



56 Prospect Street  
Hartford, CT 06103

Steven J. Allen  
Eversource, ISO-NE Coordination  
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November 1, 2022

Ms. Emily Laine  
Chair, NEPOOL Reliability Committee  
ISO New England, Inc.  
One Sullivan Road  
Holyoke, MA 01040-2841

Dear Ms. Laine,

In accordance with Schedule 12C of the ISO New England ("ISO-NE") Transmission, Markets & Services Tariff ("ISO-NE Tariff"), Eversource Energy Service Company ("Eversource") hereby submits the attached Transmission Cost Allocation ("TCA") application(s) reporting cost support information associated with the construction, retirement, or modification to facilities rated 69 kV and above that qualify as regional Pool Transmission Facilities ("PTF") for the following Eversource project:

**ES-22-TCA-27      NH 2029 Preferred Solution – Southern / 345-kV Amherst Synchronous Condenser Project**

Eversource is requesting that ISO-NE submit this TCA to the NEPOOL Reliability Committee for review, in accordance with ISO-NE Planning Procedure No. 4 ("PP-4").

If you have any questions, I can be reached via the information listed above.

Sincerely,

*Steven J. Allen*

Steven J. Allen

cc: M. Drzewianowski

**Attachment B**  
**TCA Application Form**

1. Applicant: Application #: ES-22-TCA-27 Date: Nov-22  
 Contact Name: Steven J. Allen  
 Company Name: Eversource Energy Service Company  
 Address 1: 56 Prospect Street  
 Address 2: \_\_\_\_\_  
 City, State, Zip: Hartford, CT 06103 RSP Project ID # or \_\_\_\_\_  
 Contact Phone #: 860-728-4536 Asset Condition ID # 1880  
 Email Address: steven.allen@eversource.com Is Project related to CIP-14  
Yes  No

2. Project Description: In Service Date: Mar-24

a. **High Level Project Details:**

**Project Name** ( If no formal name, then Substation Upgrade, Line Upgrade, etc. are acceptable):

**NH 2029 Solution Southern - 345-kV Amherst Synchronous Condenser Project**

**Project Location** (State only):

**State:**

**NH**

**County:**

**Cheshire**

b. Summary of PTF-related work for Project:

Install a +127/-50 MVAR Synchronous Condenser at Amherst 345-kV substation with three 345-kV breakers.

Final project cost details will be known following closeout of all project work orders.

c. Summary of Non-PTF-related work for Project:

3. Was a transmission Proposed Plan Application required for this work? Yes  No  PPA Number: ES-22-T29  
 4. Has a transmission Proposed Plan Application been approved? Yes  No  N/A  Approval Date: June 15, 2022  
 If yes, attach a copy and reference Proposed Plan Application # and approval date. (Please check only one)

**Need For Project:**

5. Need Based On (Check all Categories that apply):

- a. Reliability
- b. Economic
- c. Service to new load
- d. New generator interconnection

Generator Proposed Plan Application Number \_\_\_\_\_

Generator Proposed Plan Application Date \_\_\_\_\_

(Attach copy of cover letter & Generator Proposed Plan Application)

- e. Public Policy Transmission Upgrade (PPTU)
- f. Market Efficiency Transmission Upgrade (METU)
- g. Asset Condition
- h. Other (specify in line 6)

6. Provide a narrative description of the need for this Project.  
(Include available documentation relative to the need for this Project. )

The ISO-NE New Hampshire 2029 Solutions Study referenced the needs to upgrade the Southern New Hampshire area transmission system. The objective of the Solutions Study was to investigate transmission solutions to remedy the NH study area time-sensitive criteria violations in accordance with applicable NERC, NPCC, and ISO standards and criteria.

This preferred solution is in the NH 2029 Solutions Study that was developed in coordination with ISO-NE as detailed in the final NH 2029 Solutions Study, posted on the ISO-NE’s external website on May 27, 2021, revision (draft) posted on August 16, 2022.

Link to ISO-NE Solutions Study report below:  
[https://smd.iso-ne.com/operations-services/ceii/pac/2022/08/draft\\_ceii\\_nh\\_2029\\_ss\\_revision1\\_redline.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2022/08/draft_ceii_nh_2029_ss_revision1_redline.pdf)

**Cost of Project:**

7. Total Project Cost (\$M) equals PTF + Non-PTF + all other Project Costs:	<u>\$66.996</u>
8. Total Proposed PTF Costs	
a. Total Proposed PTF Cost of this Project (\$M):	<u>\$66.996</u>
b. Requested Pool-Supported PTF Costs associated with this Project (\$M):	<u>\$66.996</u>
c. Breakdown of Requested Pool-Supported PTF Cost associated with this Project (\$M): (Consistent with Table 1 and Appendix D of this Procedure)	
Material	<u>\$29.812</u>
Labor	<u>\$19.964</u>
ROW	<u>\$0.919</u>
Engineering/Permitting/Indirects	<u>\$5.134</u>
Escalation	<u>\$0.739</u>
AFUDC (or equivalent)	<u>\$3.854</u>
Contingency	<u>\$6.574</u>
d. Generator Supported PTF Costs* (\$M):	<u>\$0.000</u>
If the costs in 8.b. plus 8.d. do not equal the total proposed PTF cost (8.a) explain and indicate who is responsible for the remaining costs.	
9. Total Proposed Non-PTF Cost of this Project (\$M):	<u>\$0.000</u>
10. Proposed PTF Costs (\$M) introduced as a result of local, state or other regulatory/legislative requirements, including costs identified pursuant to Section 1.6.3 of this PP-4.	<u>\$0.000</u>
a. Description of Proposed PTF Cost introduced as a result of local, state or other regulatory/legislative requirements as defined in question 8 above.	
11. All other Project Costs not captured in PTF Costs (8) or Non-PTF Costs (9) (\$M) associated with this Project:	<u>\$0.000</u>

12. Total PTF Cost based on: (check one)

Actual Costs

**OR**

Estimated Costs\*

13. Valuation Year(s) of dollar amounts submitted above: 2022

14. If applicable, explain how the cost of common facilities were allocated between PTF and Non-PTF.

15. Does this Project result in a change of existing Non-PTF facilities to PTF?

Yes

No

16. Describe the major transmission alternatives, and their costs consistent with the breakdown provided in item 7 of this Application, that were considered. Provided an explanation why the preferred alternative was selected.  
(Include available documentation relative to the major transmission alternatives analysis and selection.)

**Alternative:**

Install a +/-300 MVAR STATCOM with three 345-kV breakers. A STATCOM does not provide the necessary benefits to short-circuit strength and system inertia, and improvements in power quality that are achievable from a Synchronous Condenser. A STATCOM would also have much higher risk of control interaction with inverter-based resources.

**Preferred:**

Install a +127/-50 MVAR Synchronous Condenser (SC) at Amherst 345 kV Substation with three 345 kV breakers. This alternative performs better under contingency analysis, provides much-needed voltage regulation in the area, and helps to increase area short-circuit strength, therefore, this is the Preferred Solution.

17. Has state and local siting been completed? If yes, explain the siting process and any provisions that were made during siting, provide docket or siting reference numbers. If no, then explain when siting is expected to be completed and any provisions that have been agreed to.

No unusual Siting required.

\* Pool-Supported PTF costs were determined pursuant to Schedule 11 of Section II of the Tariff.



NH 2029 Solution - Southern  
Amherst Synchronous Condenser Project  
Correlation Table

<u>TCA Item</u>	<u>RSP:</u> Project ID #	<u>Study:</u> Reliability Issues Requiring Action	<u>PPA Application:</u>		<u>PAC/RC Meeting:</u> Presentation Reference	<u>TCA Application (\$1,000s):</u>	
			<u>PPA No.</u>	<u>Preferred Solution Description</u>		<u>PTF Estimate</u>	<u>Non-PTF Estimate</u>
<b>ES-22-TCA-27</b>	<b><u>1880</u></b>	n/a	ES-22-T29	NH 2029 Solution Southern - Install one +127/-50 MVAR Synchronous Condenser and three 345-kV breakers at the Amherst 345-kV substation.	Per PAC Presentation 04/14/2021  RC PPA approval 6/15/2022	\$ 66.996	
				SUBTOTAL		\$ 66.996	\$ -