, we introduced the demand curve, which if you can tell, created quite a big uplift in price and created an incentive that I like to describe as a clarity in the pricing outcomes and an incentive for new investment.

And, frankly, the FCA #10 was our first year that we really got in significant new investment, but they were unique Projects, they were repowering opportunities generally or
projects that had already been far along in
development, for example, like the Towantic
plant in Connecticut that had been developed,
sited, I think, and had spent a lot of money but
didn't continue and were waiting for this
opportunity for market rules to really incite
that investment.

There was also some additional uprates
through the installation of turbines at existing
sites so that is the difference that we didn't,
that we didn't anticipate the, those what I
would call one-off opportunities at uprating
some of the existing site capacity or
reconsidering new projects that are lower cost,
low hanging fruit than new entry.

Then in FCA #11 we had actually market rule
change, the demand curve changed that shape that
we were discussing before and that was one of
the drivers behind the data request that
required us to put in the updated analysis.

We didn't anticipate that demand curve
change, and, frankly, the ISO didn't announce it
until after our report was complete.

PRESIDING OFFICER HONIGBERG: All right.
Sorry to break up the flow, Mr. Pappas.

MR. PAPPAS: That's okay.

BY MR. PAPPAS:

(Redacted portion in separate transcript)

A Yes. Under the linear demand curve.
Q And the actual Clearing Price for FCA #11 was 5.30, correct?
A Due to the charge in market rules.
Q Okay.
A And the reduction in what we call the ICR, Installed Capacity Requirement, which was driven by ISO's revisions to its peak demand forecast.

(Redacted portion in separate transcript)

A From before we changed the model to address the new market rules, it wasn't as big of an impact. If you actually go to the updated analysis --
Q Let me stick you with my question because it works a little bit better.
A Okay.
Q The difference between what you forecasted for FCA #11 and what actually occurred was about a
A The words you are stating are correct.
Q Thank you.
A But the impression you leave is not correct.

Q Thank you. Now, the trend for FCA #10 to FCA #11, actually the trend from FCA #9 to FCA #10 was a downward trend in price, correct?

A There is no trend when you're changing market rules. That doesn't establish a trend just because you have a high number and a low number. You need to understand what the market rules were and the conditions that resulted in those...
prices.

Q  The price went down, did it not?
A  I would agree with that. Doesn't mean it's a trend.

Q  That's going downwards, is it not?
A  Downwards with different market rules.

Q  And you also, but you didn't, you didn't estimate a downward trend, did you?
A  I estimated different market rules. Projected on the --

Q  You didn't estimate a downward trend, did you?
A  I estimated --

Q  And the trend that you estimated from FCA #10 to FCA #11 was an upward trend and the actual trend was a downward trend, correct?
A  Numerically, yes, that's correct.

Q  Thank you. Now, you also didn't estimate the amount of new generation entering, correctly estimate the amount of new generation entering the market for FCA #10, correct?
A  I actually explained that a few minutes ago. Yes. You're right.

Q  Thank you. And you didn't estimate when we got to FCA #11 the amount of new demand resources
entering, correct?

A  That's correct as well.

Q  Thank you. So forecasting the Forward Capacity Auction, and I think what we just went through demonstrates forecasting the Forward Capacity Auction with precision is very tough to do; is it not?

A  Precision is difficult in any forecast. Our job is to try to forecast an accurate forecast with the best available information we have at a given point in time.

Q  And all forecasting in the energy markets have uncertainty, do they not?

A  I think I've answered that question. So that would be a resounding yes, there are uncertainties in forecasts.

Q  Now, when you did your updated forecast in February of 2017, you used the same methodology that you had used for your October 2015 report; is that right?

A  Yes. In the sense that we started with a Base Case, updated to the latest information, and then had a Project Case so if that's the methodology you're referring to, I would agree.
Q  And you used your same two internal economic models, correct?
A  Yes.
Q  And, obviously, you changed some of the inputs and some of the assumptions and you adjusted to some of the changes in the market, correct?
A  Correct.
Q  And, for instance, you used the 2016 CELT Report, correct?
A  Yes, because it was available at the time.
Q  And, admittedly, the 2017 CELT Report was not available to you, correct?
A  Correct.
Q  And when the 2017 CELT Report came out, it showed the load growth or demand forecast actually continuing to fall from 2016, correct?
A  Yes. It is showing a lower consumption over time.
Q  So would you agree with me that, all else being equal, lower energy consumption would result in lower energy market benefits from any Project like NPT?
A  Holding all else constant, I would agree with that statement in principle.
Q All other things being equal, had you used the 2017 CELT Report rather than the 2016 CELT Report in your updated forecast, it would have lowered the amount of benefits forecasted, correct?

A Energy market benefits, yes, holding all else constant and so forth.

Q Okay. Now, in your February 2017 forecast, you predicted that no generator or demand resource would seek to de-list in FCA #11, correct?

A Are you talking about the March 2017, the updated analysis?

Q Correct. When I refer to February 2017, I understand that March just corrected a few typographical errors, correct?

A Yes.

Q So I generically refer to February 2017 because that's when the update came out, but I'm referring to, when I say February 2017, it includes March 2017 with the typographical corrections.

A So your question was that predicted -- I just don't want to misstate it. Did we predict no de-lists? Is that the question?
Q Correct.
A Well, we did have de-lists. We had New York Imports which are capacity resource de-listing in the Project Case.
Q How many megawatts?
A 500 megawatts. It's described on page 17 of the updated analysis.

We also had retirements that hadn't been anticipated like Pilgrim Nuclear. Essentially that would be retirement, an exit or de-list from the supply stack because that had been announced in October 2015 once we were done with the analysis in the original report and that was closing in June 2019. So Pilgrim is, of course, still operating but down in the future it will be exiting the Capacity Market.
Q Okay.
A All of our assumptions for the updated analysis are contained within the updated analysis, and I believe we responded to many data requests from your experts on details, inputs and outputs relating to that analysis. So they're all, to my knowledge, in the record.
Q Would you agree with me that given the
uncertainty that exists and the difficulty in precisely forecasting the energy markets that much like your October 2015 report, your February 2017 report is unlikely to be precisely accurate for the 11-year period it forecasted?

A Precision and accuracy are two different things to a forecaster. I have never said that my forecasts are precise. If market conditions change and evolve in ways that we hadn't anticipated, then actual market conditions will differ which really relates back to accuracy from what we have modeled. But if actual market conditions are as predicted, then I feel our forecast is very accurate, and we should keep in mind that actual market conditions can go both ways. They can actually increase the benefits in ways that we haven't anticipated. We lose another resource unexpectedly that we hadn't anticipated losing, maybe another nuclear plant, maybe another large gas-fired facility, a project like Northern Pass creates significant insurance for consumers across the entire region against those types of events and what that could mean to prices. And we did capture that.
So if you were going to ask did we model it, we didn't model it, but it's --

Q Excuse me. Do you remember my question? I didn't think so. So let me get back to my question.

Given the uncertainty in energy markets and the difficulty in modeling in the future, would you agree with me that having a ten-year forecast be precisely accurate is extremely difficult, if not impossible?

A I think I did answer your question.

Q And the answer is? You agree with me.

A The answer is that I wouldn't use the word precise and accurate side-by-side, but I agree with you that uncertainties will result in different conditions from what we've modeled if those uncertainties are meaningful.

Q So if the market changes in the future, that's going to affect your forecast, correct? Just like we saw changes affected your October 2015 forecast.

A It might go up. It might go down.

Q My question was it's going to affect it, would it not?
A: It could affect it, yes.
Q: It could or it would?
A: Market conditions can change and it could not actually affect the benefits we're measuring. It might affect absolute price levels but not benefits. We're not interested in a forecast of absolute price levels. We're interested in how a new supply resource through competition lowers the price of energy, the price of capacity. So it's looking at the difference in prices.
Q: So on the screen is Counsel for the Public's Exhibit 264 which is your Figure 13. Do you see that?
A: Yes. I do see it.
Q: Okay. And this is from your updated report, right?
A: Yes.
Q: And what you are showing and I've highlighted it, you're showing the capacity price reduction for the period of time that you have forecasted; do you see that?
A: Yes.
Q: And what we see is down on the bottom, you've translated that into dollar benefits, and I've
highlighted "New Hampshire." Do you see that?

A Yes.

(Redacted portion in separate transcript)

A Correct.

Q And the bulk of the benefits that you're forecasting really appear in a five-year period from FCA #14 through FCA #18; do you see that?

A Yes, because we have assumed the market will properly function and rebalance itself as quickly as possible.

Q So, essentially, what you're forecasting is NPT would provide wholesale Capacity Market benefits for, significant benefits for about a four or five year period and you've identified those, correct? And you've quantified what you predict or forecast those benefits to be.

A The Capacity Market benefits. There are other benefits that continue for much longer as a result of the electricity market impacts.

Q I'm asking you about wholesale Capacity Market benefits, correct?
A Yes. But your question actually didn't include the word capacity. That's why I answered it that way.

Q And am I correct that this is about, according to your forecast, this is about 90 percent of the economic benefits that you've forecasted for this project? We talked about that earlier.

A I don't want to confuse the Committee. It's 90 percent of the wholesale electricity market benefits. There are other types of benefits that accrue that we discuss and actually that we start discussing right below this figure.

Q Now, we talked about earlier that what you forecasted was one scenario which was NPT would qualify and clear 1000 megawatts in the Forward Capacity Auction, and as a result these are the economic benefits that you forecasted would result from that, correct?

A This is the scenario with 1000 megawatts in these conditions. We have a different set of conditions and market rules that we presented in our original report. I could treat that as another scenario. And we have yet another scenario that we modeled in response to specific
discovery data request that is a variation on this that looks at a different set of other supply conditions in the market. But they all include 1000 megawatts of CSO for Northern Pass. 

Q Thank you. And just so that we're clear, you didn't forecast any other scenario where no megawatts would clear and qualify or less than 1000 megawatts would clear and qualify, correct?

A I did not model those as I didn't think it was realistic or probable.

Q They are possible; would you agree with me?

A Hypothetically.

Q Hypothetically. It's possible. Is it not?

A I would say hypothetically. I don't see how practically it's plausible.

Q That's your opinion.

A My professional opinion.

Q Others could disagree with you, correct?

A I welcome disagreement, yes.

Q And other professionals could have a different view on whether or not NPT would qualify and clear, correct?

A They could. Yes.

Q And other professionals may believe that it's
more likely than not that NPT would not qualify and clear in the forward Capacity Market, correct?

A I don't know what data they're relying on for that opinion, but -- can't talk about others. Ask me questions about me.

Q Would you agree with me that another professional could have that opinion?

A Others can have whatever opinions they want.

Q Okay. So let me ask you some questions about NPT qualifying for the Forward Capacity Auction. Now, in order to do so, ISO New England must determine that there's sufficient HQS efficient excess capacity in order to qualify, correct?

A ISO will have to be comfortable that whoever is the sponsor of the capacity will have the resources to meet their obligation.

Q In this instance, we're talking about HQ, are we not?

A We are talking about an affiliate, a division or subsidiary of HQ most likely, yes, because of the Transmission Service Agreement.

Q Okay. So what we've put on the screen is Counsel for the Public Exhibit 266 which is from
your April 2017 updated report, correct?

A  Correct.

Q  And that is Applicant's Exhibit 102, and this exhibit is your analysis to conclude that HQ has 1,527 excess capacity to allow qualification in the Forward Capacity Auction, correct?

A  In the winter it has, based on our analysis for 2021 1,527 megawatts for export. The reference to the winter is actually in the text preceding this figure.

Q  So this is excess capacity during the winter in Quebec?

A  Exactly. In the summertime, the number is multiples of this, much greater.

Q  Now, you did this analysis by looking at the various sources listed on the right, correct?

A  Correct.

Q  So you pieced together this analysis from these different documents that we see cited, correct?

A  Yes. I performed this analysis using these various primary sources.

Q  And the first primary source you cite for number one, available generation, is HQP Capacity Demonstration December 2016; do you see that?
A: Yes. That's a document that's filed with the regulator in Quebec, Regie, and it's specifically speaking to Hydro-Quebec Production's available generation because that's the relevant entity, as we've said multiple times, that needs to be evaluated.

Q: What is on the screen is Counsel for the Public Exhibit 267. Annexe C. Do you see that?

A: Yes.

Q: Do you read French?

A: Poorly.

Q: Me, too. Is this the document you were referring to in the French version?

A: This is a type of the document. I think this one is from an earlier, this is, if I'm --

Q: Let's go to the second page and maybe that will help.

A: Yes.

Q: And do you see the number?

A: Yes.

Q: 39,729?

A: Yes.

Q: And that corresponds with the first number on your analysis?
A: Yes.
Q: Since it's been a while since I took French, we had that Exhibit 267 translated into Counsel for the Public's Exhibit 268. And if you see at the top it is the same document that we saw in the French version, do you see that?
A: I see the translation, yes.
Q: And if you look down, you see the Available Generation on Peak, the same number you had, 39,729?
A: Yes.
Q: Is this the source of your starting point for your analysis?
A: Yes.
Q: If you look at the top, this is dated 12 December 2016. Do you see that?
A: Yes.
Q: What we're putting on the screen now is Counsel for the Public's Exhibit 269 which is a document from Hydro-Quebec's Production website. Do you recognize that?
A: I've looked at the website, yes, before.
Q: And if you see, it has Generating Facilities, Installed capacity, 36,903 megawatts. Do you
see that?

A Yes, but that's not the right number to use in our analysis.

Q And it has Hydroelectric, 36,366 megawatts, do you see that?

A Yes.

Q And it indicates it has some footnotes for thermal, and then if you -- it also has other sources of supply, do you see that?

A Yes. One of the most important is actually Churchill Falls.

Q Full disclosure. We're getting there. Churchill Falls, it has 5,428 megawatts, do you see that?

A Yes.

Q And Churchill Falls is a hydroelectric power generating facility?

A Yes.

Q And it has some wind and some biomass and so forth. So is it your analysis that you have to add the Churchill Falls generating station to the installed capacity to get up to a higher number than the 36,903?

A Partially, but the other issue is this is
installed capacity, and we're not looking at installed capacity. We need to, if you go back to your translation, it was very specific. It talked about available capacity at peak. So we wanted to have that adjustment there as well. This is why the demonstrations are much better than relying on the website, which has a sort of different purpose in mind than looking at supply/demand balance.

Q So what we're putting up now is Counsel for the Public's Exhibit 270, and this is the Annual Report for Hydro-Quebec. Do you see that?

A Yes. I see the cover page.

Q Okay. And here it indicates that their generating capacity is 36,908 megawatts, do you see that?

A And it says in finer print, for generating stations operated by Hydro-Quebec. Hydro-Quebec doesn't operate Churchill Falls.

Q That's the same number that we saw on the prior document, correct?

A Possibly, yes.

Q Well, we'll show it to you. See the 36,903 installed capacity?
A: Yes.

Q: Okay. Now --

A: It's not exactly the same number but close enough.

Q: So as I understand it, what you do is you add Churchill Falls in order to -- let's see what you did.

In order to get to the 39,729, did you add the Churchill Falls capacity?

A: I didn't need to add it. As you showed in the first document, it's in the Regie, the regulators's official document about available generation for Hydro-Quebec Production.

Q: So you just --

A: But it is included, if that's your question.

Q: All right. So I want to understand how you got there.

Now, looking back at the document that you relied upon, it had down below the reserves required to meet 0.1 days a year reliability criteria. Do you see that?

A: Yes.

Q: Did you back that out of the 39,729?

A: Yes. It's line 13 in my table.
Q Okay. Then you also included in your table all of the, looks like degeneration from La Romaine plant. Correct?
A The remaining generation that is under construction currently that wouldn't be captured in the Regie document from the winter of 2016 but will be on line before 2021.
Q Okay. If you look at your, you had that as number 3, 640 megawatts?
A Yes.
Q Now, La Romaine #3 is to be commissioned at the end of this year, correct?
A I believe so. I haven't checked recently, but --
Q Well, it's actually, if you look down in your footnote, you actually say that.
A Yes. Thank you. Yes.
Q And that's 295 megawatts?
A Yes.
Q And Romaine 4 is to be commissioned at the end of 2020, correct?
A Yes.
Q And that's 245 megawatts?
A Yes.
So you included those two amounts as part of your analysis?

I have included those as resources available to Hydro-Quebec Production who will be owning and operating those resources.

And if for whatever reason one or the other or both of those don't get commissioned as scheduled, they won't be available come 2021, correct?

If there's a reason for that -- if that occurs, yes. Mathematically, that's correct.

And then you also have a number 4, Ontario Electricity Trade Agreement, 500 megawatts, you see that?

Yes.

And I understand that Ontario supplies 500 megawatts of capacity to Quebec from December to March; is that right?

Yes. It's part of a broader trade agreement between Ontario and Quebec.

And that agreement runs through 2023; is that right?

Yes. That's the current term of the agreement.

And the reason HQ, one of the reasons HQ
receives that capacity is because HQ doesn't have sufficient capacity in the winter months, is that right? They have to procure capacity in their peak period in the winter?

A The entity that is a counterparty to the ISO, the Ontario system operator, is not HQD who's responsible to have sufficient capacity for Quebec. It's actually HQP. The purpose of that trade agreement is really to help Ontario meet its carbon emission reduction goals as it's implementing its new carbon tax regime.

Q Now, if that 500 megawatts of capacity doesn't continue after the year 2023, that would not be available as part of qualifying for FCA #12, correct?

A That is correct. And I believe Hydro-Quebec has actually planned for that contingency.

Something that we haven't included here but that they've specifically said is a substitute for this is uprates that they are working on for their facilities, and that's in one of your other exhibits. Perhaps even in the Annual Report, but definitely in the strategic plan.

Q Now, what's on the screen now is Counsel for the
Public's Exhibit 272 which is an article dated October 20, 2016, and if you look at the highlighted sections, it talks about Quebec being able to turn to Ontario during peak periods when very cold temperatures will increase electricity consumption, do you see that?

A I do see the highlighted portions, yes.

Q And it refers to the 500 megawatts of power made available from Ontario?

A Well, yes, it's referring to that trade agreement, but it's not a fulsome picture of what that trade agreement is about.

Q And it says "At present, Hydro-Quebec is often forced to buy at high energy prices in the United States to meet its electricity needs during the peak winter season." Do you see that?

A I see that statement, but it's a newspaper article. And I think for the purposes of our analysis when we're looking at supply and capacity, really it's an empirical analysis, one needs to go to the source which is the trade agreement, and the Ministry of Energy in Ontario
publishes all that documentation.

Q So the earliest NPT could participate in the Forward Capacity Auction would be FCA #12, correct?

A Yes. I think so.

Q Well, we've already had FCA #11, haven't we?

A Yes.

Q Okay. And if they participated in FCA #12, that would start 40 months after February 2018, correct?

A Yes.

Q That would be in, essentially, at the end of June 2025.

A No.

Q Oh, I'm sorry. July 2022.

A It would be June 2021 through May 2022.

Q All right. Correct. And then if they missed that, they'd have to go into FCA #13, correct?

A Yes. That is correct.

Q And then that would start a year later, correct?

A Yes.

Q Right?

A Yes.

Q Okay.
PRESIDING OFFICER HONIGBERG: Mr. Pappas, off the record.

(Discussion off the record)

PRESIDING OFFICER HONIGBERG: Back on the record.

BY MR. PAPPAS:

Q Now, looking back at your summary, if, for instance, La Romaine didn't materialize and the Ontario Trade Agreement didn't renew, that would consume most of the excess capacity, would it not?

A It would lower the number, but as I said, we haven't considered other options that Hydro-Quebec has actually announced as stopgaps to the extent that -- I wouldn't even call them stopgaps. Other initiatives that they have announced to increase this surplus capacity. It is in their strategic plan. They've talked about 500 megawatts of uprates at existing facilities, programs that they have already begun and started.

Q Well, their strategic plan talks about looking in the future, determining whether they're going to build more dams, does it not?
A It talks about operations, too. It's a wholesale look at everything that's happening.

Q Okay.

A But you're right. It does also talk about the potential, if necessary, to build more dams in the very long term, too.

Q Okay. Now, you didn't, HQ or its subsidiary of HQ is NPT's joint venture for the Northern Pass Project, correct?

A I don't know if I would say joint venture. A subsidiary of Hydro-Quebec is the counterparty to the Transmission Service Agreement.

Q Right. And HQ could provide documentation to definitively state whether they have access capacity or not, could they?

A I don't know. I guess, if you asked them, I'm sure they could respond to your request.

Q No, no, no. My question is, if HQ wanted to, it could produce documentation, its own documentation to establish what its capacity is and whether it has excess capacity to qualify for the Forward Capacity Auction, could it not?

A Well, it's going to have to provide documentation as a shipper and a sponsor of a
new resource in the Capacity Auction.

Q Right, but it didn't do that as part of this proceeding, did it?

A I didn't ask HQ to do that.

Q Instead of HQ doing that, you made an analysis that used various sources to come up with an estimate of excess capacity, correct?

A Yes. I used HQ's own primary source data to do the simple math here to show that they have surplus capacity for exports.

Q This is a good time to break.

PRESIDING OFFICER HONIGBERG: Why don't we take a ten-minute break here.

(Recess Taken 3:31 - 3:50 p.m.)

PRESIDING OFFICER HONIGBERG: Mr. Pappas, you may proceed.

MR. PAPPAS: Thank you, Mr. Chairman.

BY MR. PAPPAS:

Q Ms. Frayer, I want to now ask you some questions about the other, another requirement of the Forward Capacity Auction for new participants, and that's whether or not the offer price would clear. Okay? Now, ISO New England would assess NPT as an Elective Transmission Upgrade; is that
right?

A Yes. That's my understanding.

Q And that's referred to as an ETU?

A Yes.

Q Okay. Now, am I correct in saying that an ETU's Default Offer Price in a Forward Capacity Auction is the price cap in the Auction; is that correct?

A Less a penny, but yes.

Q If the Default Offer Price is too high to clear, then, obviously, they don't participate, correct?

A Yes. So the idea behind a very high default price is that those Projects need to submit information to the Internal Market Monitor to have their Project's specific Minimum Offer Price set.

Q Right. And that was going to be my next question is, that's where they start, and then the ETU, or in this case NPT, would submit that information to the Internal Market Monitor to try to have a lower price, correct?

A Yes, but it wouldn't be NPT. It would be the entity that would be selling capacity on the
Transmission Project that would submit the information.

Q Okay. So for purposes of my questioning, just to make it go easier, I'll refer to NPT and you'll understand I'm referring to the entity that actually has to submit the information.

A Yes, which I would assume to be an entity that is working with Hydro-Quebec Production.

Q Okay. But I'll just refer to it as NPT because it's easier. Okay?

A Okay.

Q And as we said earlier, the Internal Market Monitor reviews these offers by ETUs to prevent an ETU from offering an uncompetitively low price supported by out-of-market contracts?

A Yes. The purpose is to ensure the integrity of the competitive price signal of the Capacity Market.

Q And it's the Minimum Offer Rule or otherwise known as the MOPR that is employed by the Internal Market Monitor when they look at the price, correct?

A Yes. That is correct.

Q Okay. And I think we mentioned earlier that one
of the things that the ETU has to submit are capital costs, and in this case NPT would have to submit capital costs to provide the 1000 megawatts of highway provided; is that right?

A They would have to submit capital costs for the infrastructure which in this case is transmission, and then they would have to submit information on the cost of power. I wouldn't characterize that as capital cost information though.

Q Well, they'd have to submit capital costs on the cost to transmit the power, correct?

A Yes. So the transmission infrastructure. Yes.

Q Would they also have to supply the cost of any new generation needed to supply the power?

A If there was new generation, but that is actually a particular element of the application, a particular type of analysis and workbook. My understanding is that that would not apply in the instance of Northern Pass.

Q But if an ETU had to have new generation, the cost of that would be included in the MOPR analysis, correct?

A Yes. So, for example, if there's a wind farm
being built, and it needs a long transmission lead line to interconnect to the market, it would need to submit cost data on its wind turbines and on the transmission line.

Q And these costs, these capital costs are then amortized over a period of time?

A Yes, consistent with the type of technology we're talking about.

Q Okay. And in this instance, the Internal Market Monitor would determine the net costs of NPT to provide the 1000 megawatts of capacity and whether or not its price would clear in the Forward Capacity Auction, correct?

A Yes.

Q And those net costs would be reduced by the net energy revenues?

A Yes. That's correct. And the net costs include operating costs, not just capital costs.

Q And among those operating costs are fixed costs.

A Yes, and also the IMM would be looking at opportunity costs, if there are any, and so forth.

If I may, the ISO has, actually, a very standardized process for this. They publish an
Excel-based, a Microsoft Excel-based workbook that has a number of fields that you populate with data so the calculations and the mechanics are standardized. There isn't a lot of guesswork as to what the IMM would do.

Q In fact, if you go on their website, you can see that workbook, can't you?

A Yes. It's downloadable. Publicly available.

Q I tried it.

A And that's what we used to determine our cost estimate. Or I should say or MOPR estimate.

Q And the IMM translates NPT's net costs into a capacity offer, and capacity offers are a cost per kilowatt month, is that right?

A Capacity offers are dollars per kilowatt month.

Q Dollars per kilowatt month. Yes.

A Yes.

Q Now, there are a number of possible outcomes after the IMM sets the price that NPT can offer into the Forward Capacity Auction; would you agree with me?

A Sorry. There are a number of possible outcomes?

Q Outcomes. So the NPT or the ETU submits all this data, and the IMM is the one who does the
analysis, and it's the IMM's determination that counts, right?

A Yes. There's probably some recourse if there are some concerns, but it's the IMM's decision that's supposed to hold forth.

Q And at the end of this analysis by the IMM, a price is determined, dollar per kilowatt month, for that new participant. In this case, it would be, you know, we're talking NPT, correct?

A Yes.

Q And that price per kilowatt hour could either clear the Capacity Market or not clear the Capacity Market, correct?

A Yes. As the name implies, it's their offer floor. So the participant could start off higher, but they can't bid below their offer floor, and if the rounds of the Descending Clock Auction move to a price below that offer floor, it would not clear.

Q Right. So after a new entrance goes through this analysis by the Internal Market Monitor, gets their floor price, if you will, essentially one of two things could happen or a variant.

They could clear everything they've requested or
they may not clear everything they seek to put
into the Auction, correct?
A Yes. Those are the two. They clear or they
don't clear.
Q Right.
A Now, if they don't clear in a particular Auction
they can try to clear again in the next Auction.
Q No, no. That's a good point. If they miss the
first Auction, they can try a year later to the
next Auction, but they would go, as a new
participant, they would still go through the
same process, correct?
A Essentially. And the MOPR is also set. Perhaps
market petitions have changed. The IMM might
require updates, but they would have to, again,
have an offer floor, and they would have to see
whether they can clear in that Auction, given
their offer floor.
Q Okay. Is there any limit on the number of
Auctions they can try?
A I don't believe there is, actually.
Q Now, in your first report in October 2015, you
assume that NPT's offer price in the Forward
Capacity Auction would clear, correct? You
assume that the 1000 megawatts would clear and participate in the Forward Capacity Auction, correct?

A Yes.

Q Now, your October 2015 report did not include a MOPR analysis, did it?

A No, because it's intuitive to me that that would not be binding on them clearing the market.

Q So as part of your October 2015 analysis, you assumed that NPT would clear. That was one of your assumptions?

A Based on my professional judgment, I thought there would be no constraint from a MOPR analysis for them for clearing.

Q And then you were asked about that at a Technical Session, were you not?

A Yes.

Q And in your February 2017 update, or actually it wasn't your February 2017 update, it was in your April 2017 rebuttal or Supplemental Report, you included the MOPR analysis, correct?

A Yes.

Q Now, as part of your MOPR analysis and looking at the capital costs, you included the cost of
building the transmission line from Pittsburg to Deerfield, correct?

A  I used the public $1.627 billion number.

Q  And it's your view that the Internal Market Monitor would include that number?

A  Yes.

Q  And that's because it's necessary to build that transmission line from Pittsburg to Deerfield in order to provide 1000 megawatts capacity in the Forward Capacity Auction, correct?

A  Yes.

Q  Your MOPR analysis does not include the cost to build a transmission line in Canada as part of the Northern Pass Project, is that right?

A  That is correct. Nor should it.

Q  Do you know from where the line from Canada meets the United States in Pittsburg, do you know where the other end of that is going to be in Canada?

A  I don't recall. I've looked at descriptions of it in the past, but I don't recall the specific interconnection points.

Q  Would the --

A  And I'm not sure it's a single line, but there
are reinforcements that have to be made in
Canada, in Quebec.

Q Currently, today, there is no transmission line
starting in Pittsburg, New Hampshire, and going
into Canada, correct?

A Yes. To my knowledge, yes.

Q And does Des Cantons substation ring a bill?

A Yes.

Q That's where the line starting in Pittsburg
going into Canada is going to go to receive
this power, correct?

A Yes. That's one of the -- yes.

Q And do you recall how long that is?

A No. I don't recall.

Q And do you know, is it your understanding that a
new HVDC line from Des Cantons substation in
Canada to Pittsburg, New Hampshire, is going to
be built as part of the Northern Pass Project?

A My understanding is that Hydro-Quebec
TransEnergie which is the Transmission Division
of Hydro-Quebec Corporate will need to make
transmission investments to interconnect
Northern Pass with their system.

Q So that line has to be built in order to
transmit power from HQ into the New England grid as part of the Northern Pass project, correct?

A Yes. That's correct.

Q So what I'm putting on the screen now is the cover page of the Transmission Service Agreement between Northern Pass Transmission, Inc., and an affiliate of HQ that you can't see, but it's lower on the page. So this is the cover page of the Transmission Service Agreement. Do you recognize that?

A Yes.

Q Okay. And then I have on the screen the first part of the Agreement where it talks about Hydro Renewable Energy, formerly known as HQ Hydro Renewable Energy, a corporation organized and existing under the laws of the State of Delaware as the Purchaser, and it's your understanding that that's the Canadian portion of this Project, correct, in terms of the Transmission Service Agreement?

A You're speaking about the paragraph in yellow at the bottom?

Q Well, actually, I was starting to talk -- because it starts off with Northern Pass
Transmission, LLC, and then I highlighted the
Canadian counterpart.

A Well, that's not a Canadian counterparty.  
That's a US company incorporated in the US but a
subsidiary of Hydro-Quebec Corporation.

Q Right. Right.

A My understanding is they're the counterparty to
the Transmission Service Agreement.

Q That's what we're looking at.

A Yes.

Q And if you look at the highlighted part where it
says whereas, it says, "Whereas, in order to
permit the delivery of power from the
Hydro-Quebec System for sale into the U.S.,
Hydro-Quebec TransEnergie, a division of
Hydro-Quebec, intends to develop, construct, own
and maintain a 1200 megawatt, +/- 300 kV,
high-voltage direct current transmission line
from the converter station at the Des Cantons
substation in the Province of Quebec to the U.S.
border." Do you see that?

A Yes. I do.

Q And so that's the Canadian portion of Northern
Pass Project necessary to transmit HQ hydropower
on the Northern Pass Transmission line for sale into the New England grid, correct?

A  Well, I would call it, as they've defined it, the Quebec line that's necessary to interconnect Northern Pass with the Canadian system.

Q  Yes.

A  Okay.

Q  What I've put on the screen now is Counsel for the Public's Exhibit 273 which is actually a Northern Pass document.

This is a document put out by Northern Pass, do you see that?

A  Yes, I do.

Q  And if you look at the highlighted portion, I'm not going to bother reading it all, but it refers to Northern Pass delivering the 1090 megawatts of renewable energy, and it talks about transmission line from Des Cantons, Quebec, all the way to Deerfield, and it talks about the new line in Canada being approximately 79 kilometers in Quebec. Do you see that?

A  I do see it.

Q  Then if you look further on in this document, the highlighted portion indicates that
construction of 79 kilometers of the Canadian
portion of the line is valued at $600 million Canadian, talks about at no cost to the New England customer, do you see that?

A Yes, I do see that.

Q And 600 million Canadian is about $450 million US?

A Sounds about right. Depends on where the exchange rate is these days.

Q Okay. Yes. On the screen now is Counsel for the Public's Exhibit 274 which is on the highlighted part it talks about the goal of Hydro-Quebec. If you flip, it talks about connecting to the New England grid, and if you flip the page, at the top talks about the same 320 kV direct line, about 79 kilometers long from Des Cantons, and it talks about the Franklin substation in southern New Hampshire. Do you see that?

A I see the highlighted part, yes.

Q Okay. Would you agree with me that that new 79 kilometer transmission line in Canada is a part of the Northern Pass Project as a whole?

A I would feel more comfortable to refer to it as the Quebec line that's necessary to interconnect
the Northern Pass project to Quebec. I think that's how the TSA talks about it, and I wouldn't want to recreate the wheel and give them a new definition.

Q Would you agree with me that the 79 kilometer transmission line in Canada is necessary for HQ to provide 1000 megawatts of capacity over the Northern Pass Transmission line into the New England grid?

A Yes. I would agree with that.

Q And would you agree with me that when the Internal Market Monitor looks at the capital costs necessary to deliver 1000 megawatts of capacity for the Forward Capacity Auction, that the Internal Market Monitor is going to include the cost of this 79 kilometer transmission line as part of the capital costs?

A No, I don't agree with that.

Q You don't think that these capital costs are necessary to deliver this 1000 megawatts of power?

A I have explained already that I agree with you that you need this transmission reinforcement, but I don't agree with you that it's a cost that
is going to be applied by the Internal Market Monitor as part of the MOPR. One needs to understand how the MOPR calculation works, and one needs to also understand who is funding and how they're funding this transmission investment.

Q Um-hum.

A And once one does understand all those facts, it's self-apparent that it shouldn't be part of the MOPR calculation.

Q Isn't the goal of the MOPR calculation to include all the costs necessary to provide the power for the Forward Capacity Auction?

A It is.

Q And isn't this 79-kilometer transmission line necessary to provide 1000 megawatts of power?

A Well, now you're playing word games. I've agreed that it's necessary, but it's not necessary to be reflected in the MOPR because of the way that this investment is being funded. This investment is going to be funded through existing transmission tariffs, and those transmission tariffs would have to be paid by HQP to HQT if they were going to ship power to
New England over Northern Pass or if they were going to ship power or for that matter sell capacity and then ship power to New York or Ontario or to any external market using the point-to-point tariff that HQT currently has in existence.

Q So the way it's funded determines whether the capital cost is included?

A Yes.

Q And not whether or not the capital cost itself is necessary to deliver the power?

A It's a combination of the way it's funded and also the source of energy and the opportunity costs for the shipper. If Hydro-Quebec Production can't sell capacity and, more importantly, energy to New England, it will look for other export destination markets, and in that case, it will have to pay that same Hydro-Quebec TransEnergie transmission tariff.

Q Well, would you agree with me that the only reason for this new 79-kilometer transmission line is to connect to the Northern Pass Transmission line in Pittsburg, New Hampshire?

A Well, there is a reason for that Project, yes.
Q  Would you agree with me that HQ wouldn't be building this 79-kilometer transmission line to Pittsburg, New Hampshire, unless it was going to connect with Northern Pass's transmission line in Pittsburg, New Hampshire?

A  I would agree that HQT, Hydro-Quebec TransEnergie, would not be building this without the request for this investment made by Hydro-Quebec Production.

Q  If the Internal Market Monitor disagreed with your view in terms of this capital cost, roughly $450 million US, and the Internal Market Monitor included this capital cost as part of the MOPR analysis, that would result in increasing NPT's offer price, would it not?

A  Conceptually, yes, but I don't believe they would disagree with me on this point. Again, the documents, you've shown only part of the documents, but the document are very clear. You showed actually an earlier document from the Clean Energy RFP that also said the same thing, that New England consumers are not responsible for this cost.

Q  I will tell you that's a debatable issue.
So just so I'm clear, though, if the Internal Market Monitor included the cost of this 79-kilometer transmission line, that would have an impact on NPT's MOPR price, correct?

A It would, but the Internal Market Monitor shouldn't because Northern Pass nor the entities that would be counterparties in the TSA would have to pay this as an incremental capital cost above and beyond the transmission tariff they would otherwise have to pay for any export sale outside of Quebec.

Q And if this $450 million were included in NPT's MOPR price, that would increase NPT's MOPR price, correct?

A If it was included, yes, it would, but it wouldn't be included, again.

Q Now, the state of Massachusetts recently issued an RFP for long-term contracts for Clean Energy Projects, correct?

A Yes.

Q And are you familiar with the Mass. Clean Energy RFP?

A I think I've reviewed drafts of the RFP and are generally familiar with the legislation. Yes.
Q Among other things, the state of Massachusetts is looking for contracts for hydropower?
A Yes. That is my understanding.
Q And NPT has indicated that it will enter a bid in the Mass. RFP, isn't that right?
A I believe so. I believe I recall, subject to check, reading something about that in the press.
Q I'll tell you there's been testimony that NPT hopes to be awarded a contract in that Mass. RFP. So to qualify under the Mass. RFP, hydrogeneration must be from a new generation of hydropower; is that right?
A It has to be new to New England. Not from a new plant.
Q Doesn't have to be from a new source of hydrogeneration?
A I didn't think it had to be from a new power plant. I think it has to be incremental or new to New England which would be more consistent with how they would then use it to achieve their Clean Energy goals.
Q So we're putting on the screen now the first page of the Mass. RFP. (CFP Ex 276) Do you see
A Yes. I see it.

Q Do you recognize the document?

A Well, I see the document. I might have not read this final version but yes.

Q Fair enough. So what we have on the screen now is Section 1.1 Purpose, do you see that?

A Yes.

Q Okay. And if you go to the next page which continues under that Purpose, it has a highlighted paragraph under the purpose of the RFP. Do you see that?

A Yes, I see that.

Q Now, I'm not going to take the time to read the whole thing. You're welcome to do it if you'd like. I want to draw your attention down to the last sentence that starts, the standards and criteria set forth. Do you see that sentence?

A Yes.

Q Okay. That sentence says, "The standards and criteria set forth in this RFP are designed so proposals selected for contract negotiations will serve the interests of Section 83D," and you understand Section 83D is the Mass. law?
"Will serve the interests of Section 83D by furthering those projects that have a strong likelihood of being financed and constructed and that will provide a cost-effective source of long-term Clean Energy Generation to the Commonwealth." Do you see that?

No, I do.

Yes, I do.

And you see the language that says, "have a strong likelihood of being financed and constructed." Do you see that?

Yes.

Now, further in this RFP there's Section 2.2.1.3, Eligible Bid Categories. Do you see that?

Yes.

And one of the categories with the RFP is Clean Energy Generation from Incremental Hydroelectric Generation via Long Term Contract. Do you see that?

Yes.

Is it your understanding that NPT when it bids into the Mass. RFP would be bid as an Incremental Hydroelectric Generation?
A I'm not privy to NPT's strategies around the Massachusetts RFP, but on a first glance, I guess that category would suit them.

Q Well, let me ask it this way. Are you aware of any other eligible category that NPT would fit into other than an Incremental Hydroelectric Generation?

A No, because I believe the next category would, well, I am aware of another category. It's right in that sentence, which talks about Class I RPS eligible resources, but I'm also aware that large hydro does not qualify currently for Class I eligible resources in Massachusetts.

Q So then let's look at the definition of Incremental Hydroelectric Generation.

On the screen now and I've highlighted the definition of Incremental Hydroelectric Generation. And you can read it to yourself.

A Yes. I'm done.

Q And this talks about a net increase in megawatt per year of hydroelectric generation as compared to the 3-year historical average, do you see that?

A Yes.
Q In order to qualify as an Incremental Hydroelectric Generation, you have to have a net increase compared to your prior three years, correct?
A Well, you have to read the entire sentence. It says, "As compared to the 3-year historical average and/or otherwise expected delivery of said hydroelectric generation from the bidder or an affiliate within or into the New England Control Area."

So my interpretation of this is that from the perspective of an affiliate of Hydro-Quebec if it were to be the counterparty providing this Firm Service Hydroelectric Generation, they can't reduce their energy sales, for example, on existing interties, which would be Phase II, and use that for energy flows on Northern Pass. It has to be incremental to the 3-year historical average flows that they have sent to New England historically into the New England Control Area.

Q That's the way you read it.
A Yes. That's how I read it.
Q All right. Fair enough.

Now, are you familiar with the Mass.
Department of Public Utilities Order regarding the Mass. RFP?

A I may have reviewed it. I can't remember off the top of my head.

Q Ms. Frayer, what I'm showing on the screen now is Counsel for the Public Exhibit 303 which is the first page of the Massachusetts Department of Public Utilities DPU Order 17-32. Do you see that?

A Yes, I do. Thank you.

Q And you'll see I highlighted this as Joint Petition to Approve, essentially, the RFP. Okay?

A Yes.

Q And then as part of this Order, one of the many things that it covered was the proposed bid requirement revisions, you see that?

A Yes.

Q And then one of the things it covered was some suggested bid requirement revisions regarding product definition. Do you see that?

A Yes.

Q And under product definition, one of the issues that was litigated was the definition of
Incremental Hydroelectric Generation, do you see that?

A  Yes.

Q  And then you'll see here it quotes the definition in the RFP that we just saw a moment ago. Do you see that?

A  Yes.

Q  So then I'm going to show you the page from this DPU Order 17-32 which is page 33, and it's the analysis and findings regarding the definition of Incremental Hydroelectric Generation, do you see that at the top?

A  Yes.

Q  So I've highlighted something from the Order that says, Section 83B's definition of new Class I renewable portfolio standard eligible resources states that there must be a, quote, "net increase from incremental new generating capacity." Close quote. Do you see that?

A  I see that sentence.

Q  And it refers to new generating capacity. Do you see that?

A  With respect to Section 83B.

Q  Yes. Yes. I understand. And then it goes on
to say because Section 83D was designed to, quote, "facilitate the financing of Clean Energy Generation resources," close quote, the Department finds that the electric distribution companies appropriately applied discretion when determining that hydroelectric generation should be incremental. Do you see that?

A Yes.

Q And it talks again, it again has the language about financing Clean Energy Generation resources, correct?

A I see that in the sentence, yes, but I also believe what you showed on the prior page stands for the interpretation that I've previously given. That is the words on the page. That they're measuring Incremental Hydroelectric Generation as a function of what that entity delivered into the New England Control Area over the prior three years.

In fact, if you go on, and now this is going from memory and might not be correct, but I believe there were parties that proposed alternative definitions, and I think the next sentence on this page refers to some of that,
and those were rejected.

Q Well, let me say this to be fair. Would you agree with me that whether or not the Mass. RFP requires new generation or not is probably a legal issue? Interpreting the 83D and this Order and any other legal document?

MR. NEEDLEMAN: Mr. Chair, I'm going to object at this point. First of all, it well might be a legal issue, then it's not appropriate, but more importantly, I just don't see the relevance to any of this line of questioning.

PRESIDING OFFICER HONIGBERG: Well, actually, that last question is probably the one question she's probably qualified to answer based on her expertise. Do you think that the interpretation of this contract is a legal question. Or this RFP is a legal question.

MR. PAPPAS: Yes.

A I think that the RFP will have an evaluation team, and I believe once a contract or a project or multiple projects are selected, those will have to undergo regulatory review, and it will be up to somebody above my pay grade to make
that determination.

Q Yes. Fair enough. I don't mean to try to get you to agree to a legal interpretation.

A I'm just interpreting the plain English on the page.

Q I understand, and I was just, I walked you through that to see whether or not you had a particular understanding of it based on your experience or whatever, but, in fairness, I agree. I think it's a legal interpretation, and I don't think your, it's not within your bailiwick to provide legal interpretations. My only point is that it's an issue. Would you agree with me that it's an issue that needs to be decided, whether or not the Mass. RFP requires new generation or it doesn't?

MR. NEEDLEMAN: Again, I'm going to object. I think even that's a legal conclusion, and again, I don't see the relevance.

PRESIDING OFFICER HONIGBERG: I'm going to sustain that. Is there any reason why any of what we just did with Ms. Frayer was confidential?

MR. PAPPAS: No, but I'm at the last ten
minutes. So I figured I mean, I'm going to finish.

PRESIDING OFFICER HONIGBERG: Okay. I mean, I know the parties will go through the transcript and identify what needs to remain confidential, but that struck all of us, I think, up here as interesting in that regard.

MR. PAPPAS: Yes.

PRESIDING OFFICER HONIGBERG: That may be the only regard in which it was interesting. So what's the next topic we're going to touch on?

MR. PAPPAS: Let me just finish this one line of questioning, and then I'm going to jump to my last topic.

BY MR. PAPPAS:

Q And my question is just simply this, Ms. Frayer, and if you don't have an opinion, that's fine, but if NPT is successful in the Mass. RFP and the Mass. RFP required new generation as opposed to not requiring new generation, and the Internal Market Monitor included that in the cost analysis, would you agree with me that that would obviously have an impact on what NPT's Clearing Price would be in the Forward Capacity
Auction?

A Under the hypothetical concept you've thrown out, and it doesn't need to apply to Northern Pass, it can apply to any project, the Internal Market Monitor will not take into account, just for the record, any of the contracts in terms of revenue streams being offered by the Mass. RFP. That's the whole purpose of the MOPR analysis, to assume away any contracts and understand on the basis of wholesale spot market dynamics whether the project can stand on its own two feet.

But it may take notice of the fact that there are certain infrastructure requirements. What it would do to the calculus is that there would be a levelized cost for the investment, but then there would not be an opportunity cost for that energy because there is no opportunity cost if that energy doesn't exist today.

So it changes the line items that you would be analyzing in the spreadsheet. Does it necessarily increase the MOPR? No, I don't think I can make that conclusion. It will be an empirical tradeoff between having an opportunity
cost analysis for the power versus having an
infrastructure levelized capital cost analysis.

Q And in that tradeoff analysis, the Internal
Market Monitor could determine, could it not,
that it should include the cost of this new
generation? That's one possibility.

A Well, sorry. I'm confused now by your question.
I thought I had answered that if it were to say
that you need to include the levelized capital
cost of generation, then you wouldn't include
any opportunity costs for that power.

Q Yes.

A So I thought I answered that question.

Q And if that's the analysis the Internal Market
Monitor made, that would affect the MOPR price,
if you will, of NPT, would it not?

A It would change the calculus of the MOPR price.

Q And it's more likely than not that that would
increase the MOPR price, would it not?

A I can't tell. No. Not based on my analysis.
We would have to look at what we think is then
the levelized capital costs. I haven't done
that analysis to be able to suggest that that's
more likely. That it would be higher than the
opportunity cost of power that we have included.

Q All right. So on that issue you don't have an opinion because you haven't done that analysis?

A I don't have an opinion, but I'm not willing to say that it's more likely than not which is what you were asking.

Q Yes, if you don't have opinion, then obviously you can't make that second. That's fine.

Your MOPR analysis included a 40-year amortization cost, correct?

A Yes.

Q Now, I understand you, that's your opinion that that's an appropriate amortization period, correct? Forty years?

A It's actually a value that ISO suggests in their cost spreadsheet, and I understand your expert also used that same 40 years in that analysis.

Q If somebody used a 20-year amortization period, that would impact the MOPR cost, correct?

A Yes.

Q And if someone used a 20-year amortization, that would probably add about $4 to the MOPR Clearing Price?

A I can't confirm how much it would add.
Q Okay. Fair enough. Let me just ask you a quick question on opportunity costs.

Your analysis estimated the opportunity cost of HQ energy by assuming the HQ generation would sell into the Ontario market during offpeak hours; is that right.

A Yes. That's correct. Without Northern Pass, they would not have the ability to sell additional energy into New England of significant value or into New York onpeak or Ontario onpeak for that matter.

Q Ontario onpeak is significantly higher than offpeak, correct?

A That would be the case in most markets.

Q Yes. And Ontario offpeak is also different than selling in the New York market, correct, in terms of price?

A Actually, our analysis shows that selling into upstate New York offpeak will be quite similar to selling into Ontario. There might be differences, timing differences, but they're very similar.

Q Off the record for a second.

(Discussion off the record)
PRESIDING OFFICER HONIGBERG: We'll adjourn for the day and resume again tomorrow morning at 9 o'clock.

(Whereupon Day 13 Afternoon Session adjourned at 4:45 p.m.)
CERTIFICATE

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 11th day of June, 2017.

___________________________
Cynthia Foster, LCR