

To: ISO-NE
From: NESCOE
Date: November 30, 2021
Subject: Extreme Weather Scenarios in 2021 Economic Study

This memo provides feedback on the nature of the extreme weather scenarios for the *2021 Economic Study* that ISO-NE presented at the November 17, 2021 Planning Advisory Committee (PAC) meeting, and a request to modify them.

While NESCOE did not request the *2021 Economic Study*, we believe it is important that it be conducted in a way that provides meaningful and plausible results. To ISO-NE's credit, once published, ISO-NE, states and stakeholders alike regularly refer to and quote ISO-NE's Economic Studies over the years. That makes it especially important that the studies be reasonably balanced, that the material accurately communicate what the study is and is not.

The extreme weather scenarios that ISO-NE presented are not reasonable. Many of the extreme weather scenarios focus on the impact only on renewable resources during region-wide catastrophic weather events (e.g., category 4 hurricanes) with no examination of the effect on other fuel types, transmission lines, or load levels. The idea that a single hurricane or snowstorm could have region-wide extended effects on renewable resources, with no other reduction in load or other generation, is implausible.

The presentation states that ISO-NE does not recommend including consideration of impacts on load, noting that "it is difficult to quantify the load loss." As a result, the scenario will by design overstate, likely significantly, the reliability risk associated with renewable resource performance.

Further, the percentage probabilities that are placed on these events appear to be unreasonably high. At the PAC meeting, ISO-NE seemed to downplay the percentage probabilities verbally. The ISO-NE presentation nevertheless states that there is a six percent (6%) chance that all New England offshore wind or solar will be offline for an entire month due to a hurricane. It notes a nine percent (9%) probability that all solar in the region will be offline for four days because of a single snowstorm. We encourage ISO-NE to either more accurately depict the probabilities of the scenarios or to provide more detailed information on how ISO-NE arrived at the probabilities. While NESCOE appreciates the need to study extreme weather, and appreciates the role of 'bookends' in studies, these types of bookend scenarios should remain within the bounds of plausibility.

Next, we would like to better understand how these scenarios relate to the analysis of the operational impact of extreme weather events (“*Extreme Weather Study*”) ISO-NE recently announced.¹ To date, ISO-NE has outlined a sensible analytical approach to the *Extreme Weather Study*, including the use of locationally specific climate data, both historical and projections, to develop a number of possible extreme weather events to model and their associated probabilistic distributions.² The scenario development in the *2021 Economic Study* is blunt and less sensible by comparison. Because the *2021 Economic Study* results will be released well ahead of the *Extreme Weather Study*, we caution the use of the *Economic Study’s* extreme weather scenarios in informing solution options or market design.

If ISO-NE is interested in studying longer-term operational impacts of extreme weather (and to inform solutions or any future market design), we suggest that may be best done through the *Extreme Weather Study*. Should ISO-NE continue to include such extreme scenarios in the *2021 Economic Study*, those scenarios should be modified either to reflect system-wide impacts of the hurricanes and/or to examine different extreme weather conditions that would plausibly only affect certain classes of resources (i.e., wind droughts, atmospheric conditions affecting solar production).

Finally, we offer an observation on process. As an Economic Study, ISO-NE is conducting this work at the request of stakeholders. Historically, study proponents have had a significant role in shaping the requested study and assumptions, working collaboratively with ISO-NE. At the PAC meeting, some proponents strongly objected to these scenarios for reasons similar to those outlined above, yet ISO-NE seemed reluctant to change the assumptions. We hope ISO-NE will continue to give due weight to the views of the study proponent and other stakeholders in this matter.

Thank you for considering these requests.

¹ “Operational Impact of Extreme Weather Events.” Presented by Vamsi Chadalavada at the NEPOOL Participants’ Committee. November 3, 2021.

² Id. at 4-5.