



Overview of ISO-NE's Inventoried Energy Program V1

ISO-NE's Interim Compensation Treatment Program

Deborah Cooke

PRINCIPAL ANALYST | MARKET DEVELOPMENT



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Background: Inventoried Energy Program

- Industry and policy trends are changing the makeup of New England's power system
- The ISO sought a waiver to retain the Mystic units in Forward Capacity Auctions (FCA) 13 and 14 to help address fuel security concerns
- FERC rejected the waiver on July 2, 2018 and tasked the ISO with developing a market-based approach to address fuel/energy security issues(s)
 - The ISO is developing a market-based approach to address energy security, which will be filed by April 2020
 - Implementation is targeted for June 2024: Capacity Commitment Period (CCP) 15
- The Inventoried Energy Program is an interim solution to address winter energy security ahead of its longer-term market approach
 - Scheduled to be in effect for 2023-2024 (CCP14) and 2024-2025 (CCP15) winters, which are covered by Forward Capacity Auctions (FCA) 14 and 15, respectively



Conceptual Design Overview: Five Main Elements

1. **Inventoried Energy Days** during winter period;
2. **Energy Inventory** eligible for compensation;
3. **Forward Compensation Rate** for forward sales;
4. **Spot Compensation Rate** on inventoried energy days;
5. **Two-Settlement Rule and Payments**



INVENTORIED ENERGY DAYS



Inventoried Energy Day Review

- The spot settlement compensates resources for the inventoried energy they hold on days meeting specific conditions
- Those conditions correspond to cold winter periods where the system may be tight and inventoried energy is, therefore, more likely to provide reliability benefits
- Inventoried energy days will be based on transparent, objective criteria
 - Allows the ISO and stakeholders to forecast the frequency of inventoried energy days



Inventoried Energy Day Criteria

- A day is an Inventoried Energy Day if it satisfies two conditions:
- **Condition 1:** It occurs in December, January, or February
- **Condition 2:** The average of the high and low temperatures recorded at Bradley Airport (Windsor Locks, CT) on that day is less than or equal to 17° F
 - Equivalently, the (base-65) HDD $\geq 48^\circ$ F for the day

INVENTORY ELIGIBILITY



Inventoried Energy Properties

- To be eligible for compensation, inventoried energy must satisfy three conditions
 1. Can be converted to electric energy at the ISO's direction
 2. Conversion of this inventoried energy to electric energy reduces the amount of electric energy the resource can produce in future periods (before replenishment)
 3. Can be measured in MWh and reported daily
- Inventoried energy may be stored on-site (e.g. oil in a tank) or offsite (e.g. an LNG contract)
- Inventory is reported to ISO-NE between 7:00 a.m. and 8:00 a.m. on the Operating Day immediately following an Inventoried Energy Day
- Up to 72 hours of inventory is eligible for compensation



Types of Resources Eligible for Inventoried Energy Revenues

Technology Type	Program Eligibility
Batteries	Yes
Biomass/Refuse	Yes
Coal	Yes
Demand Response	If distributed generation (with eligible technology)
Hydro	If on-site or upstream reservoir/pondage that is controlled by the Participant
Natural Gas	If it has a supply contract for firm delivery of gas (into New England)
Nuclear	Yes
Oil	Yes
Passive Demand Response	No
Solar	No
Wind	No

Additional Eligibility Requirements for Gas Contracts

1. The contract must allow the buyer to **schedule the gas intraday**
2. Inventory reported must account for any supply limitations
 - If the contract is with a regional LNG terminal that is unable to vaporize and deliver gas to the asset on the Inventoried Energy Day, the Market Participant would not be credited with inventoried energy
 - If the contract is with a LNG buoy system that does not have a LNG ship/tanker stationed at it on the Inventoried Energy Day, the Market Participant would not be credited with inventoried energy
3. Excludes contracts that are unlikely to be deliverable
 - Caps the total quantity of inventoried energy from LNG-based gas supply contracts at 560,000 MWh, based on daily maximum observed regional LNG “sendout” in recent history
4. Excludes contracts that are unlikely to be exercised because the incremental cost of the gas may be very high

SETTLEMENT RATES



Forward Settlement Rate

- The forward settlement rate represents the \$/MWh rate that a resource is paid for accepting the obligation to maintain inventoried energy on Inventoried Energy Days
- If the resource sells inventoried energy forward, it must either (i) maintain this inventoried energy level on each inventoried energy day, or (ii) buy out of any shortfall at the spot rate
- The forward rate is set at **\$82.49/MWh**
 - This rate is based the incremental costs of purchasing a winter peaking LNG-based gas contract
 - Additional detail on the rate development can be found in materials presented to the [ISO-NE Markets Committee in January 2019](#)

Spot Settlement Rate

- The spot settlement rate is the rate that resources are paid (or charged) for deviations between the quantity of inventoried energy sold forward, and the quantity of inventoried energy maintained on Inventoried Energy Days
 - Set such that, in expectation, participants earn the same revenue whether they sell inventoried energy forward or spot
- Spot rate is calculated using the forward rate and expected number of Inventoried Energy Days so that participants would expect the same total revenues from selling their inventoried energy forward or spot
- Forward rate: \$82.49/MWh
- Expected number of inventoried energy days: 10 (based on historic data)
- **Spot rate: \$8.25/MWh (= \$82.49/MWh / 10)**

OTHER DESIGN ELEMENTS



Participants Can Sell Inventoried Energy That Serves a Portfolio of Resources

- A participant may have inventoried energy that can be used by several resources
 - E.g., an oil tank that is shared by multiple generators, an LNG contract that can be called to supply gas to multiple resources
- If this inventoried energy meets the three eligibility conditions identified earlier, it will be eligible to receive compensation much like inventoried energy that is specific to a single resource



Forward Election Deadline

- Gas and oil resources may take actions to prepare for the upcoming winter (e.g. sign LNG contracts, refuel tanks) during the preceding summer months
- To allow such resources to sell inventoried energy:
 - Deadline cannot be earlier than the summer
 - Deadline cannot be later than the start of the delivery period on December 1
- Therefore an October 1 deadline has been established

Cost Allocation

- Program costs will be allocated to market participants in proportion to their Real-Time Load Obligation
- This treatment is broadly consistent with the past FERC-approved precedent on cost allocation methodology for prior energy security costs, including
 - The Winter Reliability Programs, and
 - The treatment of resources retained for fuel security

Conclusion

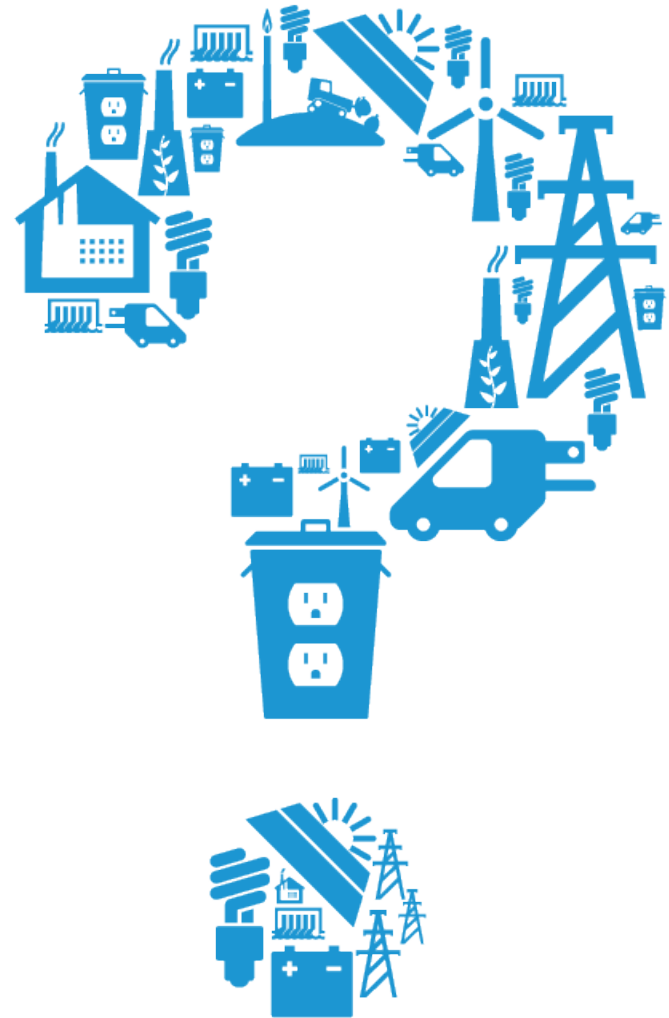
- ISO-NE's Inventoried Energy Program introduces a two-settlement structure for inventoried energy
- This interim treatment:
 - Provides similar compensation for similar service
 - Reduces the likelihood that (otherwise) economic resources pursue retirement
 - Simple and implementable for December 1, 2023 (winter 2023/24)
 - Broadly consistent with good market design
- This program will help the region meet its winter security objectives in the short-term
- Serves as a bridge to ISO-NE's market-based approach to meeting its winter security objectives in the long-term

PROGRAM APPROVAL & PENDING LITIGATION

Program Approval & Pending Litigation

- The Inventoried Energy Program took effect August 6, 2019 by operation of law.
 - FERC took the rare step of announcing that the agency lacked the three voting members it would need to decide whether the rate filing from the ISO was just and reasonable
 - Under the Federal Power Act, tariff filings become effective if FERC allows 60 days to pass without issuing an order accepting or denying them
- In a move that ultimately could lead to a federal appeals court challenge, the New England States Committee on Electricity (NESCOE), and regulators representing three of the ISO-NE's six states on September 4, 2019 petitioned the commission for rehearing in the proceeding

Questions



Other References

- Tariff provisions can be found in Market Rule 1, [Appendix K – Inventoried Energy Program](#)
- [ISO Filing with FERC](#) for the Inventoried Energy Program
- Additional background on the Inventoried Energy Program can be found in the following Markets Committee materials:
 - November 7-8, 2019, Agenda Item #5 <https://www.iso-ne.com/event-details?eventId=134567>
 - December 11-12, 2019 Agenda Item #5 <https://www.iso-ne.com/event-details?eventId=134569>
 - January 8-9, 2019 Agenda Item #2 <https://www.iso-ne.com/event-details?eventId=137567>
 - February 5-6, 2019, Agenda Item #2 <https://www.iso-ne.com/event-details?eventId=137569>