

DE 20-161
Public Service Company of New Hampshire d/b/a Eversource Energy

2020 Least Cost Integrated Resource Plan

Settlement Agreement

Appendix A

Appendix A

Eversource Energy NWA Investigation Plan

1. Non-wires alternative (NWA) thresholds¹ will be investigated and documented over a 2-year period. See the Company's current screening protocol, Attachment 1.

- In the first year (April 2023-March 2024), Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource Energy) will use existing NWA² threshold levels (\$3M, 3-year implementation) for analysis for the following reasons:
 - It allows Eversource Energy staff to become more proficient in performing the analysis.
 - Increased proficiency reduces NWA analysis times (and costs).
- In the second year (April 2024-March 2025), changes to NWA threshold guidelines are to be studied; e.g., \$3M-to-\$1M, 3-year-to-2-year implementation.
 - Similar to Portland General Electric (PGE), set a minimum non-wires solutions (NWS) cost threshold at \$1 million.³ Rationale:
 - Multi-feeder/substation projects typically cost more than \$1 million and take 2 or more years to complete.
 - Feeder/circuit-specific projects typically cost less than \$1 million and take 9 months to 2 years to complete.
- Which NWA threshold guidelines to use are expected to emerge after the second year, based on actual data and will be summarized as discussed below.
- Regardless of the NWA thresholds used, Eversource Energy will record the use of NWA analysis (e.g., frequency of use), and document analysis results by project.

¹ Dyson, Mark et al. *The Non-Wires Solution Playbook – A Practical Guide for Regulators, Utilities, and Developers*, Rocky Mountain Institute (RMI), 2018, page 53: “Any criteria used for screening should evolve over time to avoid artificially limiting the market as more non-wires solution applications are proven. Criteria should also be applied as heuristics guiding decisions to further evaluate NWS rather than as rigid boundaries used across all situations.” The referenced document may be downloaded at the following link: <https://rmi.org/insight/non-wires-solutions-playbook/>

² For the purposes of this document, “NWA” non-wires alternatives” and “NWS” non-wire solutions, shall be synonymous

³ Non-Wires Solutions (DRAFT) – Technical Process & Procedures Manual, v1.0, March 23, 2020, page 8 of 12. Available at the following link: https://assets.ctfassets.net/416ywc1laqmd/U506kk0YixSOtd3TZ7zAd/02427d8810f96e962ae9247000ec742d/PGE_NWS_process_-_2022_03_23.pdf

- Documented progress reports will be issued annually (June 2024 and June 2025) to the Department of Energy for the two-year investigation period and as specified below.
- NWA analysis process/procedure updates and implementation costs will be included in each report.
- Updates to the NWA Framework Tool will be included in each report.
- Results of the 2-year investigation will be incorporated in Eversource Energy's next (2025) least cost integrated resource plan (LCIRP) or provided as indicated.

2. NWA screening criteria related to aging equipment will be considered.

- Asset condition improvement projects (typically repairs/enhancements to correct asset reliability and safety issues) are based on a company's asset management program and condition-assessment tools with projects scoped accordingly.
 - For these types of projects, short term action is needed to correct asset reliability and safety issues.
 - NWA analyses are not to be performed.
- Failed equipment replacement typically requires as-soon-as-possible (ASAP) attention using "like for like" or "like for similar" equipment.
 - For these types of projects, failures are unplanned, and quick repairs/replacements are essential to maintaining system reliability and resiliency.
 - NWA analyses are not to be performed.
- Aging equipment replacement projects including but not limited to system load relief and system reliability, are typically planned and based on a company's asset management program and condition-assessment tools with projects scoped accordingly.⁴
 - For these types of projects, timely replacement is important but immediate attention is not usually required. "New York discusses in their *Supplemental Distributed System Implementation Plan* investments to repair or replace equipment may have components that could be suitable for NWS."⁵
 - Therefore, on a case-by-case basis an NWA analysis is to be performed. The Company will not perform NWA analyses where prior NWA analyses have shown that a specific type of project is not appropriate for an NWA analysis. The NWA screening process is designed such that it will reject unqualified projects early in the process without dedicating significant engineering hours to

⁴ RMI's *Non-Wires Solution Playbook, - A Practical Guide for Regulators, Utilities, and Developers*: contributors include Eversource, Liberty and National Grid, for example at page 53 (discusses screening criteria and includes a figure (page 54) that compares NWA screening categories in the following five states: California, New Hampshire (Liberty Utilities), New York, Rhode Island, and Vermont); page 55 (includes a section called "Timing" that discusses considerations when selecting NWA threshold constraints; e.g., 18 months, 24 months, 30 months, etc.).

⁵ *Id.*, page 57.

make that determination. The Company will document in its project authorization form the reason that an NWA analysis was not performed including reference to prior analyses, if applicable.

3. NWA parameters will be adjusted, added, or held constant.

- All parameters (including thresholds) will be defined/updated in the NWA Framework Tool as NWA study progress throughout the 2-year exploratory period.

4. There will be a reasonable “stay out” period during which further NWA threshold investigations will not be requested.

- For the effectiveness of NWA performance thresholds to be measured, there needs to be a reasonable time period to collect/analyze results before changing thresholds. Changes (if any) would then be based on data and not speculation. Therefore, a reasonable “stay out” period is appropriate.
- The results of the two-year NWA investigation will be discussed with DOE and incorporated into the Company’s next LCIRP filing (to be filed as required by RSA 378:38 identified herein as the “2025 LCIRP”) or discussed with DOE by December 31, 2025, whichever is earlier.
- On or before December 15, 2027, the Company will report on its progress applying the NWA thresholds established as a result of the two-year NWA investigation described herein (the “Mid-Point Report”). The Mid-Point Report in 2027 may inform DOE’s requests for NWA threshold investigations thereafter.
- In the event that the Company seeks an extension of the 2025 LCIRP filing date, the duration of the NWA stay-out period shall remain December 15, 2027, unless otherwise agreed upon in writing. Similarly, if Eversource files a new 2027 LCIRP, the mid-point report may inform DOE’s request for NWA threshold investigations presented in the new 2027 LCIRP. Following the two year investigation described herein, April 2023 through March 2025, the Company and DOE agree that no further threshold investigations will be required until after the filing of the Company’s Mid-Point Report, on the date specified above. The Company and DOE agree that DOE will not propose additional NWA threshold investigations until after the Mid-Point Report’s due date.

5. Cost/resource commitments will be defined as the NWA Plan progresses.

- Performance measurement is a reasonable use of resources as long as resources/costs are conscientiously managed. Engineering hours and costs must be substantiated per each project as part of the annual reporting.
- The 2-year NWA investigation will ultimately determine the appropriate NWA threshold levels for Eversource Energy.
- ***All NWA analyses are to be fully documented and retained.***

Attachment 1

Excerpts from the March 31, 2021 LCIRP Supplement, App A-1, Docket DE 20-161

PSNH dba Eversource Energy
Docket No. DE 20-161
Least Cost Integrated Resource Plan
March 31, 2021 Supplement
Appendix A-1
Page 9 of 45

67 5. INITIAL NWA SCREENING

68 The NWA Framework calls for an initial screening to ensure that from a practical and company policy standpoint the project
69 does not pose any insurmountable obstacles for an NWA Solution before further analysis has been conducted.

70 A. CRITICAL SUITABILITY CRITERIA

71 The Critical Suitability Criteria pose a go-no-go decision point in the NWA Screening Process.

- 72 a. **Asset Health Index < 0.5:** Any station with a transformer's asset health index above 0.5 will not be considered as an NWA
73 candidate. A health index greater than 0.5 equals a turn insulation drop below 400. (new transformers are at ~1000).
74 Industry/literature² accepted practice is that <400 is a replacement candidate.
- 75 b. **Year of First Violation ≥ 2:** Any constraint that appears with 2 or less years from the base year will not be considered for
76 an NWA option, as the timeframes for solution design and procurement would not suffice. A standard, out of the box
77 traditional solution provides a faster, and safer alternative to address the issues.

78 Any project site that does not pass all three criteria will be disqualified from further NWA considerations and Eversource will
79 move forward with developing a traditional solution.

80 B. ADDITIONAL CONSIDERATIONS

81 The additional screening considerations are intended to help guide a discussion in case the final cost benefit is close to 1. If any
82 of the additional considerations is answered with a "No", a decision against the NWA solution might be made, but needs to be
83 evaluated on a case by case basis.

- 84 a. Is it reasonable to assume at this time that a Non-Wires Alternative can be physically sited in the area?
- 85 b. Is it reasonable to assume at this time that there are no environmental concerns with Non-Wires Alternatives in the area?
- 86 c. Is it reasonable to assume at this time that local residents would accept a Non-Wires Alternative Solution in the area?
- 87 d. Is there no other capital project already approved in the same station?

88

² EPRI 3002019254 Analysis Assessment and Comparison

89 **6. GENERAL FRAMEWORK**

90 The following Chapter outlines the general NWA Framework, including which distributed energy resources (DER) are consid-
91 ered, how reliability is considered, and how forecasts and financial planning horizons are applied.

92 **A. CONSIDERED RESOURCES**

93 The NWA Framework is designed to consider both in front of and behind the meter (FTM / BTM) DER technologies in the NWA
94 Evaluation Process. BTM DERs are assumed to be 3rd party owned and operated through a utility program. Table 1 outlines the
95 DER technologies which are considered in the NWA Framework as options for deferring capital investments.

96 Table 1: DER Technologies Considered as NWAs

NWA	Definition	Capabilities
Energy Efficiency (EE)	Reduction of load through energy efficiency initiatives in addition to naturally occurring and already planned for energy efficiency.	Reduces load profile overall but limited by availability that is defined by customer makeup
Demand Response (DR)	Temporary reduction of consumption through demand response programs <ul style="list-style-type: none"> ▪ Commercial DR ▪ Residential DR 	Reduces load for a fixed time with pre-conditioning and snap back effects
Photovoltaic (PV)	Solar PV installations <ul style="list-style-type: none"> ▪ Utility Scale Solar PV ▪ BTM Solar PV 	Non-dispatchable output that is dictated by solar irradiance profiles
Battery Energy Storage System (BESS)	Lithium Ion Battery Systems <ul style="list-style-type: none"> ▪ Utility Scale BESS (Infront of meter) ▪ BTM BESS 	System needs to provide enough capacity to re-charge during cycles, can provide both active and re-active power
Combined Heat and Power (CHP)	Customer Program CHP solutions incentivized by the Utility Energy Efficiency Program	Modeled to run continuously and generates revenue from electricity and heat. Dispatch capability assumed through Enbala DR Platform
Conservation Voltage Reduction (CVR)	Voltage modification scheme that reduces system voltage to lower system load	Very limited impact which is highly dependent of the feeder makeup and types of loads, typically below 3%
Fuel Cell (FC)	Customer Program FC solutions incentivized by the Utility Energy Efficiency Program	Modeled to run continuously and generates revenue from electricity and heat. Dispatch capability assumed through Enbala DR Platform
Emergency Generation (EG)	Contracted generators (Diesel, Gas, etc.) that can be called upon by the utility	On-call resources with high reliability and flexibility; not renewable, could be noisy and have high emissions; typically, expensive to maintain.

97