

# **Behind-the-Meter Net Generation Initiative**

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# Market Design Summary

- ◆ **A BTM:NG Resource is a facility participating in the wholesale market that has on-site generation capability that routinely serves a Host Load, and has excess generation capability after serving that Host Load**
- ◆ **NYISO proposes to allow BTM:NG Resources to participate in:**
  - *Energy Market*
  - *Capacity Market*
  - *Ancillary Services Market*

# Market Design Summary (cont'd)

- ◆ **Access to this additional supply may:**
  - *Improve grid reliability and operational flexibility*
  - *Provide more clarity and certainty for future resource investment within New York State*
  - *Improve awareness of resources not currently participating in the NYISO wholesale markets*

# Market Design Summary (cont'd)

- ◆ **Each BTM:NG Resource must:**
  - *Be designed and operated to facilitate the business function of the on-site load by providing electricity in the regular course of business;*
  - *Meet NYSDEC requirements to operate under non-emergency conditions;*
  - *Have an effective interconnection agreement;*
  - *Meet minimum net generation requirements;*
  - *Have appropriate metering configurations; and*
  - *Be responsive to dispatch instructions for each PTID as a single entity interfacing with the grid*

# Tariff Language Overview

## ◆ MST Section 2

- *New definitions added to sections 2.1, 2.2, 2.4, 2.8, 2.9, and 2.14*
- *Revisions to definitions in sections 2.1, 2.4, 2.5, 2.7, 2.9, 2.13, 2.14, 2.15, 2.18, and 2.19*

## ◆ MST Section 3

- *BTM:NG Resources will have Host Load reporting obligations under Sec. 3.5*

# Tariff Language Overview (cont'd)

## ◆ MST Section 4

- *Revisions to sections 4.1, 4.2, 4.4, and 4.5 to provide rules for BTM:NG Resource participation in the Energy market*

## ◆ MST Section 5

- *Revisions to sections 5.11 and 5.12 to provide rules for BTM:NG Resource participation in the Capacity market*

## ◆ MST Section 15.3 (Rate Schedule 3)

- *Revised to state that a BTM:NG Resource is not permitted to provide Regulation Service if the Resource is comprised of multiple generating units aggregated at a single PTID*

# Tariff Language Overview (cont'd)

- ◆ **MST Section 15.3A (Rate Schedule 3-A)**
  - *Revised to state that BTM:NG Resources are not exempt from persistent under-generation charges*
- ◆ **MST Section 15.4 (Rate Schedule 4)**
  - *Revised to identify the types of Reserve products BTM:NG Resources are eligible to be paid for*
- ◆ **MST Section 18**
  - *Revised to state BTM:NG Resources are ineligible to receive Start-Up and Minimum Generation Cost Guarantees*

# Tariff Language Overview (cont'd)

## ◆ MST Section 23

- *Revised sections 23.2 and 23.4 to incorporate BTM:NG Resources into the ISO's existing Mitigation rules*
- *Revised section 23.2.1 definition of Unit Net CONE*

## ◆ MST Section 30

- *Revised section 30.4 to incorporate BTM:NG Resources into the duties of the Market Monitoring Unit*



# Tariff Language Overview (cont'd)

## ◆ OATT Section 1

- *New definitions added to sections 1.2, 1.4, 1.8, 1.9, and 1.14*
- *Revisions to definitions in sections 1.4, 1.5, 1.7, 1.9, 1.13, 1.15, and 1.19*

## ◆ OATT Section 25 (Attachment S)

- *Revisions to Sections 25.1, 25.2, 25.3, 25.4, 25.5, 25.7, 25.8, and 25.9 to provide and incorporate the CRIS allocation rules for BTM:NG Resources*

## ◆ OATT Section 30 (Attachment X)

- *Revised to incorporate BTM:NG Resources into the Standard Large Facility Interconnection Procedures*

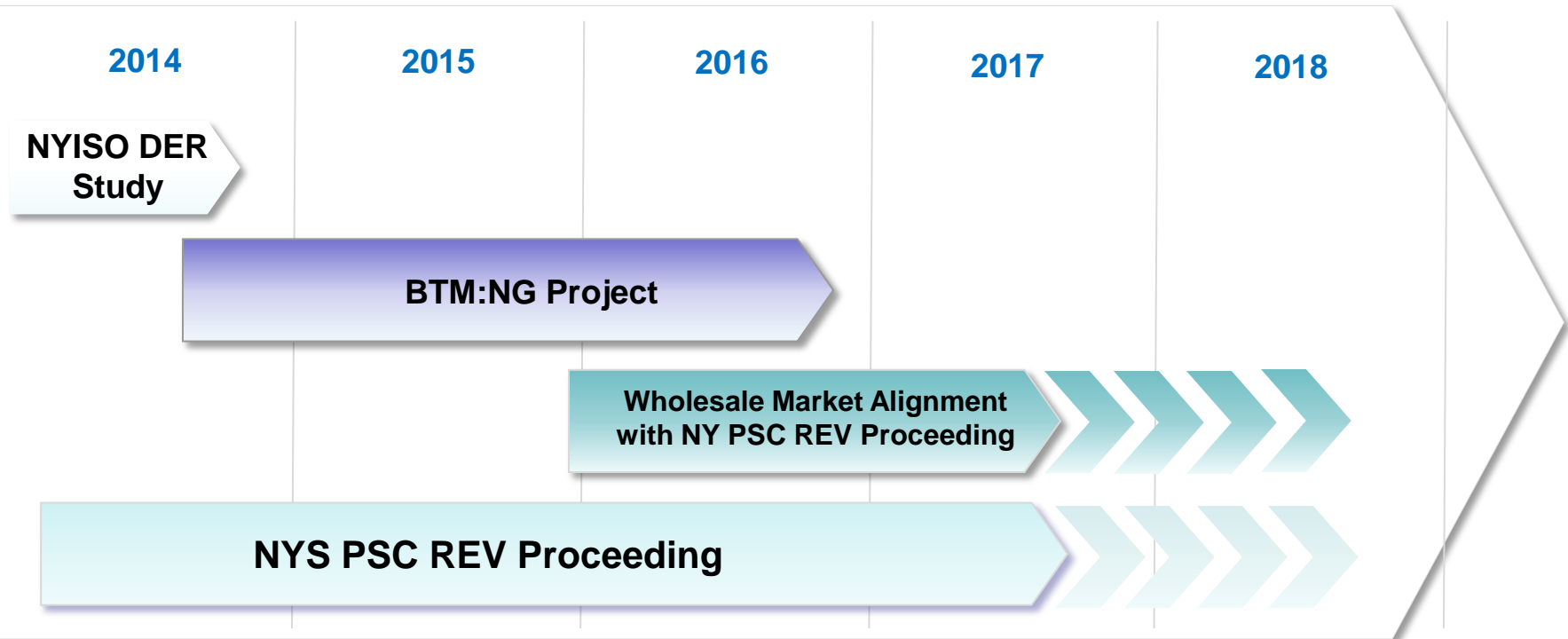
## ◆ OATT Section 32 (Attachment Z)

- *Revised to incorporate BTM:NG Resources into the Small Generator Interconnection Procedures*

# Additional Requested Features

- ◆ This is the first phase of a multifaceted approach for directly incorporating participation rules for behind the meter and distributed resources into the NYISO's tariffs
- ◆ The NYISO will continue to facilitate the development of wholesale market concepts in preparation of New York's Reforming the Energy Vision proceeding as software and protocols supporting this proposal are developed
  - *The NYISO's Wholesale Market Alignment with NY PSC REV Proceeding project will target:*
    - Improved coordination between the NYISO and the NYTOs in order to allow resources to participate in both wholesale and retail programs
    - Rules to allow additional behind the meter resources to participate, such as storage and intermittent resources
    - Supporting NYTO REV demonstration efforts

# Timeline for Integration of Behind the Meter Resources



- Wholesale Market Alignment with the NYS PSC REV proceeding is planned NYISO work that includes but is not limited to the following activities for 2016 and beyond:
  - Reducing barriers for behind the meter resources, such as developing operating protocols and procedures to allow behind the meter resources to participate in utility demand response programs while enrolled as wholesale market net generators

# Next Steps

- ◆ **Tariff Revisions and Review**
  - *BIC (December 9, 2015)*
  - *MC (December 17, 2015)*
  - *Kickoff Wholesale Market Alignment with REV project (December 2015)*
  - *Board Approval (January 2016)*
  - *Filing (February 2016)*
  - *Implement (Q4 2016) – Contingent upon timely approval from Market Participants, the NYISO Board of Directors and FERC*

# Appendix

## (Additional Design Details)

# Market Design Summary

- ◆ **To qualify as a BTM:NG resource, a minimum of 1 MW of Average Coincident Host Load will be required**
- ◆ **The Generator of the Behind-the-Meter Net Generation Resource must have a nameplate rating of greater than 2 MW**
- ◆ **The interconnection must allow an export (injection to the grid) of at least 1 MW**
- ◆ **Each BTM:NG Resource must have a revenue grade TO net meter at each interconnection point from the BTM:NG Resource to the distribution or transmission system**
- ◆ **The BTM:NG resource must have telemetry and, if bidding flexibly, be able to follow dispatch instructions from NYISO via the connecting TO**

# Market Design Summary (cont'd)

- ◆ **A BTM:NG Resource will participate either:**
  - *As a single generator serving a Host Load*
  - *As an aggregated set of generators serving a Host Load*
- ◆ **The ISO shall review and approve each facility seeking to participate as a BTM:NG resource**
- ◆ **A single physical facility may operate more than one BTM:NG Resource, provided that each Resource has its own paired Generator and Host Load, and separately meet the requirements to be a BTM:NG Resource**

# Energy Market Participation

- ◆ **The BTM:NG Resource will participate as a Generator in the NYISO wholesale markets**
  - *Existing rules and penalties applicable to Generators will apply*
- ◆ **BTM:NG Resource may offer the Generator's capability after serving its Host Load**
  - *Generation offers will include forecasted Host Load for each interval, a  $UOL_N$  and  $UOL_E$*
  - *Incremental cost curves must show the entire range of the Generator's output, including the output needed to serve the Host Load*
- ◆ **BTM:NG Resources will be treated as dispatch-only units in the NYISO's economic evaluation**
  - *No start-up or min-gen guarantees*



# Capacity Market Participation

- ◆ **BTM:NG Resources will have a Net-ICAP value**
  - ***Net-ICAP = Adj. DMGC<sub>M</sub> – Adj. Host Load (“AHL”)***
  - ***Where:***
    - **Adj. DMGC<sub>M</sub> = the Generator’s gross capability in a given month adjusted for the Resource’s Injection Limit or CRIS (as applicable)**
      - A BTM:NG Resource may elect to conduct a DMNC test instead of a DMGC test
    - **AHL = the Resource’s Average Coincident Host Load (“ACHL”) for a Capability Year adjusted to include the Installed Reserve Margin**
      - ACHL = the top 20 Load Hours for the Resource that are coincident with the top 40 NYCA peak Load hours

# Capacity Market Participation (cont'd)

- ◆ The Net-ICAP value will be translated into a Net-UCAP value
  - $Net-UCAP = (Adj. DMGC_M * (1-EFORd)) - (AHL * (1-NYCA TF_{CP}))$
  - *Where:*
    - The Generator's EFORd is applied to the Adj. DMGC
    - The Host Load is derated based on the NYCA translation of Load into UCAP terms consistent with the current derating that translates LSE Load from ICAP to UCAP

# CRIS and Interconnection

- ◆ **Manner in which the Generator of a BTM:NG Resource may obtain CRIS:**
  - *Grandfathered CRIS – for existing Generators that meet existing rules outlined in Sec. 25.9.3.1 of the OATT*
  - *Proposed Transition Rule – Existing BTM:NG Resources and Generators with non-FERC jurisdictional interconnections (post CY 2007) can acquire CRIS through a five-year set and reset period (provided they have an effective IA and have remained in operation) if requested within 60 days after FERC acceptance of the BTM:NG Tariff revisions*
  - *Class Year Deliverability Study – As of 60-days after FERC acceptance of the BTM:NG Tariff revisions, all Generators desiring to sell capacity in the NYISO market will be subject to a Class Year Deliverability Study including:*
    - **BTM:NG Resources that did not obtain CRIS through the Grandfathering rules or through the Transition Rule**
    - **Generators with Non-FERC jurisdictional interconnections**

# CRIS and Interconnection (cont'd)

- ◆ **BTM:NG Resources obtaining CRIS through the existing Grandfathering rules or Proposed Transition Rule may seek Initial Summer CRIS up to the value of the Net-ICAP (or estimated Net-ICAP)**
- ◆ **A Final summer CRIS value will be determined after a five-year set and reset period**
  - *Final Summer CRIS is the highest Summer Net-ICAP value determined in the five-year set and reset period*
  - *Initial Summer CRIS value will not limit the Final Summer CRIS value*
- ◆ **The Winter CRIS value will be the ratio of the Resource's Summer DMGC to Summer CRIS, as applied to its Winter DMGC**

# CRIS and Interconnection (cont'd)

- ◆ **BTM:NG Resources obtaining CRIS through the Class Year Deliverability Study may request Initial Summer CRIS up to the value of the Net-ICAP (or estimated Net-ICAP)**
  - *Will be evaluated in the CY Deliverability Study*
  - *Initial Summer CRIS will be the MW value determined to be deliverable, or for which the BTM:NG Resource agrees to pay for SDUs*
- ◆ **A Final summer CRIS value will be determined after a five-year set and reset period**
  - *The highest Summer Net-ICAP value determined in the five-year set and reset period*
  - *Final Summer CRIS value shall not exceed the CRIS found deliverable in the CY Deliverability Study*

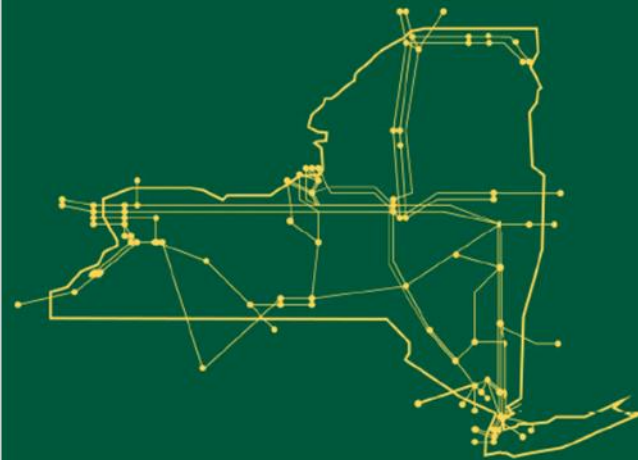
# CRIS and Interconnection (cont'd)

- ◆ **The five-year set and reset period shall terminate early (before the close of year five) if and when:**
  - *The BTM:NG Resource fails to qualify as a BTM:NG Resource in the Capacity market; or*
  - *The BTM:NG Resource elects to participate as any other type of Supplier in the NYISO's markets*
- ◆ **Following an early termination of the five-year set and reset period a Final Summer CRIS value shall be calculated in the same manner as the Final Summer CRIS if the Resource had completed the five-year period, but using the data available (i.e. – only those years that closed)**

# Mitigation and Market Monitoring

- ◆ **BTM:NG Resources will be subject to the existing mitigation measures applicable to Generators**
- ◆ **Installed Capacity market power mitigation measures adjusted to include BTM:NG Resources**
- ◆ **The NYISO's Market Monitoring Unit will be monitoring participation of BTM:NG Resources**

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