

# Dispatchable Solar

## Market Design Concept Proposal

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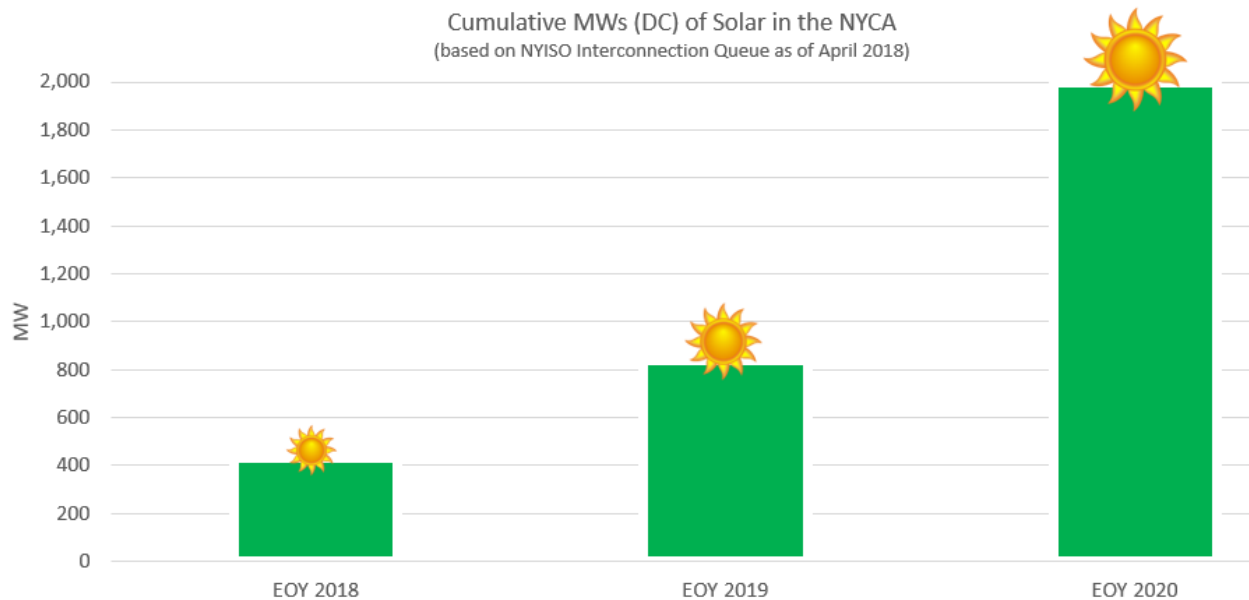
**MIWG**

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# Background

- In 2017, NYISO introduced a proposal to expand its market rules associated with in-front-of-the-meter (FTM) Solar resources. These market rules include:
  1. Solar forecasting fee recovery
  2. Meteorological data requirements
  3. Solar on economic dispatch
- In early 2018, NYISO moved forward with proposed tariff revisions to implement the first two items above. These tariff revisions were approved by the Management Committee on January 31, 2018 and are pending review at the FERC. NYISO proposed a July 1, 2018 effective date for the tariff revisions.
- Today, we are proposing a Market Design Concept to treat FTM Solar resources as dispatchable (down only) resources in the Real-Time Market.
  - NYISO already implemented this concept for Wind resources, and believes those rules are also appropriate for FTM Solar resources.
  - Applying these rules to FTM Solar resources will improve NYISO's ability to reliably integrate higher levels of Intermittent Power Resources, such as FTM solar resources, onto the grid.

# Solar in the Interconnection Queue



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# Concept Proposal Summary

- **FTM Solar resources will be required to submit flexible offers into the Real-Time Market, indicating their willingness to generate at various price levels. They will also receive, and be expected to respond to, NYISO economic dispatch instructions (down only) in order to retain eligibility for:**
  - Compensable Overgeneration payments
  - Persistent Undergeneration charge exemptions
- **Participation in the Day-Ahead Market will continue to be optional for FTM Solar resources.**

# Concept Proposal – Expected Benefits

- By submitting flexible offers, FTM Solar resources are able to indicate their economic willingness to generate.
- Incorporating FTM Solar resource offer prices into the real-time economic dispatch is expected to minimize the magnitude and duration of necessary resource limitations that would otherwise be implemented through less-efficient out-of-market curtailments.
- Allows FTM Solar resources to set the market clearing prices when they are marginal.
- Provides the wholesale markets with additional resource flexibility, improving NYISO's ability to accommodate increased levels of Intermittent Power Resources.
- Avoids a scenario where FTM Solar resources may self-direct curtailments at negative prices, since their economic willingness to generate will automatically be reflected in their dispatch instructions.

# Concept Proposal Details

- The Real-Time Market will use the FTM Solar resource's economic energy offer, its last known energy output, and its forecasted energy output to determine if the resource's output should be limited.
- If it is economic for the FTM Solar resource to limit its output, dispatch instructions sent to the resource will reflect those limitations.
- NYISO will continuously communicate dispatch instructions, both when the FTM resource is subject to limitations and when it is not.
  - Dispatch instructions are sent electronically from NYISO via market basepoints to the transmission owners. Transmission owners will communicate these instructions to the FTM Solar resources.

# Concept Proposal Details - Settlements

- **If a FTM Solar resource has been instructed to limit its output, but fails to do so, it will be subject to an Overgeneration Charge.**
  - Overgeneration charges are calculated as: MWs above basepoint \* Regulation Capacity clearing price.
  - See MST 15.3.A for more information
- **If a FTM Solar resource has been instructed to limit its output, it will be compensated at the lesser of its scheduled output or its actual output. Otherwise, it will be compensated for its actual output.**
  - See MST 2.3 Compensable Overgeneration definition and MST 4.5 Real-time Market Settlements for more information.

# Concept Proposal Details - Forecasts

- **FTM Solar resource forecasts provided via NYISO's centralized solar forecasting process will be used in both the Day-Ahead and Real-Time Markets.**
  - In the Day-Ahead Market, FTM Solar forecasts will be used as resource schedules in SCUC passes that solve for forecasted load, even if the resource submitted a bid.
    - Any submitted bids from these resources will be dropped from these SCUC passes.
  - In the Real-Time Markets, FTM Solar forecasts will be used as part of the process to determine the resource's upper dispatch limit for each time step of the optimization.



# Next steps

- The Master Plan identifies a proposed implementation date of 2022.
- With that timeline in mind, this initiative is currently expected to move to the Market Design Complete phase in 2020.

# The Mission of the New York Independent System Operator is to:

- Serve the public interest and
- Provide benefit to stakeholders by
  - Maintaining and enhancing regional reliability
  - Operating open, fair and competitive wholesale electricity markets
  - Planning the power system for the future
  - Providing factual information to policy makers, stakeholders and investors in the power system



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