

BTM:NG Energy Market Participation – Tariff Revisions

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BTM:NG Energy Market Review

The NYISO has reviewed BTM:NG Energy Market concepts at previous working group meetings.

- ◆ **Joint MIWG/ICAPWG on September 19, 2014**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2014-09-19/agenda_02_BTMNG_Sept%2018%20final.pdf

- ◆ **MIWG on November 19, 2014**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2014-11-19/agenda%207%20BTMG_MIWG_111914_final.pdf

- ◆ **MIWG on January 29, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2015-01-29/agenda%207%20BTMG_MIWG_012915_final.pdf

- ◆ **MIWG on April 2, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2015-04-02/BTMNG_MIWG_040215.pdf

- ◆ **MIWG on April 23, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2015-04-23/agenda%206%20BTMG_MIWG_CostAllocation_042315.pdf

BTM:NG Energy Market Review

The NYISO has reviewed BTM:NG Energy Market concepts at previous working group meetings.

- ◆ **MIWG on May 20, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2015-05-20/agenda%204%20BTMG_MIWG_052015_final.pdf

- ◆ **MIWG on July 8, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2015-07-08/BTMG_MIWG_070815.pdf

- ◆ **MIWG on September 3, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2015-09-03/BTMNG_MIWG_090315_final.pdf

- ◆ **Joint ICAPWG/MIWG/PRLWG on September 4, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2015-09-04/BTMNG%20Market%20Concepts-ICAPWG-MIWG%209-4-15-final.pdf

- ◆ **BIC on September 16, 2015**

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic/meeting_materials/2015-09-16/agenda%207%20pres%20BTMNG_BIC_091615.pdf

Benefits of BTM:NG Resources

- ◆ **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*

General Eligibility Requirements for BTM:NG Resources

- ◆ 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*

Participation Requirements

- ◆ To qualify as a BTM:NG resource, a minimum of 1 MW of Average Coincident Host Load will be required
 - *Host Load includes all electrically connected loads within the defined electrical boundary served by the on-site generation*
- ◆ The behind-the-meter generator must have a nameplate rating of greater than 2 MW
- ◆ The interconnection must also allow an export (injection to the grid) of at least 1 MW
 - *Multiple injection points at lower voltages may be acceptable provided they aggregate to a single injection into the NYS Transmission System*
- ◆ 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
 - *Direct communication with the NYISO is permitted as a secondary communication path*

BTM:NG Resource Facility Configurations

- ◆ Participation at a facility will be either:
 - *As a single generator serving a host load*
 - Required to provide reserves if bidding flexibly
 - Offering regulation service is optional
 - *As an aggregated set of generators serving a host load*
 - Required to provide 10 min non-spin and 30 minute reserve products if bidding flexibly
- ◆ The ISO shall review and approve each facility seeking to participate as a BTM:NG resource

BTM:NG Resource Participation in the Energy Markets

- ◆ The BTM:NG resource will participate as a generator in the NYISO wholesale markets
 - *Existing rules and penalties will apply*
- ◆ The BTM:NG resource will be allowed to offer the available net generation after serving its host Load
 - *The generation offer for a BTM:NG resource must include the forecasted host Load in each interval and the Normal UOL (the available net generation, reflective of injection limits if applicable)*
- ◆ The BTM:NG resource will be treated as a dispatch only unit when making an economic evaluation in the dispatch software
 - *Start-up and minimum generation guarantees will not be available for BTM:NG resources*
- ◆ The incremental cost curves for the entire range of the BTM:NG resource's output, including the output needed to serve the host load, are required as part of the energy offer

Tariff Language Overview

- ◆ **The following slides provide an overview of the tariff language revisions for Behind-the-Meter Net Generation Resource Participation in the Energy Markets**
 - *The slides summarize tariff changes*
 - *Redline tariff sections have been posted with the meeting materials*
 - *Corresponding changes will be made to the Open Access Transmission Tariff (OATT) where appropriate (e.g., definitions)*

Definitions

- ◆ **The following definitions are proposed to be added to the Market Administration and Control Area Services Tariff (MST)**
 - *Behind-the-Meter Net Generation Resource (BTM:NG) – A facility within a defined electrical boundary that has at least one on-site Generator that routinely serves a Host Load and has generation capability after serving that Host Load. The Generator must have a nameplate rating of greater than 2 MW and a minimum Avg. Coincident Host Load of at least 1 MW.*
 - *Dispatchable – Definition clarified to include the bid mode for BTM:NG Resources.*
 - *Economic Operating Point – Definition clarified for the megawatt quantity of a BTM:NG Resource.*
 - *Emergency Upper Operating Limit (UOLe) – Definition updated to include BTM:NG Resources.*

Definitions

- ◆ **The following definitions are proposed to be added to the Market Administration and Control Area Services Tariff (MST)**
 - *Energy Limited Resource – Definition clarified to exclude BTM:NG Resources.*
 - *Generator – Definition expanded to include BTM:NG Resources.*
 - *Host Load – Load exclusively served by a BTM:NG when the Generator is on. Host Load includes station power if self-supplied by the BTM:NG Resource.*
 - *Injection Limit – The maximum amount of energy that may be injected into the NYS Transmission System by a BTM:NG Resource.*
 - *Intermittent Power Resource – Definition clarified to exclude BTM:NG Resources.*
 - *ISO-Committed Fixed/ISO-Committed Flexible – Definitions clarified to exclude BTM:NG Resources.*

Definitions

- ◆ **The following definitions are proposed to be added to the Market Administration and Control Area Services Tariff (MST)**
 - *Minimum Generation Bid/Minimum Generation Level – Definitions modified to indicate that BTM:NG Resources will not be required to submit these offer parameters.*
 - *Normal Upper Operating Limit (UOL_N) – Definition updated to include BTM:NG Resources.*
 - *Operating Reserves – Definition updated to account for BTM:NG Resources.*
 - *Resource – Definition expanded to include BTM:NG Resources.*
 - *Start-Up Period/Start-Up Bid – Definitions modified to make it clear that commitment parameters are not required for a BTM:NG Resource.*
 - *Supplier - Definition expanded to include BTM:NG Resources.*

Tariff Revisions

- ◆ **Section 3.5.2 - Provision of Data By Market Participants**
 - *Revised to require BTM:NG Resources to provide estimates for Host Load in real-time if it is different than the estimated Host Load value provided in DAM.*
- ◆ **Section 4.1.8 - Commitment for Reliability**
 - *Revised to state that Start-Up and Minimum Generation Cost guarantees are not available to BTM:NG Resources.*
- ◆ **Section 4.2.1.1 - General Customer Forecasting and Bidding Requirements**
 - *Revised to include that BTM:NG Resources provide a forecasted Host Load value for each hour of dispatch day.*

Tariff Revisions

- ◆ **Section 4.2.1.3 - Bids by Suppliers Using the ISO-Committed Flexible, Self-Committed Flexible or ISO-Committed Fixed Bid Modes to Supply Energy and/or Ancillary Services**
 - *Revised to state that the NYISO will only consider price/MW pairs in excess of the BTM:NG Resource's Host Load.*
 - *Revised to reflect that BTM:NG Resources with multiple generation units that are dispatched as an aggregated unit at a single PTID are not qualified to provide Regulation Service or Spinning Reserves.*
- ◆ **Section 4.2.3 - Security Constrained Unit Commitment ("SCUC")**
 - *Revised to reflect treatment of BTM:NG Resources in SCUC processes.*

Tariff Revisions

- ◆ **Section 4.4.1 - Real-Time Commitment (“RTC”)**
 - *Revised to include bidding obligations in real-time and treatment of BTM:NG resources in RTC.*
- ◆ **Section 4.5 Real-Time Market Settlements**
 - *BTM:NG Resources are not subject to the procedure when bid as Self-Committed Flexible*
- ◆ **Section 4.5.1 Settlement When Actual Energy Withdrawals Exceed Scheduled Energy Withdrawals Other Than Scheduled or Actual Withdrawals in Virtual Transactions**
 - *Revised to state that the BTM:NG’s LSE will be charged for any Actual Energy Withdrawals*

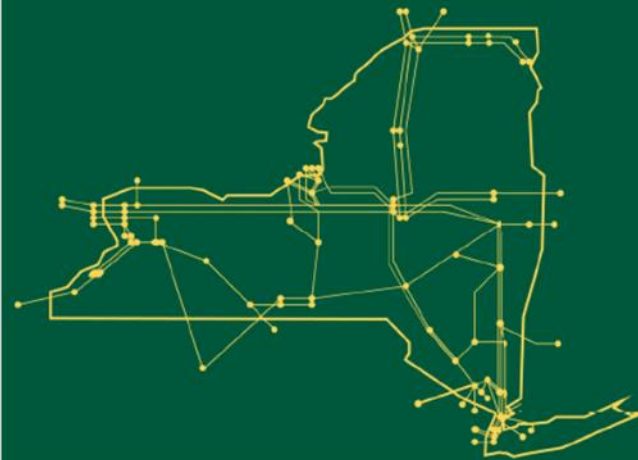
Tariff Revisions

- ◆ **Section 15.3A.3 – Exemptions (to Charges Applicable to Suppliers That Are Not Providing Regulation Service)**
 - *Revised to reflect that BTM:NG Resources are excluded from the exemption for persistent undergeneration and performance charges.*
- ◆ **Section 15.4.1.2 - Supplier Eligibility Criteria**
 - *Revised to reflect that BTM:NG Resources cannot provide spinning reserves when the Resource has multiple generators that participate in aggregate and are dispatched as a single unit.*
- ◆ **Section 18.12 - Proration Of Start-Up Bid For Generators That Are Committed In The Day-Ahead Market, Or Via Supplemental Resource Evaluation**
 - *Revised to clarify that the rules do not apply to BTM:NG Resources.*

Next Steps

- ✓ **October 23, 2015 Joint MIWG/ICAPWG/ESPPWG**
 - ✓ *Present and discuss tariff language for energy market participation*
- ◆ **October 26, 2015 Joint MIWG/ICAPWG**
 - *Present and discuss tariff language for capacity market participation (CRIS concepts for BTM:NG Resources)*
- ◆ **November 9, 2015 ICAPWG**
 - *Continue discussion of tariff language for capacity market participation (Non-CRIS concepts for BTM:NG Resources)*
- ◆ **December 2015 BIC/ MC**
 - *Seek BIC and MC approval*
- ◆ **January 2016**
 - *Seek Board of Directors approval*
 - *File tariff language with FERC*
- ◆ **Implement Q4 2016**
 - *Contingent upon timely approval from Market Participants, the NYISO Board of Directors, and FERC*

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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