
Nos. EFSB 14-04A/D.P.U. 14-153A/14-154A

PRE-FILED TESTIMONY OF BRYNDIS WOODS

Q. Please state your name, position, and address.
A. My name is Bryndis Woods and I am a Researcher at the Applied Economics Clinic and a Research Fellow at the Global Development and Environment Institute at Tufts University, both located at 44 Teele Ave, Somerville, MA, 02144.

Q. Please describe the Applied Economics Clinic.
A. The Applied Economics Clinic is a non-profit economic and energy consulting group providing expert testimony, analysis, modeling, policy briefs, and reports to public interest groups on the topics of environment, consumer protection, and equity. The Clinic also serves to train the next generation of expert technical witnesses and analysts by providing applied, on-the-job training to graduate students in related fields and working proactively to support diversity among both student workers and professional staff. The Clinic is an independent non-profit housed at Tufts University’s Global Development and Environment Institute.

Q. Please state the purpose of your testimony.
A. The purpose of my testimony is to offer my expert analysis and understanding of Eversource’s justification of the need for proposed East Eagle Street Substation, as
determined by my review of publicly available documentation in dockets EFSB 14-04 and EFSB 14-04A. I offer this testimony on behalf of GreenRoots, Inc. (GreenRoots), a non-profit organization based in Chelsea that represents the citizens of Chelsea and East Boston, which I understand to be an intervenor party to this proceeding.

Q. Please summarize your professional and educational background.

A. I am an energy policy researcher with over six years of experience in research and analysis, with a focus on climate change issues. I have authored more than thirty reports, journal articles, book chapters, and blog posts on topics related to energy, renewable energy, energy efficiency, climate policy, international climate negotiations and climate change adaptation. I have presented my work at international conferences around the world, including the European Climate Change Adaptation Conference and the Annual Conference of the European Association of Environmental and Resource Economists. Prior to joining the Applied Economics Clinic, I worked as a researcher at the Nordic Centre of Excellence for Strategic Adaptation Research, examining crop choice as a climate change adaptation among Danish farmers. I also worked as an analyst at Business for Social Responsibility, working with bi- and multilateral development institutions and with corporate clients on issues including adaptation and resilience, climate adaptation governance, supply chain sustainability and climate risk management. I currently contribute work as a staff writer for the International Institute for Sustainable Development’s Earth Negotiations Bulletin, reporting on international sustainable development conference processes including the Intergovernmental Panel on Climate Change, the Global Platform for Disaster Risk Reduction and the United Nations Framework Convention on Climate Change.
I hold a Master of Science in Environment and Natural Resources from the University of Iceland and a Bachelor of Arts in Sociology from the University of Michigan and am a PhD candidate in Environment and Natural Resources at the University of Iceland. My curriculum vitae is attached as Exhibit GR-18.

Q. Please provide a brief history of the current docket.

A. In three 2014 petitions, Eversource requested approval of the Massachusetts Energy Facilities Siting Board (EFSB) and the Department of Public Utilities (DPU) to: 1) construct a new 115/14-kilovolt (kV) substation (the “East Eagle Street Substation”) on Company property in East Boston; and 2) construct and operate two new 115-kV underground electric transmission lines in Everett, Chelsea, and East Boston. After having consolidated the Company’s three petitions relating to the Project for hearing before the Siting Board, with the docket number EFSB 14-04/D.P.U. 14-153/14-154, the EFSB’s Final Decision—issued in December 2017—approved the need for the substation and directed the Company to work with the City of Boston to relocate the proposed substation slightly and “obtain Siting Board approval under G.L. c. 164, § 69J, prior to construction of a proposed energy facility.”¹ Eversource filed a siting petition in November 2018 (EFSB 14-04A) to relocate the proposed East Eagle Street Substation by 190 feet, to the west side of the original parcel. Meanwhile, the appeal period of the Final Decision has also been extended.

Q. What is your understanding as to utilities’ obligations when pursuing costly capital developments?

A. I understand that, as with any cost to ratepayers, Eversource has an obligation to demonstrate that the expense of the proposed East Eagle Street Substation is in the public good. In its filings and subsequent responses to discovery questions in EFSB 14-04 and 14-04A, Eversource has failed to present sufficient evidence of the need for a new substation, making it impossible to conduct an adequate third-party review of their finding.

Q. What is Eversource’s stated justification of the need for the proposed East Eagle Street Substation?

A. Eversource’s central claim is that the Chelsea substation is insufficient to maintain reliable electric service in the Chelsea/East Boston/Lynn (C-EB-L) Load Area. However, my review finds that this assertion is not adequately supported by the evidence provided by Eversource.

Q. Has Eversource’s justification of the need for the proposed East Eagle Street Substation changed over time?

A. Yes, Eversource’s justification of the need for the proposed East Eagle Street Substation has changed over time. The details of the Company’s claims have shifted substantially since it filed its original petitions in 2014. Of particular note is the Company’s reliance (in its current docket EFSB 14-04A) on ISO-New England’s (ISO-NE) CELT 2015 load forecast, which projected growing peak electric load in Massachusetts. ISO-NE’s most recent projection (CELT 2019), however, show the opposite: Massachusetts peak loads are shrinking.

Q. What are Eversource’s key arguments in support of a new East Eagle Street Substation?
A. Eversource supports its claim of a need for the East Eagle Street Substation based on two arguments. First, according to Eversource, the C-EB-L Load Area’s growing peak demand will soon surpass ISO-NE’s threshold for reliability concerns. Second, Eversource claims that specific commercial and industrial developments in the C-EB-L Load Area necessitate an additional substation to maintain reliability.

Q. What critiques of Eversource’s arguments do you present in your testimony?

A. I present the following critiques of Eversource’s arguments: Eversource’s claim of growing peak demand in the C-EB-L Load Area is based on out-of-date CELT 2015 forecasts and does not appear to be supported by ISO-NE’s more recent projections for Massachusetts. Eversource’s claim that specific commercial and industrial developments in the C-EB-L Load Area create a potential reliability issue that would be solved by the proposed East Eagle Street Substation has changed substantially from its original 2014 petition. Load additions predicted in 2014 have been satisfied by current transmission infrastructure. Eversource introduces the possibility of a new Massport project adding to the area’s transmission burden but provides no detailed information regarding this project. Finally, Eversource’s continued request for approval for costly new transmission infrastructure raises concerns of neighborhood disruption and unnecessary costs to ratepayers.

Q. Has Eversource presented convincing evidence of a need for the East Eagle Street Substation?

A. No, Eversource has not presented convincing evidence of the need for the proposed East Eagle Street Substation. Eversource has not provided an updated location-specific forecast or any detailed information regarding the Massport project. Eversource’s
surprising failure to update its filing on the proposed East Eagle Street Substation based on currently available, up-to-date load forecasts from ISO-NE appears to result in the Company’s overestimation of electric needs in the C-EB-L Load Area.

Q. What load forecasts did Eversource rely on in its original filing in this docket?

Q. Did EFSB staff offer any critique of Eversource’s load forecasts?
A. Yes, ESFB staff questioned Eversource’s use of the ISO-NE’s CELT 2013 load forecast when a more up-to-date load forecast (CELT 2015) was available. In addition, EFSB staff raised questions regarding the accuracy of the ISO-NE forecast.

Q. What, if any, updates did Eversource make to these original load forecasts?
A. In response to EFSB staff’s questions in 2017 regarding the use of an outdated load forecast, Eversource updated the forecast to the most recent version available at the time, which was the 2015 CELT forecast. Table 1 presents Eversource’s updated forecast based on CELT 2015.

2 Ibid. Page 14.
Table 1. Electrical Demand in the Chelsea/East Boston/Lynn Load Area Based on the 2015 CELT Report

<table>
<thead>
<tr>
<th></th>
<th>Chelsea/East Boston/Lynn Load Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2018 (MW)</td>
</tr>
<tr>
<td>Demand at System Peak</td>
<td>332.5</td>
</tr>
<tr>
<td>Demand Response and Solar PV</td>
<td>-29.1</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Net Demand</strong></td>
<td>303.4</td>
</tr>
</tbody>
</table>

Note: For the year 2018, the 2015 CELT Report peak demand is already net of energy efficiency resources and therefore separate energy efficiency values are not provided in Table 1.

Sources: Tr. 9, at 1585, 1600-1601; RR-EFSB-3; RR-EFSB-59.

In response to EFSB staff questions regarding the accuracy of the ISO-NE forecast, Eversource provided its own internal data “on the actual and the 90/10 weather-adjusted historical peak demand in the Chelsea/East Boston/Lynn Load Area for comparison with forecast 2018 and 2023 load levels.”


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3 Ibid. Page 15.
Table 2 presents Eversource’s historical weather-adjusted load for the C-EB-L Load Area.
Table 2. Chelsea/East Boston/Lynn Load Area Historical Coincident Peak Demand and Weather Adjusted Demand as Presented by Eversource

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Summer Coincident Peak Load (MW)</th>
<th>90/10 Weather Adjusted Summer Coincident Peak Load (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>269.3</td>
<td>276.4</td>
</tr>
<tr>
<td>2006</td>
<td>278.5</td>
<td>277.9</td>
</tr>
<tr>
<td>2007</td>
<td>232.8</td>
<td>245.6</td>
</tr>
<tr>
<td>2008</td>
<td>235.6</td>
<td>251.0</td>
</tr>
<tr>
<td>2009</td>
<td>272.1</td>
<td>292.7</td>
</tr>
<tr>
<td>2010</td>
<td>279.8</td>
<td>289.5</td>
</tr>
<tr>
<td>2011</td>
<td>297.4</td>
<td>298.6</td>
</tr>
<tr>
<td>2012</td>
<td>286.4</td>
<td>300.9</td>
</tr>
<tr>
<td>2013</td>
<td>301.0</td>
<td>303.4</td>
</tr>
<tr>
<td>2014</td>
<td>265.5</td>
<td>285.3</td>
</tr>
<tr>
<td>2015</td>
<td>248.4</td>
<td>265.8</td>
</tr>
</tbody>
</table>


Q. What is ISO-NE’s threshold for reliability in the C/EB/L area?

A. In its final decision docket, EFSB summarized Eversource’s assertion that CELT’s 2015 report determined that “over 300 MW of load in the C-EB-L Load Area cannot be served in the event of a contingency involving the sequential loss of two area transmission lines.”

Q. What does Eversource conclude regarding the electric needs of the C/EB/L Load Area?

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A. EFSB also summarized Eversource’s argument stating that it would be “reasonable to assume that the area will reach the forecasted peak load level of greater than 300 MW by 2018.” That point, combined with ISO-NE’s reliability concern regarding loads exceeding 300 MW, led to the Company’s determination of the need for a new East Eagle Street Substation before 2018.

Q. Has the C/EB/L Load Area’s peak load exceeding the ISO-NE’s 300 MW reliability threshold in past years?
A. Yes, C/EB/L peak load exceeded 300 MW in 2012 and 2013 (see Table 2) but more recent peak loads have declined.

Q. Has Eversource’s 2017 determination of need for the East Eagle Street Substation by 2018 proved accurate?
A. No, Eversource’s determination that the East Eagle Street Substation would be needed for reliability purposes by 2018 has not proven accurate. The year 2018 has come and gone without the addition of the East Eagle Street Substation. As I discuss in more detail below, the four specific commercial and industrial developments in the C-EB-L Load Area that Eversource claimed would create a potential reliability issue have all come online and have been satisfied by current transmission infrastructure.

Q. Is ISO-NE’s 2015 CELT an appropriate load forecast to use for 2019 decision making?
A. No, the 2015 CELT load forecast is not appropriate to use for decision making regarding costly and potentially disruptive new transmission infrastructure in 2019. It is always best practice to utilize the most recent load forecasts available—as evidenced by ESFB

5 Ibid.
staff’s request that Eversource update their CELT 2013 forecast to the CELT 2015 forecast back in 2017. Using up-to-date load forecasting is especially important in current New England planning because the CELT 2015 forecast projected increasing peak load in Massachusetts while the 2019 CELT forecast projected decreasing peak load in Massachusetts.

Q. **What is the most recent CELT forecast available from ISO-NE?**

A. The most recent CELT forecast available from ISO-NE is their 2019 forecast released in April 30, 2019. ISO-NE also released forecasts on May 9, 2018, May 1, 2017, and May 2, 2016.

Q. **Has Eversource updated its C/EB/L substation needs assessment to reflect the ISO-NE’s 2018 or 2019 CELT forecasts?**

A. No, Eversource has not updated its substation needs assessment in its initial filing on November 15, 2018 in docket EFSB 14-04A to reflect the most up-to-date CELT load forecasts. When requested to update its assessment to use CELT forecasts from 2018, the Company demurred, suggesting that such an update was unnecessary. As an intervenor in siting docket EFSB 14-04A, GreenRoots filed several information requests. In information request GR-ESRN-1, GreenRoots asked:

> Has Eversource conducted, or is it otherwise aware of, any studies or assessments of transmission reliability in the Chelsea/East Boston/Lynn Load Area that incorporate the more recent CELT 2018 load forecasts by ISO-New England? If so, identify and provide any such studies.  

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In response, Eversource provided its justification for its decision not to update its CELT load forecasts:

*ISO-NE’s current assessment of transmission reliability, the Boston 2028 Needs Assessment, assumes that the Mystic-East Eagle-Chelsea 115-kV lines and the East Eagle Street Substation are in-service and part of the existing transmission network.*

Q. **Has Eversource provided up-to-date evidence that the C-EB-L Load Area will surpass ISO-NE 300 MW reliability threshold for the area?**

A. No. The Company asserts but does not demonstrate that C-EB-L Load Area customers’ electric needs are growing. In its Notice of Intent filing as required in docket 14-04A with EFSB, Eversource asserts:

*NSTAR’s Mystic-East Eagle-Chelsea Reliability Project] is designed to address capacity and reliability needs in the surrounding community and to meet customers’ growing electricity requirements.*

Q. **How have ISO-NE’s peak load forecasts changed for Massachusetts since 2015?**

A. In 2015, ISO-NE’s peak load forecasts were projected to increase; in 2019, ISO-NE’s peak load forecasts are projected to decrease. In their 2019 forecast, ISO-NE expects summer peak loads in 2022 to be 1,300 GW lower than predicted in their 2015 forecast—

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7 Ibid.


a 10 percent reduction as a share of current-day peaks. Where ISO-NE's 2015 forecast of Massachusetts peak load showed a 0.4 percent annual increase from 2019 to 2022, their latest forecast expects a 0.7 to 0.9 percent decrease over the same period (see Figure 1).

Figure 1. ISO-NE forecast of Massachusetts summer peak load (GW)


Note: The labels “50/50” and “90/10” both describe summer peak conditions; 50/50

represents typical weather conditions while 90/10 represents extreme weather conditions (i.e. the upper bound of possible summer peak conditions).

Q. **What C-EB-L peak load does Eversource anticipate for 2023?**

A. EFSB’s 2017 Final Decision presents Eversource’s projection of expected growth raising C-EB-L load from 303.4 MW in 2018 up to 323.0 MW in 2023, consistent with ISO-NE’s expected growth of Massachusetts load in the CELT 2015 report (see Table 1 above).

Q. **Has Eversource provided an updated estimate for C-EB-L peak load for 2023 based on ISO-NE most current forecasts?**

A. No, Eversource has not updated their C-EB-L peak load forecast.

Q. **Based on growth rates drawn from ISO-NE’s latest publicly available forecasts, how might Eversource’s C-EB-L peak load forecast change if it were updated?**

A. Replacing Eversource’s expected peak load growth rate from 2017 with ISO-NE’s current peak load growth rate for Massachusetts results in a 2023 peak load projection of 292.9 MW (a 30.1 MW decrease from the 2023 peak load projection based on CELT 2015) (see Table 3).

Q. **How does this tentative estimate of C-EB-L peak load in 2023 (consistent with ISO-NE’s 2019 load forecast) compare to ISO-NE’s 300 MW reliability threshold for the area?**

A. Utilizing up-to-date CELT 2019 peak load forecasts to estimate C-EB-L peak load results in a peak load that is lower than ISO-NE’s stated reliability threshold of 300 MW starting in 2020 (see Table 3).
Table 3. Chelsea/East Boston/Lynn peak load comparing Eversource 2017 assumptions to adjustment using CELT 2019 (MW)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Annual % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eversource 2017 Discovery Response</td>
<td>303.4</td>
<td>306.6</td>
<td>309.8</td>
<td>313.0</td>
<td>316.3</td>
<td>323.0</td>
<td>1.0%</td>
</tr>
<tr>
<td>Adjustment using 2019 CELT growth rates</td>
<td>303.4</td>
<td>301.3</td>
<td>299.2</td>
<td>297.1</td>
<td>295.0</td>
<td>292.9</td>
<td>-0.7%</td>
</tr>
</tbody>
</table>


Q. What is your understanding as to when is an EFSB decision expected with regards to the East Eagle Street Substation?

A. My understanding is that an EFSB decision on the East Eagle Street Substation is expected in late 2019 at the earliest (given the procedural schedule of Docket EFSB 14-04A).

Q. Based on the tentative estimate of C-EB-L peak load provided in Table 3 above, in what year would the area’s peak load fall below ISO-NE’s reliability threshold?

A. The tentative C-EB-L peak load forecast provided in Table 3 above indicates that any exceedance of ISO-NE’s 300 MW reliability threshold for the C-EB-L Load Area is likely to have been resolved by 2020. Because a final decision on the East Eagle Street Substation is expected in late 2019 at the earliest, the reliability issue may well be already resolved by the time a final decision is rendered.
Q. Has Eversource provided sufficient information to allow third-party review of its needs assessment for the East Eagle Street Substation?

A. No, Eversource has not provided sufficient information to allow adequate third-party review of its needs and reliability assessment of the proposed East Eagle Street Substation.

Q. What information would Eversource need to provide to allow a thorough third-party review of its needs assessment for the East Eagle Street Substation?

A. Eversource would need to provide detailed information regarding the C-EB-L Load Area’s changing electric needs and the alternative solutions considered for addressing these needs. Without these materials, it is not possible to independently assess the need for additional transmission infrastructure. The materials submitted by Eversource to date neither demonstrate this need nor provide an up-to-date load and supply assessment for the area that would be served by an East Eagle Street Substation.

Q. Does Eversource offer any additional arguments for the need for an East Eagle Street Substation?

A. Yes, Eversource offers an additional argument for the need for the East Eagle Street Substation. Eversource also suggests that planned customer projects may result in a reliability issue by 2018 in the C-EB-L Load Area. EFSB’s Final Decision in December 2017 summarized Eversource’s arguments, stating that “factoring in future economic growth, known large customer connection requests, and recent peak load levels in the Chelsea/East Boston/Lynn Load Area under approximately 90/10 weather conditions,”11

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there would be potential for load loss in the Chelsea/East Boston/Lynn Load Area by 2018.\textsuperscript{12}

Q. Has Eversource’s assessment of planned customer projects changed since the EFSB’s 2017 decision?

A. Yes, Eversource’s assessment of planned customer projects has changed since the EFSB’s 2017 decision. Eversource claimed that four specific commercial and industrial developments in the C-EB-L Load Area necessitate the East Eagle Street Substation to maintain reliability. However, in response to Information Request GR-ESRN-3 in May 2019, Eversource confirmed that the four specific customer projects referenced in the EFSB’s 2017 Final Decision are now in-service but require less voltage than predicted, stating that the projects are anticipated to add one-fourth less load than was predicted in the 2015 substation capacity assessment.\textsuperscript{13}

Q. Does Eversource still assert that four planned customer project additions expected in 2017 have had the effect of rendering the Chelsea substation insufficient to meet C-EB-L Load Area reliability needs?

A. No, Eversource has changed its assertion that four planned customer project additions in 2017 will render the Chelsea substation insufficient to meet C-EB-L Load Area reliability needs. In response to Information Request GR-ESRN-3 in May 2019, Eversource reevaluates and appears to downgrade its original reliability concerns, pushing back the expected advent of any potential load losses from 2018 to 2022.

Q. Has Eversource introduced an additional planned project that may impact on C-

\textsuperscript{12} Ibid. Page 26.

EB-L Load Area reliability?

A. Yes, Eversource has introduced a fifth planned customer project that they claim will negatively impact C-EB-L Load Area reliability. As described in their response to information request GR-ESRN-3: Eversource claims that Massport’s new “major customer project within the Chelsea-East Boston region,” will, “in combination with the previous four major customer projects, [increase] the area’s load demand and overload Chelsea Substation. The new East Eagle Street Substation will address this problem.”\(^\text{14}\)

Q. Has Eversource provided sufficient information about the Massport project to permit third-party review?

A. No, Eversource has not provided any information about the Massport project beyond what it asserts is the project’s expected size. Eversource has not provided any information about the Massport project’s load shape and expected schedule nor has it made available whatever analysis has been performed demonstrating that this additional load will impact reliability.

Q. Has Eversource substantiated its argument that a new East Eagle Street Substation is needed to maintain reliability in the C-EB-L Load Area?

A. No, Eversource has not substantiated its argument that a new East Eagle Street Substation is needed to maintain reliability in the C-EB-L Load Area. Eversource has not made available its analysis of reliability issues in the C-EB-L Load Area and what year these issues might reasonably be expected to arise. According to Eversource’s 2019 filing in Docket 14-04A, the reliability concerns are, first, increasing customer demand (and there are reasons to be highly skeptical of this claim, as addressed elsewhere in this testimony).

\(^{14}\) Ibid.
due to the fact that ISO-NE’s current load forecast are projected to decrease) and, second, the Massport project that is neither clearly identified nor described. Absent updated location-specific load forecasts or detailed information regarding the Massport project, it is impossible for a third-party review to determine the validity of Eversource’s need and reliability claims.

Q. Does this conclude your testimony?

A. Yes.

SIGNED UNDER THE PAINS AND PENALTIES OF PERJURY THIS 7th DAY OF JUNE, 2019.

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Bryndis Woods

CERTIFICATE OF SERVICE

I certify that, on this 7th day of June, 2019, I served a true copy of the foregoing document via electronic mail upon the following parties and limited participants or their counsel of record in EFSB 14-04A/D.P.U. 14-153A/14-154A.

Dated: June 7, 2019

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