ISO New England, New Ideas and Possibilities

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Data Sources Used in This Publication
ISO New England
Federal Register
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ISO New England Fuel Insecurity

New England continues to reshape its market to better handle a fuel mix dominated by natural gas. The independent system operator is discussing longer-term market solutions to its current worrisome lack of fuel security. So far, this April, it has introduced some interesting ideas and possibilities that could and should alleviate near-term just-in-time supply problems during high-demand winter pipeline constrained scenarios. In addition, the region is pushing for greater wind capacity to help prolong energy stockpiles during winter events. This note reviews recent updates in the New England fuel security saga.

New Trump Executive Orders

President Donald Trump signed executive orders 13867 and 13868 on April 10. The first deals with cross-border permitting related to the Keystone XL project. However, for New England, sections 4 and 7 of the second order opens up some interesting possibilities. So far Trump has not been overly heavy-handed in power markets outside of the 30% solar tariffs levied at the beginning of 2018 given that the coal bailout has gone nowhere.

Section 4 of order 13868, titled Promoting Energy Infrastructure and Economic Growth, instructs the Secretary of Transportation to update both liquefied natural gas facility and transport rules. The first part of this section updates rules pertaining to smaller outdated facilities, but the second part deals with LNG transport within the United States. Current rules allow for LNG transport by truck but not by rail.

If this rulemaking is allowed, it could open a new route for Marcellus Shale gas into the New England region, which pipeline permit battles have failed to breach in recent years. Pipeline protests aren't the only constraint here, since the 1920 Jones Act prohibits non-U.S. vessels from moving goods between domestic ports, and no such flag vessels are LNG carriers. So, the Trump order opens the possibility of at least some alternate supply routes to New England in the next year. Section 7 of the order also relates to the region directly, calling on the secretaries of Transportation and Energy to submit a report on the effects of the inability to transport sufficient quantities of natural gas and energy resources to the New England region in the next 180 days. Meantime, if the rail option opens, it offers some help in the near future.

ISO New England New Ideas

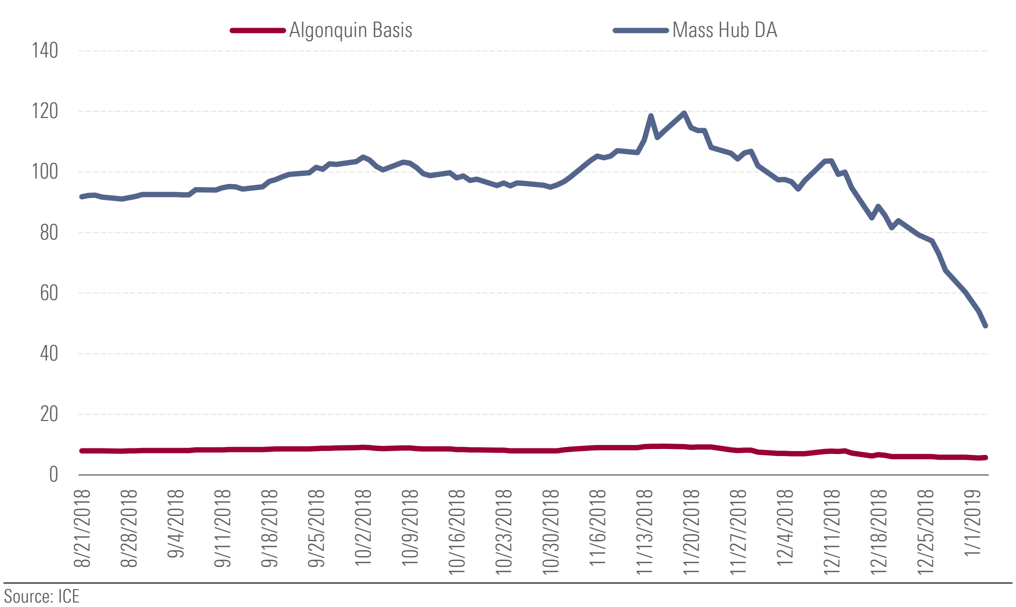
ISO New England published a white paper at the beginning of the month seeking more permanent market solutions to winter fuel security issues. The paper further outlines why the ISO requested an out-of-market solution to save the Mystic generation plant by providing a number of scenarios that highlight what the ISO calls a misaligned incentives problem. Outside of long-term capacity markets, the ISO only has a day-ahead market structure to work with. Because of this, any generator that can procure just in time or has fuel on-site is incentivized to burn it and lock in a return. That means there is no incentive for an individual generator to save its stores even if doing so is better for the market.

The first solution the ISO proposes to better align incentives is to introduce a multi-day ahead market that allows clearing multiple days out in order to co-optimize and coordinate underlying stored energy from power generators over the course of a winter cold weather event.

The ISO also wants to couple an extended energy market with added ancillary products complementing the current generation contingency reserves (GCR). These include ten-minute spinning reserves (TMSR), ten10-minute nonspinning reserves, and 30-minute operating reserves. The ISO proposes to add two new day-ahead ancillary products that mimic the three currently used in the real-time market. These additions—replacement energy reserves and energy imbalance reserves—would allow the ISO to use the new products as a call option to use as generation offered out in the day-ahead market that does not perform. This day-ahead call option could be called upon in case unexpected generation offered in the day-ahead market becomes unavailable.

While the longer-dated energy market proposed by the ISO would help optimize stored energy reserves over a high-demand two-week period in the winter, it does not completely solve incentivizing the procurement of fuel reserves in the first place. The premium paid out for the proposed additional ancillary services that provide the call option, would induce procurement of fuel to ensure the ability of the offered generator to come on line and produce power in such shortfall conditions. The collapsing spark spread last fall in New England (Exhibit 1) underlines why this is a needed short-term solution if the underlying energy supply is unreliable.

Exhibit 1 Winter Power and Natural Gas Price



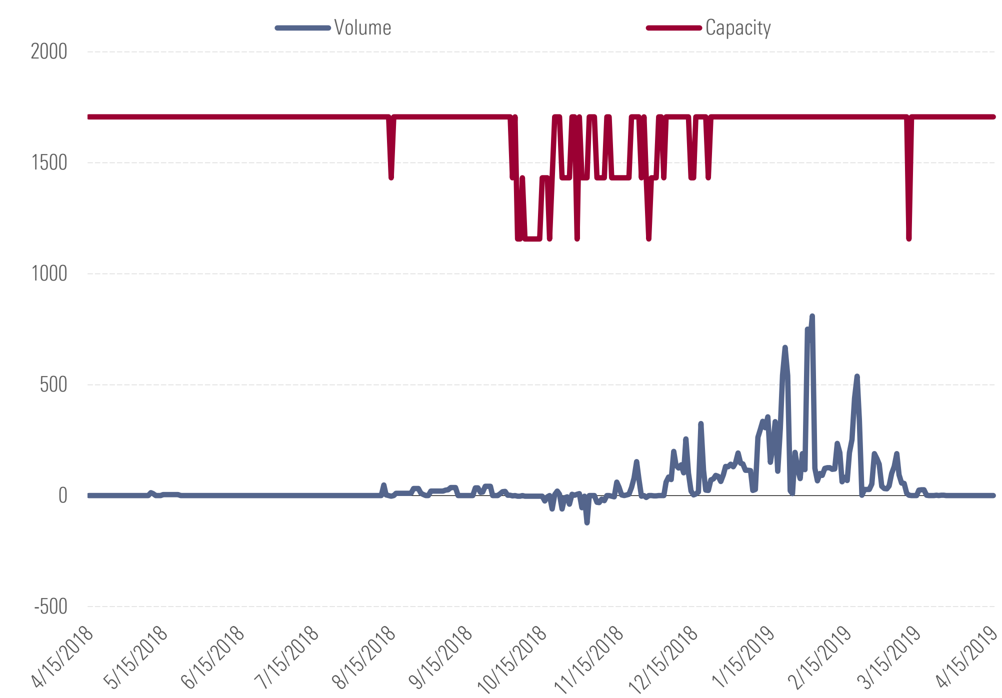
Source: ICE

Both longer day-ahead market and ancillary products are designed to offer coordination and optimizing of fuel reserves through short-term weekly measures. The ISO's third proposal is a seasonal capacity market that would allow generators to receive a premium on a seasonal basis. This appears to be an indirect replacement for the previous direct rebate winter reliability program that paid out for LNG and fuel oil procurement. However, the ISO focused on the first two items as the first order of business with the seasonal capacity market being subject to more definition later as part of an ongoing discussion

LNG Behavior

With nearly half of generation coming from natural gas in 2018, it is imperative that the ISO ensures procurement of natural gas during winter constrained scenarios. This last winter had a couple spells of cold weather that caused New England to turn to LNG imports (Exhibit 2). While the Deepwater LNG terminal didn't import in the winter of 2017-18 it saw some action this winter. In fact, the terminal reached a record sent-out of 800,000 million British thermal units per day on Feb. 1 this year. By some accounts, it already looks to be making procurement deals for next winter. With the added incentives being devised by the ISO, the market is already waking up to utilizing these terminals to meet additional natural gas demand, and no immediate prospect of added pipeline capacity, we will definitely see increased activity at both the Everett and Deepwater import terminals over the next couple of winters. Existing terminal capacity should allow for further imports if the market introduces new price incentives in the next couple of years.

Exhibit 2 New England LNG Import Activity
Million cubic feet per day

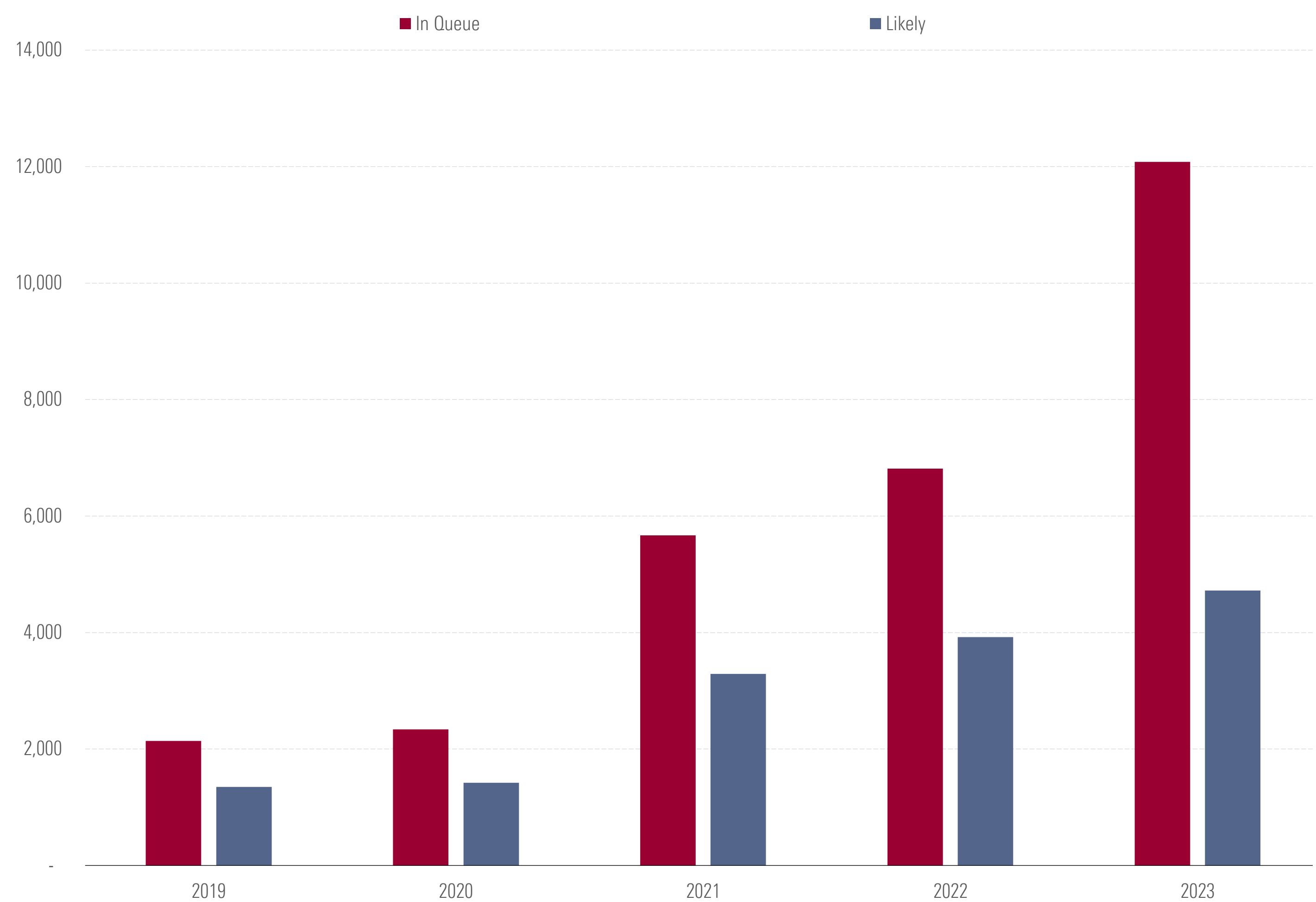


Source: Point Logic

The Coming of Offshore Wind

The ISO acknowledges in its paper that a market solution affords the best way forward to both ensure needed reserve requirements are met but also not to stifle but rather to encourage innovation and new technology, such as battery-backed renewables. Indeed, offshore wind is set to make a big impact off the East Coast in coming years. A study showing scenarios of additional wind capacity over the recent bomb cyclone suggests wind is likely to become the longer-term solution to the region's fuel-security woes because it offers another way to reduce the needed megawatts and prolong the regional reserves over cold winter events. In addition, the developer Anbaric has asked ISO New England to undertake a long-term study on the effect of substantial offshore wind on the system. The ISO currently has a bit over 1,000 MW of wind capacity, with more on the way by the end of the year. Exhibit 3 shows the outlook of total wind in the queue and likely projects coming down the pipeline. The ISO is set to see sizable expansion in coming years to help diversify the fuel portfolio.

Exhibit 3 Regional Wind Capacity Outlook



Source: ISO New England

Fate of Further Pipeline Projects

So, there are possibilities for additional LNG transport by rail, and market mechanisms being devised to help solve near-term constraints in New England. But these solutions appear to be helping fuel go around rather than through pipelines at this point, given added incentives for alternative on-site procurement of LNG and fuel oil. And longer-term solutions are being driven by renewables. These new approaches could together be the final death knell of current pipeline expansion projects already placed on hold or canceled.

ISO New England Future

In the short term, Trump's executive orders may pave the way for increased throughput of natural gas to the region. In the medium term, new rules being seriously discussed by the ISO could provide the incentives to increase utilization of current LNG terminals in the infrastructure and ensure proper energy stores are available in times of need. Finally, longer term, the potential for offshore wind to become a more significant player may forestall pipeline projects now and into the future.

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