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December 6, 2018
WebEx Broadcast

Settlements Forum

2018 Q4



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Market Analysis & Settlements

 Note: This presentation was updated on 12/13/2018. Q&A from the live session was added at the end.



Upcoming Market/Settlement Changes

- Energy Storage Devices
- Forward Capacity Market – Capacity Supply Obligation (CSO) Cover Changes
- Forward Reserve Market – Internal Bilateral Transaction Submittal Deadline



Informational Items

- Forward Capacity Market – Competitive Auctions with Sponsored Policy Resources (CASPR)
- Forward Capacity Market – Annual Reconfiguration Transactions (ARTs)
- Website Tour
- Meeting Dates

Upcoming Market/Settlement Changes

- *Energy Storage Devices*
- *Forward Capacity Market (FCM) – CSO Cover Changes*
- *Forward Reserve Market – Clarification on IBT deadlines*



Energy Storage Devices (ESD)

April 1, 2019 *



Joint ISO-NE/NEPOOL Filing

- Enhance the ability of grid size storage to participate in markets
 - Binary Storage Facility (pumped storage)
 - Continuous Storage Facility **NEW** (e.g. batteries)
- MIS report changes
 - Energy
 - Net Commitment Period Compensation (NCPC)
 - Regulation

Joint ISO-NE/NEPOOL FERC Filing

[ER19-84-000](#)

Link to FERC filings in .pdf version.

See this project's web page:

- [Customer Readiness page](#)

* Pending FERC approval



ESD store electricity from the grid for later injection back into the grid

Two types of ESD:

- Binary storage facility (pumped storage)
 - Two assets: generator and dispatchable asset related demand (DARD)
 - Need time to switch between operation modes
- Continuous storage facility **NEW** (e.g. batteries)
 - Three assets: generator, DARD, alternative technology regulation resource (ATRR)
 - Can move between max output & max consumption in 10 minutes or less
 - Simultaneous dispatch of facility; signal sent at 4 second intervals



FCM Capacity Supply Obligation (CSO) Cover Changes

Effective for FCM Settlements starting June 2019*



Joint ISO-NE/NEPOOL Filing

- New rules for resources with CSO that don't fully satisfy obligation
 - Obligation satisfied by demonstrating MW output
- Monthly calculation of difference between resource CSO and its historical Maximum Demonstrated Output (MDO)
 - If CSO > MDO, failure to cover charge assessed for CSO MW above MDO
 - Tariff failure to cover rate **
- Participants cover unsatisfied resource obligation by transferring the obligation via reconfiguration auctions or bilateral transactions
- Failure to cover charges allocated as credits to Capacity Load Obligation
- MIS report changes
 - February 2019: New annual report, prefix "SP", prior to ARA-3***
 - June 2019: New monthly detail report, some updates to current reports

Joint ISO-NE/NEPOOL FERC Filing

[ER19-169-000](#)

Link to FERC filings in .pdf version.

See this project's description:

- [Customer Readiness page](#)

Pending FERC approval ** Rate for June 2019-May 2022: Max Clearing Price (FCA, Reconfiguration Auctions) * ARA: Annual Reconfiguration Auction*

Forward Reserve Market Internal Bilateral Transactions (IBT)

Submittal Deadlines



FRM Internal Bilateral Transaction (IBT) is contract for the transfer of FRM obligation

- At market inception, FRM IBT submittal deadline was prior to operating day
- In 2015, submittal deadline changed
 - Second business day after operating day
 - Same deadline as Real-Time Energy Market IBTs
- Option for submitting FRM IBT for market resettlement was silent

Clarification is provided here:

- FRM IBT submittal for the Data Reconciliation Process (DRP) resettlement
 - Deadline is 101 business days after end of operating month
 - Same deadline as Real-Time Energy Market IBTs
 - DRP IBT deadlines for each year included [here](#)



[The IBT User Guide](#) on the ISO New England website reflects this clarification

Informational Items

- *Informational: Forward Capacity Market – CASPR*
- *Informational: Forward Capacity Market – ARTS*
- *Website Tour*
- *Settlements Forum Dates*
- *Questions*



FCM Competitive Auctions with Sponsored Policy Resources (CASPR)

February, 2019 – FCA #13 for 2022/23



Joint ISO-NE/NEPOOL Filing

- Secondary auction in the Forward Capacity Auction (FCA) process
- Market entry for resources receiving revenue from state or municipal government
 - New clean, renewable, or alternative energy
- These resources may be unable to sell capacity in the FCA
 - Out-of-market revenues prohibited from lowering FCA offer
- Substitution auction matches, MW for MW, the entry of these sponsored resources with retirement of existing resources
- **Settlement impact/MIS revisions: Not until 2022/23!**

Joint ISO-NE/NEPOOL FERC Filing

[ER18-619-000](#)

Link to FERC filings in .pdf version.

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FCM Annual Reconfiguration Transactions (ARTS)

Apply to Capacity Commitment Periods (CCP) starting in 2020/21



Joint ISO-NE/NEPOOL Filing

- ARTS will provide participants and their counterparties a method to acquire or shed CSO with price certainty
- ARTS replace CSO bilaterals for CCP 2020/21 and forward
- ARTS will be submitted during the annual reconfiguration auctions (ARA)
- First ARAs with ARTS functionality
 - June 3, 2019: ARA #1 for 2021/22
 - Aug 1, 2019: ARA #2 for 2020/21
- **Settlement impact/MIS revisions: Not until 2020/21!**

Joint ISO-NE/NEPOOL FERC Filing

[ER18-455-000](#)

Link to FERC filings in .pdf version.

See this project's web page:

- [Customer Readiness page](#)





Today's Website Tour

- Customer Readiness 12-month outlook

See the Appendix for more information

Website Tours from Past Settlement Forums

- 2018 Q3 – ISO to Go 2.0; Billing Process Summary
- 2017 Q1 – How to subscribe to the Settlement Forum
- 2016 Q4 – Metering & Resettlements Calendar
- 2016 Q3 – Enhanced LMP Selection Options
- 2016 Q2 – Understanding The Bill page

Visit the [Settlement Forum materials page](#) to view these tours.

Settlements Forum Dates 2018



Thursday, March 8 at 10:00 AM



Thursday, June 7 at 10:00 AM



Thursday, September 6 at 10:00 AM



Thursday, December 6 at 10:00 AM



2019 Settlement Forum Dates

Q1

Thursday, March 7 at 10AM

Q2

Thursday, June 6 at 10AM

Q3

Thursday, September 5 at 10AM

Q4

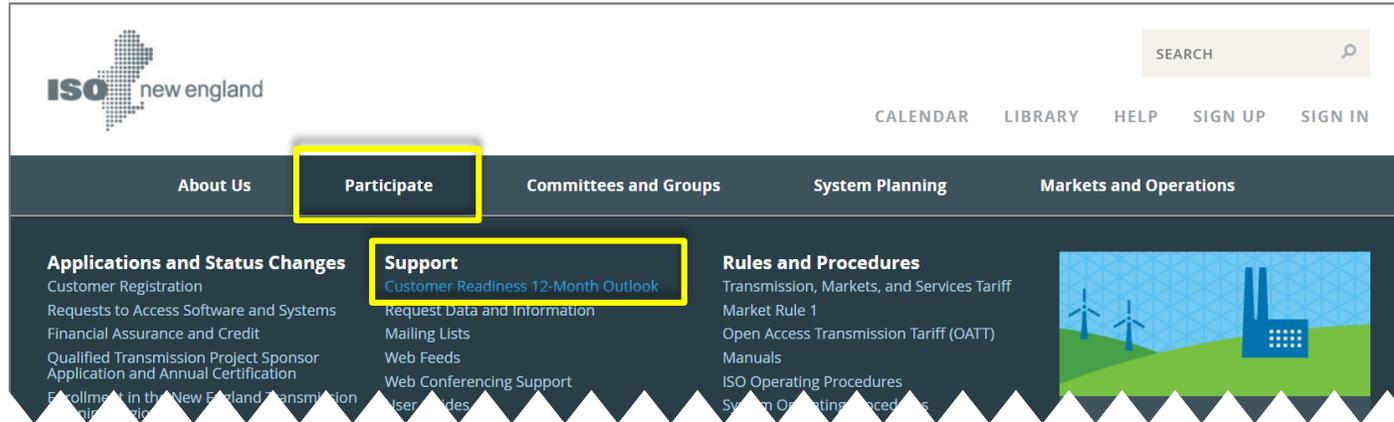
Thursday, December 5 at 10AM



Appendix: Website Tour

Today's Website Tour – Customer Readiness 12-Month Outlook

Helpful for answering many billing questions!



1. Open the ISO website
2. Navigate to: [Participate](#) > [Support](#) > [Customer Readiness 12-Month Outlook](#)
 - Scroll down to the project of interest;
 - Click the project's title to go to the project page

Participate > Support

Customer Readiness 12-Month Outlook

Last update: 12/03/2018

ISO New England undertakes many projects and initiatives in collaboration with stakeholders for the continued development of the region's wholesale electricity markets. Listed below are upcoming major projects that may affect your organization over the next 12 months. Projects are added as they are scheduled; in some cases projects are scheduled and implemented in a shorter timeframe and may be added to the list close to their target launch. This page is generally updated on a monthly basis, though more frequent updates may be made in response to a significant change in the project plan.

- Click the names of near-term projects to see details on the project and actions required, as well as links to training materials and other resources.
- [Click here to subscribe to the Customer Readiness mailing list](#) to receive notifications when this page or the near-term project pages are updated. Hit send when the subscription email opens up.
- To follow the course of proposed projects and initiatives from introduction to implementation, see the [Wholesale Markets Project Plan page](#) and [Key Project pages](#).

Shows date of last update

Click to subscribe

Near-Term Projects

(0-6 Months)

| PROJECT | TARGET LAUNCH |
|--|------------------|
| Competitive Auctions with Sponsored Policy Resources (CASPR) | February 4, 2019 |

Longer-Term Projects

(7-12 Months)

| PROJECT | TARGET LAUNCH |
|--|---------------|
| Balance of Planning Period: Financial Assurance (BOP FA) | |

Scroll down to the project of interest

Click the project title to go to the project page

Settlements Forum 2018 Q4 Q&A from the Live Webinar December 6, 2018

1. For energy storage devices (ESD), can you explain how the generator, dispatchable asset related demand (DARD), and alternative technology regulation resource (ATRR) are dispatched simultaneously?

The ESD is one physical facility; for example, it could be a bank of large batteries. One dispatch signal is sent to the ESD facility. The signal, which is sent at a four second granularity, may be tell the ESD to inject energy to the grid or to consume energy.

In the ISO's model, the ESD is represented as three assets: a generator, a DARD, and an ATRR. When the ESD is injecting energy onto the grid, the activity is recorded for the generator asset. When the ESD is consuming energy, the activity is recorded for the DARD asset. If the ESD is providing regulation, then the movement in the 4 second dispatch instructions will be recorded for the ATRR. (If the ESD is not providing regulation, the signal will be sent at four second intervals but the instruction will only be subject to change at 5 minute intervals.) Since only one signal is sent to the facility, it is a simultaneous dispatch of the three assets, where the signal directs the ESD to either provide energy, consume energy, and whether these activities are directed rapidly enough to provide regulation.

2. Can you repeat how far back you look for Maximum Demonstrated Output (MDO) in the CSO Cover calculation? And do you use the highest/lowest/average of this period?

The look back for the MDO starts 6 years from the beginning of the Capacity Commitment Period (CCP); one month will be added to the end of the period as we progress through the CCP. For example:

- In June 2019, the look back period will be June 2013-June 2019.
- In July 2019, the look back period will be June 2013-July 2019.
- In May 2020, the look back period will be June 2013-May 2020

We use the highest energy quantity in any interval during the look back period.

3. In the CSO Cover calculation, will the Failure to cover rate be applied to self supply resources?

Yes. All resources, including self supply, will be evaluated for failure to cover. Any failure would be charged at the failure to cover rate, as described in slide 6 of the presentation.