

To: ISO-NE
From: NESCOE (*contact: Ben D'Antonio*)
Date: October 15, 2019
Subject: Energy Security Improvements (ESI) Impact Analysis – Extension Priorities

NESCOE appreciates ISO-NE's ongoing efforts to improve regional energy security and inform states and stakeholders regarding its proposal. As you know, we requested the filing extension for the long-term energy security improvements (ESI) approach to allow more analysis and time so that we could better understand a more fully developed proposal. This memo identifies NESCOE's priorities for the impact analysis in light of the Federal Energy Regulatory Commission's (FERC) filing date extension to April 15, 2020. NESCOE appreciates ISO-NE's consideration of the requests below. They are, in our view, critical to understanding the expected performance of ISO-NE's ESI proposal, such as improvements to system reliability and consumer cost implications. As we noted earlier in time, we need to understand these basics in order to develop a considered opinion of the ESI proposal. If ISO-NE is unable to perform elements of the analyses requested in this memo, please let us know that and why. As always, we are available to discuss this request.

In sum, it is important to examine the impacts of the ancillary services proposal in the months in which ISO-NE intends for the proposal to apply – all twelve of them. As noted in meetings along the way, NESCOE also seeks to better understand the differences between ISO-NE's ancillary services proposal (or ESI) and those currently used in other ISO/RTOs – and how they would be modeled differently by ISO-NE's consultant.¹ This information will help us measure the incremental value of ISO-NE's proposal relative to the external market monitor's (EMM) recommendation to incorporate operating reserves into the day-ahead market. States will also benefit from additional scenario analysis that illustrates the impact analysis model's sensitivity to certain input assumptions. Accordingly, NESCOE respectfully requests ISO-NE conduct additional modeling and provide additional results.

A. Model a full year (not just winter) of Reserves Only

The impact analysis should reasonably reflect ISO-NE's proposal and highlight its energy security benefits. ISO-NE's ancillary services proposal is planned for year-round implementation. To provide states and stakeholders with the most valuable information, the impact analysis should similarly analyze the proposal's impacts over the course of a year under a range of weather conditions, similar to the winter-only analysis. NESCOE's understands that ISO-NE's consultant has the technical ability to simulate an entire year's time period. Resources should be allocated to providing an annual simulation of the ESI proposal's impacts.

¹ NESCOE understands that day-ahead reserve products in other ISO/RTOs are mostly treated as forward sales of real-time reserves. For more information, see ISO-NE Technical Session: Day-Ahead Enhancements (April 2, 2019), available at: <https://www.iso-ne.com/static-assets/documents/2019/04/20190402-da-enhancements-tech-session-2.pdf>.

- **Reserves in the Day-Ahead:** Moreover, the impact analysis should directly analyze the EMM's recommendation to incorporate operating reserves into the day-ahead market. At minimum, ISO-NE should demonstrate that the ESI ancillary services proposal is better than other more straightforward approaches for integrating operating reserves into the day-ahead market, such as those used in other ISO/RTOs. Achieving this objective will be critical for the states' ability to form a position on ISO-NE's proposal and provide informed input to the FERC.

To examine the incremental contributions of ISO-NE's ESI ancillary services proposal, relative to other ISO/RTOs' approaches, NESCOE seeks to compare and contrast ISO-NE's approach with others. The consultant has developed one scenario, and is considering requests for others, that begin to explore this question. To the extent that completed or planned scenarios do not adequately examine these issues, NESCOE requests scenarios that simulate market reforms for the entire year:

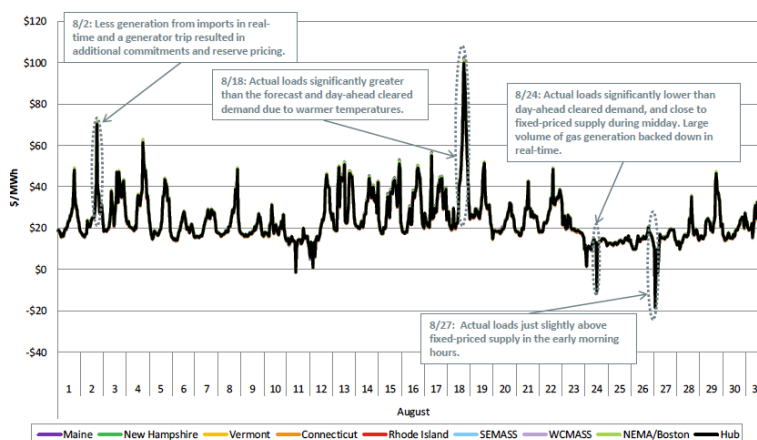
- Under the ESI proposal's approach
- Under a more traditional approach (like other ISO/RTOs)

B. Further Evaluate Model Sensitivity

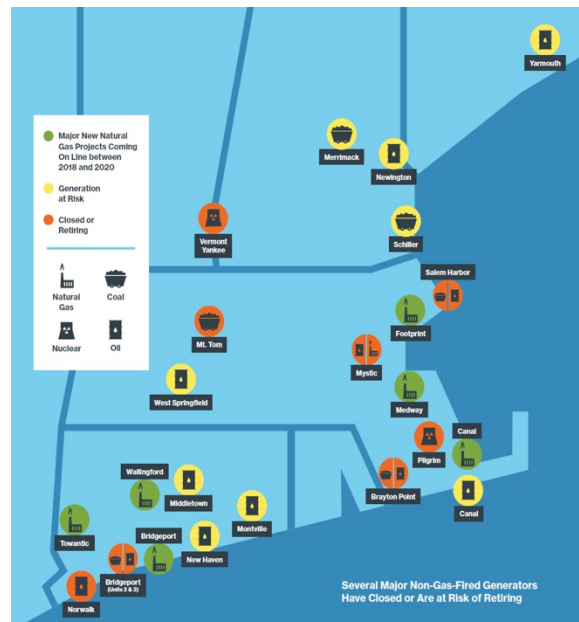
NESCOE appreciates the work completed to date. With the additional time afforded by the extension, states would benefit from better understanding the sensitivity of the results to the underlying input assumptions. In addition to completing previously requested scenarios, the states also seek to examine issues that appear in the preliminary results.

- **Quantity of Ancillary Services Procured:** NESCOE previously requested this scenario. To the extent that the consultant is not currently analyzing this issue, please include an additional scenario, as described in prior memos.
- **Load Forecast Error and Real Time Volatility:** NESCOE previously requested this scenario. The consultant included two import-related scenarios in the preliminary results. How these scenarios relate to NESCOE's request is not entirely clear at this time. To the extent that the consultant is not currently analyzing this issue, please include an additional scenario, as described in prior memos. For example, the August 18, 2019 actual weather was warmer than forecast and loads were significantly higher than forecast and procured (cleared) day-ahead. The sensitivity of the results to this relatively common occurrence needs to be better explained.

Hourly Real-Time LMPs



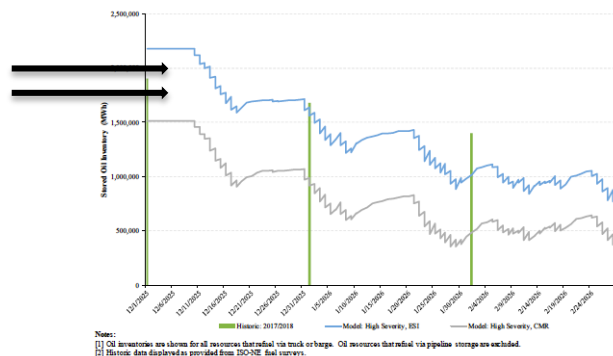
- Constrained Supply of Resources:** Preliminary net incentives analysis indicates that some resources earn less revenues under ISO-NE's proposal under certain conditions, relative to the current market rules. To examine the potential impact of less than full resource participation in the day-ahead market, NESCOE requests a scenario with a constrained supply of resources. This scenario would represent selected resources' actual withholding or unwillingness to supply the options. For example, the supply curve of resources could have its available supply reduced by half, with older and less efficient dispatchable resources comprising much of the constrained supply.
- At-risk Resource Retirements:** Preliminary net incentives analysis indicates that some resources earn less revenues under ISO-NE's proposal under certain conditions, relative to the current market rules. To examine the potential impact of certain dispatchable resource retirements, NESCOE requests a scenario with several of the economically at-risk resources deactivated. For example, the resources that ISO-NE identifies as 'at-risk' could be fully or partially retired.²
- Fuel Oil Inventory and Refueling Schedule:** Preliminary incremental incentives analysis indicates that some assumed levels of fuel oil inventory and refueling may not be economically rational for some resources. Moreover, the difference between the current and proposed market rules cases appears to be closely related to the initial inventory assumptions. To better inform states and stakeholders, NESCOE requests the consultant analyze the model's sensitivity to this input assumption. Specifically, the consultant should perform two additional scenarios that assume initial inventory and refueling rates that are greater than under current market rules *but less than* under the proposed market rules. For example, one-third and two-thirds of the difference, respectively, between these current and proposed market rule assumptions for initial fuel inventory and refueling.



ANALYSIS GROUP
ECONOMIC, FINANCIAL, AND STRATEGIC CONSULTANTS

Hourly Winter Fuel Oil Inventory

High Future Case – Model vs 2018/19 Reported Inventory

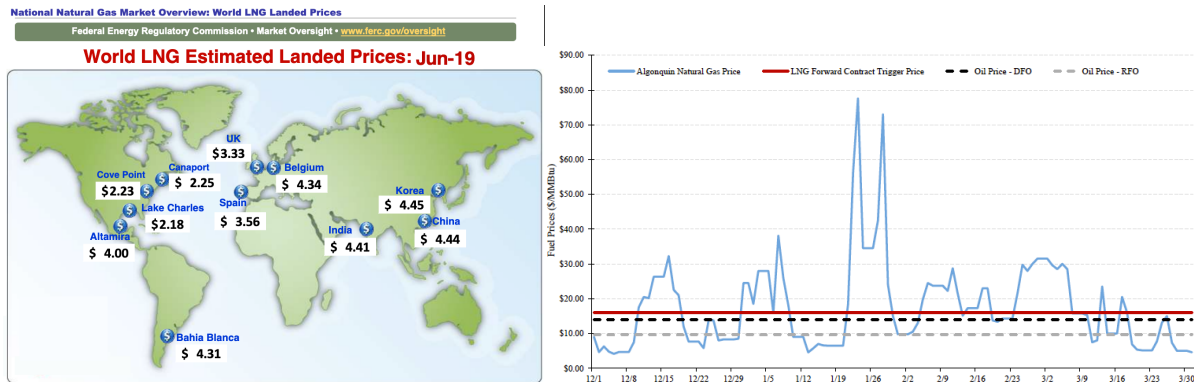


Energy Security Improvement Impact Analysis | July 30, 2019

²

For more information, see ISO-NE's Key Grid and Market Statistics: Resource Mix page, available at: <https://www.iso-ne.com/about/key-stats/resource-mix/>.

- **Liquefied Natural Gas (LNG) Costs:** Preliminary net and incremental incentives analysis indicates that the proposed market rules may ‘close the gap’ between the costs and benefits for gas-fired generators to enter into long-term contracts for LNG. The assumed LNG ten-call option contract may be relatively expensive compared with current LNG market prices. To the extent that a less-expensive LNG call-option may be available, the incentives results for the impact analysis could be quite different. For example, the consultant could conservatively assume a \$12 trigger price and \$8 commodity cost for LNG.



C. Additional Results and Documentation

To provide truly informed input to ISO-NE and FERC on the ESI ancillary services proposal, states need to better understand the impact analysis, its approaches, and the detailed assumptions. To this end, NESCOE requests:

- **Air Emissions and Associated Permit Limitations:** The preliminary impact analysis results indicate continued use of fuel oil to support regional energy security. The feasibility of these results will depend upon compliance with air emission permit limitations. To date, the preliminary impact analysis results have not included power sector air emissions. This information is a standard output of most production cost models. With the request to perform an annual analysis, it will be possible to compare individual resources air emissions with associated permit limits.
- **Modeling Approach and Detailed Assumptions:** The initial schedule for the impact analysis did not include much time for documentation of the consultant’s approach and assumptions. Many limitations to the modeling were made to accommodate the prior schedule. Given the extension, and its purpose, a comprehensive explanation of the consultant’s approach and related simplifications, including the underlying rationales and detailed assumptions, would enable better state participation in the market rule proposal process.
- **Model Outputs and Analysis Results in Excel Spreadsheet Format:** To help provide insights into the results and develop comfort with the proposal, the consultant should provide complete modeling results in spreadsheet format.