



Extended-Term/Longer-Term Transmission Planning Phase 2

Continued Discussion of Tariff Modifications

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Project Title: Attachment K Extended-Term/Longer-Term Transmission Planning*

Proposed Effective Date: August 2024

- In the [New England States' Vision for a Clean, Affordable, and Reliable 21st Century Regional Electric Grid](#) (Vision Statement), the New England states recommended that ISO identify process changes to allow for a routine transmission planning process to help “inform all stakeholders of the amount and type of transmission infrastructure needed to cost-effectively integrate clean energy resources” and enumerated certain criteria for that framework
 - These changes were addressed through Tariff changes under the Phase 1 effort, which were accepted by [FERC in February 2022](#)
- This effort, Phase 2, establishes the rules that enable the states to achieve their policies through the development of transmission to address anticipated system concerns and the associated cost allocation method

*The name of this effort was originally “Extended-Term.” During the review process, the Tariff language was changed to “Longer-Term.”

Background and Purpose

- The second phase of Tariff changes is intended to establish the processes to facilitate the states' achievement of their policy-based goals
 - Enable the development of transmission infrastructure to address the findings of a Longer-Term Transmission Study (LTTS) by:
 - Codifying NESCOE and the ISO's respective roles throughout the process
 - Establishing the cost recovery methodology for resulting transmission
 - Additionally, in [July 2023](#), the New England states indicated the potential for increased reliance on the ISO to provide technical assistance in connection with state procurements and efforts to secure transmission-related funding
- The content discussed in this presentation is the outcome of joint discussions between the ISO and NESCOE on the processes to address the states' requests
- This is the fourth meeting at the Transmission Committee to discuss these changes, which are anticipated to be filed with FERC in Q2 2024
 - Today's discussion Discussions on the redlines for Phase 2 will continue at the February TC meeting

Problem Statement

- Modifications to the Tariff are needed to support the states' efforts to meet their State-identified Requirements*

*Tariff Section I.2.2: State-identified Requirement refers to a legal requirement, mandate or policy of a New England state or local government that forms the basis for a Longer-Term Transmission Study request submitted to the ISO pursuant to the process set out in Section 16 of Attachment K of the OATT



Follow-up from the December TC Meeting

- During the discussion, a stakeholder questioned whether the proposed Tariff language regarding cost recovery through Schedule 21 for Local Longer-Term Transmission Upgrades (LLTTUs) was the same as that used for the existing Local Public Policy Transmission Upgrades (LPPTUs)
 - The ISO has compared the applicable sections of Attachment K (Section 16.7 – LLTTUs with existing 4A.11 LPPTUs) and found cost recovery for these upgrades to be identical
 - Background
 - Today, for a Regional Benefit Upgrade (RBU) or Public Policy Transmission Upgrade (PPTU) to be eligible for regionalized cost recovery, the upgrade must be PTF
 - In OATT, Section II.49, the definition of PTF is more inclusive for PPTUs than for RBUs. As part of the longer-term effort, the definition of PTF for LTTUs is proposed to be identical to that of PPTUs
 - Some confusion may have resulted from modifications to the competitive transmission process made in 2019 where the baseline for TCA review was set to the project as described in Schedule A of the Selected Qualified Transmission Project Sponsor Agreement (SQTPSA). Schedule A of the SQTPSA will only capture the PTF portion of the project, consistent with the handling of the Project List

TARIFF REVISIONS

This section discusses Tariff Revisions which have been added or modified since the December 2023 TC meeting.



Overview of Tariff Redlines

- Section II.51 had inadvertently been included in the December TC meeting materials
 - This section has been removed from the January TC materials
- As a follow-up to the discussion at the December TC meeting, the ISO corrected all applicable language to ensure that “Long-Term” was not being used where “Longer-Term” is appropriate
 - The redlines are not shown in the Tariff redlines later in this presentation, but are in the posted materials
- During the review above, the ISO found a number of instances where the term “Longer-Term Solution” was used when the defined term is “Longer-Term Transmission Solution”
 - Changes were made to correct the terminology
 - The redlines are not shown in the Tariff redlines later in this presentation, but are in the posted materials

Overview of Tariff Redlines, cont.

- The definitions for Longer-Term Proposal and Longer-Term Transmission Solution were modified for clarity
- Additional minor changes and corrections were made
 - Examples:
 - Deleting an extra “the”
 - Replacing “results” with “report”
 - Correcting “market efficiency” to “market efficiency need”
 - Minor sentence restructuring

Overview of Tariff Redlines, cont.

- OATT Schedule 12, Transmission Cost Allocation On and After January 1, 2004
 - New Section 10, Longer-Term Transmission Upgrades, is proposed
 - Cost are allocated the same as RBUs, unless NESCOE provides a written communication to the ISO specifying alternative cost allocation. In that case:
 - Costs associated with addressing any reliability and/or economic needs that have been combined into the longer-term RFP are allocated the same as RBUs. The ISO develops a representative solution to the reliability and/or economic needs to determine these costs
 - All other costs are allocated in the manner filed by Pool Transmission Owners (PTOs)/Qualified Transmission Project Sponsors (QTPSs) and accepted by the Commission
- OATT Schedule 12C, Determination of Localized Costs On or After January 1, 2004
 - Conforming change to add Longer-Term Transmission Upgrades to the list of upgrades which are subject to review for localized costs

Overview of Tariff Redlines, cont.

- The definitions in Section I.2.2 were updated to improve clarity
- Clarification made to Section 16.4(a) of Attachment K to determine the time sensitivity for reliability needs that were considered or included in a longer-term RFP that were not addressed
 - Three year window is measured from the completion of the reassessment of time-sensitivity due to the termination of the longer-term process
 - Time-sensitivity does not apply to market efficiency needs
- Section 16.4(d) of Attachment K was modified to address differences between the study deposit and the actual cost of evaluate a Longer-Term Proposal
- Section 16.5(a) was modified to:
 - Allow a PTO to recover costs associated with filing for alternative cost allocation for corollary upgrades
 - Remove duplicative language with Schedule 12
 - Address PTO AC concerns related to rights associated with Section 205 filings
- Appendix 2 to Attachment K was updated to the latest list of PTOs

Overview of Tariff Redlines, cont.

- OATT, Attachment K, Section 16.4(h), Identification and Reporting of Preliminary Preferred Longer-Term Transmission Solution; Stakeholder Input
 - Evaluation factors have been added
 - The first set of evaluation factors are the same as those used for other competitive processes under Attachment K, with those that are duplicative with the financial benefits being removed
 - The second set of evaluation factors will be used to determine the financial benefits of Longer-Term Proposals that meet the needs and are competitive
 - Production cost and congestion savings
 - Avoided capital cost of local resources needed to serve demand
 - Avoided transmission
 - Reduction in losses
 - Expected unserved energy

Evaluation Factors – Financial Benefits

- This presentation contains a general description of how the factors used to calculate the financial benefits are determined. These may change over time, possibly from improvements in modeling techniques.
- Financial benefits will be added for use in the benefit-to-cost ratio calculations
- Production cost and congestion savings
 - Calculated using the production cost model
 - Two versions of production cost model will be run, with and without a transmission upgrade
 - Production cost savings will be quantified as the difference in production cost between the two runs. The systems will be run for multiple future years (for example 2030, 2040, and 2050) and congestion savings will be calculated for the interim years by interpolating between the modeled year results.
 - The ISO will use the benefits of the proposal over the first 20 years of its life

Evaluation Factors – Financial Benefits, cont.

- Avoided capital cost of local resources needed to serve demand
 - Calculated in the capacity expansion model
 - This metric would determine any reduction in capital costs for future resource development by being able to access existing resources in other parts of the system, rather than having to develop resources in constrained parts of the system
 - A base case without transmission upgrades would be used to model optimal resource mix quantity and location for that transmission topology.
 - A change case would then be simulated in which new resource mix quantity and location are optimized for a different transmission topology (for example, taking advantage of higher transfer capability between different zones in New England)
 - The difference between the two capital costs would be the output of this evaluation factor



Evaluation Factors – Financial Benefits, cont.

- Avoided transmission
 - Review projects on the RSP Project List to see if projects that are being built for reliability, market efficiency, or public policy
 - Review projects on the Asset Condition List to account for the replacement of aging assets
 - Additional savings could be estimated by using generic replacement costs for any transmission line or transformer that is over 40 years old, since it would be expected that over the next 20 years, the asset would be replaced anyway
 - Note: In the event that a Longer-Term Proposal could eliminate the need for a project on the RSP Project List, other evaluations of the proposal would be completed with the Longer-Term Proposal in service and the cancelled RSP Project removed from service

Evaluation Factors – Financial Benefits, cont.

- Reduction in losses
 - Calculated in the production cost model
 - Powerflow models would be used to establish losses across snapshots to get an idea of the reduction in losses provided by a proposal
 - The reduction in losses would then be modeled as an 8,760 hour reduction in load in the production cost model to determine the value of reduced losses
- Expected unserved energy
 - Calculated using the production cost model
 - This production cost model would have EFORd rates added
 - Multiple weather years and multiple outage draws per year would allow the ISO to calculate an expected unserved energy (EUE)
 - This value can then be multiplied by reserve shortage prices (believed to be \$3500/MWh) to create an economic benefit
 - This analysis would again be done for a number of benchmark years (for example, 2030, 2040, and 2050), then the savings for interim years could be calculated by interpolating between the modeled years

REDLINES



Proposed Tariff Changes – Schedule 12

Tariff Section	Tariff Change	Reason for Change
<p>Section II - OATT, Schedule 12, Transmission Cost Allocation On and After January 1, 2004</p>	<p><u>10. → Longer-Term Transmission Upgrades:¶</u></p> <p>¶</p> <p><u>The cost of Longer-Term Transmission Upgrades shall be allocated in the same manner as Regional Benefit Upgrades, unless the applicable PTOs in accordance with the TOA or a Qualified Transmission Project Sponsor that is not a PTO in accordance with the NTDOA files with the Commission an alternative cost allocation for a Longer-Term Transmission Upgrade that implements the cost allocation requested by NESCOE in a written communication to the ISO pursuant to Section 16.4(i) of Attachment K to this OATT and the Commission approves such alternative cost allocation, in which case: (a) only the costs associated with addressing any combined reliability and/or market efficiency needs identified in the request for proposal(s) issued pursuant to Section 16.4(a) of Attachment K to this OATT, as calculated by the ISO, shall be allocated in the same manner as Regional Benefit Upgrades; and (b) the incremental costs associated with addressing the longer-term needs identified in a request for proposal(s) issued pursuant to Section 16.4(a) of Attachment K to this OATT shall be allocated under the alternative cost allocation filed with and accepted by the Commission by the applicable PTO in accordance with the TOA or by a Qualified Transmission Project Sponsor that is not a PTO in accordance with the NTDOA.¶</u></p>	<p>Describes default regional cost allocation; also allows for alternative cost allocation</p>

Proposed Tariff Changes – Schedule 12C

Tariff Section	Tariff Change	Reason for Change
<p>Section II - OATT Schedule 12C, Determination of Localized Costs On or After January 1, 2004</p>	<p>1. → Review Procedures For Determining Localized Costs ¶</p> <p>All (1) RTEP02 Upgrades; (2) Regional Benefit Upgrades developed pursuant to Section 4.2 of Attachment K of the OATT; (3) reconstructions/replacements of all or part of Pool Transmission Facilities; and (4) Regional Benefit Upgrades, and Public Policy Transmission Upgrades, and Longer-Term Transmission Upgrades developed pursuant to Sections 4.3, and 4A, and 16 (respectively) of Attachment K of the OATT shall be reviewed by the ISO with advisory input from the Reliability Committee to determine if any of the costs associated with such upgrades are Localized Costs, except that a proposed Transmission Upgrade which costs less than \$500,000 may be exempted from this review by</p>	<p>Provides for review of Longer-Term Upgrades for localized costs</p>

Proposed Tariff Changes – Section 1.2.2

Tariff Section	Tariff Change	Reason for Change
Section 1.2.2 - Definitions	<p>Longer-Term Proposal is a proposal, as defined in Section 16.4(h) of Attachment K of the OATT, for a Longer-Term Transmission Upgrade submitted by a Qualified Transmission Project Sponsor pursuant to Section 16.4(b) of Attachment K to the OATT.</p> <p>¶</p> <p>Longer-Term Transmission Solution is the Longer-Term Proposal solution identified as the preferred solution pursuant to Section 16.4(h) of Attachment K to the OATT, as defined in Sections 16.4(h) (i) of Attachment K of the OATT, for a Longer-Term Transmission Upgrade by a Qualified Transmission Project Sponsor.</p>	Improve clarity

Proposed Tariff Changes – Att. K, Section 16.4(a)

Tariff Section	Tariff Change	Reason for Change
Section II - OATT Attachment K, Section 16.4(a)	<p><u>Attachment K. If the longer-term process is terminated pursuant to Section 16.5(c) or 16.6 of this Attachment K or corresponding Longer-Term Transmission Upgrade is removed from the RSP Project List pursuant to Section 3.6(c), then: (1) in the case of a market efficiency need, the ISO shall initiate the process under Section 4.3 of this Attachment K, and (2), in the case of a reliability need, notwithstanding any other provisions to the contrary, then the ISO shall: (i) assess the reliability or market efficiency need and its time-sensitivity, as appropriate; (ii) determine whether a solution is needed to solve the reliability or market efficiency need in three years or less from the completion of the assessment in this Section 16.4(a); and (iii) shall initiate the applicable process pursuant to Sections 4.1-4.3 of this Attachment K.</u></p>	Corrected the start of the 3 year window for time-sensitivity; removed market efficiency from time-sensitivity since it does not apply

Proposed Tariff Changes – Att. K, Section 16.4(d)

Tariff Section	Tariff Change	Reason for Change
<p>Section II - OATT Attachment K, Section 16.4(d)</p>	<p>Longer-Term Proposal evaluation by the ISO. . . The study deposit of \$100,000 shall be applied toward the costs incurred by the ISO associated with the evaluation of the Longer-Term Proposal. Any difference between a Qualified Transmission Project Sponsor's study deposit and the actual cost of the evaluation of a Longer-Term Proposal shall be paid by or refunded to the Qualified Transmission Project Sponsor, as appropriate, with interest calculated in accordance with Section 35.19a(a)(2) of the FERC regulations. . . Any refund payment shall be accompanied by a detailed and itemized accounting of the actual study costs incurred. . . Any invoice to collect funds in addition to the deposit shall be accompanied by a detailed and itemized accounting of the actual study costs incurred. . . Any disputes arising from the study process shall be addressed under the dispute resolution process specified in Section I.6 of the ISO Tariff.</p>	<p>Added to address differences between the study deposit and the actual cost of evaluation of a Longer-Term Proposal</p>

Proposed Tariff Changes – Evaluation factors

Tariff Section	Tariff Change	Reason for Change
<p>Section II - OATT Attachment K, Section 16.4(h)</p>	<p><u>The ISO will consider several factors during the evaluation process for identification of the preliminarily preferred Longer-Term Transmission Solution. These factors may include, but are not limited to, the following which are listed in no particular order:</u></p> <ul style="list-style-type: none"> • → Life-cycle cost, including all costs associated with right-of-way acquisition, easements, and associated real estate; • → System performance; • → Cost cap or cost containment provisions; • → In-service date of the project or portion(s) thereof; • → Project constructability; • → Generation and transmission facility outages required during construction; • → Extreme contingency performance; • → Operational impacts; • → Incremental costs for potential resource retirements; • → Interface impacts; • → Future expandability; • → Consistency with Good Utility Practice; • → Potential siting/permitting issues or delays; • → Environmental impact; • → Design standards; • → Impact on NPCC Bulk Power System classification; and • → Qualified Transmission Project Sponsor(s) capabilities 	<p>Adds evaluation factors that describe examples of what may be taken into account when comparing between Longer-Term Proposals</p>

Proposed Tariff Changes – Evaluation factors, cont.

Tariff Section	Tariff Change	Reason for Change
<p>Section II - OATT Attachment K, Section 16.4(h)</p>	<p>The ISO will determine the financial benefits associated with Longer-Term Proposals that meet the needs identified in the request for proposal(s) and are competitive in terms of electrical performance, cost, future system expandability and feasibility. These financial benefits will consider factors that include, but are not limited to, the following which are listed in no particular order:</p> <ul style="list-style-type: none"> • → Production cost and congestion savings; • → Avoided capital cost of local resources needed to serve demand; • → Avoided transmission; • → Reduction in losses; and • → Expected unserved energy <p>Insert evaluation factors here</p>	<p>Adds evaluation factors that describe examples of what may be used to in the calculation of financial benefits for Longer-Term Proposals</p>

Proposed Tariff Changes – Att. K, Section 16.5(a)

Tariff Section	Tariff Change	Reason for Change
<p>Section II - OATT Attachment K, Section 16.5(a)</p>	<p>cost allocation. The Qualified Transmission Project Sponsor and PTO shall file with the Commission the alternative cost allocation for a Longer-Term Transmission Upgrade in accordance with the TOA or NTDOA, as applicable. In the case where the ISO notifies the PTO that has upgrades required by the preferred Longer-Term Transmission Solution to proceed in accordance with Schedule 3.09(a) of the TOA, any prudently incurred PTO costs associated with a filing to implement the cost allocation requested by NESCOE will be recovered by the applicable PTO in accordance with Attachment F of this OATT.</p>	<p>Address PTO AC concern related to third parties dictating a Section 205 filing with FERC; allows PTO to regionalize the costs of the FERC filing for alternative cost allocation for corollary upgrades</p>

Proposed Tariff Changes – Att. K, Section 16.5(a)

Tariff Section	Tariff Change	Reason for Change
Section II - OATT Attachment K, Section 16.5(a)	<p>Costs for the Longer-Term Transmission Upgrade included in the Regional System Plan or RSP Project List shall be allocated in accordance with Section 10 of Schedule 12 to this OATT the same manner as Regional Benefit Upgrades, unless the ISO received a written NESCOE communication pursuant to Section 16.4(i) specifying an alternative cost allocation method, in which case: the costs associated with addressing any combined reliability and/or market efficiency needs identified in the request for proposal(s), as calculated by the ISO, shall be allocated in the same manner as Regional Benefit Upgrades; and the costs associated with addressing any longer-term needs identified in the request for proposal(s) shall be allocated under the method specified in the written NESCOE communication using documents filed with and accepted by the Commission by the applicable PTO in accordance with the TOA or by a Qualified Transmission Project Sponsor that is not a PTO in accordance with the NTDOA.</p>	Addresses PTO AC concern related to duplicative language in Attachment K and Schedule 12

Proposed Tariff Changes – Attachment K, Appendix 2

Tariff Section	Tariff Change	Reason for Change
<p>Attachment K, Appendix 2, List of Entities Enrolled in the Transmission Planning Region</p>	<p>Town of Braintree Electric Light Department¶ Central Maine Power Company¶ Chicopee Electric Light Department¶ Connecticut Municipal Electric Energy Cooperative¶ Connecticut Transmission Municipal Electric Energy Cooperative¶ Cross-Sound Cable Company, LLC¶ Eversource Energy Service Company on behalf of The Connecticut Light and Power Company, Public Service Company of New Hampshire, and NSTAR Electric Company¶ Fitchburg Gas and Electric Light Company¶ Green Mountain Power Corporation¶ The City of Holyoke Gas and Electric Department¶ Town of Hudson Light and Power Department¶ Maine Electric Power Company¶ Massachusetts Municipal Wholesale Electric Company¶ Town of Middleborough Gas & Electric Department¶ The Narragansett Electric Company d/b/a Rhode Island Energy¶ New England Energy Connection, LLC¶ New England Power Company d/b/a National Grid¶ New Hampshire Electric Cooperative, Inc.¶ New Hampshire Transmission, LLC¶ Town of Norwood Municipal Light Department¶ Town of Reading Municipal Light Department¶ Shrewsbury Electric & Cable Operations¶ Stowe Electric Department¶ Taunton Municipal Lighting Plant¶ The United Illuminating Company¶ Unitil Energy Systems, Inc.¶ Vermont Electric Cooperative, Inc.¶ Vermont Electric Power Company, Inc.¶ Vermont Public Power Supply Authority¶ Vermont Transco LLC¶ Versant Power¶ Town of Wallingford¶ Connecticut Department of Public Utilities Electric Division ¶</p>	<p>Corrects the list of PTOs</p>

Conclusion

- Today's discussion provided an introduction to the proposed redlines for Schedule 12, Schedule 12C, and the evaluation factors
- Additional corrections and edits were also discussed
- The discussion also addressed eligibility for regional rate recovery for LLTTUs
- Further discussion will occur at the February 15 TC meeting, potentially including process modifications resulting from today's NESCOE presentation

Stakeholder Schedule

Proposed Effective Date – August 2024

Stakeholder Committee and Date	Scheduled Project Milestone
October 17, 2023 TC	Discussion of concepts to be included in upcoming Tariff revisions
November 21, 2023 TC	Respond to stakeholder questions from previous meeting and further discussion of concepts to be included in upcoming Tariff revisions
December 21, 2023 TC	Respond to stakeholder questions from previous meeting and initial review of proposed redlines
January 9, 2023 PTO AC	Introduction and discussion of redlines
January 19, 2023 PTO AC	Discussion of redlines
January 23, 2024 TC	Respond to stakeholder questions from previous meeting and continued review of proposed redlines
February 9, 2024 PTO AC	Vote on the proposed Tariff revisions
February 13-14, 2024 RC	Initial discussion of proposed redlines
February 15, 2024 TC	Respond to stakeholder questions from previous meeting and review of incremental changes to proposed redlines
March 19, 2024 RC	Vote on the proposed Tariff revisions and any proposed amendments
March 27, 2024 TC	Vote on the proposed Tariff revisions and any proposed amendments
Participants Committee April 4, 2024	Vote

Questions

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