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VIA E-FILING AND HAND DELIVERY

March 2, 2018

Stephen H. August
Presiding Officer
Energy Facilities Siting Board
One South Station
Boston, MA 02110

Re: **NSTAR Electric Company d/b/a Eversource Energy**
EFSB 17-02 / D.P.U. 17-82 / 17-83

Dear Mr. August:

On behalf of Protect Sudbury, Inc., please find enclosed for filing one original and five copies of its Initial Brief.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink that reads "Richard A. Kanoff".

Richard A. Kanoff

Enclosures

cc: Service List, EFSB 17-02 / D.P.U. 17-82 / 17-83

COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD

Petition of NSTAR Electric Company d/b/a)	
Eversource Energy Pursuant to G.L. c. 164, § 69J)	
for Approval to Construct, Operate and Maintain)	EFSB 17-02/D.P.U. 17-82/17-83
a New 115-kV Transmission Line in the Towns of)	
Sudbury, Hudson and Stow and the City of)	
Marlborough and to Make Modifications to an)	
Existing Substation in Sudbury)	

INITIAL BRIEF OF PROTECT SUDBURY, INC.

I. INTRODUCTION

On April 20, 2017, NSTAR Electric Company d/b/a Eversource Energy ("Eversource" or the "Company") submitted a Petition to the Energy Facilities Siting Board ("EFSB" or "Siting Board") pursuant to M.G.L. c. 164, § 69J, seeking approval to construct, operate and maintain an approximately 9-mile, 115-kilovolt (kV) underground transmission line between Eversource's Sudbury Substation and Hudson's Light & Power Department's Substation in Hudson (the "Petition"). The proposed transmission line would traverse primarily through Sudbury and Hudson, and pass through sections of the Towns of Stow and Marlborough. The Company also filed a petition for approval of the proposed line pursuant to M.G.L. c. 164, § 72 ("Section 72 Petition") and M.G.L. c. 40A, § 3 ("Zoning Exemption Petition").¹ Protect Sudbury, Inc.

¹ Section 72 requires the Company to seek approval from the Department of Public Utilities ("DPU") for "authority to construct and use or to continue to use as constructed or with altered construction a line for the transmission of electricity for distribution in some definite area." Under this statute, the DPU must determine that "such line will or does serve the public convenience and is consistent with the public interest." Chapter 40A, § 3, authorizes the DPU to issue zoning exemptions for "[l]ands and structures" to be used by "public service corporations" if such zoning exemptions are "required" and "reasonably necessary for the convenience and welfare of the public." The Town of Sudbury's testimony in this case specifically raises concerns with respect to the Zoning

(“Protect Sudbury”) filed a motion to intervene in this proceeding on June 15, 2017, which the EFSB allowed on June 26, 2017. Protect Sudbury submits this brief in opposition to the Petition.

Protect Sudbury filed testimony of Richard Cote, Robert Hartzel, Matthew Lundsted and Michael Ohl from Comprehensive Environmental Inc., an environmental and civil engineering consulting firm in New England (“CEI”). Exhs. Protect RC/RH/ML/MO-1 and Protect RC/RH/ML/MO-2. CEI’s testimony explicitly addressed concerns with the Company’s cost and routing analysis as referenced herein.

In its Petition (Exh. EV-1) and the accompanying Analysis to Support Petitions before the Energy Facilities Siting Board (Exh. EV-2), the Company identified three possible routes and one alternative route with respect to its proposed transmission line:

- (i) the “Preferred Route” (or “Project”), an approximately 9-mile underground route primarily along an inactive rail corridor (“MBTA ROW”) owned by the Massachusetts Bay Transportation Authority (“MBTA”). Exh. EV-2 at 1-5. The Preferred Route begins at Eversource’s Sudbury Substation and travels northwest along the MBTA ROW through Sudbury, Marlborough, Hudson and Stow.
- (ii) the “Noticed Variation,” an overhead transmission line traversing the same MBTA ROW as the Preferred Route. Id. at 5-6. The Noticed Variation was selected by ISO-New England’s (“ISO” or “ISO-NE”) as the designated transmission line to be developed and constructed by Eversource.
- (iii) the “Noticed Alternative Route,” an underground route approximately 10.3 miles long within public roadways. Id. at 6. The Noticed Alternative traverses in public roads between Sudbury and Hudson Substations in the Towns of Sudbury, Stow and Hudson.

Exemption Petition. Exh. SUD-DFN/WFO-1 at 3-8. Protect Sudbury shares the Town’s concerns and reserves its right to further address the Section 72 Petition and the Zoning Exemption Petition in its Reply Brief.

- (iv) the National Grid Alternative (the “NEP Alternative”), an above ground transmission line traversing an operational utility right of way and extending approximately 26.1 miles through the towns of Millbury, Grafton, Shrewsbury, Westborough, Southborough, Framingham and Sherborn. Exh. EV-2 at 3-2 to 3-7. The NEP Alternative primarily involves converting and re-conducting transmission lines within an existing electrical easement and substation.

The EFSB should reject Eversource’s request to construct the Preferred Route (or Noticed Variation) and the Noticed Alternative. For the reasons set forth herein, the Siting Board should determine that Eversource has failed to meet its burden of proof to demonstrate: (1) the Company’s compliance with ISO-NE’s requirements; (2) the cost effectiveness of the proposed transmission line compared to viable alternatives; (3) the proposed line’s superiority to the available alternatives on the basis of balancing environmental impacts, reliability and cost; and (4) compliance with the Commonwealth’s Smart Growth/Smart Energy policy.²

II. STANDARD OF REVIEW

In order for the EFSB to approve the Company’s Petition, Eversource has the burden of proof to demonstrate compliance with M.G.L. c.164, § 69J.³ In applying the statutory mandates,

² Protect Sudbury reserves its right to address additional issues in its Reply Brief; its failure to discuss any issues in its Initial Brief does not indicate any agreement on or acquiescence to any point not raised herein.

³ M.G.L. c.164, § 69J, provides in pertinent part that Eversource must satisfy the following requirements: all information relating to current activities, environmental impacts, facilities agreements and energy policies as adopted by the commonwealth is **substantially accurate and complete**; projections of the demand for electric power, or gas requirements and of the capacities for existing and proposed facilities are based on **substantially accurate historical information and reasonable statistical projection methods** and include an adequate consideration of conservation and load management . . . plans for expansion and construction of the applicant's new facilities are **consistent with current health, environmental protection, and resource use and development policies as adopted by the commonwealth**; and are consistent with the policies stated in section sixty-nine H to **provide a necessary energy supply for the commonwealth with a minimum impact on the environment at lowest possible cost . . .** that it is satisfied as to the adequacy of the applicant's capital investment plans to complete its facility; the long term economic viability of the facility; the overall financial soundness of the applicant . . . that plans including buffer zones or alternatives thereto for the applicant's new facility are consistent with current health, environmental protection and resource use and development policies as adopted by the commonwealth . . . M.G.L. c.164, § 69J (emphasis added).

the EFSB requires that the applicant demonstrate that: (i) additional energy resources are needed; (ii) on balance, its proposed project is superior to alternative approaches in terms of reliability, cost, and environmental impact, and in its ability to address the identified need; (iii) it has considered a reasonable range of practical siting alternatives and that the proposed site for the project is superior to a noticed alternative site in terms of cost, environmental impact, and reliability of supply; and (iv) its plans for construction of its new facilities are consistent with the current health, environmental protection and resource use and development policies developed by the Commonwealth. See New England Power Company d/b/a National Grid, E.F.S.B. 13-2/D.P.U. 13-151/D.P.U. 13-152 (2014), at 5.

The Company is required to meet its burden through substantial evidence. See G.L. c. 164, § 69P; Alliance to Protect Nantucket Sound v. Energy Facilities Siting Bd., 457 Mass. 663 (2010). Substantial evidence is evidence that "a reasonable mind might accept as adequate to support a conclusion." G.L. c. 164, § 69P; G.L. c. 30A, § 1(6); Town of Andover v. Energy Facilities Siting Bd., 435 Mass. 377, 386 (2001).

III. ARGUMENT

A. Introduction

The Company's Project is an approximately 9-mile, 115 kV underground transmission line extending across an environmentally sensitive area on the MBTA ROW. The Company chose this route notwithstanding better available choices. In making its unfounded decision, Eversource ignored ISO-NE's process for assessing and evaluating competing transmission line options, selected the option that would have the most environment impacts and create the most

environmental risk, failed to follow longstanding precedents that sited new transmission lines either under-street or on existing transmission rights of way, and disregarded the input of the host communities. The Company so decided with the full knowledge that other alternatives were on balance better choices, with less environmental damage and risk, at the same or lower cost (based upon the estimates provided), and with community support.

There is simply no way to explain, on the record here, why Eversource would persist with such an ill-advised and controversial choice. Pursuing a significant infrastructure project with such uncertain costs and significant environmental impacts as posed here, given the availability of alternative more balanced options, is not rational and cannot be justified. Protect Sudbury respectfully requests that the EFSB exercise the judgment that Eversource did not, and deny the Petition as filed.

In support of the Project, the Company posits a series of unsubstantiated claims:

1. That the proposed Project is the result of a transmission system study process undertaken by ISO-NE and its working group to “identify and address” transmission reliability requirements and develop solutions. The identified solutions were vetted in an extensive stakeholder process and included the Project. Exh. EV-2 at 1-3.
2. That the proposed Project will address ISO-NE’s need for the Project within the Marlborough Subarea of Subarea D, which area includes the Town of Sudbury. Id. at 1-4; Id. at 2-1.
3. That the proposed Project is “the best approach” from a “cost, environmental impact, reliability and constructability perspective” as compared to Project alternatives, including: (1) a no-build alternative; (2) two transmission solutions including the Project and the NEP Alternative; and (3) non-transmission alternatives (“NTA”). Id. at 1-5.

4. That the proposed Project costs less than the Noticed Alternative Route, although it has greater environmental impacts. The proposed Project has a higher cost and less environmental impacts than the Notice Variation. Id. at 1-6; Id. at 5-1.
5. That the proposed Project cost is approximately \$96 million (2018) including the Sudbury Substation, based upon a conceptual level cost estimates (-25%/+50%) (Id. at 3), is less than the comparative costs of the Noticed Alternative (conceptual estimate at \$110.4 million and the NEP Alternative conceptual estimate at \$116.1 million. Id. at 3-4, 5-84.
6. That the proposed Project will facilitate the development of a multi-use rail trail system for public use managed by DCR. Id. at 1-1, 1-7.
7. That the Proposed Project was selected following an extensive “outreach effort” with federal, state and municipal officials. Id. at 1-8.

While the Company attempts to paint a picture that the proposed Project has been reviewed and vetted by ISO-NE, is best approach from a “cost, environmental impact, reliability and constructability perspective,” is least cost, has community support and provides a community benefit with respect to the rail trail, the record tells a different story. The Project has not been substantively reviewed by ISO-NE, is not least cost, has more environmental impacts than the Noticed Alternative and Noticed Variation, and is opposed by the host communities. Moreover, there are viable alternatives to the Project (including NTA options) that will better serve the purported ISO-NE requirements.

The Company’s filing, in many ways, subverts well established principles and precedents. The EFSB, with a long history of evaluating transmission line requests, has not considered, as is the case here, a petition to approve a transmission line (and no utility has requested that it approve), that: (i) has not been vetted by ISO-NE; (ii) is not least cost as compared to alternatives; (iii) has more environmental impacts than the alternatives; (iv) utilizes a

undisturbed environmentally sensitive area as opposed to an under street (Noticed Alternative) or existing right-of-way option (NEP alternative); and (v) is universally opposed by host municipalities. In short, as is set forth below, this case is unique and represents a significant departure from past utility filings and precedents. Accordingly, the Company's Petition falls far short of the EFSB's requirements, is not consistent the public interest, and should be rejected.

B. The Company's Proposed Project Will Create the Most Impacts

The Company has made an extensive effort to demonstrate that the construction, operation and maintenance of a 9-mile transmission line in Sudbury and Hudson will have less environmental impacts than a transmission line located under streets or within an existing utility right of way. In days of hearings, offering volumes of documents, its witnesses have attempted to assure the Siting Board that the Project will do no harm—that construction on the MBTA's ROW would not create risks or increase cost, would not significantly damage and alter wetlands and vernal pools, would not interfere with rare species, would not obstruct on-going public recreation use, would not disrupt the local water supply, and is embraced by local stakeholders. In sum, the Company asserts, compared to alternative options, that the Project is least cost and on balance, has the least environmental implications. See generally Exh. EV-2.

The record tells a different story. The Project will have dramatic short and long term environmental impacts and these impacts are much more significant as compared to the environmental impacts of the Noticed Alternative or the NEP Alternative. Indeed, it is axiomatic that construction and operation on an otherwise undeveloped parcel will have more impacts than construction under-street or on a developed utility right of way. The comparative impacts of the three alternatives as set forth below make this clear:

Project

The Project would be sited on “one of the largest and most pristine natural resource areas” in the area, with over “3,000 acres of permanently preserved land” on a site “as close to a wilderness area as can find in Boston Metrowest.” Exhs. Hudson-PH-1 at 6; SUD-DMD-1 at 5-20. Primarily open space, used extensively as a recreational area adjoining extensive conservation resources, the proposed route includes part of the Assabet River National Wildlife Refuge, the Desert Natural Area, the Marlboro-Sudbury State Forest. Id.; Exh. SUD-MJN/RMG-1 at 38-40. It crosses the Fort Meadow Brook and is in close proximity to water supplies. Exh. HUD-PH at 6. Over all, the Project as proposed would impact environmentally sensitive and protected areas including bordering vegetative wetlands, bordering land subject to flooding, riverfront areas and 100 foot buffer zones. See Exh. EFSB-W-7(1); Exh. SUD-MJN/RMG-1 at 10-11. Moreover, in addition to the impacts to wetland resource areas listed above, the Project would permanently affect rare species, cold-water fisheries, vernal pools, scenic roads, public water supplies, and damage protected conservation land/open space. Id.; SUD-DFN/WFO-1 at 7-; Exh. Hudson-ER-1 at 3-7; Exh. SUD-MJN/RMG-1 at 18-48. In addition, the Project would result in the loss of extensive mature forest land and vegetation and increase the risk associated with increased flooding and pollution. Exh. Hudson-PH at 7-8; Exh. SUD-MJN/RMG-1 at 18-48. Further, the Project route is known to be contaminated with a yet to be determined quantity of hazardous materials which increases environmental risks (and expense) associated with removal and disposal of highly unsafe materials. Exh. Protect-RC/RH/ML/MO-1 at 9-11; Exh. SUD-MJN/RMG-1 at 47-50. Finally, the Project would permanently destroy and damage scores of trees and other vegetation, in close proximity to abutting homes and businesses, and indefinitely alter the terrain. Exh. SUD-MJN/RMG-1 at 53-56.

Noticed Alternative

In contrast, the under-street Noticed Alternative has none of the significant environmental impacts associated with the Project. The Noticed Alternative has “zero impacts on wetland resource areas and buffer zones, groundwater or public water supplies, [] wildlife habitat, rare-species, conservation land uses and abutting historic or archeological resources.” Exh. SUD-MJN/RMG-1 at 10-11; 52-53. The Noticed Alternative poses no risk of flooding, damage to aquifers, significant destruction of trees and vegetation, or contamination from hazardous materials. Most of the impacts relate to temporary inconveniences associated with short term construction under streets, primarily related to traffic disruption. Id. at 53-54. Eversource fails to acknowledge that the traffic disruptions from construction of the Notice Alternative are temporary while the impact of the Project on the natural environment is “significant” and “permanent.” Id. Nevertheless, the EFSB has long recognized the advantages of underground under-street alternatives as compared to other options. See Russell Biomass, LLC and Western Massachusetts Electric Company, EFSB 07-04/ D.P.U. 07-35/07-36 at 42-43 (2009) (“Overall, given its permanent impact advantages, the alternative route underground design would be preferable to the primary route with respect to environmental impacts”).

NEP Alternative

The NEP Alternative’s impacts relate primarily to tower replacement and reconfiguration along an existing transmission power corridor. Exh. SUD-MJN/RMG-1 at 53-54. While there would be temporary wetland impacts associated with temporary placement of swamp mats necessary to install new towers and minimal tree clearing, there would be less environmental impact with the NEP Alternative than with the Project as proposed. Id.; see, also, Exh. Protect-RC/RH/ML/MO-2 at 21-22. For example, as with the Noticed Alternative, there is no risk to

groundwater or public water supplies, wildlife habitat, rare-species, conservation land uses and abutting historic or archeological resources.

In short, the record demonstrates that the Project would cause extensive damage to the environment, particularly as compared to the alternatives. In order to accept the Company's claims to the contrary, the Siting Board has to ignore the extensive and credible testimony of expert witnesses for Protect Sudbury, the Town of Sudbury and the Town of Hudson and the united voices of town officials with substantial concerns about Project impacts. Given the strong testimony in this case, there is no basis for the EFSB to accept the unsupported and unfounded assertions of the Company in support of the Project.

As set forth below, the Company's claims to the contrary are without merit. The Company's conclusions regarding the Project's cost is unsupported by ISO-NE and by the record and its assertions that on balance the Project has less environmental impacts than the alternatives not only defies common sense but also rests on a flawed analysis and unfounded assumptions. Accordingly, its Petition should be rejected.

C. The Company Has Not Demonstrated that the Project Has Been Reasonably Evaluated by ISO-NE

In its filing, the Company described the historical process utilized by ISO-NE to evaluate the available transmission alternatives to address the transmission requirements in the Marlborough Subarea. According to the Company, during the period beginning in 2010, ISO-NE identified solutions to transmission needs and in March 2012 selected "a new 115-kV transmission line between the Sudbury and Hudson Substations as the preferred solution." Exh. EV-2 at 3-1. Following an updated process, with the issuance of the Greater Boston Area Transmission Solutions Study ("Solutions Study") in 2015, ISO-NE again selected "a new 115-kV transmission line between the Sudbury and Hudson Substations as the preferred solution."

Id. According to the Company, ISO-NE evaluated and selected the Project as the “preferred transmission alternative.” Id. at 3-2.

The Company also indicates that ISO-NE evaluated the Project in the Solutions Study as compared to the NEP Alternative. Id. at 2-1, 3-2 -3-3. Suggesting implicitly (and falsely, as set forth below) that ISO-NE compared the Project and the NEP option, the Company offers in its filing a unilateral comparison of the NEP option, referenced in this case as the NEP Alternative (updated by NEP at Eversource’s direction and expense), and the Project. The Company concludes that the Project: (i) has a lower cost at \$96 million with less environmental impact than the NEP Alternative; and (ii) provides the advantage of a rail trail. Id. at 3-4. Both alternatives would meet ISO-NE’s need. Exh. EFSB-PA-2.

The Siting Board is familiar with the ISO-NE transmission line review process and has long relied upon the ISO-NE’s review of least cost and reliability; the EFSB has correctly assumed that any transmission project proposal would be reviewed and evaluated by ISO-NE before it is submitted for its review. See e.g., NSTAR Electric Company d/b/a Eversource Energy, EFSB 14-04/D.P.U. 14-153/14-154, at 8-20 (2017). The EFSB is aware that during the development of the ISO-NE’s Solutions Study process, the Company and ISO-NE are required to identify and evaluate transmission options, identify the lowest cost solution to be included in Solution Study models and in the Plan Applications approval process. Id. at 19. In short, the Company is obligated, as the EFSB has assumed, to have any proposed solution analyzed by ISO-NE before any submittal to the Board for approval.

In fact, notwithstanding the applicable precedents (and Eversource’s statements to the contrary), ISO-NE did not review the Project or the NEP Alternative as filed here. ISO-NE reviewed an overhead line on the MBTA ROW (the Noticed Variation) at an estimated cost of

ranging from approximately \$40 million to \$59 million as compared to an alternative option to re-conductor existing lines submitted by NEP on its existing ROW at a cost of \$60 million.⁴ At no time did ISO-NE or any of its committees evaluate the Project (underground on the MBTA ROW at a cost of \$91 million) as proposed here and the NEP Alternative (as configured here) at \$116.1 million.

Eversource circumvented well-established ISO-NE procedures which require stakeholder review of competing projects and comparative costs. Eversource failure to vet the Project with ISO-NE represents a significant departure from well-established precedent and a significant exception to other cases reviewed by the EFSB in the past. In the absence of any review, EFSB should not apply the deference it may routinely show to transmission proposals that have been reviewed and evaluated by ISO-NE. In fact, it should deny the Petition on this basis alone.

The following review will demonstrate that Eversource has rejected every opportunity to submit the Project for ISO-NE review and, instead, has engaged (and continues to engage) in the fiction that the Noticed Variation is the project moving forward. This false narrative has allowed Eversource to avoid not only stakeholder and ISO-NE review of its Project as proposed, but also any analysis and confirmation by ISO-NE that the Project is in fact “the lowest cost solution” for addressing transmission need in the Marlborough Sub-Area under consideration here. The Company, under these circumstances, should not have filed for approval of the Project in this case and the EFSB should so find.

⁴ Although the NEP option considered by ISO-NE is similar to the NEP Alternative in this case, there are differences. Exhs. Protect-10; EFSB PA-16.

The ISO-NE Process

In its filing, the Company emphasizes the importance of ISO-NE as the foundation of regional transmission line planning and procedure. Exh. EV-2 at 2-5 to 2-15. As is well established in numerous EFSB decisions, ISO-NE is the regional entity designated by the Federal Energy Regulatory Commission with operational authority over the high-voltage transmission system within the ISO-NE footprint. Id.; See also, EFSB 14-04 at 8-20. This well established and documented ISO-NE process, including ISO-NE's consideration of Needs Assessment Studies and Solution Studies, is well known to the Siting Board. EFSB 14-04 at 12-19.

The Stakeholder Process

A key aspect of the planning process is keeping stakeholders apprised of the initiation and on-going status of reliability planning studies. This is done principally through an elaborate process including periodic presentations given by ISO-NE and planning staff as part of PAC review and evaluations by the Reliability Committee pursuant to the I.3.9 process, as further described below. Tr. 7 at 1223-1227. The process requires that stakeholders have the opportunity to review and comment on study assumptions, modeling techniques, and preliminary and final results of Needs Assessment Studies and Solutions Studies. The PAC process in particular is the process "to influence a decision or have other factors considered." Tr. 8 at 1227. In the instant proceeding, where the cost and design of the Sudbury-Hudson 115kV line design changed so dramatically, it would seem self-evident that Eversource would have submitted those material changes and revisions to PAC, subject to PAC's confirmation that the Project was the cost-effective solution given alternatives.⁵

⁵ Even though cost is typically the most heavily-weighted metric when comparing alternative solutions, there is no evidence that ISO-NE ever compared or evaluated the Project as compared to the alternative solutions identified for mitigating the reliability issue identified in the Sudbury Load Pocket. Had cost comparisons as required by the ISO-NE Planning Procedures been undertaken, perhaps a different alternative that involved solely upgrading existing

The Sudbury-Hudson Line Review Process-Initial PAC Review

As noted, the PAC process is instrumental in the evaluation of transmission line alternatives and solutions. Beginning in 2008, ISO-NE, the PAC and stakeholders assessed a myriad of different proposals to address regional reliability needs.⁶ As initially assessed, the Sudbury-Hudson 115 kV line (“H-S Line”) was a component of the first set of transmission alternatives identified by ISO-NE to address reliability issues in Sub-Area D.⁷ At an early stage (July 2009), the H-S line was considered as a possible underground line and compared to the National Grid re-conductoring and conversion of 69 kV Lines to 115 kV. Exh. Protect 33(3). As part of these early assessments, ISO-NE considered a choice of converting and upgrading existing facilities and new lines as follows:⁸

- *Convert 69 kV Lines to 115 kV:*
 - W-23 (Fitch Rd to Northboro Road)
 - W-23W (Northboro Rd to Marlboro)
 - M-39 (Wachuset to Fitch Road)
 - N-40 (Pratts Jct to Fitch Road)
 - G-7G (Northboro Rd to Marlboro)
 - X-24 (Millbury to Northboro Road)
- *New 115 kV UG Cables from Sudbury to Hudson*
- New 345 kV 345 or 230 kV from Lexington to Waltham and tie 230 kV supply into Sudbury via 230/115kV transformer at Sudbury
- New 115 kV from Framingham to Speen Street
- New 115 kV from Waltham to Sudbury

facilities instead of constructing a new transmission line would have scored higher and been viewed as the preferred solution.

⁶ Numerous ISO-NE documents and presentation materials were prepared as part of the Greater Boston Needs Assessment and Solutions Study. See e.g., Exh. EV-2, Vol. II; Exh. Protect-33. Unless otherwise discussed herein, these assessments focused solely on an overhead line (the Noticed Variation) as proposed by Eversource.

⁷ In the early stages of the study process, the H-S Line fell into the portion of the study area referred to as the Western Suburbs. The H-S Line was proposed to mitigate line overloads and low voltages in the Sudbury, Marlboro, Framingham and Northborough Areas. This study area would then be referred to as Sub-Area D.

⁸ See Exh. Attachment Protect-33(3) (emphasis added).

In March 18, 2010, the PAC continued to consider regional alternative transmission solution options: Option A contained the H-S Line without any indication of whether it was underground or overhead, while Options B & C contained variations of the NED option (converting 69kV lines to 115kV). Other options presented included an option for Plan A (H-S Line) as an overhead line and for Plan D an option for an 115kV line extending for 10 miles underground in public streets. Exh. Protect-33(6) at 7.

In this timeframe, the ISO-NE process specifically identified and assessed both an underground and under-street option for the H-S Line as compared to the NEP option. In addition, Eversource (for an overhead proposal) and National Grid (for its re-conductoring related work on its existing lines) submitted cost information. Exh. Attachments EFSB-PA-22(1)(2). Notably, the stakeholder process recognized the implicit difficulty of siting an overhead line on the MBTA route “with no existing ROW/potential to use the [MBTA] corridor.” Exh. Protect-33(6) at 23. Nevertheless, Eversource did not submit any information related to an underground option and this option appears to have not been evaluated going forward.

PAC Review – 2012 through 2015

By 2012, the PAC continued to focus on completing the Greater Boston Solutions Study and, in January 2012, for the first time presented cost estimates for review with respect to alternative solutions under consideration to address the reliability needs of the Marlboro Sub-Area. Exh. Protect-33(10) at 21. The two options considered are summarized below:

Marlboro sub-Area Alternative Cost Comparison

- Alternative 1
 - Converting the X-24 69kV to 115kV from Millbury to Northboro Rd.
 - Ancillary benefit of this alternative eliminates the need to refurbish X-24 line due to asset condition
 - Re-conductor the 455-507 Northboro Rd. to Sherborn 115kV line
 - Re-conductor the E-157E Northboro Rd. to East Main St. 115kV line
 - Approximately \$60M

- Alternative 2
 - Build new Sudbury to Hudson 115kV line
 - Refurbish the X-24 Milbury-Northboro Rd. 69kV line (cost TBD)
 - Approximately \$41M

The presentation indicated that both alternatives provided adequate system performance and on the basis of least cost (\$41 million vs. \$60 million), Alternative 2 (MBTA ROW, overhead), was selected at this time as the Preliminary Preferred Solution. No detailed cost estimate information validated these costs.⁹ See Attachments Exh. EFSB PA-22(1)(2). Nor was there any further consideration, as noted in 2010, regarding whether the overhead MBTA ROW option would be approved by the MBTA.

Three months later, in March 2012, the PAC again considered a listing of preferred solutions for all of the Greater Boston area. With this update, the H-S Line combined with the refurbishment of X-24 lines at 69kV, was selected as a preferred alternative for the Marlboro subarea at an estimated cost of \$41 million plus an estimated \$7 million for the X-24 Refurbishment project (this update did not include any costs associated with the Hudson Light and Power Department's Substation upgrade). At the time, there was no comparative cost estimate presented for the NEP Project and no consideration of an underground alternative (e.g., on the MBTA ROW or under-streets); however, even at this time the comparative estimates between the overhead MBTA and NEP option were narrowing. The \$48 million estimate, not including the Hudson Substation, would seemingly warrant (as adjusted for

⁹ Without detailed cost estimate information, there is no basis to assume that the Eversource and NEP proposals included the same level of detail and that the cost of rebuilding and re-conductoring the NEP facilities would be more expensive than 9 miles of previously undeveloped 115 kV construction and 15 miles of 69 kV refurbishment. Moreover, without specific cost estimate information it is not clear at this point if there was any evaluation respect to, among other things, environmental impacts, mitigation, special construction considerations through the wetlands, hazardous materials, quantity of structure replacements required for re-conductoring and right-of-way costs.

substation work —approximately 5 million as noted below) another comparison with NEP. Nevertheless, even though the two options at that point were relatively comparable, Eversource did not request, nor did ISO-NE undertake, any review. Most significantly, it was the Project Variation (overhead on the MBTA ROW), and not the Project, that was under consideration at this time.

By June 2014, the Eversource overhead project was estimated to cost virtually the same cost as the NEP option as proposed less than 2 years earlier. In a presentation for the “Disclosure of Cost Estimates Submitted to ISO-New England for the Greater Boston Upgrades,” the H-S Line was estimated to cost \$46 Million in a table listing “Common Costs – New Facilities.”¹⁰ This included a footnote that this did not include Hudson Light & Power’s termination costs. In a separate table for “Common Costs – Upgraded Facilities,” the costs for the refurbishment of the 15 miles X-24 lines was included at \$8.5 million. Combined, these two elements of the overhead MBTA ROW project, are estimated at \$54.5 million. Exh. Protect 33(15); Tr. 7 at 1187-88. Even assuming a nominal cost for the Hudson Light and Power project, by June 2014, the Eversource H-S Line and the NEP alternative were for all practical purposes equal. This was confirmed in October 2015, at which time these three elements combined were estimated to cost \$59.5 million, virtually the same as cost as the NEP configuration just a few years prior. Exh. Protect-B; Exh. Protect-C; Tr. 7 at 1192-3.¹¹

¹⁰ The Company had submitted an update of its project cost and schedule for its OH line (Noticed Variation) in PP4 format to ISO-NE dated February 12, 2014. Tr. 8 at 1203-04; Exh. Attachment Protect-16(1); Exh. RR-PS-7. The Company’s 2014 update was the first update since 2010 when the Company and NEP submitted cost information for the Noticed Variation and NEP Alternative. Exh. RR-PS-7.

¹¹ The \$8.5 million cost of the X-24-line refurbishment was carried forward and is listed as the construction estimate in ISO’s project list. The cost of the H-S Line was still estimated at \$46 million and the Hudson Light and Power portion was listed at \$5 million.

Notwithstanding the possible equivalency of the cost of the overhead MBTA option (e.g., the Noticed Variation) and the NEP option in the period 2012-2015, ISO-NE did not undertake any comparative review of two options during this period in 2015 when the Solutions Study was completed. Tr. 8 at 1206-07, 1289. Similarly, there were no requests by the Company, ISO-NE or other parties to revisit the overhead proposal and the NEP option based upon more refined project costs available in 2015. And, needless to say, the Project was not under any consideration as a solution at all.

In 2015, with two virtually identical estimates on the table, ISO-NE had the obligation (as did Eversource) to reevaluate and explicitly compare the overhead MBTA ROW project and the NEP option. The bottom line here is that Eversource failed to call attention to substantial increases in its estimate and ISO-NE neglected to undertake the review on its own. Moreover, as noted below, Eversource failed to inform ISO-NE that the MBTA was unlikely to approve the overhead option.

Such a review was possible in 2015. According to witness Andrews “Once a solutions study is completed and the preferred solutions are announced, consideration of the previous alternatives stops at that point, **unless somebody brings new information to the table—and to my knowledge that did not happen.**” Tr. 8 at 1206-7. Without the benefit of any additional information, the ISO took no action to evaluate the two projects, with virtually identical cost estimates, and the only project remaining under consideration was the Eversource overhead project. Tr. 8 at 1207.

Eversource Failed to Disclose Information to ISO-NE

In fact, new information provided to ISO-NE at this time would have revealed not only that the NEP project was competitive but also that Eversource was having difficulty obtaining

MBTA permission for its overhead line. By 2015, it was crystal clear that Eversource's overhead project was not getting MBTA approval. Inexplicably, during this key period, Eversource failed to disclose to ISO-NE that its plan to use the MBTA ROW was floundering. A brief summary will make this clear.

MBTA Process

In July 2012, while ISO-NE was evaluating the overhead transmission line proposal, Eversource commenced discussions with the MBTA regarding an easement for an overhead line on the MBTA's ROW. Exh. Attachment Protect-2-58(S-1)(1) at 389, 391; Tr. 5 at 905-907.¹² These discussions and Eversource's ongoing diligence regarding an overhead line on MBTA's ROW continued into 2014. Exh. Attachment Protect-2(58(S-1(1)) at 85, 392, 892; Tr. 5 at 911-12. Early in 2014, Eversource was still evaluating whether it could even "design the line on the existing conditions" on the MBTA ROW. Exh. Attachment Protect-2-58(S-1)(1) at 85, 892.

By mid-2015, Eversource's plan for an overhead route on the MBTA ROW began to unravel. The Department of Conservation Resources ("DCR") (with rights on the MBTA ROW for a bike path) would not support an overhead option; and although the MBTA was open to either an underground or overhead option, it seemed at this point that an overhead line was simply not viable.¹³ Id. at 1170. DCR's opposition to an overhead line was detailed in meeting minutes dated June 1, 2015: "DCR not supportive of OH options. It would change the character of the bike path." Id. at 1170; Tr. 5 at 914-915.

¹² At the time, Eversource anticipated approval by the EFSB and other regulatory agencies with "actual construction not expected before 2014." Id. Eversource also asserted it was beginning discussions with DCR about rail trail initiatives, involving other projects ("existing Eversource facilities between Sudbury and Waltham."). Id. at 1341.

¹³ At this point, although the MBTA was open to either underground or overhead, it seemed unlikely to take a position contrary to DCR and noted it needed to "check with DCR." Id. There was no reason for Eversource to conclude at this time that the MBTA would allow its overhead line on the MBTA ROW.

As discussed earlier, this is a pivotal time in the review of the H-S Line by ISO-NE. The PAC process was in a final and critical stage. The alternatives under consideration were competitive in cost. Both would serve reliability requirements. Even assuming that ISO-NE would not further evaluate comparative costs (as it should), Eversource had a responsibility to “bring new information” to ISO-NE that the overhead line, being evaluated at that time in the ISO-NE’s PAC process, had hit a roadblock. Eversource withheld critical information from ISO-NE at an important time regarding the viability of its lowest cost solution.

Instead, Eversource seemingly ignored DCR’s resistance to an overhead line and plunged ahead.¹⁴ *Id.* at 37. Via email dated December 12, 2015, Eversource stated its plan to submit an overhead proposal to the EFSB, with an underground route as an alternative. *Id.* at 111. The MBTA was not impressed; by 2016, the overhead option was dead, again. On October 12, 2016, Eversource was informed that “the MBTA is under the impression that the use of the MBTA’s land in Sudbury to Hudson is subsurface.” Exh. Attachment Protect-2-58(S-1)(1) at 668. Similarly, in a meeting on October 26, 2016, between the MBTA and Eversource, the MBTA reiterated its “understanding that [] Eversource was building underground.” *Id.* at 1228. From the period beginning in 2015 and continuing into 2017, Eversource did not inform ISO-NE that its selected overhead MBTA option could not be built as approved. And, Eversource failed to submit its Preferred Route for review by ISO-NE as required.

At this point, prior to filing its EFSB Petition, Eversource should have informed ISO-NE that it could not build an overhead project on the MBTA ROW. It was, after all, Eversource’s obligation to inform ISO-NE, and ISO-NE’s responsibility to evaluate transmission line choices.

¹⁴ In October, 2015 Eversource proposed to stake the route with tower locations and undertake a site “walk-down.” *Id.* at 37.

At the very time ISO-NE was making its decision on this overhead transmission line, Eversource knew or reasonably should have known, that the overhead transmission line as approved by ISO-NE could not be built. Nevertheless, inexplicably and inexcusably, it took no action.

Eversource was apparently trying to avoid ISO-NE review of any alternative to the overhead option and keep its options open outside of the ISO-NE process. As it explained to the MBTA in October 2016 as part of a discussion of the DPU process, Eversource wanted the “Option Agreement to reflect the option to acquire rights for an UG, OH or and UG/OH design configuration to be approved by the DPU.” *Id.* at 1228. In other words, Eversource hoped to present to the regulators (EFSB) both the overhead and underground alternatives, and it wanted the Option Agreement to be consistent with its filing, even understanding that the UG option was a no-go to the MBTA. At this time, Eversource clearly intended to avoid any ISO-NE review of the Project and instead present the Project (UG) to the EFSB.

In early January 2017, in comments on the Option Agreement draft, the MBTA stated that it “wanted more clear language that the Option Agreement and the Easement Agreement are for subsurface only.” *Id.* at 582; Tr. 5 at 924-925. At this point, even Eversource concedes it was MBTA’s preference that the line be underground. Once again, the Company should have informed ISO-NE that it could not build the overhead transmission line approved in the Solutions Study as least cost.

More troubling, Eversource has still not formally notified ISO-NE that the underground MBTA project is not feasible and that it seeks to construct the Project. It continues to engage in an ongoing fiction that it is seeking to build an overhead line. It continues to reject any suggestion that it should submit the Project to ISO-NE now. As set forth below, Eversource’s actions in not seeking approval by ISO-NE violates ISO-NE rules, allows Eversource to avoid

stakeholder review of its project and exposes ratepayers to local costs. In essence, by its inaction, and in filing the instant case, Eversource seeks cover from its failure to allow a specific review of the Project at ISO-NE and requests instead that the EFSB undertake the ISO-NE's responsibility to review the Project.

ISO-NE Policy Required Eversource To Submit the Project for ISO-NE Review

ISO-NE rules and procedures, the Proposed Plan Application (“PPA” or “I.3.9. Study”) and the Transmission Cost Allocation (“TCA”) process (ISO-NE’s Planning Procedure 5), provide for continued evaluation of Eversource’s proposal to construct a transmission line.

The purpose of the PPA process is to show that the proposed system changes will not have an adverse impact to the system or to any existing transmission or generation facilities. Tr. 8 at 1208. Eversource submitted a PPA on March 22, 2016, and received PPA approval on June 9, 2016, for its overhead project. Exh. EFSB C-42 (1); Tr. 7 at 1208-9. There is no cost component associated with the PPA process. Tr. 8 at 1211.

The TCA process relates to regional cost recovery. On May 1, 2017, Eversource submitted a request to the ISO-NE’s reliability committee for regional cost recovery for its overhead line. Exh. Attachment RR-PS-8(1); Tr. 8 at 1213.¹⁵

In addition, Procedure for Pool Supported PTF Cost Review (“Planning Procedure 4” or “PP4”) sets forth the process by which ISO-NE evaluates the cost of regulated transmission projects. Tr. 8 at 1231. Exh. EFSB-1 at 1. PP4 sets forth the requirements for regional cost recovery and the need to complete a TCA form for projects with a capital cost of greater than \$5 million. Tr. 8 at 1232; Exh. EFSB-1 at Table 1.

¹⁵ Eversource’s TCA request was submitted as part of the 39 other greater Boston projects at the request of ISO-NE and in coordination with other companies. Tr. 8 at 1219.

The PP4 process specifically requires Eversource to submit alternatives and project changes in scope to ISO-NE directly. Specifically, with respect to alternatives, Section 1.6.1.3(i) of PP4 provides that the proposed project and any feasible and practical transmission alternatives be included and discussed in the TCA process.¹⁶ The language is clear—feasible and practical alternatives—including the alternatives as presented in the instant case. Eversource concedes that although the Project and the under-street alternative (Noticed Alternative) are feasible and practical alternatives to the overhead line neither were included in the TCA application as filed.¹⁷ Tr. 8 at 1248-51.

With respect to scope, ISO-NE clearly requires, as part of the PPA process, that changes to project scope be identified and accounted for by ISO-NE. Exh. EFSB-1, Attachment D, at 6-7; Tr. 8 at 1268-1269. According to ISO-NE rules, scope changes should be included as part of submitted PPA application. Scope changes include among other things design criteria changes, regulatory and permitting definition changes (e.g., undergrounding transmission or distribution lines) and changes to the project to accommodate compliance measures. Exh. EFSB-1,

¹⁶ Section 1.6.1 (c)3(i) reads as follows: A discussion of why the Project was selected over other transmission alternatives, with a description of the benefits of the proposed Project over other transmission alternatives from an operational, timing of implementation, cost and reliability perspective.

(i) The proposed Project, and any feasible and practical alternatives that were considered, including those offered in the most recent RSP report and, if applicable, discussed at the PAC.

- Notes: (1) A feasible and practical transmission alternative means a transmission alternative that is feasible and practical from an engineering design and construction perspective. An alternative that is not or may not be approved by a siting or local review board may still be considered a feasible and practical transmission alternative.

In addition, Section 1.6.1 (c) 3 (ii)-(v) requires a discussion of cost estimates, operational impacts, and operating costs for the project and practical alternatives.

¹⁷ Similarly, Eversource agrees that the NEP Alternative is feasible and practical design alternative. It submits that this alternative was presented and evaluated by ISO-NE as part of a “regurgitation” of what was previously provided in the needs assessment and solutions study reports. Tr. 8 at 1250-1251. There is nothing in the record that shows that ISO-NE evaluated the National Grid alternative as compared to either the updated \$59.5 estimate for the overhead MBTA ROW project (as of 2015) or with respect to the Project (underground on the MBTA ROW). The TCA process was designed to require this type of review by ISO-NE prior to any of the overhead MBTA line (or the Project).

Attachment D at 7. The Company admits that a change from overhead as proposed originally to the underground Project constitutes a scope change as defined. Tr. 8 at 1268-1269. It concedes that the ISO has the responsibility to assess material changes in cost, in design and scope, that the transmission owners have responsibility to present that information and that ISO-NE would undertake that evaluation. Tr. 8 at 1269-1271. This information should have been submitted as part of the Company's PPA application in 2016.¹⁸

Notwithstanding these clear requirements, there has not been **any** review of the Project by ISO-NE. Tr. 8 at 1229. No formal consideration as part of the ISO-NE's review process. As Eversource's stated in questions about the stark contrast in review of the Project vs. Eversource's the overhead Noticed Variation:

Q. Just to be clear and to bring this into the same context as the overhead project alternative: The project, underground MBTA right-of way, has not been reviewed by ISO-NE as a concept project?

A. Specifically, no.

Q. And there has been no I.3.9 consideration?

A. That's correct.

Q. And there's been no TCA submittal?

A. That's correct.

Tr. 8 at 1269-1271

¹⁸ The ISO-NE process, as set forth in PP4 Section 1.2, provides that the applicant (i.e., Eversource) may request further guidance from ISO prior to submitting the TCA. Although Eversource concedes that ISO-NE encourages communication (so "they don't have to reject it with comments or anything"), Eversource did not reach out to ISO-NE in any formal way about significant revisions to the H-S Line changes in design, cost and scope. Tr. 8 at 1245.

Eversource's failure to present the Project to ISO-NE has unnecessarily created a risk to ratepayers that the costs of the Project, in excess of the \$45 million submitted in the TCA process, will be localized. Although the Company claims it will submit an application and argues that the costs of the Project be regionalized (Tr. 7 at 1000; Tr. 8 at 1240-1241), a plain reading of the applicable rules suggest otherwise and highlights the risks of the Company's approach to ratepayers. Exh. EFSB-1, Attachment A (PP4 specifically sets forth the criteria (and a high standard) for recovery of regional vs. local costs).¹⁹ In short, the Company's "hide-the-ball" approach has unnecessarily exposed its ratepayers to higher rates.

The Company's inconsistent approach in presenting and advocating for two different projects, *i.e.*, overhead at ISO-NE and the Project in the instant proceeding is virtually without precedent.²⁰ Tr. 8 at 1263-1264. The Company really has no excuse for its conduct and its failure to report to ISO-NE.

Notwithstanding specific and explicit ISO-NE requirements to the contrary, the Company determined that its failure to approach the ISO-NE with information about the Project is "normal." Tr. 8 at 1245-1246. It simply asserts that an underground project is "technically

¹⁹ In cases like this, where an overhead line is proposed and approved by the ISO, the ISO policy provides that the costs be localized because the transmission line selected *i.e.*, the Project (i) cost more with equal performance than the overhead line under consideration and/or (ii) the Project included underground transmission cable, which is selected (a) at the direction of a local or state siting board, or (b) to address other local concerns, and the cost of the overhead transmission lines is less expensive, taking into account all relevant costs. Exh. EFSB-1, Attachment A, para. 1,3, at 17. The Project would appear to be a text book application of localized costs given the Company's explicit rationale that the Project was selected to address other (local residents/host communities) concerns and would be approved at the direction of the EFSB. The Company admits that it has no control over ISO-NE's determination regarding local costs, has no basis to conclude that ISO-NE would go in different direction, and there is precedent for ISO-NE to localize costs. Tr. 8 at 1242-3.¹⁹ All of this would be avoided if the Company had disclosed, beginning anytime following mid-2015, that the overhead option was not feasible and ISO-NE needed to evaluate and select another project alternative. Rejecting the Petition as requested by Protect Sudbury would eliminate any risk to ratepayers created by Eversource's inaction. Tr. 8 at 1264.

²⁰ Although the Company points to its pending Roxbury to Needham case as similar, it is not. There was no alternative presented to the Siting Board in that case that should be presented to ISO-NE as is the case here—the variation (alternatives) in the Roxbury-Needham resulted from changes in length of the same project as the route was adjusted to encompass a longer length under-streets route in Needham. In short, the Roxbury-Needham project is simply not comparable to the change from overhead as selected by ISO-NE to the Project as filed here.

feasible” (the “technical equivalence of the two options”) and there is nothing “for [Eversource] to go back to ISO-NE with and discuss with them.” Tr. 8 at 1246-1247. According to Eversource, it is normal for the ISO-NE to be reviewing a \$40-plus million overhead line (that cannot be sited) while the real line, i.e., the Project, at \$96 million, is being proposed, for the first time in local and state proceedings. Tr. 8 at 1247-48.²¹ The Company’s response here is unavailing.

In the absence a required ISO-NE review, the EFSB should reject the Petition outright. There is nothing “normal” in this filing where Eversource: (i) failed to present the Project to ISO-NE for any evaluation or review at any time; (ii) submitted an overhead project to ISO-NE that could not be built; (iii) put ratepayers at risk for localized cost; and (iv) requested and required that the EFSB evaluate a transmission line alternative that had not been vetted by ISO-NE. The EFSB should reject Eversource’s unprecedented and blatant attempt to circumvent the ISO-NE review process and unnecessarily expose its ratepayers to localized costs.

D. The Company Has Not Met Its Burden to Show that Its Proposed Project Is Superior to Alternative Approaches in Terms of Cost

The Siting Board generally decides among competing transmission line projects based upon least cost. See e.g., Western Massachusetts Electric Company, EFSB 08-2/D.P.U. 08-105/08-106, at 83 (2008). As noted in Section A above, this typically occurs **after** the ISO-NE has undertaken a least cost review of various transmission projects and alternatives, has reviewed the cost estimates

²¹ Q. So, one of the elements here, then, is you’re not approved to build anything; you have an overhead that ISO-NE is looking at 40 million; you have an underground proposal here at 96 million; you have an under-street proposal also being considered here at another cost number. And, those are all things in play, and the only thing the ISO is paying attention to right now in any formal way is the overhead project at 40 million—40-plus million?

A. That’s correct. Well, that’s where it was left with them, yes.

Q. And that’s a normal thing?

A. Yes.

Tr. 8, 1247-1248.

presented for the preferred project and alternatives as set forth in PP4, has circulated the estimates for review by PAC and stakeholders, and has selected the transmission project solution as part of the Solutions Study. Ultimately, in most cases this means that the least cost project proposed to the Siting Board is the same project ultimately reviewed and selected by ISO-NE as part of the Solutions Study as least cost. See, for example, EFSB 14-04 at 18-19, (ISO-NE identified the proposed project “as the lowest cost solution for addressing both the transmission and distribution system needs [],” and therefore the project was “included in its Solution Study models as well as in its ongoing studies for the Greater Boston Proposed Plan Applications approval”).

This case is a unique and unprecedented aberration of the normal rules. Here, the Company has not proposed the least cost project previously selected by the ISO-NE. The originally preferred, ISO-NE approved, least cost Noticed Variation cannot be constructed on the MBTA ROW. Additionally, because Eversource has refused to engage the ISO-NE in any discussion or review of an alternative option, there is no ISO-NE endorsed least cost solution available for the EFSB to review. For the first time the EFSB is asked to approve a project that has not been vetted by ISO-NE and evaluated as least cost as part of a Solutions Study and PPA process. In short, there are no current precedents.

Under the circumstances, and, assuming *arguendo*, that the Siting Board does not reject the Petition (for the reasons set forth in Section A above), the EFSB should conclude that the Company has not met its burden to demonstrate least cost given its use of inherently inaccurate conceptual estimates, its failure to further refine the estimates to high levels of accuracy (notwithstanding EFSB’s clear guidance), its failure to adequately assess risk, and the clear record evidence that the Project, as compared to alternatives, is not least cost. In addition, in the absence of ISO-NE review as discussed, the Siting Board should give more weight to the inherent inaccuracy of the estimates

used in this case and to environmental impacts as discussed herein of the Project vs. the Noticed Alternative or NEP Alternative than otherwise may be the case had Eversource presented the Project to ISO-NE.

Conceptual Estimates are Inherently Inaccurate

In its filing, the Company presents conceptual estimates to determine the cost of the Project, the Noticed Variation, the Noticed Alternative, and the NEP Alternative. Exh. SUD-C-16; Exh. EV-2 at 3-4. Eversource states that its conceptual level estimates (-25 to +50%) for the Project are consistent with ISO-NE's PP4. Exh. PROTECT-44. Furthermore, Eversource relies upon its historical experience, indicative quotes from manufacturers and consultation with civil contractors to develop its cost estimates. Exh. EFSB C-31.

Conceptual estimates are usually based upon some measure of unit cost—in this case Eversource assumed a combined conduit and cable unit cost (\$/mile) for the Project (\$9.4M), Noticed Variation (\$4.5M), and the Noticed Alternative (\$10M). Exh. SUD-C-16. Eversource's assumptions are typical of a conceptual cost estimate that is only intended to provide an "order of magnitude" value. As such, these conceptual cost estimates are based upon broad-based cost indices (i.e., RS Means Construction Cost Estimating). Exh. SUD-C-16. These national cost indices rely upon a wide range of projects that are only as accurate as the information available and as complimented by current regional project experience. Exh. Protect-RC/RH/ML/MO-1 at 14.

On the basis of its conceptual estimates, Eversource submits that the Project (as compared to the Noticed Alternative) is the least cost and should be approved. Exh. EV-2 at 5-85.

Notwithstanding Eversource's assertion to the contrary, conceptual estimates, as used in this case, are inherently inaccurate, are based upon incomplete information and fail to reasonably account for

site conditions. Accordingly, Eversource cannot demonstrate it has properly determined least cost, and Eversource's use of conceptual estimates should be rejected.

As CEI explained, conceptual estimates are an early stage rough order of magnitude estimate used primarily to determine the feasibility of a project quickly or to screen alternative project designs at the very early stages of the planning process. These types of estimates are generally prepared using only basic criteria such as generic unit cost factors. Exh. Protect-RC/RH/ML/MO-1 at 5, 14.

As early stage evaluations, conceptual estimates are based upon minimum information and therefore inherently contain a wide range of variability. Id. at 5. For example, these estimates are utilize limited design or engineering information and therefore omit many key assumptions regarding material costs, labor costs, production rates, construction conditions and overall competitiveness of the construction industry. Id. Moreover, conceptual estimates lack specific information regarding equipment and quantities for materials and contractor labor and equipment vendor information. In addition, these estimates do not include a definitive scope of work and do not consider site specific information including subsurface conditions, environmental, permitting, easements, logistics, labor studies, material laydown, land, and other local considerations that all could impact the price and vary by project. Id. at 5, 14.

More specifically, significant information regarding the Project and the Noticed Alternative related to cost is not included in the estimates. For example, as CEI reports, cost and assumptions regarding subsoil characteristics, including geotechnical reports or environmental studies (to determine the risk and cost of digging underground) soil reports (identifying hazardous materials and the possibility for significant change occurring when the soil investigations are completed) and "specialty construction" areas such as directional drilling, river

crossings and highway crossings, all of which can significantly impact costs, are not included. Exh. Protect-RC/RH/ML/MO-1 at 7-8.

Given the lack of definitive information, conceptual estimates are inherently uncertain. This level of uncertainty is reflected in the wide range of -25% to + 50% assumed for these types of estimates. Moreover, with the wide range and variation of the competing projects (under-street, underground and on an existing utility ROW) conceptual estimates are not helpful in evaluating cost estimates for project alternatives, particularly where, as here, the project estimates are relatively close together in range of costs. Id. at 6. If conceptual estimates are to be used at all, it would be more accurate to compare the cost ranges of the candidate routes, rather than the specific costs estimates, in any evaluation. Id. at 7.

Moreover, there are other factors that make the use of conceptual estimates as comparative estimates problematic. The unit costs assumed in conceptual estimates do not account for the project specific differences among the different alternatives under consideration here. For example, as CEI explains, Eversource fails to take into account that conceptual cost estimates for underground utility construction (Preferred Route and Noticed Alternative) are typically more variable than conceptual cost estimates for above ground utility construction on existing utility rights-of way (NEP Alternative). Exh. Protect-RC/RH/ML/MO-1 at 14-15. Underground utility construction inherently poses additional risks and unknowns in comparison to above ground utility construction on existing utility corridors, due to the inability to fully know subsurface conditions until construction is underway. Id. Subsurface investigations performed during design provide some insights into subsurface conditions and reduce the unknowns and risks, but do not eliminate the unknowns and risks. Id. Conversely, above ground construction on an existing utility right of way are minimally influenced by subsurface

conditions (i.e., only for pole/tower footings) and consequently, even conceptual estimates would be less variable. Id.

In short, conceptual estimates lack many significant project specific variables and data that increase the inaccuracy of the estimates. This lack of information and detail is designed to be captured in the wide range in conceptual estimates (minus 25% to plus 50%). These elements may vary per project and increase the cost estimate of the Project or decrease the cost estimate of another candidate route. In addition, the absence of detailed information at this stage makes it difficult to determine if there is enough relevant information to accurately rank the cost estimates.

The EFSB is well aware of problems using conceptual estimates and has admonished Eversource for relying on them in support of cost analysis. See EFSB 14-04 at 60-61 (in criticizing the use of conceptual estimates “[t]he Board reminds Eversource that the provision of timely, high quality, and reliable cost estimates is essential for effective review of project alternatives.”). Nevertheless, just a few months later Eversource submitted this case, with conceptual estimates, ignoring the Siting Board’s explicit directive to use more defined planning grade estimates.²² This is particularly problematic here where, as discussed, there has not been any ISO-NE review of costs.

Eversource’s Conceptual Estimate Understates Demonstrated Risks Relating to Site Conditions and Contamination on the Project Route

Beyond the high range of variability associated with Eversource’s estimates as discussed above, Eversource’s estimates do not include important information necessary to evaluate Project costs. The majority of the Project Route extends along an unused rail corridor (previously

²² CEI also recommended the use of more defined estimates. Exh. Protect-RC/RH/ML/MO-1 at 22-23.

operational for 90 years) and is likely heavily contaminated with “OHM [residual oil and hazardous materials] including metals, pesticides and petroleum constituents carcinogenic polycyclic aromatic hydrocarbons. Id. at 12, citing Exh. EFSB-HW-6(S-1)(1) at page 2).²³ Although Eversource’s consultant confirmed the inherent contamination risks associated with railroad rights-of-way and with the Project site specifically, these significant risks and associated costs have not been included in the conceptual estimates. Exh. EFSB-HW-6(S-1)(1).

This level of significant contamination in the Project site will likely increase costs beyond even the upper range of the conceptual cost estimate. Exh. Protect-RC/RH/ML/MO-1 at 11-12. Conservative estimates of the cost component related to addressing just off-site transfer and disposal of contaminated material are estimated to cost in excess of \$10.3 million. Id. at 13. Most significantly, the accuracy of the conceptual estimates, even at the high end of the range (-25% to +50%), based upon generic indices and an assumed cost per mile, may not reflect the substantial costs related to site specific construction and contamination. At the very least, the potential contamination on the site creates an unnecessary risk, unknown cost and needless uncertainties as compared to other alternatives. Exh. Protect-RC/RH/ML/MO-1 at 12-13. Other witnesses in this case echo this concern. Exh. SUD-DMD-1 at 16.

²³ According to Eversource’s consultant: “[H]istorical railroad ROWs are often impacted with residual OHM, including metals, pesticides, and petroleum constituents such as polycyclic aromatic hydrocarbons (PAHs).” Exh. EFSB-HW-6(S-1)(1). Contaminants that could impact environmental conditions along the ROW include arsenic from pesticides, lead from the burning of leaded fuels, petroleum products that dripped from trains, coal ash from engines, creosote from ties and PAHs from diesel exhaust.” Id. at 2. Consultant VHB identified 5 state-listed contamination sites that are directly within the limits of the Project area and an additional 9 state-listed contamination sites that are in the vicinity of the Project and have the potential to impact the project based on their location, the severity of contamination/release, type of contaminants released and regulatory status. The contamination associated from these state-listed sites varies from oil releases (i.e., Fort Devens Training Annex, formerly an EPA Superfund site) to chlorinated volatile organic compounds (i.e., Raytheon disposal site, Coatings Engineering disposal site). Id.

Eversource’s Project Ranking Fails to Account for Variations and Risks

Notwithstanding the uncertainties, Eversource simply ranked the candidate routes from lowest to highest, based upon a single cost estimate value for each candidate route as shown in Table 4-10 in Eversource’s filing. Exh. EV-2, Table 4-10, at 4-34. This approach understates the significance of the unknowns as discussed above and suggests a level of definitiveness to what are otherwise (by nature of the limited information) widely variable conceptual estimates.

Eversource ignores the obvious and important overlap and cost equivalency between the Project and other project alternatives. This cost equivalency is shown in CEI’s Table CEI-1 which shows the complete conceptual cost estimate range for each candidate route (estimate minus 25%, estimate plus 50%). Exh. Protect-RC/RH/ML/MO-1 at 16-17. Based upon the conceptual cost ranges for each candidate route (versus the single cost estimate value), it is clear that the conceptual cost ranges for the Preferred Route and the Noticed Alternative Route options have significant portions that overlap, indicating: (i) a cost equivalency across a wide range; and (ii) that further refinement with additional data of the cost estimate of the Project and Notice Alternative (and NEP Alternative) is necessary in order to reasonably rank these candidate route based upon cost. *Id.* at 16.

Table CEI-1: Candidate Route Conceptual Cost Estimates (-25%/+50%)

Candidate Route	Cost Estimate (millions)	Rank	Possible Low Estimate	Possible High Estimate
			Estimate minus 25% (millions)	Estimate plus 50% (millions)
2B: MBTA ROW (UG) to Wilkins PREFERRED ROUTE	\$91.0	7	\$68.25	\$136.50
11: Route 20 to Green Hill to Hudson NOTICED ALTERNATIVE	\$110.4	13	\$82.80	\$165.60

Id., at 17, Table CEI-1.

Given the significant overlap of these projects, it is premature and unreasonable to rely on these conceptual estimates for any decision relating to comparative costs. The chart demonstrates why it is only reasonable to use the presented cost information (Exh. EV-2, Table 4-10) for initial screening of candidate routes and narrowing of the options for further consideration, rather than for final selection of the project. It is apparent that the two projects on the basis of the information in the record are comparable in costs across a wide range. It is not reasonable, without additional information, to rank them based upon cost using conceptual information. Accordingly, on this record, the EFSB should determine that Eversource has not met its burden to demonstrate that the Preferred Route is least cost.

The Project is Not Least Cost

Even assuming, *arguendo*, that conceptual estimates should be used in this case to compare transmission alternatives, the Project is the most costly choice, as compared to the Noticed Alternative and the NEP Alternative. In reaching a contrary conclusion, Eversource ignores the demonstrated variance that can result in any comparison of the conceptual estimated cost of its Project as compared to the alternatives and erroneously ranks the alternative routes based upon a single value (conceptual cost estimate) rather than on the complete cost range for any given candidate route. Specifically, Eversource relies on comparing the estimated cost of the Preferred Route at \$91 million to the estimated cost of each alternative (Noticed Variation at \$44.2 million, Noticed Alternative at \$103.6 million and NEP Alternative at \$116.14 million) without considering the high degree of inaccuracy stemming from the -25%/+50% conceptual cost estimate. Id. at 20. Eversource implicitly and incorrectly assumes that conceptual estimates are inherently accurate,

even though by definition, the estimates are only accurate around an assumed range and then only if site conditions are known.

The inherent variability of conceptual estimates must be considered by the EFSB, as set forth below. The relative similarity in costs in conjunction with the assumed inaccuracy stemming from the -25%/+50% conceptual cost estimate results in a conclusion that all project estimates are equivalent within the ranges assumed by the conceptual estimate.

Table CEI-2

Line No.	Estimate Description	CANDIDATE ROUTE and COST ESTIMATE (cost expressed in \$millions)				Notes
		UG MBTA	OH MBTA	UG Streets	NEP Alternative	
		Preferred Route	Noticed Variation	Noticed Alternative		
		(a)	(b)	(c)	(d)	
1	Conceptual Estimate (per Eversource)	91.000	44.200	110.400	116.140	Source for NEP Alternative cost information is NSTAR
2	Adjusted Estimate at -25%	68.250	33.150	82.800	87.105	Line 1 x 0.75
3	Adjusted Estimate at +50%	136.500	66.300	165.600	174.210	Line 1 x 1.5
4	Alternatives at -25% compared to Project at Conceptual Estimate	NA	(57.850)	(8.200)	(3.895)	Column (b), Line 2 minus Column (a), Line 1
5	Alternatives at -25% compared to Project at Conceptual Estimate +50%	NA	(103.350)	(53.700)	(49.395)	Column (b), Line 2 minus Column (a), Line 3

Id. at 21, Table CEI-2.

Most significantly, this table demonstrates that the Project may in fact be highest cost. At the very least, there is no record evidence here to support any determination based upon comparative costs that the Project is least cost. As CEI states:

Consider the scenario, for example, where the NEP Alternative comes in at the low-end of the conceptual cost estimate range. This puts the NEP Alternative at a

cost of \$87 million ($\$116 \text{ million} \times 0.75 = \87 million). Even if the Preferred Route cost estimate turned out to be 100% accurate, at \$91 million, the Preferred Route would be \$4 million more expensive than the NEP Alternative. Likewise, consider the Noticed Alternative coming in at the low-end of the cost estimate accuracy range. This results in the Noticed Alternative costing \$82.8 million, some \$8.2 million lower than the Preferred Route at its estimated \$91 million cost. **Now imagine if the Preferred Route comes in at the high-end of the accuracy range (which is certainly conceivable given the lack of sufficient information). Then the Preferred Route costs \$136.5 million (\$91 million multiplied by 1.5 = \$136.5 million) which is more than the cost of any of the alternatives at their respective stated cost estimates.** *Id.* at 20 (emphasis added).

On Balance the Company's Petition Should Be Rejected

Even assuming, *arguendo* that conceptual estimates should be used, and that the Project is less costly (which Protect Sudbury does not concede), given the demonstrated impacts of the Project versus the alternatives, the Siting Board should reject the Project and determine on balance that another alternative is the better choice. The EFSB has previously determined that a more expensive route on balance was preferable to the alternatives because, as in this case, it had fewer environmental impacts and community strong community support. New England Power Company, EFSB 97-3, at 71-72 (1998).

In short, the Company's position that conceptual estimates should be used in this case should be rejected. Given the inherent inaccuracy of the estimates, conceptual estimates should not be used to compare different alternatives as is the case here. Moreover, even assuming conceptual estimates are appropriate, the Company has failed to demonstrate that the Project is least cost. Further, even assuming the Project is least cost, on balance, other more costly routes are preferable because, as noted, these alternatives have fewer environmental impacts. Accordingly, there is no reasonable basis to conclude that the Project is least cost and Eversource's analysis should be rejected.

In rejecting the Petition, the Board may wish to direct Eversource to submit the Project and alternatives to ISO-NE for consideration as part of a revised PPA.²⁴

E. The Company Has Not Met Its Burden to Show that the Proposed Route Is Superior to Other Project Alternatives

Section 69J requires the Siting Board to review alternatives to planned projects, including other site locations. As part of its review, the Siting Board requires the petitioner to demonstrate that it has considered a reasonable range of practical project and siting alternatives and that the proposed facilities are sited at locations that minimize cost and environmental impacts while ensuring reliable energy supply.

The Company's approach involved identifying candidate routes, undertaking an environmental analysis (to compare environmental impacts and constructability constraints in the candidate routes), cost analysis, and reliability analysis. Exh. EV-2 at 4-3. The Company also purports to have had numerous meetings soliciting public input. *Id.* at 4-4.

In its Scoring Analysis, Eversource includes 17 criteria within three major categories: Developed Environment, Natural Environment, and Constructability. Exh. EV-2 at 4-15 to 4-16. Eversource estimated the magnitude of environmental impacts and assigned an environmental score (or "ratio score" as defined by Eversource) to each environmental criterion (Eversource normalized the impacts so that the scores varied from 0 to 1). Exh. EV-2 at 4-15 to 4-16. Furthermore, Eversource assigned a weight to each criterion ranging from 1 to 5 (1 being least important and 5 being of highest importance) to take into account the relative importance of the criteria. *Id.*

²⁴ Although Eversource has stated it has no intention of updating its estimates for the Noticed Variation or for the Noticed Alternative, it admits that such a review is feasible. Exh. EFSB C-3. ISO-NE may be interested in evaluating a more refined comparable estimate of alternatives. These further evaluations would provide additional data to allow further refinement of cost estimates for the Preferred Route and for other candidate routes. Without additional information, there is really no reasonable basis to conclusively rank and ultimately select the Preferred Route as compared to other options, on the basis of cost.

According to Eversource, it assigned the weights based on its reported experience and the results of its outreach program. Id.

Eversource assigned a weight of 5 (highest importance) to most criteria dealing with residential impacts, sensitive receptor impacts, traffic congestion, natural resource impacts dealing with tree clearing, wetland impacts and state-listed rare species habitat impacts. The scores assigned for the magnitude of environmental impacts or “ratio score” as defined by Eversource were based on resources impacted by each route, i.e., number of residential building affected, areas of tree clearing, wetland areas affected, and so forth. Id. To illustrate, if route A has 5 trees removed and route B has 10 trees removed, the ratio score of route A would be 0.5 and route B would be 1. Another example with respect to estimating the magnitude or “ratio score” for residential land uses includes identifying the number of residences directly abutting the property boundary of the MBTA right-of-way or public roadway easement along the alternative routes. Should route A have 5 residences abutting and route B have 10 residences abutting, route A would receive a score of 0.5 and route B would receive a score of 1. Each of the criteria has its own methodology for estimating its ratio score. For each criteria, the ratio score is relative to the maximum value among all the candidate routes. The ratio score should be independent of the weights given to the criteria. The ratio score denotes the magnitude or level of impact for that route while the weight denotes the importance of the criteria to the stakeholders. Id.

As set forth below, Eversource’s analysis is biased. Eversource has manipulated the weights and criteria such that the Project, with significant long term environmental impacts, has a better score than the Noticed Alternative (as an under-street option with virtually no environmental impacts) and the NEP Alternative with minimal long-term impacts. As set forth below, its analysis unreasonably included constructability, fails to distinguish between short-term or construction

impacts and long-term impacts associated with the alternative routes, ignores the comparative benefits of the NEP Alternative and fails to consider stakeholder inputs. Accordingly, the Siting Board should reject Eversource's analysis.

Eversource Unreasonably Included Constructability Considerations

As noted, Eversource includes "Constructability" as one of its three major categories. As set forth in CEI's testimony, Constructability criteria are temporary, site-specific construction considerations (trenchless crossings, existing utilities, hard angles, and route length) that primarily have an impact on cost and are already implicitly included in the unit cost (\$/mile) used to develop the conceptual cost estimate. Exh. Protect-RC/RH/ML/MO-2 at 7-8. Including Constructability as a separate criteria in effect double counts cost as an evaluation factor. As an example, CEI notes that the specific impacts to all wetland resource areas under 310 CMR 10.00 that are anticipated for trenchless crossings should be accounted for within the Wetlands criteria score under Natural Resources. Id. at 8. If all impacts to Natural Environment and Developed Environment are properly and separately accounted for, and if cost is also separately considered as a primary Siting Board evaluation factor, then there does not appear to be any reasonable basis for including Constructability as a subset of the Environmental Scoring Analysis. Id. at 8. It would be more accurate to include assumed impacts on the natural or developed environment, related to the project-specific constructability criteria, as part of the Natural Environment and Developed Environment scoring for each alternative. Id. at 8. Accordingly, Eversource's analysis overstates construction considerations and places less weight on true environmental impacts with the inclusion of constructability criteria in the Environmental Scoring Analysis.

The inclusion of double counting the constructability impact is significant. CEI recalculated Total Environmental score based upon the exact same criteria (ratio score, criteria

weight) as the original Eversource filing, but with the elimination of the constructability criteria from the matrix. Exh. Protect-RC/RH/ML/MO-2 at 9. This recalculation showed that candidate routes that had greater constructability criteria scores (and greater overlap with the cost factor) experienced a greater percent reduction than those candidate routes that had relatively low constructability criteria scores. The difference between the original and recalculated Total Environmental Score for each candidate route ranged from 13% to 47% for the Ratio Scores and 5% to 32% for the Weighted Scores. Id. For example, the weighted score for the selected Project (Option 2B) decreased by 10% (from the original to recalculated Total Environmental Score) while the Noticed Alternative (Option 11) decreased by 32%. Id. at 10-11. This change is especially significant since it changed the relative ranking of these two candidate routes. Originally, Eversource’s scoring analysis indicated that the Project would have a lower Total Environmental Score (less impact) than the Noticed Alternative; the recalculated score (elimination of the double counted Constructability Criteria) reversed this ranking, with the Noticed Alternative having a lower Total Environmental Score than the Project. Eversource’s and CEI’s scoring results are set forth below.

Table CEI-3 — Summary of Original and Revised Scoring Matrix

Candidate Routes/ Design Options	Score Type	Eversource	CEI Revision	Percent Change from Eversource Value
		Total Environmental and Constructability Score	Total Environmental Score	
Option 2A: MBTA ROW (OH) to Wilkins NOTICED VARIATION	Ratio Score	8.49	7.13	16%
	Weighted Score	27.30	25.50	7%
Option 2B: MBTA ROW (UG) to Wilkins PREFERRED ROUTE	Ratio Score	5.96	4.60	23%
	Weighted Score	17.62	15.82	10%
Option 11:Route 20-Greenhill-Hudson NOTICED ALTERNATIVE	Ratio Score	7.42	3.95	47%
	Weighted Score	21.40	14.63	32%

Id. at 10-11.

Eversource Unreasonably Evaluated Short Term and Long Term Impacts

While Eversource acknowledges in its Petition that there are both temporary and permanent impacts (Exh. EV-2 at 4-15), its analysis does not adequately distinguish between temporary or short-term impacts and long term impacts after the construction period is completed.²⁵ Eversource's scoring analysis overstates the relative importance of temporary impacts and understates the relative importance of permanent impacts. Exhs. Protect-RC/RH/ML/MO-2 at 11-15; Hudson-PH-1 at 3-7. For example, temporary construction-phase disturbances associated with traffic, residential land use, and sensitive receptors are unreasonably given the highest weight in the scoring analysis ("5") (the same weight assigned to permanent ecological impacts associated with the clearing of trees that have taken decades to reach maturity), even though these are temporary and short term and for the most part (except for view degradation) disappear after construction. *Id.* Similarly, impacts associated permanent damage, for example damage associated with permanent loss of Conservation Land has a rating of "3" which does not account for the permanent loss of protected open space. Hudson-PH-1 at 3-7. As another example, Subsurface Contamination was only rated "1" even though as noted there is a very real risk of contamination and associated impacts, particularly on the Project route. *Id.* All of these examples demonstrate that Eversource has consistently undervalued long term impacts. As such, its analysis is fatally biased in favor of the Project route which will benefit from overstating temporary impacts associated with alternatives (traffic and sensitive

²⁵ Eversource seems to avoid any meaningful consideration of long-term impacts. As one example, the Company notes that it "is not proposing nor is it practicable to replant the same or comparable trees removed by construction activities for the Project." Exh. EFSB-LUC-3. The response further indicates that replanting would be limited to planting associated with view screening and "landscape plantings." Thus, even though the Project includes tree clearing in uplands, forested wetlands, and within the wetland buffer zone as defined under 310 CMR 10.00 (and further defined under municipal wetland bylaws) the Company's intended plantings do not appear to be intended for or likely to provide mitigation for ecological functions and values that will be permanently lost due to tree clearing impacts.

receptors for example) and understating long term impacts associated with (and unique to) the Project (impacts on conservation land and risk of contamination).²⁶

In order to more accurately calculate the long-term impacts using the Eversource screening methodology, CEI adjusted the criteria scores by assigning a value of “0” to the residential, commercial/industrial, sensitive receptors, traffic impacts and scenic roadways indicating minimal or no impact once the lines are installed underground to compare the impacts of the Project and the Noticed Alternative. Exh. Protect-RC/RH/ML/MO-2 at 13. This is a reasonable value for these criteria based upon typical impacts associated with construction activities.²⁷ As CEI explains, a “0” score refers to the magnitude of the impact and not the weight or level of importance as explained above. The criteria weight originally selected by Eversource was left unchanged, along with the original basis for calculating the ratio score for each candidate route in comparison to the other options. Id. These changes are reflected in the Table below:

Table CEI-4

<u>Routes</u>	Eversource-Representative Short-term <u>Impacts</u>	Representative Long-term <u>Impacts</u>	% Change
Noticed Variation	27	26	4%
Preferred Route	18	14	22%
Noticed Alternative	21	10	52%

Exh. Protect-RC/RH/ML/MO-2 at 14.

²⁶ Eversource addresses their justification of the weights to the various criteria without any explanations as to how the environmental scores were assigned for the two types of impacts (short term versus long term). Exhs. Protect-RC/RH/ML/MO-2 at 12.

²⁷ For the Noticed Variation, CEI assumed that only traffic congestion impacts would be minimized after the construction period. Id. at 13.

The “Representative Long-term Impacts” column shows the total weighted environmental scores. The Eversource-Representative Short-term Impacts are the results of the Eversource analysis as presented in the Petition filing (“Table 4-5-Scoring Matrix”). *Id.* at 13-15.

CEI further adjusted the criteria to more accurately account for distinction between short - term and long-term impacts. It conservatively assumed “worst case conditions for the short-term impacts (i.e., a 2 year construction period)” and compared that to the 40 year service life of the project assumed by Eversource in its filing. *Id.* at 14. It then calculated a duration impact weighting of 5% short term and 95% long term.²⁸ *Id.* Applying these duration impact weights to the Eversource Weighted Score (short term impacts) and the recalculated Weighted Score (long term impacts) as set forth above, yields the following revised weighted score that more accurately reflects the actual balance between short-term and long-term impacts from the environmental criteria.

Table CEI-5
Short and Long Term Impacts

Routes	Eversource-Representative Short-term <u>Impacts</u>	Representative Long-term <u>Impacts</u>	Combined Short and Long-Term Impacts
Noticed Variation	27	26	26.05
Preferred Route	18	14	14.20
Noticed Alternative	21	10	10.55

Exh. Protect-RC/RH/ML/MO-2 at 14.

In short, CEI calculated a combined short-term and long-term impact score by assessing short and long term impacts separately and then developing a combined score based upon weighing the two types of impacts based upon the approximate duration of construction activities versus the

²⁸ This ratio for impact duration was derived by simply dividing the respective duration (short term or long term) by the total duration (short term plus long term, or 42 years).

service life of the completed project. CEI's analysis shows that a more accurate and complete consideration of the long-term impacts would result in a lower total environmental score for the Noticed Alternative as compared to the Project. CEI's analysis recognizes that: (i) the undergrounding of utility lines may mitigate short-term and long-term environmental impacts for an underground route in the public streets (i.e., Noticed Alternative) in comparison to any route along the MBTA ROW; (ii) the undergrounding of utility lines along the MBTA ROW (Project) would mitigate environmental impacts (short-term and long-term) in comparison to the Noticed Variation since a narrower utility corridor would need to remain cleared of trees; and (iii) the undergrounding of utility lines in the Project would have greater environmental impact when compared to the underground utility lines in public streets proposed in the Noticed Alternative since any work along the MBTA ROW would require significant additional tree clearing (effectively none for work within public streets) and present increased environmental impacts from construction and operation activities. Id. at 16. CEI's adjustments are consistent with the Project impacts set forth in Section A, supra, and the Siting Board's recognition that underground projects in existing roadways avoid the long term invasive impacts that result from construction in more sensitive areas and under street projects avoid impacts to water, historic resources, rare species and siting, construction and installation impacts on undisturbed property. See EFSB 14-04 at 146; New England Power Company d/b/a National Grid, EFSB 09-1/D.P.U. 09-52/D.P.U. 09-53, at 63 (2011).

As a complementary analysis of short and long-term impacts, CEI developed (as an alternative to using a 40-year life-cycle of the project) a weighting factor which reflects impacts to the developed environment and natural environment based on the anticipated duration of impacts. CEI used weighing factors ranging from 1-5 to more specifically address impacts relating to the specific duration of the impact at different stages, ranging from a category of 1 for the construction

phase to 5 for impacts that would last for 30-40 years. Exh. Protect-RC/RH/ML/MO-2 at 17, Table CEI-6. As CEI notes, this approach would allow a more refined assessment of ecological impacts that are permanent versus those which are either temporary due to in-place restoration or can otherwise be addressed according to an anticipated schedule through an approved mitigation plan (replanting, restoration, off-site mitigation).

CEI specifically evaluated this methodology, in conjunction with concurrently eliminating the “constructability criteria” discussed above, against what Eversource had determined in its Total Environmental Score as shown in Table 4-5-Scoring Matrix. Exh. EV-2 at 4-27.²⁹ This recalculation effectively increased all the total weighted scores, but not proportionately and changed the relative ranking of the candidate routes. For example, Eversource’s scoring analysis indicated that the Project would have the lowest Total Environmental Score (less impact) than any other candidate route, including the Noticed Alternative which was ranked 7th lowest; the recalculated score (including weighted duration) substantially reversed this ranking, with the Noticed Alternative having the lowest Total Environmental Score while the Project had the 14th lowest (or 6th highest score). Exh. Protect-RC/RH/ML/MO-2 at 18-19.

CEI’s analysis is consistent with common sense and with the Siting Board’s recognition that, from an environmental perspective, an under-street alternative has minimal long-term impacts and is on balance the preferred approach. EFSB 14-04 at 146 (an under-street option can be designed to avoid or minimize impacts on natural and recreational resources without affecting any previously undisturbed property).

²⁹ Table CEI-7 lists the original Total Environmental Score as shown in the Petition filing (“Table 4-5-Scoring Matrix”) along with a recalculated Total Environmental score based upon the exact same criteria (ratio score, criteria weight) as the original Eversource filing, but with the elimination of the constructability criteria from the matrix and with the addition of the duration weighting factor. Exh. Protect-RC/RH/ML/MO-2 at 18-19.

Eversource's Evaluation of the NEP Alternative Understates the Impacts

Eversource did not present a specific analysis for the NEP Alternative comparable to the other routes selected. Tr. 5 at 929. It did, however, present certain information on the environmental criteria, including, for example, the number of residential units affected, water body crossings and tree clearing. Exh. Protect-RC/RH/ML/MO-2 at 21. Although due to its greater length, the overall impacts may appear greater than the shorter line alternatives (as Eversource assumes), Eversource's analysis failed to consider that most of the impacts on an existing utility ROW will be incremental to what has already occurred. Although there may be certain incremental impacts as a result of installing taller poles than the ones presently installed, overall, from an environmental perspective, a route along an existing power transmission right-of-way will have less impacts than alternatives, particularly projects in undeveloped areas like the Project. Id.

In general, the use of an existing ROW for siting upgraded power transmission lines will significantly reduce the environmental impacts, especially considering long-term impacts. Assuming the same criteria as established by Eversource is used in the analysis, then most of the environmental criteria would have minimal (to zero) incremental impact. The key difference between the existing ROW and a new route is that the existing ROW is already established and is being actively maintained. The number of abutters (residential or commercial) remains unchanged. The number of sensitive receptors and cultural resources abutting the route remains unchanged. The miles of scenic roadway intersected by the existing ROW remains unchanged. The miles of public water supply resource areas intersected by the existing ROW remain unchanged. The miles of conservation lands intersected by the existing ROW remain unchanged. The long-term impacts relate to relatively small increases in the amount of tree

clearing (in select areas only) and in wetland filling (construction of towers). Exh. Protect-RC/RH/ML/MO-2 at 21-22.

Eversource's conclusion that Project compares favorably to the NEP Alternative is without merit. Exh. EFSB-PA-36(R-2); Exh. Protect-RC/RH/ML/MO-2 at 21-22. In reaching its conclusion, Eversource mischaracterized the available information as presented in Table EFSB-PA-36(R-2) and manipulated the evaluation to reflect its bias toward the Project. As an example, the Project requires trenching across 10 highways/roads with disruption of the paved surface and traffic flow (i.e., reduce to one lane, one-way only), compared to the NEP Alternative where the new cables will be quickly extended across the highways/roads with minimal disruption to traffic. Exh. Protect-RC/RH/ML/MO-2 at 21-22. Further, Table EFSB-PA-36(R-2) shows zero square feet (sf) of temporary fill in vegetated wetland areas for the Project as compared to over 1 million sf of temporary fill for the NEP Alternative, implying that the NEP Alternative has a far greater impact for this criteria. Id. In reality, the "temporary fill" essentially consists of timber matting or similar work platform that is easily installed (and removed) with no long-term impact. Id. To compare these two routes, it is essential to focus on the "change" from existing conditions and to weight short-term and long-term impacts accurately. Id. at 22-23.

The Project Route Is a Unique and Unprecedented Choice Inconsistent With Precedents

Eversource admits its proposal to cite the Project route across undeveloped land instead of under street or on an existing utility right of way is inconsistent with its own recent experience. Over the past 10 years, in virtually every other case, Eversource has proposed a transmission line project (previously vetted at ISO-NE as discussed) that was either under street

or on an established right of way.³⁰ Exh. EFSB-RS-(1)(1); Tr. 5 at 886-889. Essentially, Eversource acknowledges that either the Noticed Alternative or the NEP Alternative would be more consistent with its practice over the last 10 years.

This lack of experience in developing a transmission line across a relatively undeveloped (and contaminated) area may explain (as well as bias), Eversource's inability to accurately evaluate and weigh factors in its Environmental Analysis as noted above. Eversource simply lacks the experience to appropriately assess and value the relevant impacts on this type of route.

Additional Factors Should Be Included in the Environmental Analysis

Protect Sudbury submits that Eversource should have included additional factors in its route analysis, including property values and stakeholder values. Exh. Protect-RC/RH/ML/MO-2 at 23-24. With respect to property values, CEI recognized that Eversource's analysis failed to account for the longer-term property value impacts of transmission lines on abutter properties on the route. Id. The probable impacts to property values in Sudbury from the Project should have been included as an additional consideration in the Environmental Analysis. Tr. 12 at 2018-2083. If considered, the record confirms that transmission lines generally do impact property values impacts under certain circumstances and the Project would likely have such impacts. Exh. Protect-C, D, and E; Tr. 12 at 2109-2114. Accordingly, property value impacts, needed to be appropriately reflected in the analysis and some definitive determination made with respect to the possible impacts on property values from the Project as compared to the Noticed Alternative and NEP Alternative.

With respect to stakeholder input, CEI noted that stakeholders were not fairly included in Eversource's analysis (particularly Hudson and Sudbury) and that the weight assigned by

³⁰ This includes West-Roxbury Needham (EFSB-1602), Woburn-Wakefield (EFSB 15-04), Woburn-Mystic (EFSB 15-03), Mystic East Eagle (EFSB 14-04), Walpole-Holbrook (EFSB 14-02), Lower SEMA (EFSB 10-2), WMECO (EFSB-08-02) and Stoughton Boston (EFSB 04-01).

Eversource to each criteria in their scoring matrix may not reflect the opinions of the various stakeholders in this process. Specifically, Eversource did not consider the Towns' input at key points and did not consider at all the Towns uniform and persistent opposition to this Project as reflected in the filings in this case. Exh. SUD-DMD-1 at 7-20; Hudson-PH-1 at 3-11. Had stakeholder views been considered, the Noticed Alternative and the NEP Alternative would benefit the most—as set forth herein, there are fewer environmental implications in siting a project under street or on an existing right of way than in an environmentally sensitive area, like the Project.

Accordingly, Eversource did not demonstrate that its Project is superior in any respect to the proposed alternatives. In fact, as set forth above, the Company's analysis is flawed and unreliable and both the Noticed Alternative and the NEP Alternative have less impacts than the Project. In light of the significant impacts of the Project and the demonstrated superiority of the alternatives, the Siting Board should not approve Eversource's request to construct the Project.

F. The Company Has Not Demonstrated Any Project Benefit From Development of the Rail Trail

Eversource asserts throughout its filing its willingness, in partnership with DCR, to “couple construction” of a rail trail on the MBTA ROW with the Project. Exh. EV-2 at 1-1. From a construction perspective, the rail trail would utilize the Project's access road as part of its design. *Id.* at ES-2. Eversource presents the idea of a rail trail as providing financial benefit to the Commonwealth and as a benefit to the community. *Id.*

The EFSB should not consider any benefit of the rail trail in its determination. The rail trail is not required for reliability or other system needs. Additionally, the MBTA ROW, is suitable for a rail trail development independent of the Project, with minimal environmental impacts. Exh. SUD-MJN/RMG-1 at 42. Sudbury, as the significant host community, should be allowed to decide independently and without any consideration of the Project, whether a rail trail

should be developed on the MBTA ROW, how it should be designed and at what cost.

Fundamentally, any determination of whether or not to proceed with a rail trail is a local decision and not a bargaining chip to be offered by a utility in a transparent attempt to persuade the Siting Board. Finally, the towns are opposed to the development of a rail trail as part of this Project—any purported advantages of the rail trail are outweighed by the destructive impacts of the Project on the MBTA ROW. Exh. SUD-MJN/RMG-1 at 41-43.

In short, there is no need for the Project to serve as a mechanism for development and construction of the rail trail--the rail trail as proposed in this case functions as a misdirection away from this Project's otherwise serious impacts to the environment and communities. Accordingly, the EFSB should reject the Company's request to consider the rail trail as part of its evaluation of the Project.

G. The Proposed Project Is Inconsistent With the Commonwealth's Smart Growth/Smart Energy Policies

The Executive Office of Energy and Environment Affairs ("EEA"), pursuant to the Commonwealth's Smart Growth/Smart Energy policy, established Sustainable Development Principles. Among the principles are: (1) supporting the revitalization of city centers and neighborhoods by promoting development that is compact, conserves land, protects historic resources and integrates uses; (2) encouraging reuse of existing sites, structures and infrastructure; and (3) protecting environmentally sensitive lands, natural resources, critical habitats, wetlands and water resources and cultural and historic landscapes. See EFSB 14-04 at 146; see also EFSB 09-1 at 63.

In applying these principals, the EFSB has evaluated whether any project: (i) has been designed and conditioned to avoid or minimize impacts to natural and cultural resources by being placed underground in city streets and within existing underground [rights of way]; (ii) would

not affect undisturbed property by the siting, construction, or installation of the project; (iii) has the support of local officials who have assisted in the development of the route as well as in construction mitigation plan; and (iv) is not located in a “mapped habitat” and is unlikely to impact water or historic resources. Id.

In this case, the Company failed to comply with the EFSB’s directives, as set forth above, established as part of the Commonwealth’s Smart Growth/Smart Energy policy. Indeed, the record is clear, as set forth herein, that the Project: (i) has not been designed and conditioned, particularly given alternatives, to avoid or minimize impacts to natural and cultural resources by being placed underground in city streets and within existing underground [rights of way]; (ii) would significantly affect undisturbed property; (iii) does not have the support of local officials and in fact rejected their specific suggestions regarding the development of the route; and (iv) is located in a “mapped habitat” and is likely to impact water or historic resources.

Accordingly, the EFSB should determine that the Project is inconsistent with and violates EEA’s Smart Growth/Smart Energy policy.

IV. CONCLUSION

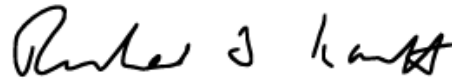
For all the reasons set forth herein, Eversource’s Petition to construct a transmission line on the MBTA ROW does not meet the statutory requirements for Siting Board approval. The Project has not been evaluated by ISO-NE, is not least cost, is not superior to available alternatives and is inconsistent with the Commonwealth’s Smart Growth/Smart Energy Policy. Indeed, the alternatives submitted would as reliably serve any necessary need, at costs lower or within the range estimated for the proposed Project’s cost, without the demonstrated threats posed to the environment by the Project. Moreover, the record and testimony show that the Project is devoid of any community support and would have, by far, the largest impacts and the least benefits on the

communities that Eversource is purportedly required to serve. The proposed Project should be denied.

Respectfully submitted,

PROTECT SUDBURY, INC.

By its attorneys,

A handwritten signature in black ink, appearing to read "Richard A. Kanoff", is written over a horizontal line.

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Dated: March 2, 2018

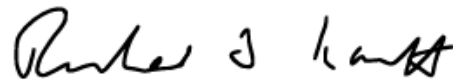
COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD

Petition of NSTAR Electric Company d/b/a
Eversource Energy Pursuant to G.L. c. 164, §69J
for Approval to Construct, Operate and Maintain a
New 115-kV Transmission Line in the Towns of
Sudbury, Hudson and Stow and the City of
Marlborough and to Make Modifications to an
Existing Substation in Sudbury

EFSB 17-02/D.P.U. 17-82/17-83

CERTIFICATE OF SERVICE

I hereby certify that on this day I have served a copy of the foregoing document via email upon each person as designated by the Energy Facilities Siting Board for the above-captioned proceeding in accordance with the requirements of 980 C.M.R. § 1.03.



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