ISO New England Inc. Docket Nos. EL18-182-000

PROTEST AND COMMENTS OF PUBLIC INTEREST ORGANIZATIONS

Pursuant to Rule 211 of the Federal Energy Regulatory Commission’s (Commission) Rules of Practice and Procedure, Sustainable FERC Project, Acadia Center, Conservation Law Foundation, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, and Vote Solar (Public Interest Organizations) respectfully submit this protest and comment on ISO New England Inc.’s (ISO-NE or ISO) proposed Energy Security Improvements (ESI) market rule changes to its Transmission, Markets and Services Tariff (Tariff). The ISO submits ESI as a replacement rate necessitated by the Commission’s finding under section 206 of the Federal Power Act (FPA) that its Tariff may be unjust and unreasonable due to winter fuel security concerns. The ISO’s ESI filing purports to address these concerns, and improve reliability more generally, by creating a new options market for ancillary services. According to the ISO, these changes will funnel tens or hundreds of millions of ratepayer dollars per year to fossil fuel generators, incenting some to make additional investments to stockpile fuel or contract for firm delivery of gas.

The Commission should reject ISO-NE’s filing. While the Commission made a preliminary finding under section 206 that ISO-NE’s Tariff “may” be unjust and unreasonable

1 18 C.F.R. §§ 385.211 and 214.
due to fuel security relating to the closure of specific facilities, neither that finding nor the record in this proceeding support ESI’s sweeping, costly changes. Further, ESI is unjust and unreasonable because, according to the Impact Assessment included in the filing, it would only provide minimal potential reliability benefits for exorbitant cost. Although styled as resource neutral, the proposed ESI reforms are also unduly discriminatory because they exclude clean energy resources that play an essential role in meeting the winter reliability challenges ESI purports to address. Finally, in propping up fossil fuel-burning resources, ESI arbitrarily and capriciously fails to account for the reality of New England states’ efforts to decarbonize the grid.

I. Background

For years, ISO-NE advocated for expansion of gas pipelines as gas generation came to predominate electricity production in New England. However, stakeholders have consistently rejected new pipelines for environmental and economic reasons, including ambitious clean energy mandates from statehouses and a burgeoning renewable electricity sector. Unable to foist new fossil fuel infrastructure on an unwilling region, the ISO now seeks to achieve similar ends—increased support to fossil fuel-burning incumbent generators—through changes to the markets under its control.

The instant proceeding has its origins in the Operational Fuel-Security Analysis (OFSA) ISO-NE published in January 2018, which analyzed the level of operational risk under various resource combinations and concluded that “[f]uel security risk . . . is the foremost challenge to a

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reliable power grid in New England.” As detailed below, stakeholders pointed out numerous flaws in the OFSA, from its use of deterministic analysis instead of probabilistic analysis to its unrealistic assumptions regarding adoption of renewable energy and other factors. In March 2018, the owner of the Mystic Generation Station in Boston submitted a retirement de-list bid proposing to retire all four of the facility’s gas-fired units as of June 2022. While most gas-fired generators in New England are served by gas pipelines, the Mystic facility relies on imported liquefied natural gas (LNG) from the neighboring Distrigas LNG terminal. ISO-NE conducted studies of the operational risks posed by Mystic’s retirement, based on the methodology employed in OFSA, and concluded that the loss of two of the facility’s units, known as Mystic 8 and Mystic 9, as well as the Distrigas terminal itself, presented “unacceptable fuel security risks.”

In May 2018, ISO-NE filed a petition for waiver of several provisions of its Tariff to allow it to retain Mystic 8 and 9 via a short-term cost-of-service agreement because of the purported fuel security risks associated with their retirement. The Commission denied the petition by order on July 2, 2018, holding that a waiver was an “inappropriate vehicle” to effect retention of the units for fuel security reasons, which was not contemplated in ISO-NE’s Tariff. However, the Commission “preliminarily” found under section 206 of the FPA that ISO-NE’s

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6 Id. at P 10 (quoting ISO-NE, Petition for Waiver (May 1, 2018)).

7 Id. at P 1.

8 Id. at P 47. The Commission elaborated, “[ISO-NE’s] request effectively creates an entire process that is not in the ISO-NE Tariff in order to allow for a cost-of-service agreement to meet regional fuel security concerns. Such new processes may not be effectuated by a waiver of the ISO-NE Tariff; they must be filed as proposed tariff provisions under FPA section 205(d).”
Tariff “may be unjust and unreasonable” because it “does not sufficiently address the fuel security issues currently facing the region” as detailed in the OFSA and Mystic retirement studies. The Commission directed ISO-NE “to submit within 60 days of the date of this order interim Tariff revisions that provide for the filing of a short-term, cost-of-service agreement to address demonstrated fuel security concerns and to submit by July 1, 2019 permanent Tariff revisions reflecting improvements to its market design to better address regional fuel security concerns,” or in the alternative, to “show cause as to why the Tariff remains just and reasonable in the short- and long-term such that one or both filings is not necessary.”

Pursuant to the July 2, 2018 Order, ISO-NE submitted its first set of Tariff revisions, creating a short-term cost-of-service recovery mechanism for resources “needed for fuel security,” which the Commission accepted on December 3, 2018. The LNG-fueled Mystic units thus received cost-of-service treatment for 2022/2023 and 2023/2024 at an anticipated cost of nearly $350 million to New England consumers. ISO-NE filed an additional proposal under FPA section 205 purporting to address similar winter energy security issue—the “Inventoried Energy Program”—which was approved by operation of law due to lack of a quorum at the Commission that will cost consumers $148 million per year in 2023/2024 and 2024/2025.

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9 Id. at P 55.
10 Id.
The ESI filing is the latest in ISO-NE’s line of proposals on the issue of fuel security. It proposes a new day-ahead options-market construct, superimposed on the ISO’s existing day-ahead market, to provide a new revenue stream to incent certain resources to provide additional energy and reserve services on demand. Although rebranded as improvements to “energy security” and couched in the facially neutral language of reliability standards, the ISO’s filing makes clear which resources the proposal is designed to benefit—existing fossil fuel generators able to invest in fuel storage or firm gas contracts.14 ESI is estimated to cost New England consumers $20 million to $257 million a year beginning in 2024/2025.15 On top of that, the ISO also plans to develop a “seasonal forward market” proposal for fuel security in 2021, continuing what is now a pattern of annual filings on fuel security that is likely to cost consumers still more.16

II. The Commission’s finding under FPA section 206 that ISO-NE’s markets may be unjust and unreasonable does not support ESI’s expensive, sweeping Tariff changes.

The Commission’s FPA section 206 finding in this proceeding was not a carte blanche allowing any market changes purporting to address the problem of fuel security. Rather, in the July 2018 Order, the Commission made a preliminary finding under section 206 that ISO-NE’s Tariff “may be unjust and unreasonable” based on “specific regional fuel security concerns identified in the record that could result in reliability violations as soon as year 2022.”17 The only specific concerns identified in the order were the retirement of two generating units at the Mystic gas plant and the closure of the Distriegas LNG terminal that serves the Mystic facility—

14 See infra section IV.
15 ISO Filing at 34.
16 Id. at 3 and 71-72.
17 July 2 Order at P 2.
retirements that ISO-NE claimed could result in depletion of operating reserves and loss of load.\textsuperscript{18} In its December 2018 Order, the Commission accepted ISO-NE’s short-term compliance filing, which led to temporary cost-of-service treatment for the Mystic units. While the Commission agreed with the ISO “that it is necessary to implement a longer-term market solution as soon as possible,” it declined to provide guidance on such a solution and did not modify its section 206 finding.\textsuperscript{19}

Under section 206, the scope of the Commission’s authority to establish a replacement rate is guided by the scope of the finding that current rates are unjust and unreasonable.\textsuperscript{20} ISO-NE has rushed to implement a permanent systemwide market to procure energy and reserve options it says are needed for energy security, yet the Commission has not found that general energy security issues pose an actual threat to the region that would support such sweeping reforms. The Commission’s section 206 finding on fuel security plainly relies on the specific purported threat posed by the loss of Mystic units 8 and 9.\textsuperscript{21} Although the July 2 Order mentions the OFSA, which states ISO-NE’s broader theory of the region’s fuel security problem, it does not articulate a finding of how fuel security issues beyond those presented by the Mystic retirements threaten regional reliability. Indeed, Commissioner LaFleur cautioned in a concurrence that the July 2 Order should not be construed as lending credence to “a generic or national resilience need, or an approach to address that need.”\textsuperscript{22} Rather, she explained, the Order

\textsuperscript{18} Id. at P 5.

\textsuperscript{19} December 3 Order at PP 96, 102.

\textsuperscript{20} See Colorado Office of Consumer Counsel v. FERC., 490 F.3d at 954, 956 (D.C. Cir. 2007) (explaining that the scope of the replacement rate ordered by the Commission is appropriately tailored to the scope of the Commission’s finding that rates are unjust and unreasonable).

\textsuperscript{21} July 2 Order at P 49 (accepting “ISO-NE’s conclusions that the retirement of Mystic 8 and 9, under current ISO-NE Tariff provisions, could cause ISO-NE to violate mandatory reliability standards as soon as 2022.”)

\textsuperscript{22} July 2 Order (LaFleur, Comm’r, concurring).
“rightly responds to documented and specific regional challenges in New England, including its
dependence on a unique generation facility that can be served only by imported LNG. Our
responsibility to oversee regional efforts to ensure continuous reliable service to customers
requires that we address specific situations as needed, **but not draw inaccurate generalizations
when they are not justified.**”

The record in this proceeding does not support a finding that permanent, regionwide
measures to increase supplies of fuel are needed to maintain reliability. The OFSA posited a
number of scenarios that could lead to reliability problems and loss of load, but as numerous
stakeholders observed, that study was deeply flawed. In particular, the OFSA failed to account
fully for renewable resource’s contributions to maintaining reliability in stressed winter
conditions, and it employed a deterministic analysis that by design did not calculate the
likelihood that the various scenarios analyzed would actually occur. While the Commission in
this proceeding has deferred to ISO-NE’s methodological choices for analyzing fuel security risk
so far, it did so within the context of analyzing the need to retain specific units whose retirements
it was alleged would pose unacceptable risks to reliability. In other words, the Commission

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23 *Id.* (emphasis added).

24 Despite concerns raised by several of the undersigned Public Interest Organizations and others, the
Commission deferred to and accepted ISO-NE’s OFSA analysis in its July 2, 2018 order, which has led to the
development of the current ESI proposal. July 2 Order at P 49. Noting that “fuel security analyses do not currently
have an established methodological framework and that there are no industry standards or best practices for
conducting such an analysis,” the Commission declined to challenge the assumptions the ISO used in its study. *Id.* at
P 52. Sierra Club, Natural Resources Defense Council, and Sustainable FERC Project have requested rehearing of
/common/OpenNat.asp?fileID=14991463.

25 *See infra* section IV for further explanation of renewable resources’ contributions to meeting winter
reliability needs.

26 July 2 Order at P 49; December 3 Order at P 35 (accepting the interim Fuel Security Study process).
found that it was “reasonable for ISO-NE to use a deterministic analysis in this instance”—that is, when faced with the alleged imminent threat to reliability from the Mystic retirements.²⁷

Outside the context of assessing the reliability risks from the imminent loss of specific resources, relying on a deterministic analysis like the OFSA is even less justifiable. As commenters in this proceeding have observed, “a deterministic analysis merely demonstrates that this outcome [i.e., reserve depletion and load shedding] is possible under certain conditions and does not explain the likelihood of the conditions identified by ISO-NE or subsequent load shedding or reserve depletion actually occurring.”²⁸ A study that merely shows that certain outcomes are theoretically possible is insufficient to support a finding that those outcomes pose an actual threat. Indeed, in the July 2 Order the Commission only made a “preliminary finding” that ISO-NE’s Tariff “may” be unjust and unreasonable. Without evidence of the likelihood of contingencies analyzed in the OFSA actually occurring, the Commission cannot evaluate the magnitude of the threat, the need for action to address that threat, or the reasonableness of a proposed replacement rate.

The sweeping, costly ESI proposal is beyond the scope of the Commission’s section 206 finding in this proceeding, which only indicated that the ISO’s Tariff “may” be unjust and unreasonable due to the specific fuel security issues presented by the retirement of the Mystic and DistriGas facilities. To the extent the Commission’s section 206 finding could be construed as acknowledging the existence of a broader fuel security problem beyond those specific resources, ISO-NE’s deterministic analyses do not support such a finding.

²⁷ July 2 Order at P 50. In the July 2 Order, the Commission agreed with the ISO that a deterministic analysis “allows for . . . identifying potential violations of reliability standards,” but the only potential reliability standards identified in the order relate to the loss of the Mystic and DistriGas facilities. Id. at P 5.

²⁸ July 2 Order at P 26.
III. The ESI proposal is unjust and unreasonable because its minimal benefits cannot justify its excessive costs.

Although ESI would impose tens or hundreds of millions of dollars in annual costs on New England consumers, ISO-NE’s filing contains scant evidence that the proposal will materially improve winter reliability in the region—the professed concern at the heart of this proceeding. Instead, the ISO assumes that providing generous incentives to encourage fossil fuel generators to shore up fuel supplies will necessarily lead to “social benefits,” but it fails to demonstrate a connection between generally increasing the quantity of available fuel (or ancillary services facilitated by that fuel) and real-world improvements in winter reliability in New England. As shown above, the Commission’s section 206 finding does not support ISO-NE’s inference that any incentive to increase available fuel will solve the specific claimed reliability issues at the root of the finding. Moreover, the ISO’s most current evidence in this proceeding, Analysis Group’s Impact Assessment of the ESI proposal, indicates that fuel security issues pose little to no risk of actual winter reliability problems. ESI would lead to unjust and unreasonable rates because it would impose high costs on ratepayers to address what is at most a minor problem.

A. The ESI Impact Assessment shows only miniscule risk to reliability under the status quo.

In proposing ESI, ISO-NE asserts that the New England grid “may not be able to produce energy in the event of an unexpected, extended loss of supply, particularly during stressed system conditions (e.g., a cold snap).” However, the ISO’s articulation of an imminent fuel/energy security problem demanding market attention remains unsupported, more than two

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29 ISO Filing at 42.
30 Id. at 4.
years since ISO-NE published its original OFSA report “for discussion.” Contrary to the ISO’s claims, the most recent analysis of energy security, which the ISO commissioned from the Analysis Group as part of its ESI proposal, continues to show a reliable grid with sufficient energy resources under a range of potential future scenarios, out to at least the year 2025/2026 (i.e., a year beyond the OFSA which looked out to 2024/2025). To evaluate ESI, Analysis Group constructed a production cost model and considered a range of “potential market and resource conditions that might reasonably arise in the future,” both with and without the proposed ESI changes in place.

The ESI analysis shows overwhelmingly that the New England grid is expected to have sufficient energy resources, without requiring new market changes, to meet demand. The model’s “central case,” modeled without the proposed ESI changes, concluded that New England would experience no operating reserve shortages across any of its three potential scenarios of varying wintertime grid stress in 2025/2026. To further test these results, Analysis Group considered 24 additional wintertime sensitivity cases without ESI. In 23 of those 24 scenarios, the model again concluded the region would experience no shortages in operating reserves. In no scenario were operating shortages projected during any non-winter months.

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31 OFSA at 1.


33 Id. at 78 (ISO Filing at 411). These winter scenarios were “frequent stressed conditions,” “extended stressed conditions,” and “infrequent stressed conditions,” defined as: “The Frequent Case is based on market conditions from the winter of 2013/2014. This winter experienced multiple, shorter periods with fuel system constraints, driven in large part by numerous cold-snaps. . . . The Extended Case is based on market conditions from the winter of 2017/2018. This winter experienced one extended period with fuel system constraints, which occurred during a long cold-snap in late December and early January. . . . The Infrequent Case is based on market conditions from the winter 2016/2017. This winter experienced particularly mild temperatures and no periods of stressed conditions. One indicator of the mildness of these conditions was that day-ahead natural gas prices at Algonquin Citygate never exceeded $13 per MMBtu over the entire winter.” Id. at 13 (ISO Filing at 346).

34 Id. at 95-96 (ISO Filing at 428-29).
In only one case did the model suggest the possibility of a shortage—for 3 hours during a “frequently stressed” winter compounded by a five-day disruption in New England’s Hydro-Quebec interconnection (resulting in a supply loss of 1,364 MW).\textsuperscript{35} Analysis Group’s report provides no information on the number of MWhs at risk of being unserved in the single scenario in which it projected a shortage. However, given that an identical winter scenario without the Hydro-Quebec disruption projected no energy shortfalls, we can deduce that no more than 4,092 MWh were modeled to be at risk.\textsuperscript{36} This represents one hundredth of one percent of the ISO’s anticipated winter 2025/2026 net energy load and three one-thousandths of one percent of the anticipated 2025/2026 total net energy load for the entire year.\textsuperscript{37} Moreover, this potential shortfall occurred in only one of the three winter weather scenarios modeled and only in the case of a potential five-day loss of the Hydro-Quebec interconnection, itself a low probability event.

A single, unlikely scenario out of 27 non-ESI scenarios modeled that projects a potential operating shortfall of 3 hours is a far cry from the grave reliability shortfalls suggested by the OFSA—which predicted possible load shedding in 23 out of 24 future winter scenarios. Moreover, as the Analysis Group authors explain, their ESI model is deterministic rather than

\textsuperscript{35} Notably, under “extended” and “infrequent” wintertime stress, the grid is expected to continue to meet energy demand reliably without intervention, even with a potential disruption of the Hydro-Quebec interconnection. See id.

\textsuperscript{36} I.e., the size of the interconnection supply loss times the number of hours of shortages calculated by the model—1,364 MW x 3 hours = 4,092 MWh. Analysis Group’s report does not specify whether it would be necessary to replace the full Hydro-Quebec interconnection to avoid the projected operating reserve shortfall or only a portion of it. If the latter, then the projected shortfall would be less than 4,092 MWh.

probabilistic, and the scenarios evaluated in the study “do not represent forecasts or predictions of future outcomes” or of “the many potential scenarios that are not evaluated.”

The ISO’s failure to rigorously assess its energy security risks even as it uses those risks to justify sweeping market changes is inexcusable. Since its release of the original OFSA over two years ago, New England states and NEPOOL stakeholders have urged the ISO to conduct a more thorough, probabilistic assessment of fuel/energy security to understand better the scale and scope of the potential problem. The ISO has resisted these urgent requests up to and including in the most recent ESI filing. Yet even absent a probabilistic analysis, the deterministic analysis by Analysis Group undermines the ISO’s central arguments in the OFSA and suggests that the ISO’s near singular focus on fuel security over the last two years has been misplaced.

B. The ESI proposal is unjust and unreasonable because it imposes grossly disproportionate costs to address what is, at most, a limited problem.

The ESI proposal is unjust and unreasonable because it would impose grossly disproportionate costs to address a minor, if not nonexistent, problem. Analysis Group’s assessment of ESI suggests that, at most, New England faces a limited energy security problem that could be addressed through a more targeted solution than ESI. As noted above, only one winter scenario out of the 27 non-ESI scenarios modeled by Analysis Group projected a potential

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38 ESI Impact Assessment at 13 (ISO Filing at 346).

39 July 2 Order at P 26 (“Several commenters argue that the models used in the OFSA and Mystic Retirement Studies are deterministic and a probabilistic analysis may be more appropriate.”); Clean Energy Advocates, Reply Comments, at 9 (May 9, 2018), FERC Docket No. AD18-7, https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14913280 (“[The OFSA] is a deterministic study, rather than a probabilistic study. . . and thus does not assign any probabilities to the preselected scenarios that are modeled. . . ISO-NE thus fails to address a key predicate for objectively evaluating resilience risk—the likelihood of any particular scenario actually occurring.”); NESCOE, Reply Comments, at 12 (May 9, 2018), FERC Docket No. AD18-7, https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14912964 (“While the study informs decision-makers of what might happen if certain assumptions occur, New England does not yet have information about how likely those assumptions are. . . [I]n April 2018, NESCOE provided ISO-NE with information regarding potential approaches to enable better risk-informed judgments about the region’s challenges and range of potential solutions. . . At a high level, these approaches involve the use of probabilistic models to evaluate the likelihood of possible outcomes.”).
operating reserve shortage—for a period of 3 hours and of no more than 4,092 MWh during winter 2025/2026, representing a tiny fraction of the ISO’s forecasted net energy load for that winter. In no scenario did Analysis Group project operating reserve shortages in non-winter months. Yet in ESI, the ISO proposes to make major market changes, including the development of three new day-ahead ancillary services, and apply these changes year-round, at a cost of $20 million to $257 million a year to consumers. The scale of the proposed solution is vastly disproportionate to the minor problem evidenced in the ESI filing.

The single scenario with a projected operating reserve shortage was modeled under a “frequently stressed” winter grid. To avoid shortages during such a winter, the ISO proposes ESI, which it projects would increase energy costs to load—ultimately paid by consumers—by $132 million over the three winter months (December-February). This represents a cost of over $32,000 per MWh of operating reserve shortfall avoided if the Hydro-Quebec interconnection were also disrupted for five days during the winter, the condition precedent in the modeling for a shortage to occur. Neither the ISO nor Analysis Group provide an assessment of the likelihood of this scenario. To our knowledge, it has never occurred. While not representative of probabilities, Analysis Group’s assessment of non-ESI scenarios included nine different “frequently stressed” winter scenarios of which a five-day disruption to the Hydro-Quebec interconnection was only included in one. If we assume that a five-day disruption to the Hydro-Quebec interconnection is likely to occur in only some small proportion of “frequently stressed” winters, then the actual cost per MWh of operating reserve avoided is likely to be much higher,

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40 Supra section III.A.
41 ISO Filing at 33.
42 $132 million ÷ 4,092 MWh = $32,238.06 per MWh.
as consumers would also be paying for ESI in “frequently stressed” winters where the interconnection remains intact and in winters when the grid is not “frequently stressed.” The actual cost per MWh of operating reserve shortfall avoided would also include the costs of ESI in non-winter months, which the ISO estimates at $89 million to $125 million per year, even though no non-winter scenario modeled by Analysis Group exhibited any operating reserve shortfalls at all. In other words, the cost per MWh of potential operating reserve shortfalls avoided by ESI is likely to be many times higher than $32,000 per MWh, potentially costing consumers hundreds of thousands or millions of dollars per MWh.

Throughout its ESI filing, ISO-NE presents its proposal as increasing the efficiency of New England’s grid, yet the estimated net cost of the proposal is vastly disproportionate to any reliability challenge indicated in the ESI Impact Assessment. Far from being an economically efficient solution, ESI is an unjust and unreasonable adder to regional costs with questionable benefits. If the Commission believes the single modeled scenario that projected a potential 3-hour operating reserve shortfall is of concern, then the Commission should order the ISO to file a more targeted, less costly solution than ESI.

IV.  **ESI unduly discriminates against clean energy resources by failing to recognize and compensate their energy security services.**

ISO-NE claims that the ESI proposal is “fuel and technology neutral,” but this claim is not borne out by Analysis Group’s impact assessment or the program’s design. The benefits of ESI will accrue primarily to fossil fuel-based resources. This is not because fuel-free clean energy resources are incapable of contributing to energy security; as discussed below, ISO-NE’s

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43 ISO Filing at 34.
44 E.g., ISO Filing at 25.
analyses have consistently shown the opposite. Rather, it is because ESI favors fuel-based resources and their characteristics and disfavors fuel-free resources and theirs.

The ISO asserts that ESI is fuel and resource neutral, but the filing makes clear which resources it envisions will benefit from the market changes. For example, in its discussion of “the Energy Security Problem,” the ISO states that “additional energy supply arrangements (e.g., fuel) can enable the existing fossil-fired generators to perform reliably” during stressed winter conditions. Similarly, the Analysis Group Impact Assessment the ISO solicited for this filing focused its quantitative analysis on “the incentives for units with stored fuel tanks to expand inventory and refuel more aggressively, and for natural gas units with no on-site storage to make contractual fuel arrangements in advance of winter.” In fact, the ESI design favors resources that use fuel and excludes most resources that do not. ESI works by compensating resources in the day-ahead market to “bolster their energy supply arrangements.” For a fuel-based resource, the pathway to provide ESI services is clear: procure additional fuels that can be stored onsite or secure other firm fuel arrangements. Such resources would be compensated for these procurements via day-ahead energy market procurement of the ISO’s newly proposed day-ahead ancillary services. Lining up additional fuel procurements in the day-ahead market is anticipated to lower real-time prices, thus dampening the effects of scarcity pricing. But for resources that

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45 ISO Filing at 13.

46 ESI Impact Assessment at 7 (ISO Filing at 340). See also ISO Filing at 15, which notes that the following resources face “production uncertainty,” but are “relied on by the ISO to manage uncertainties (i.e., the operational needs)”: (1) off-line fast-start dispatchable generators, which infrequently receive schedules in the Day-Ahead Energy Market (e.g., hydro electric and distillate-fuel combustion turbines and internal-combustion units); (2) higher-cost ‘blocks’ of combined-cycle generators that receive schedules in the Day-Ahead Energy Market below their Economic Maximum Limit; (3) higher heat-rate combined-cycle generators that infrequently clear in the Day-Ahead Energy Market; and (4) long-lead time oil-steam units that infrequently clear in the Day-Ahead Energy Market.” Out of this list, all but hydroelectric generators are fossil fuel resources.

47 ISO Filing at 23.
can make advanced fuel arrangements, lower real-time revenues will be offset by gains in the
day-ahead market. These resources come out ahead.

For a fuel-free resource like offshore wind, there is no pathway to providing energy
security services under ESI: a wind farm operator cannot procure additional wind for the day-
ahead market. Yet such resources make important contributions to alleviating winter reliability
challenges. High wind speeds accompanying winter storms can enable offshore wind farms to
produce above their usual capacity, lowering demands for fuel-based resources, helping relieve
fuel constraints, and lowering costs on the grid. ISO-NE has itself recognized the potential for
offshore wind to reduce demand for imported gas during extreme cold weather events—the very
conditions the OFSA identified as presenting the greatest fuel security risk.48 In a report released
in December 2018, the ISO modeled “the potential impacts offshore wind could have had on the
power system and region” in conditions similar to the 16-day cold spell that occurred in
December 2017-January 2018.49 Based on three offshore project scenarios of various nameplate
sizes, the study demonstrated that offshore wind could have displaced a significant percentage of
the gas used during the cold spell, as shown in a table (Figure 1) from the study:

48 See OFSA at 10 (“The region’s fuel-security risks have been evident to ISO New England since a 2004
cold snap.”).

49 The ISO analysis used an average capacity factor for offshore wind of 70 to 71 percent of nameplate
capacity “based on wind speeds that were recorded” at three project sites during the December 24, 2017, to January
8, 2018 cold spell. By comparison, ISO-NE has previously estimated an average annual offshore wind capacity
factor of 41 percent for the region and assumed a capacity factor of 53 percent in the OFSA for offshore wind during
the 2024/2025 winter. ISO-NE, “2015 Economic Study Offshore Wind - Draft Results,” at 41, https://www.iso-
ne.com/static-assets/documents/2016/03/a3_2015_economic_study_off_shore_wind_presentaion.pdf; ISO-NE,
High-Level Assessment of Potential Impacts of Offshore Wind Additions to the New England Power System During
ne_offshore_wind_assessment_mass_cec_production_estimates_12_17_2018_public.pdf; OFSA at 13 n10; see also
Table 5
Gross Estimates of Avoided Natural Gas Use (Billion Cubic Feet and % of Actual Use)

<table>
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<th></th>
<th>400 MW Project (Site A)</th>
<th>800 MW Project (Sites A + B)</th>
<th>1600 MW Project (Sites A + B + C)</th>
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<td><strong>Estimated Avoided Natural Gas Use (Billion cubic feet)</strong></td>
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<td><strong>Estimated Avoided Natural Gas Use (% of actual consumption)</strong></td>
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<td>9%</td>
<td>20%</td>
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</tbody>
</table>

*Figure 1: Gross Estimates of Avoided Gas Use due to Offshore Wind Generation.*

Not only does ESI arbitrarily exclude renewable resources with undeniable energy security value, it impedes their ability to receive compensation under existing market structures. Resources that overperform during times of grid stress like offshore wind can benefit from scarcity prices, providing an economic incentive to build more and further relieve winter gas shortages. By shifting more revenues to the day-ahead market and dampening real-time prices, however, ESI will reduce scarcity prices and lessen those incentives.

The ESI design similarly fails to account for the ability of demand-side resources like Demand Response to provide energy security services. In many ways, Demand Response is ideally suited to provide energy security services by providing a demand-side safety valve during times of infrequent acute grid stress, such as the three-hour shortfall in operating reserves projected by Analysis Group during a frequently stressed winter that overlaps with an extended outage of New England’s Hydro-Quebec interconnection. As described above, however, ESI

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51 *Supra* section III.A.
will flatten energy market prices by shifting more revenues to the day-ahead market and reducing scarcity prices in real-time. Thus, rather than promoting Demand Response participation in the energy market, ESI is likely to reduce it, as fewer scarcity conditions will translate into fewer Demand Response events. Technically, Demand Response resources would be able to sell ESI’s day-ahead ancillary services. However, they are unlikely to do so. ESI’s day-ahead ancillary services will operate as call options with a common strike price set by the ISO based on forecasted real-time hourly LMPs. Unless these option strike prices are high, they will not reflect the economics of Demand Response, which at typical energy prices is generally uneconomic and out of merit.

Importantly, the inability of Demand Response to provide energy security services under ESI is a consequence of ESI’s design, not a reflection on the competitiveness of Demand Response versus other resources in providing energy security. ESI’s approach to energy security is to provide a year-round day-ahead market sufficient to provide certainty to fuel-based resources to procure fuel. A market that properly accounted for Demand Response’s energy security characteristics would likely see higher energy market prices during times of grid stress, leading to higher costs over shorter periods, but would likely not require 365 days of day-ahead procurements and payments as under ESI. In fact, given that Analysis Group’s modeling of ESI suggests that the cost of avoiding operating reserve shortages under the proposed rules could be over $32,000 per MWh, there is substantial reason to believe that an energy security design that properly accounted for, and further incentivized, Demand Response’s characteristics would cost consumers less than the ESI proposal. During the most recent winter from December 2019 to February 2020, there were over 440 MW of Demand Response resources with Capacity Supply

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52 Supra section III.B.
Obligations (CSOs) in the region.\textsuperscript{53} Under the Tariff, resources with CSOs, including Demand Response, must offer into the day-ahead energy market,\textsuperscript{54} and, through winter 2019/2020, these offers were capped at $1,000 per MWh.\textsuperscript{55} That means at least 440 MW of Demand Response in the region were willing to provide energy, by reducing demand, for $1,000 per MWh or less if needed. While 440 MW is less than the 1,364 MW loss of the Hydro-Quebec interconnection modeled by Analysis Group in the one scenario that projected an operating reserve shortage, there is also a wide gap between the region’s $1,000 per MWh offer cap, which was sufficient to attract that Demand Response, and the $32,000 per MWh or more consumers are projected to pay under ESI. More than 440 MW of Demand Response could certainly be incentivized or procured at above $1,000 per MWh. Because Analysis Group does not report on whether the 3-hour operating reserve shortage it projected would require full replacement of the Hydro-Quebec interconnection, it may also be the case that fewer than 1,364 MW of Demand Response or other replacement resources would be needed to avoid an operating reserve shortfall in that scenario.\textsuperscript{56}


\textsuperscript{54} Tariff § III.13.6.1.5.1.

\textsuperscript{55} This $1,000 price cap applied to day-ahead energy offers through the 2019/2020 winter. Following Order No. 831, and effective March 1, 2020, resources can now offer in the ISO-NE energy market at rates higher than $1,000 per MWh if approved by the Internal Market Monitor upon showing such rates are warranted. In such cases, these offers are still subject to a hard price cap of no more than $2,000 per MWh, which remains substantially below the estimated cost of $32,000 per MWh or more of avoided operating reserve shortages under ESI. See ISO New England, Market Rule 1 Revisions to the Offer Cap Requirements in the Day-Ahead Energy Market and Change to Effective Date for Order No. 831 Revisions (June 14, 2019), FERC Docket No. ER19-2137, https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15274319 (filing accepted by delegated letter order on August 13, 2019).

\textsuperscript{56} \textit{Infra} note 36.
In sum, ESI’s harm to resources like offshore wind and Demand Response is twofold. First, it unduly and discriminatorily fails to compensate these resources with demonstrated energy security value through the design of its options markets. Second, it would alter the dynamics of existing energy markets by depressing scarcity prices, depriving these resources of their current source of revenue for their contribution to meeting system needs under such stressed conditions. Not only does ESI prevent resources such as offshore wind and Demand Response from receiving revenue needed to make additional investments to increase their contributions to meeting potential energy security challenges, it unjustly and unreasonably raises costs for consumers.

Analysis Group’s assessment of ESI shows that fuel-dependent resources would be its major beneficiaries. The assessment includes projections of how ESI would change resources’ behavior—i.e., how different resource types would be expected to respond to ESI’s new day-ahead ancillary service opportunities. Consistent with the discussion above, the analysis shows the ESI design does not provide opportunities for fuel-free resources to participate in the new ancillary service markets to provide energy security. Analysis Group’s modeling projects that ESI would not enable onshore and offshore wind, solar resources, and active demand response to provide day-ahead energy options under any of the winter scenarios it considered. It similarly finds that battery storage would be unable to provide day-ahead energy options. The only resource types projected to be able to sell energy options in the new ESI markets are fossil fuel generators (coal, combined cycle and combustion turbine gas, dual fuel combined cycle and combustion turbine generators, and steam and combustion turbine oil) and hydropower (including pumped storage).57

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57 ISO Filing at 398.
This market design further has implications for resource revenues. In the central “frequent” winter grid stress case, all resource types are projected to see increased revenues, in terms of dollars per MW under ESI, but fuel-free resources like solar, wind, and offshore wind would see much smaller gains—half as much or less—than every other resource type except combined cycle gas generators.\(^{58}\) Coal, oil, and dual-fuel generators would all receive at least twice as much per megawatt relative to onshore and offshore wind and solar, with revenue increases of $3,532 to $10,696 per MW compared to $17 to $1,509, respectively.\(^{59}\) In the “extended” winter case, most resource types would see lower revenues, including losses of $307 to $3,705 per MW for solar and onshore and offshore wind.\(^{60}\) Only certain gas, dual fuel, and hydropower resources would come out ahead in this scenario.\(^{61}\) In the “infrequent” winter stress case, solar and onshore and offshore wind resources are projected to see gains of $54 to $726 per MW, though these increases would be smaller than many, though not all, fuel-based resources.\(^{62}\)

Analysis Group’s report does not provide any revenue projections under ESI for Demand Response or battery storage resources.

Thus, while ISO-NE describes ESI as fuel and technology neutral, the proposed rules are only designed with the characteristics of fuel-based resources in mind and do not provide opportunities for fuel-free clean energy resources to provide energy security services, despite their proven abilities to do so. In designing ESI, the ISO claims it has worked to “anticipate the

\(^{58}\) Id. at 406.

\(^{59}\) Id.

\(^{60}\) Id. at 407.

\(^{61}\) Id.

\(^{62}\) Id.
needs and capabilities of the evolving generation fleet,” but there is no evidence in the record that this is the case. All New England states are aggressively pursuing a transition to a grid based on clean energy, yet there are no apparent opportunities for non-hydroelectric fuel-free clean energy resources to participate in the ISO’s new energy security markets, now or in the future. The ESI proposal is thus unduly discriminatory toward fuel-free clean energy resources and unduly preferential toward fuel-based resources, particularly fossil fuels, and should therefore be rejected.

V. In focusing on ensuring continued operation of fossil fuel resources, ESI arbitrarily and capriciously fails to account for the reality of New England states’ efforts to decarbonize the grid.

The Commission should also reject ESI because it attempts to lock-in the physical and operating characteristics of a fossil fuel-dominated grid despite New England’s burgeoning clean energy transition led by ambitious state legislation. States retain authority over their generation mix notwithstanding ISO-NE’s Commission-regulated wholesale markets. Exercising that authority, New England states are adding thousands of megawatts of new renewable energy resources to the grid, investing in nation-leading energy efficiency programs, and, increasingly, providing economic incentives for new energy storage resources to help further integrate renewable energy. These facts, combined with states’ economy-wide commitments to reduce greenhouse gas emissions and collaborative efforts like the Regional Greenhouse Gas Initiative (RGGI), show that New England is moving rapidly toward a clean, decarbonized grid. Yet ESI is pushing in the opposite direction—seeking to prop up uneconomic fossil fuel resources when

63 Id. at 4.
64 Infra section V.B.
these resources should retire. It would be arbitrary and capricious for the Commission to allow ESI to prop up fossil fuel-burning incumbent resources in the face of New England’s ongoing, state-led transition of its generation mix away from fossil fuels and towards clean energy.

A. States retain authority over their generation mix under the FPA’s cooperative federalism structure.

The FPA assigns to the Commission and state governments complementary, but distinct, regulatory roles. For this reason, the FPA has been characterized as a statute of “collaborative federalism” that “envisions a federal-state relationship marked by interdependence.”66 The Commission’s role is to regulate “the sale of electric energy at wholesale in interstate commerce.”67 A “wholesale” sale of electricity is defined as a “sale of electric energy to any person for resale.”68 The FPA charges the Commission with the task of ensuring that wholesale sales of electricity occur at rates that are “just and reasonable” and not “unduly discriminatory or preferential.”69

However, the FPA leaves to state governments the regulation of “any other sale of electric energy,” as well as “facilities used for the generation of electric energy.”70 This state regulatory authority encompasses “questions of need, reliability, cost, and other related state concerns”71 as well as “environmental and social impacts.”72

72 Californians for Renewable Energy, Inc. v. CAISO, 117 FERC ¶ 61,072, at P 10 (2006); Re S. California Edison Co., 159 P.U.R.4th 381 at (Feb. 22, 1995) (“We respect the fact that resource planning and resource
States can exercise this authority by “direct[ing] the planning and resource decisions of utilities under [the states’] jurisdiction.”73 Notably, states’ “role as regulators of generation facilities” can include “the right to forbid new entrants from providing new capacity, to require retirement of existing generators, [and] to limit new construction to more expensive, environmentally-friendly units.”74 States may exercise these regulatory prerogatives even if such regulations “incidentally affect” wholesale electricity markets.75 The Supreme Court has emphasized that “[s]tates, of course, may regulate within the domain Congress assigned to them even when their laws incidentally affect areas within FERC’s domain.”76

As the Court has explained, “[i]t is a fact of economic life that the wholesale and retail markets in electricity, as in every other known market, are not hermetically sealed from other.”77 The Court has also noted with respect to the Natural Gas Act, a statute closely analogous to the FPA, it would be “strange indeed” if states could only regulate gas production “in furtherance of legitimate conservation goals” if doing so had no “effect on interstate rates.”78

The Court’s observations make sense, given that it would not be feasible for the Commission to attempt to cancel out the effect of all state actions on wholesale rates, however legitimate the action or minor its effects. As Commissioner Glick has noted, quoting former

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73 *Entergy Nuclear Vt. Yankee, LLC v. Shumlin*, 733 F.3d 393, 417 (2d Cir. 2013) (internal quotation marks omitted).


75 *Hughes*, 136 S. Ct. at 1298 (2016).

76 *Id.*


Commission Chairman Norman Bay, an “idealized vision of markets free from the influence of public policies . . . does not exist, and it is impossible to mitigate our way to its creation.”

More broadly, beyond the FPA’s division of authority over the electric grid between FERC and the states, states have the independent authority reserved to them under the U.S. Constitution to legislate for the general welfare of their people. “The power to promote the general welfare is inherent in government,” and the “states in their sovereign capacity” possess this power for “all subjects jurisdiction of which is not surrendered to the federal government.”

This power extends to legislation to promote the health of a state’s people and natural environment—“Legislation designed to free from pollution the very air that people breathe clearly falls within the exercise of even the most traditional concept of what is compendiously known as the police power.” State policies that regulate the negative externalities of power generation—including policies such as clean energy mandates that aim to replace polluting resources in the generation mix with clean ones—fall squarely within states’ inherent power to protect the health and welfare of their citizens, and their sovereignty over those police powers is independent of their authority under the Federal Power Act.

**B. ESI would arbitrarily and capriciously impede New England states’ legitimate regulatory goals.**

All six New England states have committed to significantly reduce carbon emissions over the next 30 years and transition to economies based on clean energy resources. To achieve these

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80 Nebbia v. People of New York, 291 U.S. 502, 524 (1934); see also New York v. United States, 505 U.S. 144, 156 (1992) (“The States unquestionably do retain a significant measure of sovereign authority ... to the extent that the Constitution has not divested them of their original powers and transferred those powers to the Federal Government.”).

targets, the states have enacted statutes and are exercising their authority over the generation mix to implement a variety of policies, including competitive long-term procurements of large-scale renewable and zero-carbon generation, renewable portfolio standards, utility-administered energy efficient programs, and expansion of distributed generation and storage. The following table summarizes the states’ climate mandates and targets.

<table>
<thead>
<tr>
<th>STATE</th>
<th>REDUCTION TARGETS</th>
<th>BASELINE YEAR</th>
<th>FRAMEWORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhode Island</td>
<td>10% by 2020</td>
<td>1990</td>
<td>Resilience Rhode Island Act, 2014</td>
</tr>
<tr>
<td></td>
<td>45% by 2035</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80% by 2050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>10% by January 1, 2020</td>
<td>1990</td>
<td>Public Act No. 08-98</td>
</tr>
<tr>
<td></td>
<td>80% by January 1, 2050</td>
<td></td>
<td>Public Act No. 18 – 82</td>
</tr>
<tr>
<td></td>
<td>45% by January 1, 2030</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>10-25% by December 31, 2020</td>
<td>1990</td>
<td>Massachusetts Global Warming Solutions Act, 2008</td>
</tr>
<tr>
<td></td>
<td>Net-zero by 2050</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80% by 2050</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80-90% by 2050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>45% by January 1, 2030</td>
<td>1990</td>
<td>Chapter 476 Public Law</td>
</tr>
<tr>
<td></td>
<td>80% by January 1, 2050</td>
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</tbody>
</table>

In Connecticut, Maine, and Massachusetts, state policymakers and stakeholders are actively engaged in further forward-looking planning processes that will culminate in state-level plans to achieve their climate targets. In short, New England states have passed ambitious legislation to facilitate a transition to an electric system based on clean energy, with important economic, environmental, and public health consequences for their citizens.
Unfortunately, the ISO-NE has chosen to view the region’s clean energy transition as a problem—an “increasing reliance on just in time resources”\textsuperscript{82} necessitating dramatic intervention in its markets—notwithstanding that, as shown above, there is still scant evidence for the ISO’s claims that fuel/energy security poses a real threat of reliability problems. ESI would funnel new revenue to fossil generators in the new day-ahead options market even as states work to replace their pollution-emitting fossil fuel resources with emissions-free clean energy resources. Not only would ESI undermine states’ legitimate policy prerogatives, it would lead to costly over-procurement, forcing consumers to shoulder the cost of fossil fuel resources that states neither want nor need. Approval of such changes would be arbitrary and capricious.\textsuperscript{83} In carrying out its obligation to ensure just and reasonable rates in wholesale markets, the Commission cannot ignore the reality of New England’s clean energy transition.

VI. Conclusion

The Commission should reject the ESI filing. Its sweeping, costly changes are neither supported by the Commission’s section 206 finding nor the record in this proceeding. Further, ESI is unjust and unreasonable because it would only provide minimal potential reliability for exorbitant cost according to the Impact Assessment included in the filing. ESI is also unduly discriminatory because it disadvantages resources that play an essential role in meeting the winter reliability challenges ESI purports to address. Finally, in propping up fossil fuel-burning resources, ESI arbitrarily and capriciously fails to account for the reality of New England states’ efforts to decarbonize the grid.

\textsuperscript{82} ISO Filing at 13.

\textsuperscript{83} Agency action is arbitrary and capricious if, for example, the agency “entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” \textit{Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.}, 463 U.S. 29, 43 (1983).
Respectfully submitted on this 15th day of May 2020.

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Annapolis, MD this 15th day of May 2020.

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