

February 15, 2017

Pamela Monroe, Administrator
New Hampshire Site Evaluation Committee
21 South Fruit Street, Suite 10
Concord, NH 03301-2429

**Re: New Hampshire Site Evaluation Committee Docket No. 2015-06
Joint Application of Northern Pass Transmission LLC and Public Service Company
of New Hampshire d/b/a Eversource Energy for a Certificate of Site and Facility
Julia Frayer's Updated Report and Testimony**

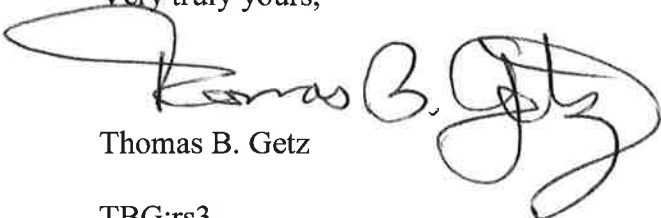
Dear Ms. Monroe:

The Applicants enclose for filing, in the above-captioned matter, an original and one copy of a redacted version of Julia Frayer's Update of the Electricity Market Impacts Associated with the Proposed Northern Pass Transmission Project, as well as her Updated Pre-Filed Testimony. The redactions to the Update were made in compliance with the Presiding Officer's May 25, 2016 Order on Motion for Protective Order and Confidential Treatment and December 13, 2016 Order on Applicants' Further Motion for Confidential Treatment in order to protect information that if publicly disclosed would place Northern Pass Transmission LLC at a business disadvantage relative to its competitors in the wholesale electric marketplace.

Un-redacted versions of the Update will be provided separately to the Site Evaluation Committee, Counsel for the Public, and parties to the proceeding pursuant to the protective orders issued in this proceeding, and subject to individual confidentiality agreements.

Please feel free to contact me with any questions regarding the enclosed information.

Very truly yours,


Thomas B. Getz

TBG:rs3

**THE STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE SITE EVALUATION COMMITTEE
DOCKET NO. 2015 – 06**

UPDATED TESTIMONY OF JULIA FRAYER

**IN SUPPORT OF THE
APPLICATION OF NORTHERN PASS TRANSMISSION LLC
AND PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
D/B/A EVERSOURCE ENERGY
FOR A CERTIFICATE OF SITE AND FACILITY TO CONSTRUCT A NEW
HIGH VOLTAGE TRANSMISSION LINE AND RELATED FACILITIES IN
NEW HAMPSHIRE**

February 15, 2017

1 **Q. Please state your name, business affiliation, and business address.**

2 **A.** My name is Julia Frayer, and I am one of the partners and a Managing Director of
3 London Economics International LLC (“LEI”), an economic consulting specializing in the
4 infrastructure industries. My business address is 717 Atlantic Avenue, Suite 1A, Boston, MA
5 02111.

6 **Q. Have you previously provided testimony in this case?**

7 **A.** Yes, I submitted a report in October 2015, with an accompanying pre-filed testimony, in
8 this proceeding. I was asked to assess the Northern Pass Transmission Project (“Northern Pass”
9 or the “Project”) as proposed by Northern Pass Transmission LLC (“NPT”) and to provide an
10 expert analysis of the economic and environmental impacts of the Project. More specifically,
11 through the use of simulation-based modeling, I projected the wholesale and retail electricity
12 market impacts, environmental impacts, production cost savings, and local economic impacts of
13 the construction and operations of the Project.

14 In summary, in my October 2015 analysis wholesale electricity market benefits,
15 composed of both wholesale energy and capacity market price impacts, were estimated to
16 average \$851 million to \$866 million per annum for New England and \$81.0 million to \$82.5
17 million per annum for New Hampshire over the study timeframe of 2019 through 2029. Local
18 economic benefits (as measured by GDP) during the operations period averaged over \$1.1 billion
19 per year for New England as a whole and over \$160 million per year for New Hampshire. In
20 terms of jobs, during the operations period, the Project will create over 6,800 jobs per year on
21 average for New England as a whole and over 1,100 jobs per year for New Hampshire.¹

¹ And at the height construction period, before the operations period begins, NPT would bring a total of 5,574 new jobs to New England.

1 In addition to the tangible market price reductions that will affect the ISO-NE wholesale
2 electricity markets and ultimately flow through to retail customers as retail electricity cost
3 savings, there are other electricity market-related benefits associated with the operations of the
4 Project. The hydroelectric-based energy flows that will be imported from Quebec and
5 transmitted on NPT will lead to a reduction in carbon emissions within New England. Based on
6 LEI's simulation modeling of the Base Case and Project Case in my October 2015 analysis, the
7 7,957 GWh of energy flowing on NPT would result in approximately 3.3 to 3.4 million metric
8 tons of avoided CO₂ emissions per year in New England.²

9 Lastly, I measured the production cost savings created as a result of NPT for the
10 wholesale electricity market in New England, due to the addition of low cost supply resulting
11 from NPT's operations and more efficient generation dispatch. NPT would result in an average
12 of \$330 million to \$425 million p.a. in savings from lower production costs for the ISO-NE
13 system.³ These savings reflect the change in the total marginal costs of production for the entire
14 ISO-NE system.

15 **Q. Were you asked to update your analysis of the benefits of Northern Pass?**

16 **A.** Yes, the New Hampshire Site Evaluation Committee ("SEC") issued an Order on
17 October 28, 2016 on Applicants' Motion for Rehearing (the "Order") which led to Northern Pass
18 Transmission LLC and Public Service Company of New Hampshire d/b/a Eversource Energy
19 (collectively "Applicant") authorizing us to undertake a comprehensive re-calculation of the

² This is a net figure that already accounts for the greenhouse gases emitted in Québec in the production of these 7,957 GWh of energy (based on the estimated average life-cycle CO₂ emissions from large hydroelectric systems).

³ The level of estimated production cost savings depends on the marginal costs of production for the hydroelectric-based imports on NPT (as hydroelectric resources have essentially negligible physical marginal cost of production, we have assumed a \$0 per MWh offset in the above calculations).

1 market analysis submitted as in October 2015. My Updated Analysis incorporates the most
2 recent FERC-approved demand curves (“Marginal Reliability Impact” or “MRI” curves) for
3 ISO-NE’s Forward Capacity Market (“FCM”) and more recent natural gas price trends (based on
4 Energy Information Administration’s (“EIA”) Annual Energy Outlook (“AEO”) 2016⁴) into an
5 updated analysis of the wholesale electricity market impacts created by the Northern Pass
6 Transmission Project (“NPT”, “Northern Pass”, or “Project”). In addition, other aspects of the
7 wholesale electricity markets have evolved since mid-2015, when LEI prepared the *Cost-Benefit
8 and Local Impact Analysis of the Proposed Northern Pass Transmission Project*. Therefore, I
9 included other updated assumptions and inputs, taking into account the latest market
10 developments. My testimony summarizes the key findings from the accompanying detailed
11 report, titled *Update of the Electricity Market Impacts Associated with the Proposed Northern
12 Pass Transmission Project* (“Updated Analysis”).

13 **Q. Please summarize the key findings of your Updated Analysis.**

14 **A.** After considering capacity market rule changes, I continue to conclude that the Project
15 can create significant wholesale electricity market benefits for consumers in New England. The
16 Project will also continue to create material carbon emissions reductions within New England
17 and yield a more efficient system for the ISO-NE (i.e., as measured by production cost savings).⁵

18 Over the modeling horizon, wholesale electricity market benefits average \$614 million
19 per year for New England. Over the 11-year modeling horizon, this represents a net present value

⁴ The EIA’s Annual Energy Outlook 2016 was released on September 15, 2016.

⁵ LEI’s updated analysis covers calendar years 2020-2030 as opposed to 2019-2029 in LEI’s October 2015 Report. The in-service date of Northern Pass is 2019 but for modeling purposes the Updated Analysis reflects an in-service date of January 1, 2020.

1 (“NPV”) of approximately \$4.6 billion in 2020 dollar terms, using a 7% discount rate.⁶ This
2 translates to approximately \$63 million on average per year in wholesale electricity market
3 benefits for New Hampshire (for comparison, we had previously projected annual wholesale
4 electricity market benefits between \$81 and \$83 million on average in LEI’s October 2015
5 Report). Section 3 of the accompanying report speaks further about our projections of wholesale
6 electricity market benefits and the two components, wholesale energy and capacity market
7 benefits.

8 Production costs savings as a result of Northern Pass are expected to be approximately
9 \$389 million on average per year (please see Section 3.3 of the accompanying report). In line
10 with the energy and gas price trends, this falls between the expected production cost savings of
11 the two gas scenarios presented in LEI’s October 2015 Report, which were \$330 million and
12 \$425 million on average per year.

13 The environmental benefits of the project are largely unchanged since the assumed level
14 of energy flows on NPT is unchanged. The results of my updated modeling show that Northern
15 Pass reduces CO₂ emissions by approximately 3.2 million metric tons in New England (please
16 see Section 3.4 of the accompanying report). Figure 1 provides a summary of the updated
17 benefits compared to LEI’s October 2015 Report.

⁶ LEI is using a 7% discount rate for illustrative purposes, which is the same discount rate used in the LEI October 2015 Report.

Figure 1. Annual Wholesale Electricity Market Benefits Summary (\$ millions in nominal terms)

| Benefit Categories | New England | | New Hampshire | |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Updated Analysis | October 2015 Report | Updated Analysis | October 2015 Report |
| Wholesale Market | (\$millions, nominal) | (\$millions, nominal) | (\$millions, nominal) | (\$millions, nominal) |
| Wholesale Market Benefits (11-yr avg) | \$614 | \$851 - \$866 | \$62.8 | \$81.0 - \$82.5 |
| Energy Market (11-yr avg) | \$88 | \$80 - \$100 | \$8.6 | \$8.2 - \$10.2 |
| Capacity Market (10-yr avg) | \$579 | \$843 - \$848 | \$59.6 | \$79.6 - \$80.1 |
| Production Costs | (\$millions, nominal) | (\$millions, nominal) | | |
| Production Cost Savings (11-yr avg) | \$389 | \$330 - \$425 | | |
| Environmental Benefits | (million metric tons) | (million metric tons) | | |
| CO ₂ Reduction (11-yr avg) | 3.2 | 3.3 - 3.4 | | |

Q. Did you use the same methodology and modeling approach in the Updated Analysis as compared to the analysis documented in LEI’s October 2015 report?

A. Yes. The overall methodology and modeling approach taken to calculate the benefits in the Updated Analysis is unchanged from LEI’s previous analysis in October 2015. We continue to also use the same simulation tools for the ISO-NE energy and capacity markets, with the one change being the FCA simulator has been adapted to reflect the latest ISO-NE FCM rules, like the MRI.

The market benefits of Northern Pass continue to be measured as a function of *the difference in market prices* between the Base Case and the Project Case. The Base Case outlook continues to be a conservatively constructed combination of the most likely set of market assumptions for key drivers like gas prices and system conditions, along with normal system operations (e.g., weather normal demand forecasts from ISO-NE, namely the “50/50” load forecasts from CELT 2016). In reality, it is likely that there will be unusual weather and abnormal system (stress) conditions at some point in the future. A project such as the Northern Pass can provide valuable “insurance” to consumers by mitigating some of the market price impacts of such real world events, as the energy flows on NPT are not expected to be dependent

1 on natural gas prices (or availability of gas pipeline capacity) and the summer peak for Québec is
2 not correlated with that of New England. LEI continues to assume that the New England
3 wholesale electricity market converges and maintains a balanced supply-demand profile over the
4 longer term with new entry occurring when needed, consistent with the parameters that define
5 the new MRI curves. This is also a conservative analysis. To the extent that new entry is
6 constrained, NPT would provide alternative source of supply. In summary, the Base Case
7 continues to represent a future evolution from the current status quo, based on known
8 information for existing supply and demand projections, as well as the response of economically
9 rational investors to the projected market dynamics.

10 **Q. Have you modified any of the project characteristics of Northern Pass?**

11 **A.** No, the project characteristics (such as energy flows and capacity supply obligation
12 (“CSO”) level) have not changed. Based on available information and for ease of modeling, LEI
13 assumed energy transmission would begin on January 1, 2020, and capacity sales would begin
14 with the deliverability period of May 2020 under the Updated Analysis. As a consequence,
15 Northern Pass’s 1,000 MW CSO begins to affect the capacity market outcomes with FCA #12
16 (previously, we had assumed FCA #11). And as a consequence of this shift in modeled start of
17 commercial operations, the Updated Analysis covered an 11-year period from 2020-2030, as
18 opposed to 2019-2029 in LEI’s October 2015 Report

19 **ENERGY BENEFITS**

20 **Q. What is the most impactful market rule change and/ or updated assumption**
21 **affecting wholesale energy market benefits for Northern Pass in the Updated Analysis?**

22 **A.** The most important driver affecting energy price levels and energy market benefits of
23 NPT is the projected cost of fuel and most significantly, the cost of natural gas. The forecast

1 natural gas prices used in the Updated Analysis fall between the two natural gas price scenarios
2 employed in LEI's October 2015 Report. Thus, the resulting New England energy market prices
3 fall between the levels projected under the two scenarios in LEI's October 2015 Report.
4 Consistent with the gas price inputs to the modeling, wholesale energy market benefits also fall
5 in between the range of energy market benefits documented in LEI's October 2015 Report.
6 Please refer to Section 2.1 and Section 5 of the accompanying report for further description of
7 the revised delivered natural gas price outlook.

8 Other important updates for the modeling of the energy market benefits include the use of
9 an updated load forecast from ISO-NE (e.g., CELT 2016) and the change in the least cost
10 technology of generic new entrants. In conjunction with ISO-NE's plan to switch reference
11 technologies in the FCM, the most economic new generation technology is that of a peaker.

12 In general, the lower demand projections reduce the energy market benefits, while the
13 change of technology (from combined cycle ("CCGT") plant to peaking technology) will
14 increase energy market benefits because of the difference in thermal efficiencies and short run
15 marginal costs of CCGTs versus peakers. While LEI has made updates to other inputs such as
16 imports, carbon allowance prices and internal transfer limits, these other updates do not result in
17 significant changes to the energy market outcomes. A more comprehensive discussion of all the
18 updated assumptions can be found in Section 2 of my Report.

19 **Q. Please describe in more detail the wholesale energy price impacts of Northern Pass**
20 **under the Updated Analysis and the resulting wholesale energy market benefits. Please**
21 **explain how they differ from the energy market modeling results presented in LEI's**
22 **October 2015 Report?**

23 **A.** Over the simulated 11-year modeling timeframe of 2020 to 2030, Northern Pass is

1 expected to decrease annual average wholesale energy prices across the New England Control
2 Area (“NECA”) by an average of \$0.7/MWh annually, resulting in approximately \$88 million of
3 wholesale energy market benefits per year for the New England Control Area (“NECA”). Given
4 the composite effect of all the changes, but primarily driven by the updated gas prices, these
5 estimated benefits of \$88 million a year under the Updated Analysis are within the projected
6 range of wholesale energy market benefits presented in LEI’s October 2015 Report (\$80 million
7 to \$100 million per year on average).

8 For New Hampshire wholesale load, the projected energy market benefits total \$8.4
9 million on average per year in the Updated Analysis, which are also within the range of results
10 reported under the two scenarios in LEI’s Report from October 2015.

11 Using a 7% discount rate, the present value of the wholesale energy market benefits is
12 approximately \$657 million (in 2020 dollars) for the entire New England region and \$64 million
13 for New Hampshire.

14 The energy market price reduction in the Updated Analysis (\$0.7/MWh) is slightly lower
15 than the results of higher bound scenario from the October 2015 Report (\$0.8/MWh). The
16 difference in LMPs between the updated Project Case and the updated Base Case reflects the
17 updated natural gas prices, as well as the impact of the Project and other investor response. Note
18 that LEI’s October 2015 Report showed that, over time, energy market benefits “dissipate” as
19 new and efficient CCGTs enter the New England market, displacing less efficient price-setting
20 resources in the supply curve and thereby reducing LMPs. With a modification in the preferred
21 technology in the FCM, our Updated Analysis suggests that new peakers would be more
22 economic than new CCGTs. And as a result, energy market benefits are not falling over time
23 under the Updated Analysis. The full discussion is documented in Section 3.1 of my Report.

1 **CAPACITY BENEFITS**

2 **Q. What is the most impactful market rule change and/ or updated assumption**
3 **affecting the capacity market modeling in the Updated Analysis?**

4 **A.** The most important change affecting capacity prices is the new FCM demand curve (e.g.,
5 the MRI curve), which leads to downward pressure on FCA prices in the short term. We also
6 updated the modeling of the FCM to represent the ISO-NE’s latest determinations about the
7 reference technology and the Net Cost of New Entry (“Net CONE”) of that reference
8 technology. The change in Net CONE also created downward pressure on capacity prices in the
9 short and long-term.

10 The MRI curves have been simulated in LEI’s analysis using information from ISO-NE
11 and the latest market rules. The MRI curves were approved by FERC and have come into effect
12 with FCA #11 in February 2017.⁷ In the Updated Analysis, I adjusted the FCM simulator to use
13 the ISO-NE’s MRI curves for each zone and I also included the FERC approved transitional
14 arrangements. Furthermore, I also adjusted the FCA Simulator for the ISO-NE’s latest estimates
15 of Net CONE for setting the demand curve, although this change will only be implemented
16 starting from FCA #12 (at the earliest).⁸ In addition, imported capacity, new entry and
17 retirements were updated according to the latest available information from ISO-NE and also
18 through the endogenous process of the FCA Simulator. The full discussion of these changes is
19 documented in Section 6 and Section 7 of my Report.

⁷ These market rules did not get approved by FERC until June 2016, and ISO-NE’s plans for these market rules became clear only when they published a discussion paper in November 2015; therefore, LEI could not have included these changes in its original analysis.

⁸ ISO-NE FERC Filing ER-17- 795-000. January 13, 2017.

1 **Q. Are there any other market rules changes and updated assumptions that you have**
2 **reflected in the Updated Analysis?**

3 **A.** I also updated the latest estimate of the Social Cost of Carbon (“SCC”) based on the
4 published information on SCC from the Interagency Working Group’s (“IWG”) report dated
5 August 2016.⁹ The full description of the change is documented in Section 2.3 of my Report.

6 **Q. Please describe in more detail the FCA outlook in the Updated Analysis and the**
7 **resulting wholesale capacity market benefits and how these capacity market benefits differ**
8 **from those contained in the October 15, 2015 report?**

9 **A.** Wholesale capacity market benefits incorporated the MRI curves and ISO-NE’s proposed
10 changes to the reference technology and the Net CONE. Specifically, ISO-NE is looking to from
11 a CCGT-based reference technology to a combustion gas turbine technology (i.e., frame-based
12 peaker). LEI’s Updated Analysis finds that the sale of 1,000 MW CSO from Northern Pass
13 would result in system-wide wholesale capacity market benefits of approximately \$579 million
14 on average per year over 10 year capacity delivery period captured by the forecast timeframe
15 (FCA #12 through FCA #21, or 2020/2021 to 2029/2030). This is similar in magnitude to the
16 findings described in LEI’s October 2015 Report, in which Northern Pass was expected to result
17 in approximately \$843 million to \$848 million on average per year over the modeled timeframe.
18 The key drivers for the lower estimates are changes to the FCM demand curve (use of MRI),
19 reduction in Net CONE, as well as updated new entry (based on resources that cleared FCA # 10
20 and generic new entrants) and updated list of retirements. See Section 3.2 of my Report for a
21 complete discussion of the capacity market results.

⁹ Interagency Working Group on Social Cost of Greenhouse Gases, US Government. Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866. August, 2016. < <https://www.epa.gov/sites/production/>

1 **OTHER BENEFITS**

2 **Q. Please describe your results from modeling production cost savings and how they**
3 **differ from the projections you had included in the October 15, 2015 report?**

4 **A.** Production costs savings as a result of Northern Pass are expected to be approximately
5 \$389 million on average per year. In line with the energy and gas price trends, this falls between
6 the expected production cost savings of the two gas scenarios presented in LEI's October 2015
7 Report, which were \$330 million and \$425 million on average per year. See Section 3.3 of my
8 Report for a complete discussion of production cost savings.

9 **Q. Please describe your result of environmental benefits and why they are lower than**
10 **(or different from) the October 15, 2015 report?**

11 **A.** CO₂ emissions reductions as a result of Northern Pass are expected to be approximately
12 3.2 million metric tons on average per year, compared to 3.3 million to 3.4 million metric tons on
13 average per year in LEI's October 2015 analysis. The CO₂ reductions are a function of which
14 resources are being displaced by Northern Pass (typically gas-fired resources) and the
15 environmental benefits of the project are largely unchanged since the October 15, 2015 report
16 given the assumed level of energy flows on NPT is unchanged. See Section 3.4 of my Report for
17 a discussion of the environmental benefits.

18 **Q. Did you update the local economic benefit analysis?**

19 **A.** No, I did not. Local economic benefits are a function of expected local spending during
20 the construction period (and I have been told by Eversource that expected local spending for
21 construction of Northern Pass has not changed). Once the project starts operating, local
22 economic benefits are primarily a function of the wholesale electricity market cost savings for
23 ratepayers, which as noted above are lower than but similar in magnitude to LEI's Report from

1 October 2015. Given the observed result, we did not re-estimate the local economic benefits.¹⁰

2 **Q. Did you re-consider the insurance value of the project?**

3 **A.** No. The operating characteristics of the Project, such as the projected profile of energy
4 flows on the Project, have not changed. Therefore, the backcast of the Project's insurance value
5 in the face of system stress events did not have to be re-estimated.

6 **Q. Is this Updated Analysis necessarily more accurate than the prior analysis you**
7 **sponsored in October 2015?**

8 **A.** No. As I have said all along, there are uncertainties in forecasting market outcomes ten to
9 fifteen years from today. Key market drivers and wholesale market rules will evolve and change
10 over time. It is unrealistic to assume that any single forecast at any particular point in time will
11 predict the precise market impacts of Northern Pass. However, this Updated Analysis shows that
12 even in the face of shifting market conditions due to changes in underlying drivers and evolving
13 market rules, a project like Northern Pass will create substantial wholesale electricity market
14 benefits in the form of lower electricity costs, benefiting consumers across New England. In
15 addition, the Updated Analysis suggests that Northern Pass still produce significant reductions in
16 emissions of CO₂ within the New England footprint, supporting many states' legislated
17 greenhouse gas emissions reduction goals and overall societal initiatives to tackle the global
18 Climate Change problem. In conclusion, I believe that the Updated Analysis demonstrates that
19 the overall results of LEI's October 2015 Report are still valid. As such, I believe that the
20 findings of LEI's October 2015 Report should continue to be taken into account by the SEC in

¹⁰ Calculating the local economic benefits must also be done sequentially only after finalizing the wholesale electricity benefits. As such, there was insufficient time to conduct this analysis and incorporate it in the Updated Analysis.

1 their decision on the siting application for the Project.

2 **Q. Does your Updated Analysis incorporate the results of FCA #11?**

3 **A.** No, it does not. The work for the Updated Analysis began in December 2016 and
4 concluded in mid-January. FCA #11 occurred on February 6, 2017. The preliminary results of
5 FCA #11 were published by ISO-NE on February 9, 2017. The information currently available
6 is insufficient to model accurately, as we do not know the specific changes in resources. The full
7 results of FCA #11 will not be available until the end of February 2017 or early March 2017.

8 **Q. How did the outcomes of FCA #11 compare with your forecasts in the Updated**
9 **Analysis?**

10 **A.** FCA #11 cleared at \$5.3/kW-month, while we had projected a clearing price in FCA #11
11 of \$6.3/kW-month. The difference between LEI's projected capacity price and realized clearing
12 price was the result of 235 MW of supply, on a net basis. This is a very small difference in net
13 supply – given the total procured amount was over 35,835 MW – essentially a forecast deviation
14 of just over half a percent.

15 There are many underlying similarities between the outcomes of FCA #11 and LEI's
16 projections for FCA #11. For example, there were no generation retirements (permanent delists),
17 consistent with LEI's projections. The fact that only a few small oil-fired plants delisted even
18 when the price breached the Dynamic Delist Threshold of \$5.5/kW-month is also consistent with
19 LEI's capacity model dynamics. Overall, the outcomes of FCA #11 supports LEI's current (and
20 previous analysis) that capacity prices that would occur as a result of the new supply introduced
21 by Northern Pass would not be so low as to trigger retirements.

22 LEI also predicted that imports could be price sensitive to the capacity prices in New
23 England and neighboring regions. For FCA #11, we saw approximately 515 MW fewer capacity

1 imports over the New York AC ties as compared to FCA #10 and ISO-NE staff conjectured that
2 this was a result of the evolving arbitrage expectations between New York and ISO-NE capacity
3 markets.¹¹ LEI also forecasted that there would not be zonal price separation in its forecast under
4 the Updated Analysis, which was reconfirmed by the results of FCA #11.

5 **Q. Is your Updated Analysis still valid given the FCA #11 results?**

6 **A.** Yes. As I stated above, FCA #11 resulted in a system that has approximately 235 MW of
7 additional capacity supply relative to the supply forecast that LEI modeled. While the inclusion
8 of this additional supply may lower the capacity market price outlook, this small additional
9 supply is not expected to materially change other suppliers' response to NPT's capacity supply
10 under the Project Case, and therefore will yield similar capacity market benefits. Energy market
11 related benefits will remain the same as well, as FCA #11 did not result in any new entry or
12 retirements (the net supply surplus appears to be related to demand response, primarily, which is
13 not going to impact the energy market under normal operations). In summary, the results of FCA
14 #11 confirm the major findings from LEI's capacity market modeling in the Updated Analysis.
15 In our opinion, FCA #11 outcomes do not necessitate any additional changes to the forecast of
16 wholesale electricity market benefits of Northern Pass.

17

18 **Q. Does this conclude your testimony?**

19 **A.** Yes

¹¹ UBS Securities LLC. *Conference Call on New England Capacity Auction Results with ISO-NE Management*, February 9, 2017.