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November 17, 2017

By E-Mail & U.S. Mail
Pamela G. Monroe, Administrator
New Hampshire Site Evaluation Committee
21 South Fruit Street, Suite 10
Concord, NH 03301-2429
pamela.monroe@sec.nh.gov

Re: 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

Dear Ms. Monroe:

Enclosed for filing in the above-referenced matter is the following:

1. Counsel for the Public's Memorandum Regarding Correction Provided in Connection With KRA Testimony of 10/11/17.

Thank you.

Regards,

Elijah E. Emerson

Enclosure

cc: Chris Aslin, Esq.
Thomas Pappas, Esq.
New Hampshire Site Evaluation Committee
Service List

Kavet, Rockler & Associates, LLC
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Williamstown, Vermont 05679-9003 U.S.A.
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Fax: 866-433-1360
Cellular: 505-433-1360
E-Mail: tek@kavet.net
Website: www.kavetrockler.com

Memorandum

To: Christopher Aslin, Counsel for the Public, NH Department of Justice

From: Nicolas Rockler and Thomas Kavet

CC: New Hampshire Site Evaluation Committee, Thomas Pappas, Esq.

Date: November 15, 2017

Re: Correction Provided in Connection With KRA Testimony of 10/11/17

Per your request, this memo summarizes corrections made to our April 17, 2017 analysis associated with the proposed Northern Pass Transmission Line, as referred to during our testimony before the Site Evaluation Committee on October 11, 2017, Day 45, pages 79-81 of the SEC transcript.

These corrections are associated with a data entry error for REMI New Hampshire expenditure inputs for purchases of ready-mix concrete used in the construction of transmission tower bases and associated infrastructure.

This correction affects the same 3 tables and pages that were revised with CFP Ex 148A, plus one figure on page 2. Accordingly, the attached revision includes 4 pages (pages 2, 41, 42 and 76 from the original report). The changes are minor, raising our construction period economic impact estimates slightly, and do not materially affect any of our broad findings or change any of our conclusions. We have also attached a version of the revised 4 pages with every change highlighted in yellow, in the event this helps in identifying the specific changes.

Please let us know if you or others would like any further information in connection with this correction.

does not lend itself to formulaic comparison. Where we have modified economic model inputs, it has generally been associated with model specification corrections rather than source data overrides.

In general, the Applicants' economic impact analysis was well-performed, however, model specification errors resulted in an overstatement of employment impacts during the development and construction phase of approximately 15%. Ongoing operational impacts were very close to our estimates, but are relatively small.

The largest differences in net economic impacts stem from considerably less beneficial electricity market assumptions made by The Brattle Group and used in our simulations.[2] In some scenarios, there were no price benefits whatsoever or very minimal benefits. Even where benefits were more substantial, however, reduced or eliminated electric power generation in New England and/or New Hampshire that may be displaced by cheaper Canadian power transmitted by the Project, could result in net negative economic impacts in New Hampshire. This is especially true if plant shutdowns result and happen to be concentrated in New Hampshire. Even in the most "extreme case" scenario run by The Brattle Group, with the greatest benefits to New Hampshire from potential electricity price reductions, net economic impacts were about 30% lower than those presented by the Applicants.

For some Project components, our employment and other economic impacts were higher than those of the Applicants. For example, we included spending assumptions related to estimated property tax payments to state, county and town governments which resulted in hundreds of additional jobs beyond those estimated by the Applicants. We also included longer term impact periods in some analytic components than the 11 year period used by the Applicants, resulting in 40 year impacts from property tax payments and 20 year impacts from the Forward NH Fund.

We did not find the Applicants' stark conclusions regarding the complete absence of any potential negative property valuation or tourism impacts to be credible. While both areas of potential negative impacts are uncertain and difficult to estimate, they both could give rise to negative economic impacts that are substantial.

Some property valuation losses from viewshed impacts associated with the proposed transmission line are likely, and have been the source of vocal local opposition along the proposed route. While burying nearly one-third of the line avoids some of these impacts, it does not entirely eliminate them. Based on the percentage of acreage within the viewshed of the proposed transmission line and associated structures, as estimated by T.J. Boyle & Associates, also under contract with Counsel for the Public in this proceeding, there is potentially more than $1.1 billion in residential property that could be affected by the presence of the line. While some properties with high scenic view amenities could be severely affected and others will have minimal or no negative impacts, the loss in wealth to current property owners within this viewshed could be as much as $15 to $30 million. As these properties sell, they will also exert a negative impact on the future property tax base of the affected towns.

[2] Although the Brattle Group will be submitting updated estimates as supplemental testimony on April 17, 2017, they have stated that, "our updated analysis is not fundamentally different from our original," with respect to retail customer savings.

These distortions are likely to shift some of the estimated economic impact towards local markets, since personal consumption purchases tend to be local (at least initially). On the other hand, the low estimate of intermediate expenditures results in a reduction in purchases from nearby states' markets. Viewed together, however, the total size of the distortions could be relatively small. To correct for this problem, a different set of compensation rates are required.

2. The failure by LEI to nullify intermediate purchases generated by its direct employment entries into the REMI model led to a nearly $330 million overstatement of the New Hampshire and New England regional economic impact (as measured by GDP). In so much as LEI had already identified the intermediate purchases (i.e., electrical cable, structural towers, converter equipment, and substation equipment) as originating outside the New England region, the inclusion of the REMI model's estimation for these and many other materials, goods, and services (many inappropriate to transmission line construction) are unwarranted. We regard the failure to nullify these estimates as an oversight by LEI.

We show the estimated economic impact of the Project on New England and New Hampshire with corrections in place to use "jobs" based direct employment and with REMI's estimates for intermediate transactions nullified since LEI already estimated them outside the model. These estimates are shown in Table 7. As shown, we estimate the Project's impact on gross regional New England output to be $199 million ($2016), about 18% lower than LEI's estimate. For New Hampshire, our estimate of $94 million for gross state product is about 9% lower than LEI's estimate. In terms of job impact, we estimate New Hampshire will see an average of nearly 1,160 jobs during the construction period, more than 15% below LEI's estimate of about 1,370 jobs.

Even after all methodological corrections, it is clear that the construction of the Project will have a major beneficial economic effect on the New Hampshire economy during its four-year construction period, as would be expected with such a sizable investment.

TABLE 7

Construction Period Economic Impact : New England and New Hampshire, Average Annual

Economic Measure	Units	New England		New Hampshire	
		LEI (2015-2019)	KRA (2016-2020)	LEI (2015-2019)	KRA (2016-2020)
GSP	$2016M	$243.4	$199.4	$102.4	$93.6
Personal Income	$2016M	$254.7	$207.2	$112.6	$97.8
Disposable Income	$2016M	$211.9	$172.1	$97.2	$84.2
Employment	Jobs	2,915	2,306	1,367	1,157

Source: KRA, Inc. using the REMI Model

7) Economic Impacts – Potential Electricity Market Effects

The Brattle Group, in their analysis of the Project for Counsel for the Public,[34] generated four scenarios with varying electricity market impacts, including potential electricity price savings, for the six New England states. These potential benefits are an important input to the aggregate economic impact model and were calculated by end-use sector and state. They result in a substantial portion of the potential net economic benefits derived from the proposed Project once construction expenditures conclude.[35]

Benefits from lower electricity prices flow through the regional economic impact model in several ways: They boost disposable income for households and reallocate consumer expenditures away from electricity purchases and towards goods and services that generally have higher local content; They lower costs for businesses, adding to corporate income; and, If sustained over time, they encourage greater business growth by making regional businesses more competitive.

These benefits are included in our economic impact model in much the same way as LEI included them in their original analysis, with similar beneficial effects, however, we assume a supply response to the introduction of lower-priced power that will likely displace existing power generation. This supply response takes two forms: One, an assumed "mothballing" of regional generating supplies equal to the approximate amount of imported NPT energy (1000 MW), and the other, the closure of 500MW of regional power generation, allocated throughout the region based on existing power production, along with 500MW mothballed. The mothballing of generating capacity assumes

[34] "Electricity Market Impacts of the Proposed Northern Pass Transmission Project," by Sam Newell and Jurgen Weiss for the Brattle Group, December 30, 2016

[35] In the LEI analysis, these benefits represented virtually all of the net benefits in the post-construction period

TABLE 24[70]

Aggregate Model Impacts: Selected Project Components for New Hampshire (Annual Averages - Number of Jobs)

Employment

	---------- Project Phase and Selected Years ----------				
	Initial	Near-Term	Mid-Term	Late-Term	Long-Term
Impact Element	*Primarily Construction* **2016-2020**	*Operational Period* **2020-2030**	*Operational Period* **2030-2040**	*Operational Period* **2040-2050**	*Operational Period* **2050-2060**
Construction & Development	1,157	-61	-1	16	19
Electricity Market Effects	40	131	-192	-183	-198
Operations & Maintenance	2	13	8	6	4
Property Tax Effects	66	249	122	64	27
Forward NH Plan	147	170	87	0	0
Tourism Effects	-80	-189	-214	-260	-320
Construction Disruptions	-17	0	0	0	0
TOTAL	**1,315**	**313**	**-190**	**-357**	**-468**

TABLE 25

Aggregate Model Impacts: Selected Project Components for New Hampshire (Annual Averages - Millions of 2016 Dollars)

Gross State Product

	---------- Project Phase and Selected Years ----------				
	Initial	Near-Term	Mid-Term	Late-Term	Long-Term
Impact Element	*Primarily Construction* **2016-2020**	*Operational Period* **2020-2030**	*Operational Period* **2030-2040**	*Operational Period* **2040-2050**	*Operational Period* **2050-2060**
Construction & Development	$94	-$5	$1	$2	$2
Electricity Market Effects	$4	$10	-$30	-$40	-$54
Operations & Maintenance	$0	$2	$2	$2	$2
Property Tax Effects	$5	$19	$10	$6	$3
Forward NH Plan	$8	$10	$5	$0	$0
Tourism Effects	-$5	-$14	-$18	-$24	-$33
Construction Disruptions	-$1	$0	$0	$0	$0
TOTAL	**$105**	**$22**	**-$30**	**-$54**	**-$80**

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