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By email to Jsingh@iso-ne.com

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Subject: RENEW Feedback on ISO-NE's Economic Study Process Improvements Phase 2 Presentation at the January 29, 2025 Transmission Committee

Ms. Singh:

Thank you for the opportunity to provide feedback on the ISO-NE's Economic Study Process Improvements Phase 2 Presentation at the January 29, 2025 Transmission Committee. RENEW Northeast believes that having a regular, transparent, and effective process like the System Efficiency Needs Scenario, that can identify when and where congestion on the transmission system is raising consumer costs and can be resolved cost effectively, is critically important for an efficient and affordable electricity system. We applaud ISO-NE for taking a fresh look in this Phase 2 project at the rules regarding what study findings would trigger action to identify a solution, and what cost-benefit threshold must be met for a solution to move forward. RENEW believes the ISO's proposed rules are a good step in the right direction towards improving this process, but offer the following feedback regarding aspects of the proposal that we believe fall short.

The comments expressed herein represent the views of RENEW and not necessarily those of any particular member of RENEW.

1. **Capacity Market Savings Should be Included in the Costs Benefit Analysis**

Economic Studies in ISO-NE have only previously modeled and reported on metrics related to congestion in the energy market, ignoring the impact of transmission system congestion on the cost to consumers of the capacity market. For years, RENEW has asked ISO to also model the capacity market benefits of congestion relief. While the energy market has historically reflected the majority of the value in the wholesale electricity markets, the capacity market has been a sizeable portion of the total cost. In 2023, the Annual Markets Report shows that the total cost of the energy market was $4.8B while the total cost of the

capacity market was $1.3B (just over 20% of the total electricity market cost). If transmission upgrades would result in less congestion, which in turn would result in consumer savings from the capacity market, this is a legitimate benefit that should be accounted for.

Capacity market savings could take one of two forms. First, congestion relief upgrades could enable new resources to pass the capacity deliverability test such that they are able to qualify and participate in the capacity market. Bringing new supply into the capacity market (*like the resources that are already built and being ignored by the capacity market due to the overlapping impact test*) would reduce capacity prices and result in meaningful consumer savings. The other way that congestion relief could result in consumer savings from the capacity market would be if they increase zonal transfer limits. If more of the low-cost capacity from export constrained zones (e.g., Maine and Northern New England) can reach the rest of the system, or if more capacity from the rest of the system is able to make it into import-constrained zones (e.g., Southeast New England) then this would also bring capacity costs down and provide savings to customers.

ISO noted on slide 17 that they are not going to propose adding a capacity savings metric as part of the current "phase 2" project for three reasons. First, the capacity market is being redesigned, so it's hard to figure out how savings would be modeled right now. Second, modeling capacity market savings in the 2024 economic study would mean that ISO needs to rush and design a model rapidly enough to be able to finish that study by the end of this year as required in the Tariff. Third, there is "no reliable method" to estimate capacity savings on a 10-year forward time horizon.

RENEW agrees that the first and second reasons are legitimate explanations for not including a capacity metric in the current project which dictates how the 2024 economic study will be completed this year. **RENEW does, however, request that ISO commits to adding a capacity savings metric for the next economic study cycle** (which will begin in either 2026 or 2027).

ISO's third listed reason for not committing to add a capacity savings metric is not one that RENEW finds to be sufficient for ignoring this large piece of the market. The accuracy of ISO's 10-year forward projections of energy markets are just as impacted by assumptions and uncertainty as a capacity market projection would be. Trying our best to estimate the future consumer savings from congestion relief is what the entire purpose of the System Efficiency Needs Scenario is about. It will never be perfectly accurate, but it is how we, as a region, do our best to make decisions about what is in consumers' best interests moving forward. If the 10-year forward time horizon of the SENS study, and the uncertainty it brings to the assumptions about which resources will retire and which new resources will be

added, is the reason why ISO is not comfortable making estimates of capacity market savings, then perhaps it is time to reconsider the 10-year SENS time horizon. The local points of congestion that ISO identified in the EPCET study were all points where congestion currently exists. We don't need to look ten years into the future to find places where congestion is costing consumers money; it's here right now and we should not sweep it under the rug because it's hard to predict the future.

ISO presented more detail at this meeting, on slides 12-13, about the PJM market efficiency process. For "lower voltage projects" in PJM (i.e., 345 kV single-circuit or below), PJM uses the change in Load Energy Payment plus the change in Load Capacity Payment to determine whether their benefit to cost ratio has been satisfied. PJM, it seems, has come up with a way that they feel is reasonable and has been durable over time to estimate the capacity market savings from efficiency transmission upgrades. In the 2014/15 study cycle, they identified 12 projects that met this threshold. In the 2016/17 cycle they identified one. In the 2018/19 cycle they identified two more. In the 2020/21 cycle they identified four. In the most recent cycle in 2022/23 they didn't identify any. In sum, over the past 5 study cycles, PJM has advanced 19 of these lower-voltage projects that exceeded the benefit to cost ratio when looking at both energy and capacity market savings to load.

At the January 29th meeting we asked ISO to report back to the TC on these 19 projects that PJM has advanced over the past 5 study cycles to identify what portion of the economic benefits for these projects came from the energy market savings versus the capacity market savings. If capacity market savings have been a driver for these projects being advanced in PJM, that would be helpful for us to consider as we think about whether it's worth the effort to study capacity market savings here (while the opposite may also be true).

2. **ISO should continue to report on LSE Energy Expense Savings in the SENS Analysis**

ISO provided a number of reasons at the January 29th TC meeting for relying exclusively on production cost savings as the threshold for running an RFP, rather than incorporating LSE Energy Expense into the consideration. RENEW requests that, even if LSE Energy Expense is not used in the decision-making process about actions to take following completion of the SENS analysis, that ISO-NE continue reporting on this metric, as it has done in past economic studies. It is a valuable, informative metric for stakeholders to understand the operations of our system.

One of the reasons ISO gave for relying on production cost in the SENS analysis was that "In a 10-year out New England system, fossil generation will likely continue to frequently be the unit on margin" (slide 8). Whether or not this is the case in 2034, the 10-year time horizon for the 2024 economic study, this will not continue to be the case for many more years after that, as the region makes its clean energy transition. ISO-NE and NEPOOL should not be in the habit of intentionally creating short-lived Tariff language that is intended to be used for only a single study cycle. We should be designing this process as one that will last beyond a single cycle, and beyond our expectations for the system ten years out. That said, we accept the ISO's proposal to use production cost exclusively in this first study cycle, so long as we can continue to see the LSE Energy Expense metrics and can consider if and when it may be appropriate to consider incorporating it into the decision-making process in the future.

3. **Please explain how information about production cost savings from specific parts of the system will be identified in the SENS**

The Tariff redlines (Attachment K, Section 17.9) lay out the threshold for production cost savings identified in the SENS analysis that would trigger a "system efficiency need" and a subsequent RFP. This threshold is written as "instances where system efficiency production cost savings at a given part of the system are equal to or greater than $4.3 million/year on the PTF portion of the New England Transmission System." RENEW requests that ISO-NE clarify at the next TC meeting how the production cost data underpinning this threshold will be identified in the SENS analysis.

In the EPCET, ISO did not identify production cost savings tied to specific points of congestion across the system. In the December 2022 PAC presentation, ISO identified the total production cost increase across the system when nodal N-1 constraints were respected, as compared with the unconstrained system, as $24 million per year (slide 9). It did not, however provide a breakdown of where on the system this production cost increase was occurring. Instead, it presented a table (slide 19), listing the average shadow price, maximum shadow price, and hours congested per year for the top seven "most congested areas". These metrics, while informative, cannot be directly translated into potential production cost savings.

In a later iteration of this study, RENEW requested that ISO-NE run a sensitivity analysis in which assumptions were changed around the inclusion of a large wind farm in northern Maine and imports from New Brunswick. In that sensitivity, it was found that these assumption changes led to very high levels of congestion on the ME-NH interface. Still, it was not possible to ascertain what level of production cost savings could be achieved by

increasing the ME-NH interface limit. RENEW then requested that ISO run an analysis of production cost if the ME-NH interface limit were increased, in order to understand the potential savings of a hypothetical upgrade. Aside from this requested sensitivity analysis, RENEW is not aware of ISO-NE providing information about the production cost savings specific to individual points of congestion in the EPCET, as doing so requires a new iteration of the model for each point in question.

With ISO's proposal to use $4.3M/year of production cost savings as the threshold for issuing an RFP, we would like to understand at the next TC meeting how this would be implemented. What results in the SENS will trigger ISO to do this further analysis to identify the potential production cost savings from increasing the limit at that particular location on the system? Will ISO run this analysis for the top ten most congested elements in the SENS? Will it be limited to elements that show a certain average shadow price, or a certain number of hours per year of congestion? Even where a point of congestion does not reach the $4.3M/year threshold, it would still be useful information for stakeholders to understand the locations and magnitude of production cost increases being caused by congestion, such as the seven most congested areas identified in the December 2022 EPCET presentation.

4. **Reconsider creation of a simplified process for System Efficiency Transmission Upgrades that do not meet the $4.3M/year Production Cost Savings threshold**

ISO-NE chose the $4.3M/year production cost savings threshold because it is sufficient, on its own, to justify a roughly $30M capital expenditure on a transmission upgrade. RENEW believes there could be lower-cost, targeted SETUs that would have a benefit to cost ratio over 1.0 and would meaningfully reduce congestion, but that might not cross the $4.3M/year production cost savings threshold. In the discussion of PJM's economic efficiency upgrade process at the January 29th TC meeting, ISO shared that most of the projects PJM has advanced through their economic upgrade process have been fairly small projects like substation equipment upgrades.

From the meeting discussion, it sounded like a significant factor behind ISO's decision not to advance SETUs with less than $4.3M/year in production cost savings is a desire to avoid running too many RFPs, which require an intensive commitment of staff time. It is reasonable to consider a threshold below which a simplified process for identifying potential solutions is prudent. However, RENEW does not support the creation of a structural barrier in the Tariff to finding and implementing low-cost transmission solutions that could offer net savings to consumers.

Given the ticking clock that requires ISO to finish the 2024 economic study this year, RENEW accepts that there is not enough time left, in this Phase 2 project, to create such a simplified process for projects that do not meet the threshold for triggering an RFP. We appreciate ISO's commitment to monitoring points of congestion that fall under the $4.3M/year threshold in this economic study, and strongly encourage ISO to create a simplified process that enable these types of cost-effective, lower-cost upgrades to be advanced in the next economic study cycle.

5. **Please clarify the process for determining generic cost assumptions for the avoided transmission cost**

RENEW appreciates and supports ISO's decision to conform the "avoided transmission cost" metric in the SENS/SETU process with the metric of the same name in the LTTP process, including the use of generic cost assumptions for rebuilds of existing transmission elements that are more than 40 years old. As we asked at the January 29th meeting, we would like ISO to share the generic cost assumptions that will be used in this evaluation process at the next TC meeting. ISO indicated that it would likely refresh the numbers used in the 2050 transmission study that was part of the LTTP process, given the time that has passed since those numbers were developed, which RENEW supports.

Because the SENS study cycle will run every two to three years, and costs can change significantly over that length of time, RENEW also requests that ISO specify the process by which these default costs will be updated and shared in each study cycle.

Further, while the generic costs shared in the 2050 study covered the majority of transmission equipment that would likely be rebuilt or replaced as part of a LTTP or SETU project, RENEW recognizes that there may be additional types of equipment not listed in the table that could be replaced as part of these projects. RENEW requests that ISO specify how a generic replacement cost will be developed should a proposal include replacement of existing equipment over 40 years old that is not listed in the table.

6. **ISO-NE's revised approach to modeling imports appears to undervalue the benefits of relieving congestion**

On slides 4-5 of the January 29 presentation, ISO summarized the key lessons learned from the EPCET Market Efficiency Needs Scenario, which all revolving around how they modeled imports. The import assumptions ended up being a primary driver of congestion in the EPCET SENS (mostly at the ME-NH interface, driven by imports into Maine). ISO found that

they needed to update how these imports were modeled so as not to over-estimating the benefits of relieving congestion that limits imports.

RENEW has concerns about the ISO's newly proposed model for imports (as discussed in more detail at the PAC), and that it may be artificially reducing the quantity of imports in the model and as a result having the opposite effect of under-estimating the benefits of congestion relief. RENEW understands that ISO will be releasing a draft of the Economic Study Technical Guide in February and will accept stakeholder feedback on these modeling assumptions before finalizing the study approach. RENEW looks forward to providing feedback on that draft once it is released and appreciates ISO's consideration of that feedback as the region tries to strike a measured balance in this study process.

RENEW is also concerned with ISO's revised proposal for how imports would be valued in the production cost metric. While all energy produced within New England would be valued at its production cost (i.e., its fuel cost), ISO is proposing to model imports' production cost as the LMP at the external interface rather than at an estimate of the fuel cost underlying the imports. This is mixing metrics, and, we believe, devalues the effect of reducing congestion that is limiting imports. We explain this in the following example.

In ISO's model, if congestion on the system limits 1 MWh of wind energy ($0/MWh production cost because there's no fuel cost for the wind) from being produced and as a result the system needs to buy 1 MWh from a gas generator (let's say the gas costs $30/MWh so that's its production cost), then resolving that congestion would result in $30 of production cost savings regardless of what the LMP is where the wind generator is located. But if instead of limiting wind, if there were congestion limiting 1 MWh of imports, and the LMP at the external interface is $25/MWh, then the production cost savings for relieving that congestion would be just $5. If the imports are coming from hydro or wind from a neighboring region, the fuel cost underlying the energy is no different than for the domestic wind generation. If ISO puts imports into the model at a higher price than domestic clean generation, then when there are transmission constraints that limit both domestic clean generation and imports, the model will always curtail the imports before curtailing the domestic generation. As a result, the production cost savings for relieving congestion will be based on the difference between the LMP at the external interface and the cost of gas, rather than being based on the fuel cost savings. These assumptions appear to RENEW to systematically underestimate the benefits of congestion relief and should be reconsidered.

Sincerely,

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