May 23, 2014

VIA ELECTRONIC SUBMISSION

The Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

Re: ISO New England Inc.; Informational Filing of the Day-Ahead Energy Market and Reserve Adequacy Analysis Timing Report Docket No. ER13-895-___

Dear Secretary Bose:

ISO New England Inc. (the "ISO") hereby submits the attached Informational Report on the Impact of the May 2013 Day-Ahead Energy Market ("DAM") and Reserve Adequacy Analysis ("RAA") Timing Changes. This report is being submitted in accordance with a Commission directive in an April 2013 order approving revisions to the DAM and RAA timelines. [1] The report finds that the DAM and RAA timing changes have incrementally improved gas-electric coordination.

The ISO shared a draft of the attached report with stakeholders on April 23, 2014 and solicited stakeholder input. Stakeholder input was received and incorporated into the report.

Correspondence and communications regarding this submittal should be addressed to the undersigned as follows:

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[1] *ISO New England Inc.*, 143 FERC ¶ 61,065 (2013).

Respectfully submitted,

/s/ Jennifer Wolfson
Jennifer Wolfson

Counsel for ISO New England Inc.

Attachment

CERTIFICATE OF SERVICE

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

Dated at Holyoke, Massachusetts this 23th day of May, 2014.

/s/ Linda M. Morrison
Linda M. Morrison
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Informational Report on the Impact of the May 2013 Day-Ahead Energy Market and Reserve Adequacy Analysis Timing Changes

ISO New England Inc.
May 23, 2014
System Operations
Market Operations
Market Development
Internal Market Monitor

Informational Report on the Impact of the May 2013 Day-Ahead Energy Market and Reserve Adequacy Analysis Timing Changes

Executive Summary

On April 24, 2013, the Commission approved changes to the Day-Ahead Energy Market ("DAM") and the initial Reserve Adequacy Analysis ("RAA") timelines prompted by concerns that the then-existing DAM and RAA schedules exacerbated challenges resulting from New England's increasing reliance on natural-gas-fueled generators.[1] These changes moved the DAM and RAA timeline up, so that the processes began and ended earlier in the day. Specifically, under the new timeline, the deadline for submitting offers and bids into the DAM is 10:00 a.m., the ISO posts the DAM schedules by no later than 1:30 p.m., the deadline for submitting revised offers during the Re-Offer Period is 2:00 p.m., and the ISO provides initial RAA results at 5:00 p.m.

In accepting these changes, the Commission noted that the ISO would be able to "observe the impacts of the new schedule, review system performance a year after implementation, share the results with stakeholders, and together with stakeholders determine whether further changes are appropriate."[2]

Accordingly, the Commission directed the ISO to submit an informational report detailing the impact of the schedule changes on system operations within one year of the effective date of the changes. The Commission stated that the report "must include supporting data regarding the impact of the schedule changes on system operations, the amount of long-lead-time generation dispatched outside of the RAA process, the effects on the gas market, and an assessment of the new re-offer period and any impacts on electric market efficiency."[3]

This report is the result of the ISO's analysis of the impact of the schedule changes on system operations. It covers the period beginning May 23, 2013, when revisions to the DAM and RAA schedules went into effect.

The report finds that the DAM and RAA timing changes have incrementally improved gas-electric coordination. The report makes the following findings: (1) Preliminary evidence suggests that the schedule changes have had a positive impact on system operations, as the number of units committed in the DAM or RAA who were completely unavailable in real time due to gas procurement issues (excluding units that had their schedules extended due to

[1] *ISO New England Inc.*, 143 FERC ¶ 61,065 (2013).

[2] *Id.* at P 37.

[3] *Id.*

reliability or capacity issues) dropped from seven in the winter of 2012/2013[4] to zero in the winter of 2013/2014.[5] (2) The number of generators with long start-up times dispatched before the DAM offer and bid deadline dropped from 12 in the winter of 2012/2013 to zero in the winter of 2013/2014, which may be attributed at least in part to the timing changes. (3) The timing changes have had no discernible effect on the timing or volume of gas traded on the Algonquin pipeline (based on Intercontinental Exchange data). (4) The number of external transactions has not decreased, as some argued it would. (5) The new, shorter, Re-Offer Period appears to be functioning adequately. (6) The timing changes appear to improve the ISO's ability to make commitments through the DAM and RAA process, which has a positive impact on electric market efficiency. In addition, the ISO has already observed an improvement in the overall DAM clearing time from enhanced hardware and business processes. The ISO is continuing to evaluate further improvements to the DAM clearing time by enhancing the underlying architecture to utilize parallel computing techniques and speed up the security analysis component and data transfer. This analysis is expected to continue into 2015.

Despite the incremental improvements noted above, the timing differences between the gas market and the electric market continue to cause significant inefficiencies in the electric market. Electric suppliers have to manage two sets of gas prices, at least one of which is unknown for each electric day: the late start of the gas day means that generators cannot know if they have adequate gas for the balance of the day before the close of gas trading. In a recently issued Notice of Proposed Rulemaking ("NOPR"), the Commission has proposed revisions to the natural gas operating day and scheduling practices used by interstate pipelines.[6] The proposed revisions include starting the natural gas operating day earlier, moving the timely nomination cycle later, and increasing the number of intra-day nomination opportunities. The Commission simultaneously initiated parallel proceedings to further improve the coordination and scheduling of natural gas pipeline capacity with electric markets.[7] The ISO believes that there are significant efficiencies and reliability benefits to be gained from starting the gas day earlier and moving the timely nomination cycle later, which will move the morning ramps of both the electric and gas days into the same trading day. An earlier start to the gas day would allow generators to better determine if they have adequate gas for the balance of the gas day before the closing of gas trading because the generators would have already been through the morning electric ramp (and in the summer, most of the afternoon peak hours and, in the winter, into the start of the short evening peak hours). These efficiencies will improve reliability because system operators will know with more certainty which units are available, reducing the risk that there will be insufficient resources available to provide energy and reserves. The ISO expects to continue its efforts to improve gas-electric coordination by participating fully in these latest Commission proceedings.

[4] In this document, the winter of 2012/2013 refers to November 15, 2012 through March 15, 2013.

[5] In this document, the winter of 2013/2014 refers to November 15, 2013 through March 15, 2014.

[6] *Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities*, 146 FERC ¶ 61,201 (2014), Docket No. RM14-2-000.

[7] Docket Nos. EL14-22-000, EL14-23-000, EL14-24-000, EL14-25-000, EL14-26-000, EL14-27-000, and RP14-442 000.

1. Impact of the schedule changes on system operations

The new DAM and initial RAA timeline provides participants with natural-gas-fired generators an enhanced opportunity to arrange for gas supply to meet the DAM and RAA schedules while gas trading desks are still open and gas nomination cycles for the following gas day are still active. Previously, the RAA posting deadline was 10:00 p.m., after the 7:00 p.m. North American Energy Standards Board ("NAESB") Evening Cycle deadline. Under the new timeline, the RAA results are provided at 5:00 p.m. This timeline change provides schedules to participants earlier in the day, when gas traders are more accessible and the NAESB Evening Cycle is still active for the following gas day.

In the winter of 2012/2013, prior to the timing changes, there were seven units committed in the DAM and RAA that were completely unavailable in real time due to gas procurement issues. (This pertains to the original unit commitment only and not to units that had their schedules extended or who were called intraday due to reliability or capacity issues.) The majority of these generators received their commitment schedules subsequent to the NAESB evening gas nomination cycle deadline at 7:00 p.m.

Since May 23, 2013, the accelerated timeline has allowed generators more opportunities for gas procurement. While it is difficult to disaggregate the effects of this winter's high gas prices (which resulted in decreased reliance on natural-gas fired units), in the winter of 2013/2014, there were no units committed in the DAM or RAA that were completely unavailable in real time due to gas procurement issues. (This again pertains to the original unit commitment only and not to units that had their schedules extended or who were called intraday due to reliability or capacity issues.) The IMM's *2013 Annual Markets Report*[8] notes a decline in the number of gas reduction events as well. It reports a high of 89 gas reduction events in 2011 dropping to 29 in 2013, with just two gas reduction events in 2013 following the change in the market timeline.[9] The decline in unavailability and reduction events is coincident with the FERC Orders clarifying the obligations of market participants to procure fuel[10] and with the change in the DAM and RAA timelines.

This is preliminary evidence that the timing change, combined with the Commission's order on generator obligations, has had a positive impact on system operations.

The RAA process, which takes into account changing conditions (in contrast to the DAM process, which considers only static inputs), met the 5:00 p.m. publication goal under the new timeline 91% of the time. The overwhelming majority of the late posting of commitments were within ten minutes of 5:00 p.m.

[8] Available at http://www.iso-ne.com/markets/mkt_anlys_rpts/annl_mkt_rpts/2013/2013_amr_final_050614.pdf.

[9] *Id.* at pp. 49 – 50. In the IMM's analysis, the number of events refers to the number of instances the ISO logged a report that the output of a gas unit needed to be reduced because of gas issues. Instances where output was reduced because of occurrences beyond the generator's control are excluded. All events were treated equally, and occurrences of the output of a facility with multiple units needing to be reduced was counted as one event.

[10] *Order on Complaint,* 144 FERC ¶ 61,157 (2013).

2. Long-lead-time generation dispatched outside of the RAA process

Accelerating the timeline not only provides gas generators an increased opportunity to secure gas supplies, it also provides more timely information to the ISO to allow it to commit long-lead-time resources. In the winter of 2012/2013, prior to the timing changes, 12 long-lead-time units were committed prior to the DAM offer and bid deadline for reliability.

In the winter of 2013/2014, there were no long-lead-time generation units committed prior to the DAM offer and bid deadline. (Again, however, this may be influenced by this winter's high natural gas prices, which resulted in the long-lead-time units being dispatched in economic merit order around the clock for multiple days.) With day-ahead commitment results now being posted by 1:30 p.m., most long-lead-time units are within reach of being committed via the DAM in both the winter and summer seasons for the daily peak.

3. Effects of the timing changes on the natural gas market

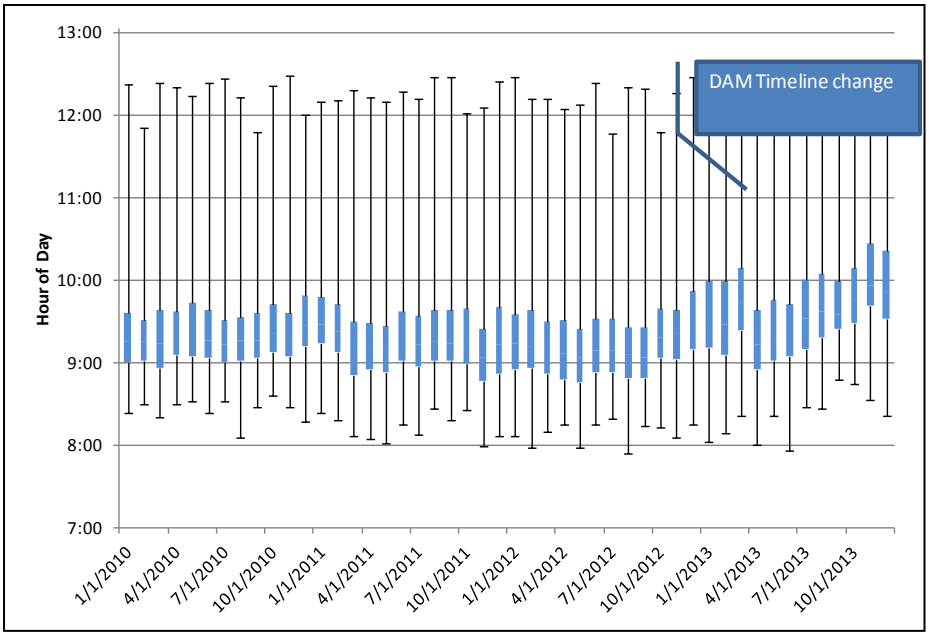
The ISO argued last year that, while gas markets were more liquid at 10:00 a.m. than at 9:00 a.m., it was likely that the natural gas markets would adjust to become more liquid earlier in the day if the DAM offer deadline was moved to 9:00 a.m. Because the Commission instead accepted a 10:00 a.m. DAM offer deadline, no change to the natural gas market timing would be expected. And indeed, the data suggest that the timing of natural gas trades has not changed as a result of the timeline change in May 2013. It is not clear at this time if further adjustments in the electric market day would impact gas market liquidity; however, as noted above, the ISO believes that there are significant efficiencies and reliability benefits to be gained from starting the gas day earlier and moving the timely nomination cycle later.

To examine the possible impact of changing the DAM timeline on natural gas markets, the IMM reviewed the trading execution times from the Intercontinental Exchange for next-day gas contracts at the Algonquin Hub.[11]

The figure below shows the time range of fixed-price natural gas trades. The blue boxes represent the interquartile range (25th percentile to the 75th percentile), during which most trades occur. The error bars account for the earliest and the latest trade time in the month. The graph below indicates that the interquartile range of trades has been moving later in the day since April 2013. A similar pattern occurred from August 2012 to March 2013.

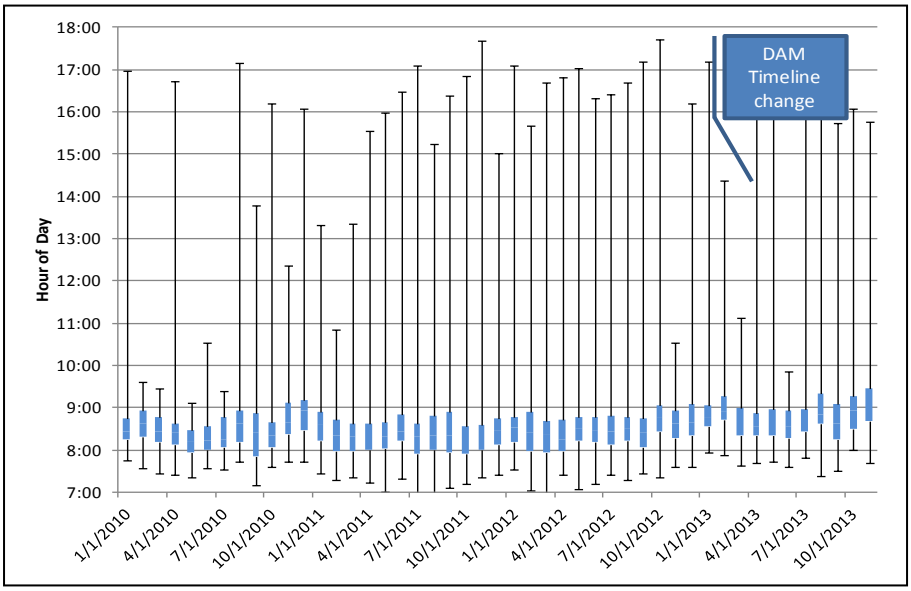
While gas-fired generators procure a large portion of their gas through the Intercontinental Exchange, a substantial portion of gas purchases to support electric generation occurs bilaterally between generator buyers and shippers. While these bilateral trades are not included in the figures below, and while the ISO does not have specific information on bilateral trades, one market participant states that there is limited liquidity of bilateral trading prior to the 10:00 a.m. DAM supply offer deadline, and that this presents uncertainty for gas-fired generators in formulating their DAM supply offers.

[11] These trades are for any end-use of natural gas, including (but not limited to) power plant gas consumption.



Fixed-price contract execution times for next-day Algonquin gas traded on the Intercontinental Exchange by month, January 2010-December 2013.

The figure below shows the time range of price-indexed contract trades, which do not appear to have changed as result of the change in the DAM timeline.

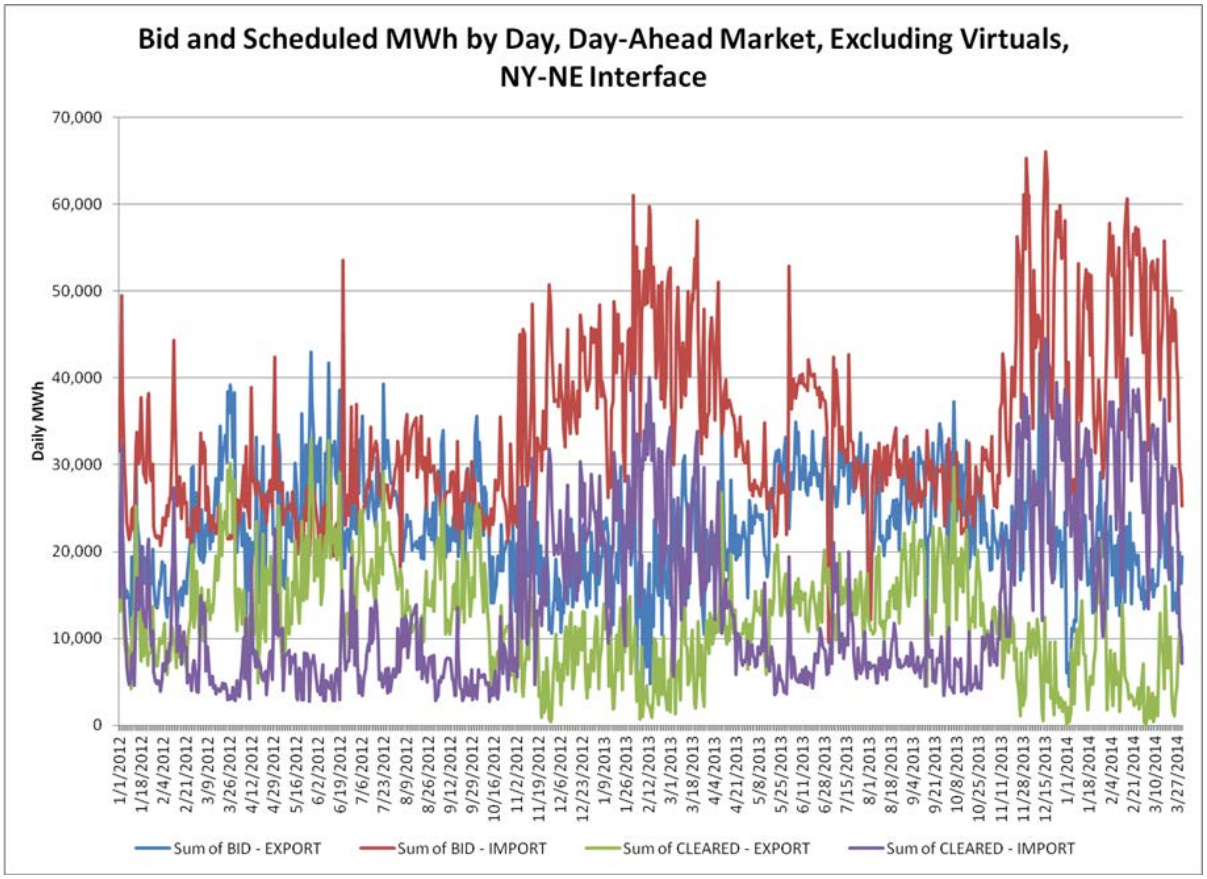


Index contract execution times for next-day Algonquin gas traded on the Intercontinental Exchange by month, January 2010-December 2013.

4. Effects of the timing changes on external transactions

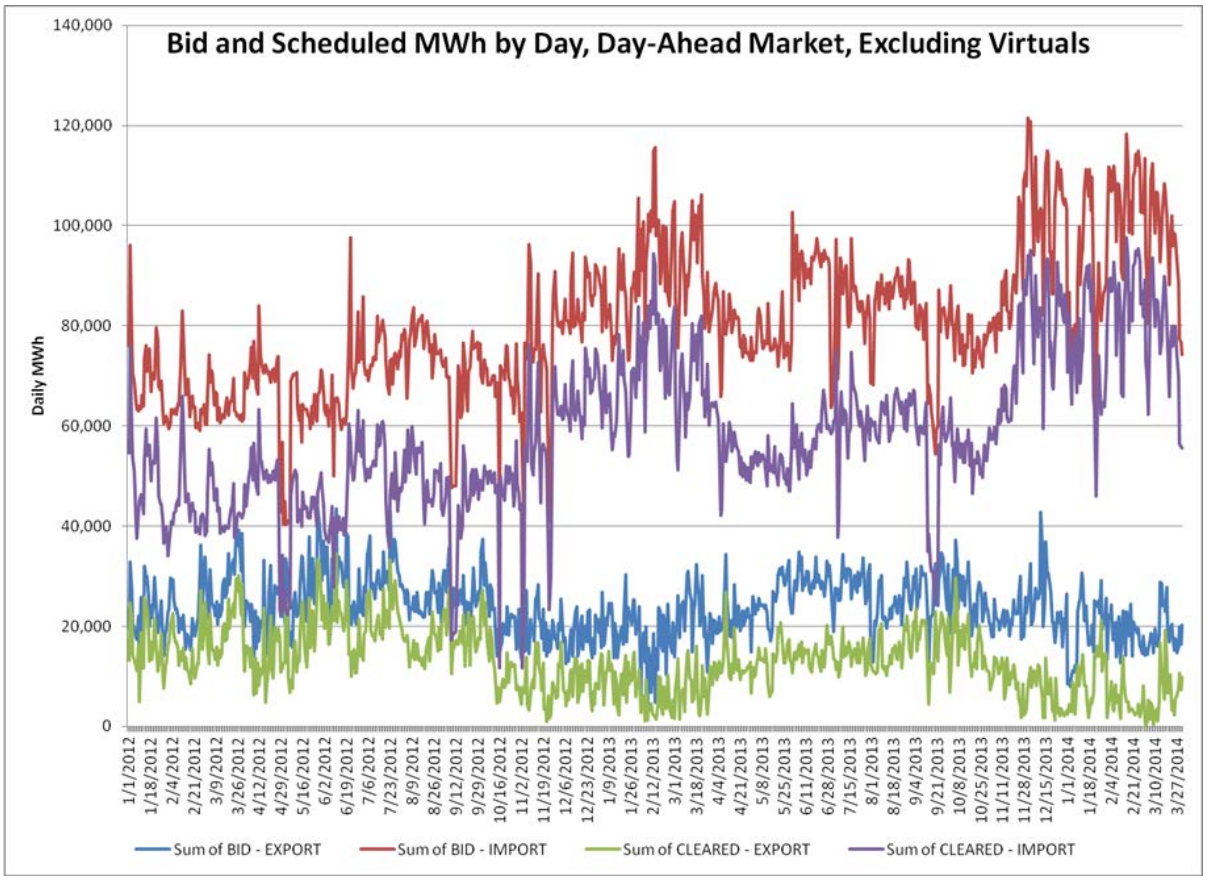
Prior to the timeline change, some parties argued against moving the DAM offer and bid deadline earlier, particularly to 9:00 a.m., on the grounds that doing so would make it difficult for participants to consider external transactions with the New York region when formulating DAM offers for the New England market, thereby sacrificing 1,650 MW of transfer capability from New York to New England.

The chart below shows the bid-in and cleared amount of New York external imports and exports from January 1, 2012 through March 31, 2014 and reveals that the level of New York external transactions has not decreased. One participant observes that in September, the New York ISO began to post its day-ahead market results earlier, at 9:35 a.m. rather than at 9:50 a.m., and that this change may contribute to the fact that transaction levels have not decreased.



The chart below shows the bid-in and cleared amounts of imports and exports from January 1, 2012 through March 31, 2014 for all external nodes (not just from New York).

The data indicate that the level of external transactions has not decreased, but instead has increased.



5. Assessment of new Re-Offer Period

Under the prior DAM and RAA timeline, the Re-Offer Period took place between the 4:00 p.m. posting of the DAM results and 6:00 p.m. Under the new timeline, this period was reduced to as little as a half-hour, between the 1:30 p.m. posting of the DAM results and 2:00 p.m., the current re-offer deadline.

For operating days May 24, 2013 through March 17, 2014 (298 days), the ISO made the DAM schedule available on average at 12:33 p.m., 57 minutes earlier than the DAM posting deadline. Since the Re-Offer Period deadline under the new timeline is 2:00 p.m., the average length of the Re-Offer Period (from the posting of the DAM results to 2:00 p.m.) for these operating days has been 87 minutes.

Shortly after the implementation of the new DAM timeline in May 2013, a limited number of participants submitted offers after the close of the Re-Offer Period. This appears to have been due to participants adjusting to the new timelines in their own business processes. At no time did these late submittals (subsequent to the Re-Offer Period but still prior to the operating day) affect the ISO's ability to meet forecasted load and reserve requirements, nor did they result in any unnecessary supplemental commitments.

This evidence indicates that the ISO and market participants were able to adjust their business procedures to meet the revised timeline.

6. Impacts of the timing change on electric market efficiency

Facing a fixed real-time load, the economically efficient market outcome minimizes total production costs while meeting the load and required reserves. In theory, the new timeline may improve economic efficiency in two ways. First, it may lower the number of incidents in which market participants with gas units committed in the DAM or RAA are unable to procure natural gas. Second, it may expand the pool of resources that can be committed in the DAM and RAA by allowing the inclusion of units that previously could not be considered in these processes because of their long lead times.

The additional gas availability provided under the new DAM and RAA timeline can improve economic efficiency. Since the next-day gas market is still active when the DAM and RAA results are published, the likelihood of procuring gas through the market is higher under the new timeline than it was under the previous timeline. This is supported by the decrease in the number of gas unavailability and reduction incidents for units committed in the DAM noted in Section 1.

An earlier timeline also allows the ISO to efficiently select long-lead-time units. For example, prior to the DAM and RAA timeline changes, the RAA results were published by 10:00 p.m. the night before the operating day. Therefore, the pool of the resources that could be committed in the RAA (at 10:00 p.m.) to meet the demand at 8:00 a.m. the next morning was limited to those with a lead time of 10 hours or less. As a result, if needed, the ISO committed units with longer lead times prior to the conclusion of the RAA (or DAM) process, which in some cases was inefficient. The new timeline shifted the first publication of the RAA results to 5:00 p.m. on the day before the operating day, allowing resources with up to 15 hours of lead time to be committed in the RAA process to meet load at 8:00 a.m. the following morning. This timeline shift results in fewer units being committed outside the DAM and RAA process, as noted in Section 2. Given the same load forecast, expanding the pool of resources that can be included in the DAM and RAA process allows the ISO to meet the load forecast at a possibly lower total production cost, improving economic efficiency.