

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

SUPPLEMENTAL 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**

April 17, 2017

1 **Qualifications and Purpose of Testimony**

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

3 A. My name is Julia Frayer, and I am one of the partners and the Managing Director
4 of London Economics International LLC (“LEI”), an economic consulting firm specializing in
5 infrastructure industries. My business address is 717 Atlantic Avenue, Suite 1A, Boston, MA
6 02111.

7 **Q. What is the purpose of this supplemental testimony?**

8 A. The purpose of this supplemental testimony is to respond to the analyses
9 conducted by The Brattle Group and Kavet, Rockler & Associates (“KRA”) on behalf of
10 Counsel for the Public (“CFP”), and the pre-filed testimony of Mr. William Fowler on behalf of
11 the New England Power Generators Association (“NEPGA”). Accordingly, I provide an
12 overview of the rebuttal report that is being filed as part of this supplemental testimony.

13 **Electricity Market Benefits**

14 **Q. Please summarize the positions of The Brattle Group and Mr. Fowler.**

15 A. CFP and NEPGA filed testimony in December 2016 in response to the Cost-
16 Benefit and Local Economic Impact Analysis of the Northern Pass Transmission Project
17 prepared by LEI as part of the Application in this proceeding. Subsequently, the New
18 Hampshire Site Evaluation Committee (“SEC”) conducted a series of technical sessions in
19 March 2017, at which LEI was able to ask questions of the witnesses retained by the CFP and
20 NEPGA in order to better understand the testimony filed by those witnesses.

21 Mr. Newell and Mr. Weiss of The Brattle Group, on behalf of CFP, questioned the
22 magnitude of the estimated electricity market impacts benefits created by the Northern Pass
23 Transmission Project (“Northern Pass” or the “Project”), while Mr. Fowler, on behalf of
24 NEPGA, challenged whether the capacity of the Project was deliverable under ISO-New
25 England (“ISO-NE”) rules, as well as other issues related to the magnitude of the wholesale
26 capacity market benefits. LEI believes that the analysis included in the accompanying rebuttal
27 report, as well as the Updated Analysis filed in February 2017, shows that the concerns about
28 LEI’s estimated wholesale capacity market impacts are without merit.

29 **Q. What is your opinion of the concerns raised by The Brattle Group and Mr.
30 Fowler?**

31 A. The analysis included in the accompanying rebuttal report, as well as the Updated

1 Analysis filed in February 2017, shows that the concerns raised about the robustness of LEI's
2 estimated wholesale electricity market impacts are without merit. In particular, based on LEI's
3 Updated Analysis (which updates the wholesale capacity market benefits for the latest capacity
4 market rules), and given the details contained in LEI's rebuttal report (which demonstrates
5 Hydro Quebec Production's ("HQP") ability to supply the capacity and addresses the Minimum
6 Offer Price Rule ("MOPR") for qualifying that capacity on Northern Pass), I have demonstrated
7 that Mr. Fowler's concerns regarding the capacity market benefits are unfounded. LEI's analysis
8 shows that The Brattle Group's concerns (on these same issues) are addressed as well. LEI's
9 rebuttal report also identifies technical flaws and conceptual shortcomings in the independent
10 analyses conducted by The Brattle Group and KRA, which generally lead to an under-
11 representation of the benefits of Northern Pass.

12 **Q. What conclusions do The Brattle Group and Mr. Fowler reach regarding**
13 **electricity market benefits associated with the Project?**

14 A. The Brattle Group and Mr. Fowler primarily focus on the estimated capacity
15 market benefits. They conclude that there will be either technical or economic obstacles in
16 having 1,000 MW of capacity clear the Forward Capacity Market ("FCM").

17 **Q. Do you agree with their conclusions about the capacity impacts of the**
18 **Project?**

19 A. No, I do not agree with the conclusions drawn by The Brattle Group and Mr.
20 Fowler in their respective testimonies. As discussed in Section 1 of LEI's rebuttal report, the
21 primary difference of opinion rests on Northern Pass's participation in the FCM, and whether the
22 1,000 MW of new supply associated with the Project would clear future Forward Capacity
23 Auctions ("FCAs"). Neither The Brattle Group, nor Mr. Fowler, conducted analysis to prove out
24 their concerns – rather they presume hypothetical problems. And in many instances, to support
25 these presumptions, they examined the wrong documents or misconstrued relevant facts about
26 the Project and the shipper, HQP.

27 In order to address Mr. Fowler's and The Brattle Group's suppositions about smaller
28 wholesale capacity market benefits, LEI examined the technical and economic issues raised by
29 these experts quantitatively, using reliable data and undisputed calculation techniques (such as
30 ISO-NE's own models for calculating the MOPR). This analysis is documented in Section 3 of

1 the accompanying rebuttal report. LEI's analysis shows that HQP has sufficient surplus energy
2 and capacity to sell into New England on Northern Pass, without reducing their sales of energy
3 and capacity on other New England interties.

4 There is also no evidence to suggest that Northern Pass would be constrained in
5 qualifying capacity technically or economically, due to the ISO-NE's technical qualification
6 process for new resources or the MOPR. Indeed, LEI estimated the MOPR for the Project using
7 ISO-NE's own template calculations and public data on the Project's costs and operations, and
8 the resulting estimated MOPR is substantially below the projected capacity prices in LEI's
9 Project Case (from the Updated Analysis). Therefore, it is reasonable to conclude that the MOPR
10 should not be limiting on the Project's ability to create the capacity market benefits estimated by
11 LEI. Finally, given the significant economic revenues from these capacity sales, it would not be
12 economically rational for HQP to forego the capacity sales, inasmuch as the expected value of
13 the capacity revenues far outweighs the expected costs of ISO-NE's pay-for-performance
14 scheme.

15 **Q. Did The Brattle Group perform their own capacity market analysis?**

16 A. The Brattle Group created a stylized "model" of the FCM for this engagement
17 that I would characterize as more of an *ad hoc* tool. However, the tool, as developed,
18 undervalues the capacity market impacts of any new supply; not just the impact of Northern
19 Pass. As described in Section 2 of the rebuttal report, The Brattle Group's capacity market tool
20 is overly simplistic and does not reliably project the market outcomes that we have actually
21 observed from past FCAs. In contrast, LEI's capacity market model, which is the proprietary
22 model LEI has developed and refined over time, has been calibrated specifically to real world
23 dynamics that play out in the New England market, including the behavior that represents the
24 economic opportunities and technical constraints of existing resources and new resources.

25 Moreover, the capacity market impacts that LEI forecast for Northern Pass are no
26 different than the capacity market impacts observed in the market for other new gas-fired
27 generation in FCA #9 and FCA #10. In economic theory, the cornerstone of competition in
28 markets is based on the premise of lower prices from new supply. The capacity market benefits
29 associated with Northern Pass fall squarely within this aspect of economic theory and the

1 specific market rules designed by stakeholders, adopted by ISO-NE, and sanctioned by FERC.
2 To conjecture that a 1,000 MW capacity resource would not have any meaningful impact on
3 market prices is completely counter to the foundation of competitive market design.

4 **Q. After having listened to The Brattle Group’s explanations of their analysis at**
5 **the technical session, do you have any other concerns?**

6 A. I have a serious concern about the overall structure of their analysis. It became
7 clear at the technical session that The Brattle Group only examined a narrow sub-group of
8 benefits and intentionally focused on the downside dimension of LEI’s estimate of wholesale
9 capacity market benefits – namely, the conditions under which the wholesale capacity market
10 benefits from Northern Pass could be smaller. Indeed, The Brattle Group conceded that they
11 started with Scenario 1 in their analysis, which is the scenario that is closest to LEI’s estimates,
12 and *then* proceeded to create hypothetical fact patterns that would reduce the wholesale capacity
13 market benefits – all the way down to zero under Scenario 4. However, we also learned at the
14 technical session that they could not assign any probabilities to the alternative scenarios and the
15 hypothetical fact patterns. As discussed in Section 3 and 4 of the rebuttal report, LEI believes
16 that there is no reliable basis for considering the hypotheticals as plausible, let alone likely.

17 We also understood from the technical session that The Brattle Group recognized the
18 potential for other benefits to accrue to the market as a result of Northern Pass, but they had not
19 performed any analysis to quantify those other benefits– even though LEI had examined and
20 quantified some of these benefits (e.g., production cost savings and insurance value). The Brattle
21 Group agreed that they would have - if it had been within their scope of work - estimated these
22 other benefits. Moreover, they also accepted LEI’s estimates of the production cost savings,
23 since those stem from the same energy market simulations that they “blessed” for measuring the
24 wholesale energy market benefits.

25 **Local Economic Impacts**

26 **Q. With respect to the benefits associated with local economic impacts created**
27 **by the Project, what are your issues with KRA’s economic impact analysis?**

28 A. As discussed in detail in Section 5 of LEI’s rebuttal report, KRA’s estimate of the
29 long-term aggregate local economic impact has various input errors and methodological flaws.

1 While KRA and LEI agree on the substantial nature of the construction period-related economic
2 benefits created by the Project, LEI discovered issues with KRA’s calculations (specifically, use
3 of incorrect inputs to the REMI PI+ model) which led them to under-state the local economic
4 benefits to New Hampshire. More importantly, LEI is concerned with the robustness of KRA’s
5 aggregate long-term analysis, which is geared to examining the combined effect of various
6 factors associated with the Project on the New Hampshire economy.

7 In addition to certain erroneous inputs, KRA has made assumptions critical to its analysis
8 that are contrary to the facts – indeed, the assumptions made by KRA departed from the
9 conclusions drawn by CFP’s other expert, The Brattle Group. KRA has also only considered
10 negative externalities in its long term aggregate impact analysis, without quantifying the impact
11 of positive externalities. Finally, the proposed timeframe of KRA’s long-term analysis is far too
12 long in the context of such modeling – the expanding forecast errors make the reported results in
13 the last three decades of the 2016-2060 timeframe especially unreliable.

14 **Conclusion**

15 **Q. In summary, what is your opinion of Mr. Fowler’s testimony and the**
16 **testimony of the witnesses for the CFP?**

17 A. Mr. Fowler has not presented any rigorous analysis to substantiate his position.
18 As shown in the accompanying rebuttal report, his concerns about the Project’s ability to achieve
19 capacity market benefits associated with a 1,000 MW Capacity Supply Obligation are
20 unfounded. As for the CFP witnesses, both The Brattle Group and KRA focus on identifying
21 potential downside risks, monetizing those potential negative effects, and thereby reducing the
22 estimated electricity market benefits and local economic benefits of the Project. The Brattle
23 Group’s downward bias stems from the *ad hoc* tool they created for this engagement and their
24 one-sided scenario approach. Similarly, KRA focuses on quantifying long term impacts, which
25 are mostly negative because of the “what if” factors they introduced, without reasonable
26 foundation or any likelihood assessment. KRA conceded at the technical session, however, that
27 those long term results are “sketchy” and potentially of very limited likelihood and plausibility.

28 **Q. Does this conclude your supplemental testimony?**

29 A. Yes.