Before the New Hampshire Public Utilities Commission

Docket No. DE-23-056

kris pastoriza petition for docket to examine the costly rebuilds and structure replacements by Eversource of its 115 kV and 345kV transmission lines listed below, as well as all other Eversource transmission line projects in the category of Asset Management from 2018 to the present, including the proposed X-178, U-199, and Q-195 line replacements.

Relief sought: A complete assessment by the PUC of Eversource's Asset Condition category projects for conformance to ROW easement deed conditions, necessity, cost/least cost, how they are booked for inclusion in the rate base, eg, as capital costs to be depreciated; as operation and maintenance; environmental consequences; renewable energy goals, and any other standards required.

Public release by Eversource of all pole inspection reports on its 345kV and 115kV transmission lines.

The suspension of action on any river or public land crossing applications submitted by Eversource to DOE, for Asset Condition projects, until the conclusion of this docket.

Replacement of all OPGW (Optical Ground Wire) with non fiber optic ground wire, on Eversource asset condition transmission line rebuilds for which ROW easements do not include transmission of 'intelligence,' or, if desired by the landowners whose easements have been violated, compensation in the form of rental fees or other conditions they may negotiate with Eversource, such as lower structure heights, reduction in present ROW widths and limitations on conductor size and voltage.

Statutory provisions: 365 (1-7, 15, 18, 19, 29, 37,) 374.7, 371.17, 374-A:8, 125-O:23 (3) (c)(1,2), **3**74-G:5 9 (II) (a-i) and III,

1.

371.17: Whenever it is necessary, in order to meet the reasonable requirements of service to the public, that any public utility should construct a pipeline, cable, or conduit, or a line of poles or towers and wires and fixtures thereon, over, under or across any of the public waters of this state, or over, under or across any of the land owned by this state, modify a previously licensed installation, or license a previously constructed installation, it shall apply to the department of energy for a license to construct and maintain the same.

Eversource and the PUC/DOE failed to determine that there was need for Eversource's Asset Condition crossings, to meet the reasonable requirements of service to the public.

The PUC/DOE have not defined "reasonable requirements of service to the public."

Since the transmission line ROWs were given, sold or taken to meet the reasonable requirements of service to the public, the PUC/DOE cannot violate the ROW easement terms by dispensing with need in assessing river/public land crossing applications.

Section 374-A:8

374-A:8 Proceedings to Acquire Property or to Obtain Rights in Public Waters and Lands.

Electric generating stations, electric substations, and lines for transmission of electricity which are electric power facilities, irrespective of the destination and ultimate use of the electricity to be so

generated and transmitted, shall be electric generating stations, electric substations, and lines for transmission of electricity for which an electric utility, domestic or foreign, may petition under RSA 371 for permission to take lands, rights or easements by eminent domain or for a license to construct and maintain facilities over, under or across public waters or state lands, provided that the commission shall find that such facilities will provide a substantial benefit to the public in this state.

Eversource did not petition the DOE/PUC to take rights for transmission of intelligence on the 115kV and 345kV asset condition projects in which it replaced ground wire with OPGW, which contains fiber optic, not permitted in the terms of most of the ROW easements.

374:7 Investigation of Other Utilities; Orders. –The commission and the department of energy shall have power to investigate and ascertain, from time to time, the quality of gas supplied by public utilities and the methods employed by public utilities in manufacturing, transmitting or supplying gas or electricity for light, heat or power, or in transmitting telephone and telegraph messages, or supplying water, and, after notice and hearing thereon, the commission shall have power to order all reasonable and just improvements and extensions in service or methods.

The PUC and DOE may investigate Eversource's method of using Asset Condition as a means of building new transmission lines without oversight or conformance to any standard of need, cost-effectiveness, abuse of ratepayers or environmental damage.

125-O:23 (3) (c)(1)

125-O:23 Energy Efficiency Fund and Use of Auction Proceeds. –

III. All remaining proceeds received by the state from the sale of allowances, excluding the amount used for department of energy and department of environmental services administration under paragraph I, shall be allocated by the department of energy as follows:

(c) The remainder to all-fuels, comprehensive energy efficiency programs administered by qualified parties which may include electric distribution companies as selected through a competitive bid process. The funding shall be distributed among residential, commercial, and industrial customers based upon each customer class's electricity usage to the greatest extent practicable as determined by the department of energy. Bids shall be evaluated based on, but not limited to, the following criteria:

(1) A benefit/cost ratio analysis including all fuels.

(2) Demonstrated ability to provide a comprehensive, fuel neutral program.

(6) The validity of the energy saving assumptions described in the bid.

PUC failed to do a cost/benefit assessment of Eversource's RGGI proceeds as they relate to Eversource's Asset Condition projects' costs placed in its rate base.

PUC failed to assess Eversource's non-renewable inputs (CO2) into its Asset Condition projects, thus failed to assess Eversource's "fuel neutral program" and the real validity of Eversource's "energy saving assumptions."

65. (1-7, 15, 18, 19, 29, 37,)

374-G:5 9 (II) (a-i) and III; Rate Filing; Authorization. –

II. Prior to authorizing a utility's recovery of investments made in distributed energy resources, the commission shall determine that the utility's investment and its recovery in rates, as proposed, are in the public interest. Determination of the public interest under this section shall include giving a balanced consideration and proportional weight to each of the following factors:

(a) The effect on the reliability, safety, and efficiency of electric service.
(b) The efficient and cost-effective realization of the purposes of the renewable portfolio standards of RSA 362-F and the restructuring policy principles of RSA 374-F:3.
(c) The energy security benefits of the investment to the state of New Hampshire.
(d) The environmental benefits [and damages] of the investment to the state of New Hampshire.
(e) The economic development benefits and liabilities of the investment to the state of New Hampshire.

(f) The effect on competition within the region's electricity markets and the state's energy services market.
(g) The costs and benefits to the utility's customers, including but not limited to a demonstration that the company has exercised competitive processes to reasonably minimize costs of the project to ratepayers and to maximize private investment in the project.
(h) Whether the expected value of the economic benefits of the investment to the utility's ratepayers over the life of the investment outweigh the economic costs to the utility's ratepayers.

(i) The costs and benefits to any participating customer or customers.

III. Authorized and prudently incurred investments shall be recovered under this section in a utility's base distribution rates as a component of rate base, and cost recovery shall include the recovery of depreciation, a return on investment, taxes, and other operating and maintenance expenses directly associated with the investment, net of any offsetting revenues received by the utility directly attributable to the investment. The utility may recover all reasonable costs associated with the filing, whether or not the application is approved by the commission.

PUC/DOE have failed to assess how Eversource's Asset Condition projects may be connected to distributed generation and if so, are in the public interest in the categories listed above. The PUC/DOE have improperly allowed cost recovery of any Eversource Asset Condition projects connected with distributed generation.

Most of the Asset Condition projects appear to have been either unnecessary or most-cost projects.

Using the Asset Condition category, Eversource has built (and proposes to build more) completely new transmission lines; new, taller, wider, steel structures carrying larger conduit. The original 115kV lines are/were rated at 529 (336 kcml, .463 lbs/ft) and 907 amps (795 kcml, 1.1 lbs/ft) The new lines are rated at 1,187 amps (1272 kcml 1.6 lbs/ft) and 1590 kcml (K-165, Merrimack.)

Installation of these new, heavy structures and conduits is not only expensive in terms of materials and installation, but also requires extensive road building, much of it on ROWs with no roads, due to rough

terrain covered with glacial erratics, streams, wetlands, steel slopes and water bodies. The X-178 line, in particular, was routed to avoid the Coppermine Trail, Lonesome Lake and the viewshed of the Tram and Route 3 through Franconia Notch, a route with higher tourism impacts but lower environmental impacts.

On February 8, 2023, NESCOE wrote to ISO-NE and NETOs:

“Investments in Asset Condition Projects have grown steadily. Today they are a material portion of the overall regional network service charge that consumers ultimately pay. Asset Condition Projects have an important role in system reliability. However, the process by which Asset Condition Projects are developed by NETOs, reviewed by ISO-NE, states and the public, approved for rate recovery, and considered in overall transmission system needs and planning is antiquated and ultimately, inadequate.”

https://www.iso-ne.com/static-assets/documents/2023/02/2023_02_08_nescoe_asset_conditions_letter.pdf

In a May 15, 2023 letter to PAC and NETOs Synapse Energy Economics stated

“**Cost Oversight and Review Processes**

Synapse is concerned that there may be several fundamental problems with the asset condition project review and approval process. First, participants appear to receive little notice to analyze proposals or engage in a proper review of the NETOs proposals.

Second, our understanding is that very few stakeholders have the bandwidth, resources, or expertise to periodically review spending proposals, regardless of the review time allotted. Third, we also understand there is no requirement that NETOs receive comments, incorporate feedback from stakeholders, or follow up with the PAC after presenting their proposals. Lastly, concerning cost overruns appear to occur periodically, seemingly without any further review or repercussions. In short, our impression is that asset condition spending proposals are not subject to meaningful review and NETO presentations serve as little more than a pro forma exercise.

Synapse is concerned that the lack of regulatory oversight may be creating a perverse incentive for NETOs to pursue asset condition spending disproportionately, unnecessarily, and/or exorbitantly. We understand there are few strings attached to the approval and rate-basing of asset condition projects, and NETOs earn a guaranteed rate of return on these investments. The ostensible lack of cost review and containment measures also raises questions over whether NETOs are prudently incurring these investments. While ISO New England has a "gold-plating" review process for asset condition projects, ISO New England is not a regulator and has no express directive to oversee NETOs' spending. Regardless, a gold-plating review is not the same as a cost-prudency review since it is a distinct and much lower standard relative to an

assessment of whether a cost is reasonable.

Planning and Right-sizing

Another concern is that asset condition projects are not adequately factored into transmission planning or public policy. Because asset condition projects lack cost-scrutiny and oversight relative to other transmission project types, the earnings opportunity may be driving NETOs to pursue them at a disproportionate rate. The perverse incentive to pursue asset condition projects therefore discourages a more optimal mix of transmission project types that New England will need for a decarbonized and electrified future." (emphasis added)

https://www.iso-ne.com/static-assets/documents/2023/05/2023_05_18_pac_memo_pac_asset_condition_projects.pdf

https://www.rtoinsider.com/articles/32235-states-press-new-england-tos-asset-condition-projects

https://nescoe.com/wp-content/uploads/2023/03/NESCOE-Comments-on-Tx-Plng-Cost-Management-AD22-8-AD21-15-FINAL-A9535371.pdf

Eversource has provided no documentation that lighter OPGW would not meet current and predicted need.

9.

Eversource has provided no documentation of the need for its structure or conduit replacements e.g. pole and conductor inspection reports.

Eversource has stated “Increased conductor size will drastically raise thermal capability of lines to meet future needs” but provided no documentation of need, for example ISO-NE determination of the need for increased power carrying capacity of these lines for system reliability.

Eversource provided no life-cycle costs for wood vs. steel structures. Eversource provided no costs for installation of wood vs. steel structures.

115kV Projects:

9/2022: 115kV Corridor Asset Condition & OPGW A-111 line	$53,501,000.
1/2020: 115kV Structure Replacement Project A-126	$8,292,000.
6/2023: Laminated Wood Structure Replacement Program Phase II A-152	$6,884,000.
9/2020: 115kV Wood Pole Replacement – B-143	$6,403,000.
11/2020: 115kV Wood Pole Replacement – C-129	$10,048,000.
12/2021: Copper Conductor and Shield Wire Replacements- C-129 Line	$12,145,000.
9/2023: Asset Condition wood structure Replacements C-196	$6,191,000.
1/2022: Copper Conductor and Shield Wire Replacements- D-108 Line	6,750,000.
6/2022: 115kV Structure and Shield Wire Replacements- Line D-121	$13,105,000.
12/2022; Line Rebuild and Asset Condition Project - D-142	$52,900,000.

12/2023: 115kV Corridor Asset Condition E-115	$64,147,000.
6/2021: 115kV Wood Pole Replacement – F-139	$7,530,000.
11/2020: 115kV Wood Pole Replacement – G-128	$7,404,000.
12/2021: NH 115kV Laminated Wood Structure Replacement Phase 1 G-128	$12,632.000.
11/2021: Copper Conductor and Shield Wire Replacements- G-128 Line	$5,044,000.
10/2019: 115kV Structure Replacement Project H-`123	$6,168,000.
12/2019: 115kV Structure Replacement Project - H-141	$9,400,000
5/2022: 115kV Laminated Wood Structure Replacement Phase 1 K-105	$16,503,000.
12/2019: 115 kV Structure Replacement Project – Line K-174	$8,665,000.
4/2022: Wood Pole and Shield Wire Replacement K-174	$16,240,000.
2/2021: 115 kV Structure Replacement Project - Line L-163	$16,922,000.
11/2021: Copper Conductor and Shield Wire Replacements- L-163 Line	$23,310,000.
9/2021: 115kV Laminated Wood Structure Replacement Phase 1 L-175	$19,300,000.
12/2020: Wood Pole and Shield Wire Replacement- M-127	$29,740,000.
2/2022: Laminated Wood Structure Replacement Program Phase II M-164	$6,024,000.
12/2023 115kV Line Rebuild and Asset Condition project O-154	$51,000,000.
8/2023: 115kV Structure Replacements and OPGW P-106	$6,375.000.
3/2024: P-145 Line Rebuild-Asset Condition and OPGW P-145	$52,042,000.
9/2023: 115kV Structure Replacements and OPGW Q-171	$14,966,000.
11/2022: Laminated Wood Structure Replacement Program Phase II R-187	$7,541,000.
9/2022: Laminated Wood Structure Replacement Program Phase II S-188	$7,342,000.
12/2022: 115kV Structure and Shield Wire Replacements- T-198	$19,113,000.
9/2022: Laminated Wood Structure Replacement Program Phase II V-191	$10,114,000.

3/2023: Line Rebuild and Asset Condition Project – W-179	$?
12/2022: 115kV Laminated Wood Structure Replacement Program Phase I X-116	$24,646,000.
11/2022: Copper Conductor and Shield Wire Replacements- X-104 Line	$6,994,000.
2/2022: 15kV Laminated Wood Structure Replacement Program X-116	$26,000,000.
11/2020: Wood Pole and Shield Wire Replacement- Y-138	$8,475,000.
12/2022: 115kV Laminated Wood Structure Replacement Program Phase I Z-119	$23,443,000.
4/2022: 115kV Corridor Asset Condition and OPGW Project Z-180	$9,351,000.

<u>345kV lines:</u>

7/2018: 345kV Structure Replacement Project-Line 307	$11,702,000.
8/2018: 345kV Structure Replacement Project-Line 326	$11,702,000.
3/2020: 345kV Structure Replacement Project-Line 326	$3,630,000.
11/2018: 345 kV Structure Replacement Project -Line 367	$15,235,000.
2/2021: 345 kV Structure Replacement Project -Line 367	$13,631,000.
12/2020: 345 kV Structure Replacement Project – Line 373	$10,995,000.
3/2022: 345 kV Structure Replacement Project – Line 373	$9,351,000.

11/2018: 345 kV Structure Replacement Project – Line 379 $14,452,000.

12/2020: 345 kV Structure Replacement Project – Line 379 $11,589,000.

11/2022: 345 kV Wood Structure Replacements- Line 379 $8,020.000.

12/2018: 345 kV Structure Replacement Project – Line 381 $16,255,000.

1/2020: 345 kV Structure Replacement Project – Line 381 $ 6,590,000.

12/2020: 345 kV Structure Replacement Project – Line 385 $14,408,000.

3//2023: Optical Ground Wire Upgrade Lines 381/379 $5.600,000.

12/2018: 345kV Structure Replacement Project – Line 391 $17,858,000.

Need	Projected ISD Month/Year (Cost >$5M dollars)	Project Area	Project	Status	Solution
Asset Condition	2024	Northern	W179 115-kV Line Rebuild and Asset Condition Project	Planned	Rebuild the aging 115-kV line with larger conductor and OPGW.
Asset Condition	Dec-22 $52.9M	Northern	D142 115-kV Line Rebuild and Asset Condition Project	Under Construction	Rebuild the aging 115-kV line with larger conductor.
Asset Condition	Dec-23 $51.0M	Northern	O154 115-kV Line Rebuild and Asset Condition Project	Under Construction	Rebuild the aging 115-kV line with larger conductor and OPGW.

The 115kV Structure Replacement Project of Line X-178 is listed as canceled in the 3/2023 Asset Condition spreadsheet.

The X-178 Corridor Asset Condition Project (new line) has been submitted to the public . $53,000,000.

The Coos Loop new lines are not listed in the March 2023 Asset Condition projects list, but the D-142, W-179 and O-154 rebuilds are described as such in Eversource's Local System Plan, presented to the Planning Advisory Committed on October 19, 2022.

https://www.eversource.com/content/docs/default-source/Tranmission/local-system-plan.pdf

The P-106, Q-171, C-196 and 381/379 Asset Condition Projects are not listed in the March 2023 spreadsheet but are shown in ISO's March 2023 RSP Project List and Asset Condition List update.

115 kV Structure Replacements and OPGW Installation - P106 Line (New Hampshire)	5.6
115 kV Structure Replacements and OPGW Installation - Q171 Line (New Hampshire)	15.0
Asset Condition Wood Structure Replacements - C196 115 kV Line (New Hampshire)	6.2
Line 381/379 Optical Ground Wire Upgrade (New Hampshire)	8.2

https://www.iso-ne.com/static-assets/documents/2023/03/

final_project_list_presentation_march_2023.pdf

There have been many Asset Condition Projects constructed by Eversource in the other states in its service area, the costs of which have presumably been born, in part, by Eversource customers in New Hampshire. Perhaps other states are investigating Eversource's Asset Condition Projects.

States Press New England TOs on Asset Condition Projects , May 18, 2023, Jon Lamson

https://www.rtoinsider.com/articles/32235-states-press-new-england-tos-asset-condition-projects

Are Eversource customers responsible for the apparently inferior laminated wood structures installed in the 1970s, whose apparent lifespan has been 30 years short of the 115kW structures installed in the late 1940s, many of which are still in use?

Eversource's description of the roads required for the new 115kV transmission lines has been non-existent.

Following is an Eversource 115kV line replacement description that was actually reviewed:

"The new overhead 115-kV transmission line would consist of three sets of phase conductors. Each set is comprised of one 1,590,000 circular mil (1,590-kcmil) Aluminum Conductor Steel Supported (ACSS). This selection is a standard Eversource conductor utilized for new 115-kV line construction… [Should we expect that the 'standard' 1272 will be replaced by the 'standard' 1,590?]

"Access Road Requirements

... To construct, operate, and maintain the new overhead 115-kV transmission line along the Proposed Route, contiguous access along the ROW is not required and these existing access roads would be used to the extent practical.

However, access to each new transmission structure location, as well as to pulling pads and guard structure sites, would be required. As a result, additional temporary and permanent

access roads must be established and most of the existing on-ROW access roads would require improvements to allow the safe movement of the heavy construction equipment needed to install the new 115-kV line.

In addition, other temporary access along the ROW may be required to facilitate vegetation removal during construction. Refer to Section 4.1.4.2 for further information regarding temporary access for vegetation removal.

Further, in some areas, to avoid traversing linearly along the ROW over rugged terrain or through sensitive environmental or cultural resources, access roads to the ROW would be developed or improved across private property or across land owned by Eversource ("off-ROW access roads"). The locations and type of new access roads and access road improvements would depend on the terrain, presence / absence of environmental features, and whether the access road would be temporary (used only during construction) or permanent (retained for long-term maintenance of the line).

Access roads must have appropriate grades and sufficient width and capacity to support the large, heavy construction equipment (such as flat-bed tractor-trailers, drilling rigs, cranes, and concrete trucks) required to construct the new 115-kV line. The need for access by flat-bed trailers and concrete trucks (including turning radii) typically determines the scope of access road improvements.

In general, all construction access roads (on- or off-ROW) must have a stable base and grades of 10% or less. Whether restored, improved, or newly constructed for the Project, on- and off-ROW access roads would have a typical 16-to-20-foot-wide travel way and, overall, a 20-to-25-foot-wide footprint (including road shoulders). However, access road widths would vary depending on site-specific conditions (principally slope and presence of water resources) and on factors such as the amount of grading (cutting and filling) required and on whether a particular section of road must accommodate equipment turning radii and/or equipment passing/turn-out locations. Access roads would be graveled or would consist of temporary construction (timber) mats or equivalent.

In general, gravel would most commonly be used in constructing access roads in upland areas. In some locations, particularly on steep slopes and at intersections with public roads, asphalt millings could be used to improve road stability and vehicle traction."

https://www.eversource.com/content/docs/default-source/Tranmission/sw-ct-mcf-1.pdf

On the X-178 115kV line, crossbars and insulators were replaced on many structures in 2017. This process places large stresses on the poles on either side of the one from which the conductors have been removed, (Guidelines for Electrical Transmission Line Structural Loading, 4th edition ASCE 2020) yet these poles, now claimed to be inadequate, were deemed able to safely bear these forces. The line-workers were not deemed to be in danger.

17.

These poles and conduit were replaced in 1986 thus should last until 2060, since the 1949 poles they replaced are still in service.

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reformatted to conform to PUC rules, june 28, 2023

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