

173 FERC ¶ 61,106  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;  
Richard Glick and James P. Danly.

ISO New England Inc.

Docket No. ER20-1567-000

ORDER REJECTING PROPOSED TARIFF REVISIONS

(Issued October 30, 2020)

1. On April 15, 2020, ISO New England Inc. (ISO-NE) submitted proposed revisions to the ISO-NE Transmission, Markets and Services Tariff (Tariff) reflecting improvements to its market design to better address regional fuel security concerns. As ISO-NE states, these proposed revisions (Energy Security Improvements, or ESI) set forth long-term market enhancements to address the New England Region's fuel security challenges, beginning on June 1, 2024, the start of the Capacity Commitment Period<sup>1</sup> associated with the fifteenth Forward Capacity Auction (FCA 15). As discussed below, we reject the ESI proposal.<sup>2</sup>

**I. Background**

2. On May 1, 2018, ISO-NE filed a petition for waiver of certain Tariff provisions to allow ISO-NE to retain two retiring generating units owned by Exelon Generation Company, LLC, Mystic Generating Station 8 and 9 (Mystic 8 and 9), for the 2022-2023 and 2023-2024 winter periods to maintain fuel security.<sup>3</sup> In support of its Petition for Waiver, ISO-NE cited a series of studies that showed a high level of operational risk, under a variety of scenarios, associated with the retirement of Mystic 8 and 9 and the

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<sup>1</sup> Capitalized terms not defined herein are used as they are defined in the Tariff. *See* Tariff, § I.2 Rules of Construction.

<sup>2</sup> Although ISO-NE characterizes its filing as submitted pursuant to FPA section 206, we are treating that filing as submitted under FPA section 205.

<sup>3</sup> ISO-NE, Petition for Waiver, Docket No. ER18-1509-000, at 3 (filed May 2, 2018) (Petition for Waiver).

Everett Marine Terminal (Everett).<sup>4</sup> These studies indicated that the loss of both Mystic 8 and 9 and Everett<sup>5</sup> would lead to the depletion of operating reserves and load shedding.

3. On July 2, 2018, the Commission rejected the Petition for Waiver and preliminarily found that the Tariff may be unjust and unreasonable because it fails to address specific regional fuel security concerns identified in the studies presented by ISO-NE, which could result in a violation of mandatory reliability standards.<sup>6</sup> The Commission directed ISO-NE to either: (1) submit by August 31, 2018, 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 (2) by August 31, 2018, show cause as to why the Tariff remains just and reasonable absent those filings.<sup>7</sup>

4. On August 31, 2018, ISO-NE submitted proposed fuel security cost-of-service Tariff provisions (Fuel Security Retention Mechanism) to allow for the retention of resources for fuel security under a short-term, cost-of-service agreement, which the Commission accepted on December 3, 2018.<sup>8</sup> On March 25, 2019, ISO-NE proposed to implement a program to compensate resources for maintaining inventoried energy during the winter months (Inventoried Energy Program), which the Commission accepted on June 18, 2020.<sup>9</sup> The Fuel Security Retention Mechanism is only in effect for FCAs 13 through 15, which cover the Capacity Commitment Periods of 2022-2023, 2023-2024, and 2024-2025, respectively.<sup>10</sup> The Inventoried Energy Program is in effect for the

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<sup>4</sup> *Id.* at 3 n.6.

<sup>5</sup> The only fuel source for Mystic 8 and 9 is natural gas purchased from Everett, which is located adjacent to the Mystic Generating Station.

<sup>6</sup> *ISO New England Inc.*, 164 FERC ¶ 61,003 at PP 49, 55 (July 2018 Order).

<sup>7</sup> *Id.* P 55.

<sup>8</sup> *ISO New England Inc.*, 165 FERC ¶ 61,202, at P 49 (2018) (December 2018 Order).

<sup>9</sup> *ISO New England Inc.*, 171 FERC ¶ 61,235, at P 32 (2020) (June 2020 Order).

<sup>10</sup> December 2018 Order, 165 FERC ¶ 61,202 at P 5.

winter months of FCAs 14 through 15 (i.e., the winter months of 2023-2024 and 2024-2025).<sup>11</sup> On April 15, 2020, ISO-NE submitted the instant filing, its ESI proposal.

## II. Filing

5. ISO-NE states that its ESI proposal represents a long-term, market-based solution to the New England region's fuel security problems that complies with the Commission's directives in the July 2018 Order.<sup>12</sup> ISO-NE proposes to implement ESI beginning June 1, 2024, coincident with the start of the Capacity Commitment Period associated with FCA 15. ISO-NE requests a November 1, 2020 effective date for its Tariff revisions in order to (1) provide market participants with greater certainty as to the Tariff rules that will be in effect for FCA 15, (2) allow ISO-NE to reflect what market rules will be in effect in its informational filing for FCA 15, which is scheduled to be filed on November 10, 2020, and (3) allow ISO-NE to reflect which market rules will be in effect as it reviews and recalculates a number of Forward Capacity Market parameters for the sixteenth Forward Capacity Auction (FCA 16). The Tariff requires ISO-NE to file the FCA 16 parameters by March 2021 so that they are effective before the FCA 16 qualification process. ISO-NE asks the Commission to issue an order by November 1, 2020.<sup>13</sup>

6. ISO-NE explains that, in studying the energy security problem and its existing market rules and operations, it identified certain gaps in the assumptions it makes about resource availability when developing its daily Operating Plans.<sup>14</sup> Specifically, ISO-NE states that it fails to explicitly procure in its day-ahead market three distinct resource capabilities corresponding to certain reliability requirements: (1) energy to meet the gap between ISO-NE's forecast load in real-time and the day-ahead physical energy supply awards; (2) operating reserves for fast-start and fast-ramping generation contingency response; and (3) energy to replace a long-duration supply loss or unanticipated increase

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<sup>11</sup> June 2020 Order, 171 FERC ¶ 61,235 at P 1.

<sup>12</sup> Transmittal at 1-3. ISO-NE characterizes its fuel security concerns as an energy security problem due to the constraints and uncertainties in managing an energy-limited power system consistent with established reliability standards and criteria. *Id.* at 2 n.3.

<sup>13</sup> *Id.* at 68-69, 74.

<sup>14</sup> *Id.* at 4. ISO-NE explains that Operating Plan refers to "processes and procedures which are available to the System Operator on a daily basis to allow the System Operator to reliably address conditions which may arise throughout the day. It is valid for tomorrow, the day after, and the day after that." *See id.* at 9 n.9 (citing Reliability Standard TOP-002-4 (Operations Planning) at 7).

in demand. ISO-NE argues that, due to the evolving nature of its resource fleet,<sup>15</sup> it can no longer rely on resources to provide these reliability services in real-time absent day-ahead compensation and thus the markets must procure and provide compensation for the operational capabilities that these resources provide and upon which ISO-NE depends to ensure a reliable power system. Specifically, ISO-NE explains that it suffers from a “misaligned incentives” problem, which occurs when market participants’ private incentives to take action to improve their ability to provide energy in real-time do not align with society’s interest in such arrangements.<sup>16</sup> ISO-NE states that this misaligned incentives problem precipitates concerns related to the gap between forecasted real-time load and day-ahead physical energy supply awards and concerns surrounding operational uncertainties.<sup>17</sup>

7. To fill the identified market gaps, ISO-NE proposes to formalize the three categories of operational capabilities it identified into three day-ahead ancillary service products: (1) Energy Imbalance Reserve, to compensate all generators that work to satisfy ISO-NE’s load forecast; (2) Generation Contingency Reserve, to parallel the existing real-time operating reserve products; and (3) Replacement Energy Reserve, to restore depleting operating reserves within reliability standards’ prescribed timeframes and to address load forecast errors realized during the operating day (collectively, ESI Products).<sup>18</sup>

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<sup>15</sup> ISO-NE notes that the nature of its resource portfolio has changed, so more of its resources require “just in time” fuel inputs, such as gas delivered through the region’s constrained pipeline system or “fuel” in the form of the sun and the wind. ISO-NE states that “the prevalence of resources with just-in-time inputs, combined with a constrained fuel delivery infrastructure, 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).” *Id.* at 3-4.

<sup>16</sup> *Id.* at 13. This problem occurs when resources are not sufficiently incented to make additional investments in energy supply arrangements, which may have adverse efficiency and reliability consequences under the existing market rules. *See* June 2020 Order, 171 FERC ¶ 61,235 at P 33.

<sup>17</sup> Transmittal at 4, 13-14.

<sup>18</sup> *Id.* at 4-5.

## A. ESI Products

### 1. Energy Imbalance Reserve

8. ISO-NE states that it will procure sufficient Energy Imbalance Reserve to meet any gap between day-ahead cleared energy demand and its forecasted real-time load (Forecast Energy Requirement). ISO-NE explains that it currently only clears a quantity of supply in its day-ahead market consistent with the market participants' submitted offers to supply, and bids to buy, energy day-ahead, even if the Forecast Energy Requirement exceeds this amount of cleared energy.<sup>19</sup> ISO-NE states that it then positions resources to cover any energy gap using an out-of-market Reserves Adequacy Analysis (RAA) that ISO-NE executes immediately after the day-ahead market run. However, according to ISO-NE, the cost of any supplemental commitments executed through the RAA is not reflected in day-ahead market prices, and there is no market compensation for these capabilities in the day-ahead timeframe. Therefore, ISO-NE contends that procuring sufficient Energy Imbalance Reserve to cover any gap between cleared energy supply and the Forecast Energy Requirement will ensure that the market produces a reliable next-day Operating Plan and improve price formation by signaling to the market, through transparent prices, the cost of a reliable next-day Operating Plan. ISO-NE explains that the following resources are eligible to provide Energy Imbalance Reserve: (1) resources that have a corresponding day-ahead energy schedule for the same hour and (2) fast-start resources physically located in the New England Control Area.<sup>20</sup>

9. ISO-NE also explains that physical resources (i.e., all resources except virtual supply) that provide day-ahead energy and resources that provide Energy Imbalance Reserve will contribute equally to meeting the Forecast Energy Requirement. Thus, ISO-NE proposes to pay all physical resources that clear the day-ahead energy market the day-ahead locational marginal price (LMP) plus a Forecast Energy Requirement Price, which will be a new revenue stream for resources that help meet the Forecast Energy Requirement set equal to the Energy Imbalance Reserve clearing price.<sup>21</sup>

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<sup>19</sup> *Id.* at 35. ISO-NE consistently has a gap between its day-ahead cleared supply and that hour's Forecast Energy Requirement. *See* ISO-NE Filing, Dr. Matthew White Aff. Attach. B at 110 (ESI White Paper). In 2018, there was zero gap in only 22% of hours, the median hourly value of that gap was 459 MWh, and the gap exceeded 1,000 MWh in 25% of hours. *Id.* at 110.

<sup>20</sup> Transmittal at 35-36.

<sup>21</sup> *Id.* at 49-53.

## 2. Generation Contingency Reserve

10. ISO-NE proposes to procure sufficient day-ahead Generation Contingency Reserve to cover its existing real-time operating reserve requirements (i.e., the Ten-Minute Spinning Reserve Requirement, Ten-Minute Reserve Requirement, and Minimum Total Reserve Requirement).<sup>22</sup> To meet these reserve requirements, ISO-NE proposes to establish three separate day-ahead Generation Contingency Reserve products mirroring the three existing real-time products: Day-Ahead Ten-Minute Spinning Reserve, Day-Ahead Ten-Minute Non-Spinning Reserve, and Day-Ahead Thirty-Minute Operating Reserve. ISO-NE also proposes to apply its existing real-time operating reserve eligibility and designation rules to determine which resources are eligible to provide each of the new Generation Contingency Reserve products.<sup>23</sup>

## 3. Replacement Energy Reserve

11. ISO-NE proposes to procure in the day-ahead market a quantity of Replacement Energy Reserve consistent with North American Electric Reliability Corporation (NERC) and Northeast Power Coordinating Council, Inc. (NPCC) reserve restoration requirements and expected load forecast error.<sup>24</sup> ISO-NE explains that its current day-ahead market does not commit resources to ensure that the system's real-time reserves can be fully restored within the timeframes specified in NERC Reliability Standard BAL-002 and NPCC Directory 5. Instead, ISO-NE states that it assumes that there will be enough supply available from capacity that has no day-ahead energy award to fill the energy gap on the system if, for example, a unit committed day-ahead experiences an unplanned outage, or a transmission failure limits a scheduled import of energy. To better reflect its operational requirements in the day-ahead market, ISO-NE proposes to define two Replacement Energy Reserve products to ensure sufficient replacement energy to restore operating reserves post-contingency consistent within the NERC and NPCC prescribed restoration times: 90-minute Replacement Energy Reserve and 240-minute Replacement Energy Reserve.<sup>25</sup>

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<sup>22</sup> *Id.* at 37; Tariff § III.2.7A.

<sup>23</sup> Transmittal at 21, 37-38.

<sup>24</sup> *Id.* at 38-41.

<sup>25</sup> *Id.* at 39-40. Ninety-minute Replacement Energy Reserve refers to the capability of a resource to either produce additional energy or further reduce energy consumption within 90 minutes to satisfy the NERC BAL-002 Ten-Minute Reserve restoration time requirement; 240-minute Replacement Energy Reserve refers to the capability of a resource to either produce energy or reduce energy consumption

12. ISO-NE also explains that, under NERC's TOP-002-4 Requirement R4, ISO-NE must have Operating Plans for the next day that address, among other things, "expected generation resource commitment and dispatch, interchange scheduling, demand patterns, and capacity and energy reserve requirements."<sup>26</sup> ISO-NE states that, consistent with this requirement, its current Operating Plans provide sufficient reserves to address different events, including load forecast error, though the precise reserve capability and the amount used to address load forecast errors is currently unspecified. To formalize its operational requirements for load forecast error, ISO-NE proposes to incorporate into the Replacement Energy Reserve demand quantities an allowance for load forecast error.<sup>27</sup>

### **B. Energy Call Option Construct**

13. ISO-NE proposes to procure the ESI Products as call options on energy rather than traditional day-ahead reserve products that settle against resources' anticipated real-time reserve designations. Under this approach, a market participant seeking to sell ESI Products submits a single option offer (Option Offer), specifying the minimum price that it is willing to be paid to accept the obligation to provide any ESI Product in each hour. ISO-NE states that resources with Option Offers that clear in the day-ahead market are paid the day-ahead option clearing price (Option Price). Subsequently, after the real-time market run, these resources must pay ISO-NE any positive difference between the Real-Time Hub Price<sup>28</sup> and the option strike price (Strike Price), which ISO-NE proposes to set equal to the forecasted expected Real-Time Hub Price.<sup>29</sup> ISO-NE states that this settlement construct functions like existing forward sales of energy in the day-ahead market by tying financial consequences (i.e., replacement costs) to the real-time energy price. As a result, ISO-NE contends that this construct resolves the misaligned incentives

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within four-hours (or 240 minutes) to satisfy the NPCC Directory 5 30-Minute Operating Reserve restoration time requirement. *Id.* at 40.

<sup>26</sup> *Id.* (quoting Reliability Standard TOP-002-4 (Operations Planning) at Requirement R4).

<sup>27</sup> *Id.* at 40-41.

<sup>28</sup> The Real-Time Hub Price is an average of the real-time LMPs for a pre-existing, stable set of (generally unconstrained) pricing nodes in ISO-NE's control area and reflects the system-wide real-time energy price. ESI White Paper at 70.

<sup>29</sup> *See* Transmittal at 42-54.

problem by allowing market participants to internalize the high costs that may prevail if a resource with an ESI Product obligation cannot operate in real-time.<sup>30</sup>

14. ISO-NE explains that the procurement and settlement of the proposed call-option ESI Products involves several steps. First, ISO-NE forecasts the expected Real-Time Hub Price for each hour of the next operating day, establishes the Strike Price for each hour based on this price, and then publishes the Strike Price for each hour no later than two hours before day-ahead market offers are due. Second, resources use the published Strike Price to establish voluntary Option Offers for each hour and submit these offers to ISO-NE with their day-ahead energy supply offers.<sup>31</sup> Third, ISO-NE uses its day-ahead market engine to simultaneously clear energy supply offers, demand bids, and Option Offers to determine the most cost-effective assignment of resource offers for energy and each of the ESI Products, which establishes the hourly day-ahead LMPs and hourly Option Prices for each ESI Product. Fourth, ISO-NE proceeds into the operating day and dispatches resources for energy in real-time to establish the real-time LMPs and Real-Time Hub Prices for each hour of the operating day. Fifth, ISO-NE determines whether there is any positive difference between the Real-Time Hub Price and the Strike Price and, if so, charges all resources with ESI Product obligations the difference between the Real-Time Hub Price and the Strike Price. Finally, ISO-NE credits all resources that provide energy in real-time, including any resources with ESI Product obligations, the real-time LMP at their respective pricing node, as it does under its current market rules.<sup>32</sup>

15. ISO-NE states that all resources with an ESI Product obligation incur a closeout cost equal to the positive difference between the Real-Time Hub Price and the Strike Price, regardless of whether it is dispatched for energy or produces energy in real-time. ISO-NE explains that this “no excuse” settlement obligation is the only obligation associated with the ESI Products and argues that this obligation is appropriate because it imposes the additional cost of replacement energy on a supplier if it is unable to perform for any reason. ISO-NE contends that additional obligations would result in inefficiently

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<sup>30</sup> *Id.* at 43-44, 53.

<sup>31</sup> *Id.* at 44-45. Option Offers must be associated with a resource registered as a Generator Asset or Demand Response Resource with a corresponding Supply Offer or Demand Reduction Offer in the day-ahead market for the same hour of the operating day. Resources submit a single Option Offer for all ESI Products. *Id.*; *see also* ESI White Paper at 79.

<sup>32</sup> Transmittal at 49-50, 52-54, 58.



high offer prices, reduce market participation by competing suppliers, undermine the cost effectiveness of the ESI market design, and unnecessarily increase consumer costs.<sup>33</sup>

### C. Impact Assessment

16. ISO-NE states that, to evaluate the efficacy and cost of its proposed market design, it engaged the Analysis Group, Inc. who conducted the ESI Impact Assessment (Impact Assessment).<sup>34</sup> ISO-NE contends that the Impact Assessment shows that the proposed design will create strong financial incentives for resources to maintain more secure energy supplies at a modest cost to consumers when compared to all ISO-NE markets. Specifically, ISO-NE states that the Impact Assessment finds that ESI would increase total consumer costs by approximately \$20 million to \$257 million per year, depending on how frequently stressed conditions materialize. At the same time, according to ISO-NE, the Impact Assessment shows that ESI will improve the overall reliability of the power system by increasing the fuel oil available for electric generation across a wide range of system conditions, improving incentives for gas-only resources to firm up their energy supply, and avoiding operating reserve shortages that would otherwise occur during “supply shocks” under current market rules.<sup>35</sup> ISO-NE explains that the incentives offered by ESI are strongest during periods when energy security risks are most severe, thereby creating the strongest price signals when energy needs are greatest. Furthermore, ISO-NE states that, while the market design will increase costs to consumers, the Impact Assessment demonstrates that those increases come from a market design that is expected to lower production costs during more stressed system conditions, indicating that the design enhances the region’s energy security in an efficient manner.<sup>36</sup>

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<sup>33</sup> *Id.* at 53-54; ESI White Paper at 70.

<sup>34</sup> Transmittal at 5 (citing ISO-NE Filing, Dr. Todd Schatzki Aff. Attach. C, Energy Security Improvements Impact (Impact Assessment)).

<sup>35</sup> *Id.* at 30-32. The “supply shocks” considered include one-day and five-day supply contingencies, in which imports are reduced 1,364 MW during stressed market conditions. Impact Assessment at 89-91.

<sup>36</sup> Transmittal at 5-6, 32-33. ISO-NE indicates that, under the two more severe winter cases, production costs are reduced by \$35.5 million for a winter experiencing frequent severe weather events (the Frequent Case) and by \$19.3 million for a winter experiencing less frequent but more extended severe weather events (the Extended Case). ISO-NE explains that, in the case of a milder winter, production costs decrease by \$0.9 million but total production costs increase slightly due to the higher costs of holding fuel inventories until the following winter. *See* Impact Assessment, section IV.A.3, Table 22.

#### **D. NEPOOL Alternative**

17. ISO-NE explains that NEPOOL proposes three discrete changes to the ESI proposal: (1) set the Replacement Energy Reserve quantity to zero during the nine non-winter months and thus only procure Replacement Energy Reserve during the three winter months of December through February;<sup>37</sup> (2) remove Tariff language authorizing ISO-NE to increase the Replacement Energy Reserve amount to account for load forecast error;<sup>38</sup> and (3) bias the Strike Price upward by \$10/MWh to reduce the cost and risk of the energy call option mechanism for ESI Product providers (NEPOOL Alternative).<sup>39</sup>

18. ISO-NE states that, to the extent the Commission finds any part of the ESI proposal outside the scope of its FPA section 206 directive, it requests that the Commission consider the ESI proposal under FPA section 205 and consider the NEPOOL Alternative in accordance with the jump ball provisions.<sup>40</sup>

### **III. Notice of Filing and Responsive Pleadings**

19. Notice of the filing was published in the Federal Register, 85 Fed. Reg. 22,419 (Apr. 22, 2020), with interventions and protests due on or before May 15, 2020.<sup>41</sup> Entities listed in Appendix A submitted notices of intervention, timely motions to intervene, protests and/or comments. Appendix A also identifies entities that filed answers.

### **IV. Discussion**

#### **A. Procedural Matters**

20. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2020), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

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<sup>37</sup> Transmittal at 41.

<sup>38</sup> *Id.*

<sup>39</sup> *Id.* at 47.

<sup>40</sup> *Id.* at n.1.

<sup>41</sup> On April 16, 2020, the comments due date was extended to May 15, 2020. Errata Notice Extending Comment Period, Docket No. ER20-1567-000 (issued Apr. 16, 2020).

21. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2020), prohibits an answer to a protest or an answer unless otherwise ordered by the decisional authority. We accept the answers filed by Calpine/Vistra, FirstLight, ISO-NE, Mass AG, NEPGA, NEPOOL and NESCOE because they have provided information that assisted us in our decision-making process.

**B. Substantive Matters**

22. As discussed further below, we reject the ESI proposal as unjust and unreasonable because (1) ESI fails to sufficiently align the timing of reserve procurement with the timing of fuel procurement; (2) the voluntary nature of the ESI market design undermines its ability to address fuel security during stressed conditions; and (3) the Impact Assessment demonstrates that ESI would not materially reduce reserve shortages or the potential for loss of load, but nevertheless would impose substantial costs on consumers.

**1. ESI's Fuel Security Benefits and Consumer Costs**

**a. Filing**

23. ISO-NE asserts that its proposed ESI market design fully resolves its fuel security concerns. ISO-NE states that its proposal addresses existing gaps in the energy market by providing additional incentives and the compensation necessary for resources to bolster their energy supply arrangements in a fuel- and technology-neutral matter. Specifically, ISO-NE explains that the ESI proposal procures 3,500 to 5,000 MW of energy option reserves in the day-ahead market to help ensure reliable next-day operations. ISO-NE states that these new services will provide the capabilities that ISO-NE currently relies on, but does not compensate, in the day-ahead timeframe. ISO-NE asserts that these new capabilities will ensure that the system is prepared to respond to stressed conditions that have created energy security concerns in the past. ISO-NE also explains that the ESI proposal will provide more accurate and stronger price signals to suppliers during tightening market conditions and thus provide an early warning that conditions are tightening before an actual scarcity condition materializes, incentivizing suppliers to invest in energy supply arrangements so that they are prepared to perform. Finally, ISO-NE explains that the ESI market design appropriately ties resource compensation to strong financial consequences based on the real-time replacement cost of energy, which can exceed \$3,800/MWh during periods of scarcity.<sup>42</sup>

24. ISO-NE contends that ESI will meaningfully strengthen incentives for participant-driven supply chain management and reliable energy supply arrangements and explains that the Impact Assessment demonstrates that it would be profitable for many resources to maintain greater fuel inventories under ESI relative to current market rules.

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<sup>42</sup> Transmittal at 23-24.

Specifically, ISO-NE states that the Impact Assessment demonstrates that the additional revenues available to oil-fired and dual-fuel resources would far exceed the increased costs that these resources incur for holding fuel in inventory. Thus, ISO-NE argues that the results unambiguously demonstrate that ESI would increase the region's fuel oil available for electric generation across a wide range of system conditions. ISO-NE adds that the Impact Assessment shows that ESI would increase incentives for gas-only resources to firm up their energy supply, specifically when considering potential returns from entering into a forward liquefied natural gas (LNG) contract. Furthermore, ISO-NE explains that ESI may prompt suppliers to take other actions not quantified in the Impact Assessment, such as preservation of limited energy inventories (e.g., at hydropower facilities), investments to expand fuel storage capability (e.g., dual fuel), improvements in operational performance (e.g., reduced forced outage rates), and internalization of these new revenue streams in entry and exit decisions.<sup>43</sup>

25. ISO-NE contends that its proposed Tariff revisions reflect a complete, sustainable, and fully integrated market design to address the energy security problem facing the region in compliance with the Commission's directives pursuant to section 206 of the Federal Power Act (FPA).<sup>44</sup> ISO-NE states that, to the extent the Commission finds any part of the proposed long-term, market-based solution outside the scope of its directive, ISO-NE requests that the Commission find it just and reasonable pursuant to FPA section 205.<sup>45</sup>

26. Furthermore, ISO-NE explains that it intends to pursue a seasonal forward market to complement the ESI proposal filed here. Specifically, ISO-NE states that its initial work has identified a set of conditions in which an FCA may further improve market efficiency by using a potential two-settlement design through which suppliers could sell ESI Products via a forward auction held some months in advance of the delivery period. ISO-NE states that developing a forward market would be a major undertaking and that certainty regarding ESI, the foundational component for such a market, is necessary before ISO-NE can move forward.<sup>46</sup>

27. ISO-NE states that its ESI proposal is expected to increase load's aggregate payments to suppliers by approximately \$20 million to \$257 million per year, depending on the extent to which stressed conditions materialize. Specifically, ISO-NE explains that consumer costs would increase by \$132 million (3.2%) during a winter with frequent

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<sup>43</sup> *Id.* at 30-31, n.109.

<sup>44</sup> 16 U.S.C. § 824e.

<sup>45</sup> Transmittal at 1 n.1 (citing 16 U.S.C. § 824d).

<sup>46</sup> *Id.* at 71-72.

stressed conditions, decrease by \$69 million (-2.5%) during a winter with extended stressed conditions, and increase by \$35 million (2%) during a winter with infrequent stressed conditions. ISO-NE states that consumer costs would increase by \$89 million (3.6%) during a moderate non-winter period and by \$125 million (4.6%) during a severe non-winter period.<sup>47</sup>

**b. Pleadings**

**i. Effect on Fuel Security**

28. Several commenters support ISO-NE's characterization of and solutions to its fuel security concerns.<sup>48</sup> Several generators agree with ISO-NE that the essential operational capabilities formalized as part of ESI are currently uncompensated. The IMM adds that ESI is consistent with valuing the "missing product" of energy security through a market-based solution. NEPGA and Calpine/Vistra argue that ISO-NE has appropriately identified the three categories of day-ahead operational capabilities on which it relies, and assert that the ESI market design will allow ISO-NE to satisfy NERC and NPCC reliability standards and its own Operating Procedures through market means. Similarly, Calpine/Vistra and Dominion argue that ISO-NE's proposed suite of ESI Products is the ideal vehicle to provide energy security incentives year-round. Consumer Advocates acknowledge that ESI has some potentially beneficial properties, could result in modest market improvements, and is responsive to the July 2018 Order.

29. Several commenters argue that the ESI proposal is just and reasonable because it will better address fuel security by incentivizing fuel procurement and resource availability.<sup>49</sup> NGSA contends that the proposed market products, if structured properly, will provide price signals for generators to make contractual arrangements that allow them to perform reliably throughout the year and will provide incentives for generators to devise cost efficient means to provide reliable power, including power reliant on LNG, pipeline capacity, dual fuel or storage. NEPGA claims that the ESI proposal resolves fuel security issues because it will enable ISO-NE to develop a reliable day-ahead operating plan that accounts for current and future constraints on fuel, load forecast errors, and

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<sup>47</sup> *Id.* at 33-34.

<sup>48</sup> Calpine/Vistra Comments at 6, 13; Cogentrix Comments at 5-6; Consumer Advocates Comments at 10-11; Dominion Energy Comments at 2; EDF Comments at 2; Exelon Protest at 7; FirstLight Comments at 7-10; IMM Comments at 5-6; NEPGA Comments at 6-7 (citing Transmittal, Attach. B, at 12).

<sup>49</sup> Calpine/Vistra Comments at 7; Cogentrix Comments at 4-6; Dominion Energy Comments at 6; EPSA Comments at 1-3; Exelon Protest at 7; FirstLight Comments at 7-10; IMM Comments at 5-6; NEPGA Comments at 4-5, 8; NGSA Comments at 3.

reserve restoration requirements. Several commenters also argue that ESI will help ensure energy security as ISO-NE transitions to greater use of renewable and natural gas generation.<sup>50</sup>

30. In contrast, several commenters argue that the ESI market design seeks to address a problem beyond the scope of the July 2018 Order because it introduces a new concept (i.e., energy security) or seeks to improve price formation and renewable integration issues rather than addressing fuel security concerns.<sup>51</sup> Several commenters also argue that the fuel security concerns at issue are limited to winter months and that ESI's applicability to non-winter months is not aimed at addressing fuel security.<sup>52</sup> Commenters contend that the Commission relied on the Operational Fuel Security Analysis (OFSA) and Mystic Retirement Studies to open the FPA section 206 investigation, which are winter-based models that do not support ISO-NE's year-round market design.<sup>53</sup>

31. Some commenters question if it is possible to assess whether the ESI proposal will improve fuel security.<sup>54</sup> AEE argues that the true effects of ESI on fuel security cannot be fully assessed given the limited information provided by the Impact Assessment and the incompleteness of the proposal. Public Systems' witness Mr. Forshaw concludes that the co-optimization impacts, coupled with a lack of market mitigation rules, will make it difficult, if not impossible, to conduct an evaluation of the effectiveness of the program in addressing winter fuel security concerns. Some commenters assert that the lack of reserve deficiencies in the Impact Assessment reveals that the region's reliability problem

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<sup>50</sup> Calpine/Vistra Comments at 6-9; Cogentrix Comments at 5-6; NEPGA Comments at 5.

<sup>51</sup> Connecticut DEEP Comments at 3; NESCOE Protest at 24; NESCOE June 30, 2020 Answer at 4-5 (NESCOE Third Answer); Repsol Protest at 4.

<sup>52</sup> Calpine/Vistra Answer at 3-6; Connecticut DEEP Protest at 2-4; IECG Comments at 4-5; NESCOE Protest at 17-22; Public Interest Organizations at Protest 5-8; Vermont PUC Comments at 2.

<sup>53</sup> Consumer Advocates Comments at 22- 24; NECOS and ENE Protest at 13-14; NESCOE Comments at 17-18; NESCOE Third Answer at 2-3; *see also* July 2018 Order, 164 FERC ¶ 61,003 at P 4 (citing ISO-NE, Operational Fuel-Security Analysis (Jan. 2018), [https://iso-ne.com/static-assets/documents/2018/01/20180117\\_operational\\_fuel-security\\_analysis.pdf](https://iso-ne.com/static-assets/documents/2018/01/20180117_operational_fuel-security_analysis.pdf)).

<sup>54</sup> AEE Comments at 6-7; Public Systems Protest, Brian E. Forshaw Aff. Attach. A at P 33 (Forshaw Affidavit).

appears to have disappeared under current market rules.<sup>55</sup> Maine PUC contends that the different conclusions reached by the OFSA and the Impact Assessment underscore the need for a common method for analysis and a reliability metric upon which identification of needs and the success of market rules to address these needs are based.

32. Some commenters argue that ESI will not improve fuel security or reliability.<sup>56</sup> Consumer Advocates assert that the Impact Assessment fails to demonstrate that ESI will materially improve incentives to procure LNG or change fueling arrangements. Public Systems contend that ISO-NE's proposal will not ensure that resources procure additional fuel to meet ISO-NE's energy needs during contingencies because ISO-NE's proposal creates a framework that resources can use to determine the cost of economic losses from hours in which they have an obligation is less than the cost of procuring fuel to cover their obligation in all hours, and thus not procure fuel. NESCOE claims that the unconventional energy call option design will not encourage resources to change their current practices where ISO-NE claims there is a misaligned incentive problem.

33. With respect to arguments that ISO-NE has expanded the scope of the July 2018 Order, ISO-NE responds that the Commission's finding in the July 2018 Order did not impose a seasonal or other temporal limitation on the market-based solution and that the Commission did not refer to a winter fuel security problem or solution. ISO-NE argues that its in-depth analysis of the region's energy security concerns identified that the fundamental problem is an economic one, that of misalignment of incentives for energy supply arrangements under the existing market design, and that no commenters dispute the existence of misaligned incentives. ISO-NE rejects arguments that ESI has been designed primarily to address long-standing price formation issues or concerns about renewable integration. ISO-NE contends that the Commission directed ISO-NE to present a market mechanism and good price formation is, of necessity, a central characteristic of any functioning market. For similar reasons, ISO-NE maintains that its market design must function with a future resource mix and not just the current fleet and must incentivize new technologies that will ensure their operational capabilities are available to the power system each day.<sup>57</sup>

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<sup>55</sup> Consumer Advocates Comments at 12-13; EDF Comments at 3-4; Maine PUC Comments at 3-4; Public Interest Organizations Protest at 9-14.

<sup>56</sup> Consumer Advocates Comments at 14-17 (citing Impact Assessment at 122-123, Tables 62-64); NEPOOL Comments, Benjamin Griffiths Aff. Attach. 3 at 21-22; NESCOE Protest at 14-15, 23-26; Public Interest Organizations Protest at 9-12; Public Systems Protest at 18-20.

<sup>57</sup> ISO-NE Answer at 19, 21-25.

34. ISO-NE argues that no party challenges the fundamental logic of using the energy options construct to solve the misaligned incentives problem. ISO-NE asserts that NESCOE fails to dispute ISO-NE's finding that using conventional day-ahead reserve products would not solve the misaligned incentives problem because resource owners would have far weaker incentives to arrange energy supplies in advance. ISO-NE reiterates that the misaligned incentive problem does not occur in narrow circumstances, arguing that it exists for all resources and the root causes of this problem occur more frequently and under a broader set of circumstances than NESCOE claims.<sup>58</sup> ISO-NE argues that Commission precedent provides that establishing that a market or product design is just and reasonable does not require empirical evidence that the proposal will lead to specific results or particular benefits and the Commission can rely on well-articulated economic theory.<sup>59</sup>

35. With respect to claims that ESI will not improve fuel security, ISO-NE argues that protesters do not challenge the underlying finding of the Impact Assessment that, relative to the current rules and under a broad range of scenarios representing reasonably likely conditions on the New England power system, ESI will create strong financial incentives for resources to maintain more secure energy supplies (e.g., higher levels of energy inventories) and generally will improve their ability to deliver energy in real-time when called upon. ISO-NE points to the Impact Assessment's finding that ESI provides sufficient price signals to incentivize resources to procure fuel during periods when energy security risks are most severe, adding that, although ESI increases costs to consumers, it will lower overall production costs for the region during more stressed conditions. ISO-NE emphasizes that these findings demonstrate that ESI complies with the directive in the July 2018 Order.<sup>60</sup> ISO-NE contends that commenters that focus on the reserve deficiency numbers of the Impact Assessment to assess ESI's reliability benefits ignore the Commission's prior finding that there is a regional energy security concern and directive to resolve the region's energy security issues using long-term market mechanisms.<sup>61</sup>

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<sup>58</sup> *Id.* at 31-33, 34-38 (citing NESCOE Protest, Testimony of James F. Wilson at 14-15, 26-28 (Wilson Testimony)).

<sup>59</sup> *Id.* at 28 (citing *Sacramento Mun. Util. Dist. v. FERC*, 616 F.3d 520, 531 (D.C. Cir. 2010); *Cent. Hudson Gas & Elec. Corp. v. FERC*, 783 F.3d 92, 109 (2d Cir. 2015); *ISO New England Inc.*, 158 FERC ¶ 61,138, at P 23 (2017)).

<sup>60</sup> *Id.* at 45-46.

<sup>61</sup> *Id.* at 62-63 (citing July 2018 Order, 164 FERC ¶ 61,003 at PP 49, 53, 55).



**ii. Need for a Seasonal Forward Market**

36. Some commenters acknowledge that ESI could be improved with a seasonal forward market component; they ask the Commission to accept the ESI proposal as just and reasonable and allow ISO-NE to voluntarily pursue a seasonal forward market in the future.<sup>62</sup> EPSA contends not only that ESI is the type of approach that can cost effectively and efficiently meet the region's energy security needs but also that the region would benefit from a seasonal forward market that provides resource owners the time necessary to make investments such as building new back-up fuel oil tanks or forward contracting with LNG suppliers. Similarly, the IMM asserts that ESI creates strong performance incentives consistent with the market's short- and long-term reliability objectives but emphasizes that a complementary seasonal forward market for the ESI Products could be important because fuel procurement decisions are frequently made well in advance of the operating day. Cogentrix claims that ESI efficiently uses the region's existing assets and infrastructure to achieve fuel security in the most cost-effective way and is a logical market structure upon which to build durable forward market signals. Cogentrix adds that the operational security value of the market will increase if ISO-NE has a significantly diverse forward inventory to alleviate the system constraints in summer or winter.

37. Some commenters argue that a seasonal forward market is a critical component of ensuring fuel security and therefore urge the Commission to direct ISO-NE to implement a seasonal forward market.<sup>63</sup> Others go further, arguing that the ESI proposal is incomplete or does not comply with the July 2018 Order without the seasonal forward market component. Repsol argues that although the Commission's July 2018 Order found that the Tariff may be unjust and unreasonable based on the Mystic Retirement Studies and OFSA, which identified a reliability need for generators to take on firm contracts for LNG delivery prior to winter months, the ESI proposal excludes fuel supplies like LNG by favoring short-term, day-ahead arrangements. Public Systems contend that, while ESI will increase prices available to resources clearing the day-ahead market and ESI Products, it does not solve the fundamental fuel security problem because generators must make fuel-procurement decisions long before they know whether they will clear in the day-ahead or real-time markets and be able to recoup the costs of those fuel arrangements. Public Systems add that while ISO-NE appears to agree with the need

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<sup>62</sup> Cogentrix Comments at 6; EPSA Comments at 1-4, 7-8; IMM Comments at 4, 6-8. EPSA asks the Commission to encourage ISO-NE to develop a forward mechanism to complement ESI in time for FCA 16.

<sup>63</sup> AEE Comments at 2, 6-7, 9; Avangrid Comments at 3-4, 6-11; Excelerate New England Comments at 3-6; Exelon Protest at 7-12; NRG Comments at 5-10; Public Systems Protest at 3-4, 7-8, 11-18; Repsol Protest at 3-5, 15-16.

for a seasonal forward market, ISO-NE hedges whether it will actually complete its development.

38. Regarding whether ESI incents resources to procure oil inventories, Public Systems' witness Forshaw opines that, given that most oil-only steam units burn residual fuel oil, which complicates delivery logistics especially during cold weather periods, these units are unlikely to be able to replenish fuel supplies on short notice during the winter.<sup>64</sup> As for incentives for natural gas resources, several commenters allege that ISO-NE's ESI proposal does not incentivize forward LNG procurement without a seasonal forward market because most LNG terminals require a long-term contract to ensure a firm supply of LNG is available to resource owners.<sup>65</sup> Excelerate New England contends that, without a seasonal forward market component, the ESI Products do not provide assurance that generators' costs of firm advance commitments for LNG supply will be recovered. Repsol adds that the current process to implement a seasonal forward market is not sufficiently urgent or properly structured.

39. Exelon, Public Systems, and Repsol disagree with the Impact Assessment's assumptions about LNG procurement.<sup>66</sup> Exelon argues that the Impact Assessment's analysis considers a hypothetical LNG call contract despite the fact that no LNG supplier currently offers such a contract. Public Systems disagree with the Impact Assessment's assumption that 616 MW of gas only resources will contract for a 10-day supply of LNG prior to the start of the winter due to the volatility of potential revenues under ESI. Repsol argues that the LNG contract used in the Impact Assessment would not ensure LNG supply because the contract does not accurately reflect risk between generators and LNG suppliers. Repsol further argues that the Impact Assessment inadequately models the effect on system operational reliability of varying levels of LNG procurement.

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<sup>64</sup> Public Systems Protest, Forshaw Affidavit at PP 25-26.

<sup>65</sup> Avangrid Comments at 6-8; Excelerate New England Comments at 3-6; Exelon Protest at 7-11; Public Systems Protest at 17; Repsol Protest at 2-3, 8-11, 15. Considering the projected ESI revenue level, Exelon maintains that the ESI proposal alone would not have provided adequate compensation for Mystic to continue operating had ESI been in effect when ISO-NE first found that Mystic was needed for fuel security; thus, the region would have faced the same fuel security need caused by Mystic's retirement even if ISO-NE's proposal was in place. Exelon Protest at 11.

<sup>66</sup> Exelon Protest at 10; Public Systems Protest, Forshaw Affidavit at P 30 (citing Impact Assessment at 37); Repsol Protest at 10-14.

40. Avangrid explains that, because the ESI market design lacks a must-offer requirement, it is uncertain whether the market will attract sufficient participation during stressed winter periods.<sup>67</sup> Avangrid argues that a well-designed, seasonal forward market would include a must-offer requirement for resources that obtain a forward commitment, which would discipline day-ahead offers of other suppliers and potentially obviate the need for other market mitigation measures.

41. ISO-NE disagrees with commenters that the Commission should direct ISO-NE to implement a seasonal forward market on the basis that the ESI proposal either is incomplete or does not sufficiently address New England's fuel security concerns.<sup>68</sup> ISO-NE argues that a seasonal forward market is not a necessary element for addressing fuel security concerns because ESI's new revenue streams provide sufficient potential positive returns for market participants to undertake fuel procurement, both for the day-ahead market and farther in advance. With respect to comments that suppliers will only make fuel arrangement investments if those investments are guaranteed to be profitable, ISO-NE asserts that a guarantee of profitability is antithetical to the principles of competitive markets. ISO-NE adds that it has pledged to work with stakeholders on a potential seasonal forward market but asserts that the Commission must accept the ESI proposal for the stakeholder process to proceed.

42. NESCOE does not oppose ISO-NE working with stakeholders to explore the development of an appropriate seasonal forward market but argues that process is flawed because it has not provided a meaningful opportunity to consider whether such a market, combined with a conventional day-ahead ancillary services approach (e.g., forward sales of reserves), is a viable and cost-effective alternative to addressing fuel security.<sup>69</sup> NESCOE claims that, given the difficulty of assessing the efficacy of the energy call options approach, as noted by the IMM, the Commission would be taking a leap of faith in accepting ESI. NESCOE contends that, if ESI's success depends on a seasonal forward market, the Commission cannot evaluate ESI's compliance with the July 2018 Order.

43. In contrast, Calpine/Vistra assert that commenters oversimplify and overstate the limitations of the Impact Assessment's estimates with respect to LNG contracting.<sup>70</sup> Calpine/Vistra argue that ISO-NE's proposal does not need to fundamentally change how

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<sup>67</sup> Avangrid Comments at 9-10.

<sup>68</sup> ISO-NE Answer at 135-138.

<sup>69</sup> NESCOE First Answer at 6-7.

<sup>70</sup> Calpine/Vistra Answer at 16-17 (citing Excelebrate Comments at 5; Exelon Protest at 10; Repsol Comments at 13-14).

LNG is procured in New England to increase or improve the region's energy security. Calpine/Vistra assert that whether ISO-NE's proposal will materially impact a generation owner's decision to enter into an LNG contract or its decision regarding how many tranches of LNG volumes to reserve under such a contract will depend on the generation owner's individual circumstances. Calpine/Vistra contend that what matters is that ISO-NE's ESI proposal will provide ISO-NE with the confidence that resources that have sold ESI Products will have, through whatever means they choose, secured the fuel necessary to perform in real-time.

### iii. Consumer Costs

44. Some commenters argue that ESI is an efficient means to procure needed reliability services.<sup>71</sup> Other commenters support ESI because it reduces the need for out-of-market actions or administrative interventions to ensure reliability.<sup>72</sup> Commenters argue that ESI will improve price formation and lower production costs, as well as compensate resource for services on which ISO-NE relies.<sup>73</sup>

45. In contrast, other commenters argue that ESI imposes costs on consumers that are not commensurate with its benefits and that such a demonstration is necessary for the Commission to find the ESI market design just and reasonable.<sup>74</sup> Specifically, commenters argue that (1) ISO-NE's proposal fails to balance costs and benefits, as required by precedent;<sup>75</sup> (2) the D.C. Circuit's remand of ISO-NE's 2013-2014 Winter Reliability Program in *TransCanada* makes clear that the Commission is bound to consider whether resulting rates are just and reasonable, even when implementing a

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<sup>71</sup> Dominion Energy Comments at 3; NHA Comments at 4.

<sup>72</sup> API Comments at 3; Calpine/Vistra Comments at 6, 9-10; EPSA Comments at 2-3; IMM Comments at 11.

<sup>73</sup> Calpine/Vistra Comments at 10; EPSA Comments at 3; FirstLight Comments at 9-10; NEPGA Comments at 5, 10; NHA Comments at 6.

<sup>74</sup> NESCOE Protest at 43-46; Public Interest Organizations Protest at 12-14; Public Systems Protest at 25-26. Public Interest Organizations argue that ESI is unjust and unreasonable because it would impose disproportionate costs to address a minor, if not nonexistent, problem as demonstrated by the results of the Impact Assessment. Public Interest Organizations Protest at 13-14.

<sup>75</sup> NEPOOL Comments at 15-16 (citing *Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1502 (D.C. Cir. 1984)).

temporary reliability fix;<sup>76</sup> (3) ESI's costs are unjustified because meeting New England's reliability standards can be done without ESI's high cost;<sup>77</sup> (4) consumers should not bear the costs of ESI, a novel, untested concept;<sup>78</sup> and (5) ESI overvalues and overbuys the ESI Products.<sup>79</sup> In addition, some commenters support the NEPOOL Alternative because it would impose lower costs on consumers than ISO-NE's ESI proposal.<sup>80</sup>

46. With respect to cost concerns, ISO-NE responds that a cost-benefit analysis is not required to approve ESI, arguing that substantial evidence supports ESI's approval.<sup>81</sup> ISO-NE states that the Commission can lawfully consider and rely upon non-cost factors in determining that a proposal is just and reasonable.<sup>82</sup> ISO-NE argues that the Commission's approval of PJM's Capacity Performance proposal supports acceptance of ESI because the Commission found that the Capacity Performance proposal would have significant reliability benefits and would allow PJM "to meet its reliability objective at a reasonable cost over time," and ISO-NE makes a similar showing here.<sup>83</sup> ISO-NE argues that, contrary to NEPOOL's assertion, *TransCanada* does not require ISO-NE to

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<sup>76</sup> *Id.* at 16 (citing *TransCanada Power Mktg., Ltd. v. FERC*, 811 F.3d 1, 13 (D.C. Cir. 2015)).

<sup>77</sup> Maine PUC Protest at 3; NESCOE Protest at 33-35; Vermont PUC Comments at 2.

<sup>78</sup> Maine PUC Protest at 3; NESCOE Protest at 46-47; Vermont PUC Comments at 2.

<sup>79</sup> IECG Protest at 4; NESCOE Protest at 35; Vermont PUC at 2.

<sup>80</sup> *See* AEE Comments at 16; Avangrid Comments at 4-6; Consumer Advocates at 1-2, 9-10; EDF Comments at 1; IECG Comments at 4-6; NECOS and ENE Protest at 1; NEPOOL Comments at 1-4; NESCOE Protest at 47-48; Public Systems Protest at 25; Vermont PUC Protest at 2-3. NESCOE, Public Systems, and Vermont PUC request that the Commission reject the ESI proposal or, in the alternative, adopt the NEPOOL Alternative.

<sup>81</sup> ISO-NE Answer at 80-82 (citing *Ill. Commerce Comm'n v. FERC*, 576 F.3d 470 (7th Cir. 2009)).

<sup>82</sup> *Id.* at 80-81 (citing *Permian Basin Area Rate Cases*, 390 U.S. 747, 791, 815 (1968)).

<sup>83</sup> *Id.* at 81 (citing *PJM Interconnection, L.L.C.*, 155 FERC ¶ 61,157 at 31, 34 (2016)).

establish that ESI's benefits will exceed its costs, noting that, unlike ESI, *TransCanada* involved an out-of-market program.<sup>84</sup>

47. ISO-NE disagrees with commenters who assert that ESI costs cannot be justified because neither NERC nor NPCC standards mandate use of market products to satisfy those requirements, arguing that procuring reserve capabilities as market products is consistent with the Commission's directive.<sup>85</sup> ISO-NE adds that NESCOE's and Vermont PUC's assertions that ESI "overbuys" reserves in excess of the amounts the system would typically need in real-time is flawed because the applicable reliability standards specify reserve needs based on the size of a system's largest potential (source-loss) recovery needs in real-time, not based on the system's typical needs in real-time.<sup>86</sup>

48. NEPGA contends that NESCOE's assertion that ESI overcharges consumers results from only looking at some resources under some scenarios favorable to its position, arguing that looking at market wide results under all scenarios is more appropriate.<sup>87</sup> NEPGA argues that consumers could benefit further from the elimination of costs associated with the Forward Reserve Market and the potential for the ESI proposal to put downward pressure on the Net Cost of New Entry associated with the Forward Capacity Market.

### c. Determination

49. We find that the ESI proposal is unjust and unreasonable because it would impose substantial costs on consumers without meaningfully improving fuel security. Specifically, we find that (1) the day-ahead ESI Products do not provide enough time for resources to take the steps necessary to perform during stressed conditions if they have not already taken them (e.g., arranged fuel); (2) the voluntary nature of the ESI market design would allow resources that have not made advance energy arrangements

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<sup>84</sup> *Id.* at 81-82 (citing NEPOOL Comments at 16, n.55 (citing *TransCanada*, 811 F.3d at 1)).

<sup>85</sup> *Id.* at 83-85 (citing July 2018 Order, 164 FERC ¶ 61,003 at P 53; December 2018 Order, 165 FERC ¶ 61,202 at P 96).

<sup>86</sup> *Id.* at 93-95 (citing NESCOE Protest at 37); *see also id.* at 93 (citing Reliability Standard BAL-002-3 (Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event) at Requirement R2).

<sup>87</sup> NEPGA Answer at 9-10. NEPGA provides an example that places equal weight on both summer and all three winter scenarios and arrives at monthly financial costs of \$11.6 million per month, approximately equal to the average daily wholesale energy costs of \$11.2 million to \$16.7 million since 2015.

to simply not participate, undermining ESI's ability to address fuel security during those periods; and (3) the Impact Assessment demonstrates that ESI would not materially reduce reserve shortages or the potential for loss of load, but nevertheless forecasts cost increases of \$20 million to \$257 million per year. We address each of these findings in more detail below and offer guidance on how ISO-NE might develop a just and reasonable approach to addressing its fuel security concerns.

50. As an initial matter, ISO-NE's ESI proposal does not adequately address the misaligned incentives problem that ISO-NE identifies: fuel secure resources may not be sufficiently incented to make additional investments in energy supply arrangements, resulting in adverse reliability consequences.<sup>88</sup> ISO-NE states that it currently relies on resources that might not be available during stressed conditions because they did not procure the necessary fuel or, for other types of resources with energy storage capabilities, did not take the steps necessary to allow them to produce energy when needed during stressed conditions. We find that, while the procurement of day-ahead reserves or call options allows ISO-NE to procure additional resource capability one day prior to real-time, the record in this proceeding demonstrates that one day is not a sufficient timeframe for resources to take the steps necessary to perform during stressed conditions.<sup>89</sup>

51. ISO-NE points to the results of the Impact Assessment to claim that ESI would create strong financial incentives for resources to maintain more secure energy supplies without an associated forward market.<sup>90</sup> However, ISO-NE fails to demonstrate how such incentives, which, as NESCOE indicates, would be fairly uncertain and highly

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<sup>88</sup> See June 2020 Order, 171 FERC ¶ 61,235 at P 33.

<sup>89</sup> Commenters indicate that ESI's day-ahead procurement of reserves may not provide sufficient incentives for certain resource types to make the necessary arrangements in order to perform during stressed conditions and meaningfully contribute to fuel security. For example, Public Systems indicate that certain oil resources are unlikely to be able to replenish fuel supplies on short notice during the winter. Public Systems Protest, Forshaw Affidavit at PP 25-26. Other commenters highlight that ESI may not incentivize forward LNG procurement because most LNG terminals require long-term contracts. Avangrid Comments at 6-8; Excelerate New England Comments at 3-6; Exelon Protest at 7-11; Public Systems Protest at 17; Repsol Protest at 2-3, 8-11.

<sup>90</sup> See Impact Assessment at 10 (stating that the Impact Assessment's central aim is to provide "information on changes to customer payments and production costs; changes to incentives to market participants to take steps to improve their ability to supply energy in real-time; changes to fuel system operational outcomes that have implications for system reliability; and other expected energy market impacts.").

dependent upon weather conditions, would be meaningful to resources that are unable to adjust energy supply arrangements in the day-ahead timeframe.<sup>91</sup> We disagree with ISO-NE's suggestion that commenters in favor of a forward procurement mechanism believe that suppliers would only make costly investments if they are guaranteed to make a profit. Rather, these commenters highlight a mismatch between the timing of suppliers' procurement of advance energy arrangements and ISO-NE's procurement of the day-ahead ESI Products.

52. Our concern about the day-ahead nature of ESI is exacerbated by the fact that ISO-NE proposes to make Option Offers voluntary. If a resource has not arranged fuel or otherwise obtained the stored energy necessary to perform in real-time, then the resource can choose not to offer into the ESI market during stressed system conditions, causing the financial incentives and obligations of the call option design to be of little use.

53. Furthermore, the Impact Assessment reveals that ESI may not materially improve fuel security. While we acknowledge ISO-NE's statement that the Impact Assessment is not a reliability study, the Impact Assessment does include a discussion of the anticipated reliability effects of the ESI proposal. The Impact Assessment analyzes operating reserve shortages as a reliability metric under various scenarios, presumably to demonstrate ESI's potential impact on system reliability.<sup>92</sup> However, it forecasts that the ESI market design would have no effect on reserve shortages in any of the central cases (i.e., frequent stressed conditions, extended stressed conditions, and infrequent stressed conditions) and would have no effect on reserve shortages in any of the additional scenarios considered, except for a situation where imports from Hydro Quebec are cut off for five days, in which case ESI avoids only three hours of reserve shortages.<sup>93</sup> While ISO-NE frames its fuel security concern as a misaligned incentives problem, it is fundamentally a concern that a lack of fuel could lead to reserve shortages and potential loss of load during certain conditions. Regardless of the finding in the Impact Assessment regarding ESI's

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<sup>91</sup> See ISO-NE Answer at 27-29; NESCOE Protest, Wilson Testimony at 15-16.

<sup>92</sup> See Impact Assessment at 77-78, Table 29 ("For the particular deterministic scenarios analyzed in the Central Case, there are no operating reserve shortages in either the [Current Market Rules] or ESI cases. However, as discussed above, our analysis is not designed to provide a thorough or complete analysis of system reliability and may make assumptions that lead it to overstate system reliability... Thus, we caution against drawing inferences about the current or present reliability of the system from our results.").

<sup>93</sup> See *id.* at 89-96, Tables 45-47; Consumer Advocates Comments at 12-13; EDF Comments at 3-4; Public Interest Organizations Protest at 9-14.



incentives for resources to procure fuel, the Impact Assessment fails to demonstrate that ESI would materially reduce reserve shortages or the potential for loss of load.

54. While ISO-NE emphasizes that the OFSA continues to provide evidence of the region's fuel security concerns, the OFSA suggested that there may be hours of reserve deficiencies and load shedding under a current market rules scenario, while the Impact Assessment does not. This apparent inconsistency between the OFSA and the Impact Assessment further suggests that ESI may not materially reduce reserve shortages or the potential for loss of load.

55. In addition, the Impact Assessment forecasts that ESI would increase total consumer costs by \$20 million to \$257 million per year. While the Commission does not "generally require the mathematical specificity of a cost-benefit analysis" to render a proposal just and reasonable,<sup>94</sup> the Commission must protect consumers from excessive rates and charges.<sup>95</sup> In light of our finding above that ISO-NE fails to demonstrate that ESI will materially improve fuel security, we find that ESI does not strike an appropriate balance between addressing fuel security in New England while protecting consumers from the significant cost of those fuel security benefits.

56. While the NEPOOL Alternative would result in lower costs to consumers than ISO-NE's ESI proposal, we also reject the NEPOOL Alternative as unjust and unreasonable because it contains the same deficiencies that render ISO-NE's proposal unjust and unreasonable. Namely, the NEPOOL Alternative maintains the day-ahead nature of the ESI Products, which fails to sufficiently align the timing of reserve procurement with that of fuel procurement, and maintains the voluntary nature of the ESI Products. Furthermore, the Impact Assessment demonstrates that the NEPOOL Alternative would not materially reduce reserve shortages or the potential for loss of load.<sup>96</sup>

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<sup>94</sup> See *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208, at P 49 (2015), *reh'g denied*, 155 FERC ¶ 61,157 (2016), *aff'd sub nom. Advanced Energy Management Alliance v. FERC*, 860 F.3d 656 (D.C. Cir. 2017).

<sup>95</sup> *NextEra Energy Resources, LLC v. FERC*, 898 F.3d 14, 21 (2018) (citing *Xcel Energy Servs. Inc. v. FERC*, 815 F.3d 947, 952 (D.C. Cir. 2016) (quoting *Municipal Light Bds. v. FPC*, 450 F.2d 1341, 1348 (D.C. Cir. 1971))).

<sup>96</sup> See Impact Assessment at 100-101.

57. In rejecting the ESI proposal, we make no finding on whether ISO-NE faces a fuel security or energy security issue. We recognize that ISO-NE has concerns about its current and future ability to reliably serve load given its growing reliance on “just-in-time” resources such as pipeline-fed natural gas and renewable generation, which could have efficiency and reliability consequences. If ISO-NE decides to pursue a solution to address these concerns, we encourage it to explore a market-based reserve product that provides resources sufficient lead time and ability to acquire fuel or take other steps necessary to be able to deliver energy when needed. We expect that such a market solution would be designed to (1) coordinate procurement of forward reserves with co-optimization of energy and reserves in the day-ahead and real-time markets; (2) incentivize resources to offer into the forward, day-ahead and real-time energy and reserves markets based on their actual costs; (3) prevent the exercise of market power, including through mitigation measures, if necessary; and (4) include financial obligations or incentives sufficient to ensure resources can deliver energy and/or reserves in real-time. We are not, however, directing ISO-NE to pursue any particular approach. We further note that nothing in this order prohibits ISO-NE from proposing a day-ahead reserves market independent of any proposal to address the concerns at issue here.

## 2. Sunset of Interim Programs

### a. Filing

58. ISO-NE proposes to sunset two interim out-of-market programs that were designed to bridge the gap between the date the Commission denied the Petition for Waiver and the implementation of ISO-NE’s long-term energy security market design: the Fuel Security Retention Mechanism and the Inventoried Energy Program (Interim Programs).<sup>97</sup> ISO-NE argues that its ESI proposal can only function if it can competitively price reliability services without interference from out-of-market measures that provide the same services under a non-market price. Therefore, ISO-NE states that, as part of ESI, it proposes to eliminate these Interim Programs for the Capacity Commitment Period associated with FCA 15 (i.e., 2024-2025), coincident with ESI’s implementation date.

### b. Pleadings

59. Several commenters support ISO-NE’s proposal to sunset the Interim Programs for the Capacity Commitment Period associated with FCA 15.<sup>98</sup> AEE states that reliance on out-of-market solutions to meet identified market needs, especially at the scale of the

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<sup>97</sup> Transmittal at 6.

<sup>98</sup> AEE Comments at 5-6; Calpine/Vistra Comments at 17; EPSA Comments at 7; IMM Comments at 12; NRG Comments at 10-11.

two measures in question, is harmful to other market participants and to market competition generally. Calpine/Vistra and EPSA note the extreme market disruptions caused by the Fuel Security Retention Mechanism, along with ISO-NE's confidence that continuation of this mechanism is not needed. NRG asserts that the continuation of the Interim Programs will lead to price suppression and the retirement of additional fuel-secure units despite the valuable reliability service they provide to the market. EPSA clarifies that, while it supports sunsetting the Inventoried Energy Program if the Commission approves the ESI proposal, the Inventoried Energy Program should remain in place until a long-term solution is implemented if the Commission rejects or direct ISO-NE to modify ESI.

60. Exelon asks the Commission to ensure that there are no gaps between the Interim Programs and a fully fuel-secure ISO-NE market. Exelon argues that, while ISO-NE has preliminarily determined that there are no fuel security issues for FCA 15, many of the same conditions that led to the findings in the OFSA persist today.<sup>99</sup> Exelon contends that, given the incremental nature of the ESI proposal, it would be risky to dispose of the Interim Programs at this point. Exelon argues that the Commission should retain the critical safeguards offered by the Interim Programs, as it did when ISO-NE sought to prematurely remove the option to use fall back measures, until the market solution to the long-standing fuel security problem is comprehensive, real, and tested.<sup>100</sup>

61. ISO-NE states that, if the Commission accepts ESI, the existing interim out-of-market programs must end for the ESI market design to operate effectively. ISO-NE disagrees with Exelon's argument that the Interim Programs should continue in order to maintain reliability and asserts that Exelon offers no independent evidence for its claims. ISO-NE adds that Exelon is the only market participant that opposes elimination of the Interim Programs, whose "opinion is informed by its interest in extending these programs to facilitate the further retention of its Mystic generating units on a cost-of-service basis."<sup>101</sup>

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<sup>99</sup> Exelon Protest at 13 (citing ISO New England Presentation, Forward Capacity Auction 15 (FCA 15): Fuel Security Review Inputs Revisions – Clarity to Planning Procedure No. 10, Appendix I (PP10-A) Inputs, Trigger Criteria and Preliminary Study Results (Apr. 22, 2020), [https://www.iso-ne.com/static-assets/documents/2020/04/a05.1\\_rc\\_2020\\_04\\_22\\_pp10.zip](https://www.iso-ne.com/static-assets/documents/2020/04/a05.1_rc_2020_04_22_pp10.zip)).

<sup>100</sup> *Id.* at 14-16 (citing *ISO New England Inc.*, 170 FERC ¶ 61,099 (2020)).

<sup>101</sup> ISO-NE Answer at 138-139.

62. Calpine/Vistra state that, while they support efforts to further bolster the region's energy security by continuing to improve the region's market design, it is unnecessary and counterproductive to retain the Fuel Security Retention Mechanism. Calpine/Vistra explain that ISO-NE is in the best position to determine whether its proposal is sufficient to eliminate the need for future out-of-market fuel security contracts, adding that ISO-NE has unequivocally determined that it does not need the ability to enter into such contracts going forward.<sup>102</sup>

**c. Determination**

63. Because we reject the ESI proposal as unjust and unreasonable, we also reject ISO-NE's associated proposal to sunset the Interim Programs one year earlier than currently provided for in the Tariff. Given these findings, ISO-NE may propose to the Commission other steps it believes are warranted to address fuel security, such as submitting a revised long-term fuel security proposal or seeking to extend one or more of the Interim Programs.

**3. Other Issues**

**a. Pleadings**

64. Several commenters raise other concerns with ISO-NE's ESI proposal, including that it fails to meet ISO-NE's goal of technology-neutrality<sup>103</sup> and fails to include a market power assessment or mitigation measures for the ESI Products.<sup>104</sup>

**b. Determination**

65. Because we reject the ESI proposal as unjust and unreasonable, we do not address the other issues commenters identify. However, we note that effective market power mitigation is an essential component of any fuel security market design, which by its nature depends on competitive outcomes during stressed conditions when supply is limited and the market is more concentrated.

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<sup>102</sup> Calpine/Vistra Answer at 13-14.

<sup>103</sup> AEE Comments at 10-15; Avangrid Comments at 7; Public Interest Organizations Protest at 17-19; Repsol Protest at 14.

<sup>104</sup> AEE Comments at 6-7; NESCOE Protest at 3-4, 28-29; Public Systems Protest at 21-24.

The Commission orders:

ISO-NE's ESI proposal is hereby rejected, as discussed in the body of this order.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

**Appendix A****Entities filing interventions, protests and/or comments, and answers are as follows:**

<b>Entity</b>	<b>Short Name or Acronym</b>
Acadia Center**	
Advanced Energy Economy	AEE
American Petroleum Institute	API
American Public Power Association*	
American Wind Energy Association*	
Avangrid Service Company	Avangrid
Brookfield Renewable Trading and Marketing LP*	
Calpine Corporation**±	
Cogentrix Energy Power Management, LLC	Cogentrix
Connecticut Department of Energy and Environmental Protection	Connecticut DEEP
Connecticut Municipal Electric Energy Cooperative**	
Connecticut Office of Consumer Counsel**	
Connecticut Public Utilities Regulatory Authority*	
Conservation Law Foundation*	
Dominion Energy Services, Inc.	Dominion
Electric Power Supply Association	EPSA
Environmental Defense Fund	EDF
Eversource Energy Service Company*	
Excelerate New England	Excelerate
Exelon Corporation	Exelon
FirstLight Power Inc.±	FirstLight
Helix Maine Wind Development, LLC et al.*	
Hydro-Quebec Energy Services (U.S.) Inc.*	
Industrial Energy Consumer Group	IECG
Internal Market Monitor†	IMM
Maine Public Utilities Commission	Maine PUC
Massachusetts Attorney General Maura Healey**±	Mass AG
Massachusetts Municipal Wholesale Electric Company**	
National Grid*	
National Hydropower Association	NHA
Natural Gas Supply Association	NGSA
Natural Resources Defense Council	

New England Consumer-Owned Systems and Energy New England, LLC	NECOS and ENE
New England Power Generators Association, Inc.±	NEPGA
New England Power Pool Participants Committee±	NEPOOL
New England States Committee on Electricity±	NESCOE
New Hampshire Electric Cooperative, Inc.**	
New Hampshire Office of the Consumer Advocate**†	
NextEra Energy Resources, LLC*	
NRG Power Marketing LLC	NRG
Potomac Economics, External Market Monitor for ISO-NE	EMM
Powerex Corp.*	
PSEG Energy Resources & Trade LLC et al.*	
Public Citizen, Inc*	
Public Systems	
Repsol Energy North America Corporation	Repsol
Shell Energy North America (US), L.P.*	
Sierra Club**	
Sustainable FERC Project**	
Union of Concerned Scientists**	
Vermont Department of Public Service*	
Vermont Public Utility Commission	Vermont PUC
Vistra Energy Corp.**±	
Vote Solar**	
William Tong, Attorney General for the State of Connecticut*	

\* Entities submitting interventions only

\*\* Entities submitting comments as part of a coalition

± Entities submitting answers

† Entities submitting comments and no motion to intervene

### List of Coalitions' Individual Members:

#### Calpine/Vistra

Calpine Corporation

Vistra Energy Corp.

#### Consumer Advocates of New England (Consumer Advocates)

Mass AG

Connecticut Office of the Consumer Counsel

New Hampshire Office of the Consumer Advocate

Public Interest Organizations

Sustainable FERC Project

Acadia Center

Conservation Law Foundation

Natural Resources Defense Council

Sierra Club

Union of Concerned Scientists

Vote Solar

Public Systems

Connecticut Municipal Electric Energy Cooperative

Massachusetts Municipal Wholesale Electric Company

New Hampshire Electric Cooperative, Inc.