

BTM:Net Generator Initiative: Proposal for Determination of Net ICAP

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Groups**

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Agenda

- ◆ **Background/Scope of BTM:NG**
- ◆ **Discuss proposed determination of Net ICAP for BTM:NG resources**
 - *Review proposed Net ICAP calculation*
 - *Review current DMNC testing rules*
 - *Propose a Dependable Maximum Generating Capability (DMGC) test that is based on DMNC test rules*
 - *Introduce proposed methodology for estimating the coincident peak load supplied from the BTM:NG resource*
 - *Review determination of UCAP and proposed changes for BTM:NG*
- ◆ **Next Steps**

Background/Scope

- ◆ **This presentation is part of the NYISO’s Behind-the-Meter Net Generator (BTM:NG) project to develop market rules that will allow eligible behind the meter generation that serves retail load to sell the ‘net’ generation into the wholesale market**
 - *This proposal applies to behind-the-meter generators seeking to participate in the wholesale market with surplus (“net”) energy and/or capacity available after serving their host load obligations*
 - *The NYISO is proposing a set of market rule changes that would subject these BTM:NG resources to the same ICAP eligibility requirements that apply generators of the same type as the BTM:NG (e.g., complying with DAM bidding and outage reporting requirements)*
 - *This phase of project will consider only conventional generation, not renewable or hydro BTM:NGs*

Net Installed Capability

Net ICAP Determination

- ◆ **Net ICAP (i.e., CRIS Adjusted DMNC) for Conventional Generators**
 - *Net ICAP is the lesser of the current season DMNC and the current CRIS cap*
- ◆ **Proposal for Net ICAP of BTM:NG**
 - *Net ICAP available will be the lesser of:*
 - **The net injection capability for the facility's interconnection**
 - **CRIS (to be discussed in a separate presentation), and**
 - **DMGC less (BTM:NG Coincident Load \times (1+IRM))**
 - DMGC is a variation of the current DMNC that would be specific to BTM:NG resources
 - BTM:NG Coincident Peak Load is the proposed methodology for estimating the maximum load that will be supplied from behind-the meter generator

Dependable Maximum Net Capability (DMNC)

DMNC Test – Purpose and Rules

◆ Purpose of DMNC

- ◆ Provides a measure of the output that a generation resource can provide to the system

◆ Current Rules for DMNC Tests

- ◆ DMNC tests are conducted on a Capability Period basis
 - ◆ **Test in the Prior Equivalent Capability Period is used for the current Capability Period DMNC**
 - ◆ **Out-of-period tests may be conducted in accordance with program rules (ICAP Manual)**
 - ◆ **Test data is temperature-corrected for:**
 - Internal Combustion
 - Combustion Turbine
 - Combined Cycle

DMNC Test – Current Testing Rules

- ◆ **Current test durations by technology**
 - ***Four (4) hour test***
 - **Fossil Fuel and Nuclear Stations**
 - **Hydro Stations**
 - **Combined Cycle Stations**
 - **Energy Limited and Capacity Limited Resources**
 - Except IC/CTs, see 1 hour test
 - ***One (1) Hour Test***
 - **Internal Combustion Units**
 - **Combustion Turbines**

DMNC Test – Current Rules

(Sect. 4.2, ICAP Manual)

- ◆ **Current Rules for other types of Installed Capacity Suppliers**
 - ***Combined Nameplate***
 - Intermittent Power Resources (Wind/Solar)
 - Run-of-River Hydro Resources
 - ***Special Case Resources***
 - Average Coincident Load provides basis of the amount of capacity available
 - One hour test each capability period
 - Sustained disconnect test

Dependable Maximum Gross Capability (DMGC)

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- ◆ **Based on the DMNC test conducted for generators**
 - *To the extent possible, rules incorporate existing market rules for resource(s) by technology type*
 - *Testing procedures need to be flexible for the BTM:NG resources in a similar manner as testing procedures are flexible for generator(s)*
- ◆ **DMGC for the BTM:NG resource will be based on the gross output of the generator**
 - *Meter data required from the test period:*
 - **The gross output of the generator**
 - **Net meter installed at the interconnection point to the distribution system**

DMGC: Test Length and Multiple Resource Types

- ◆ **Current rules for DMNC tests provide flexibility according to the type of generation**
 - ***BTM:NG DMGC test will provide flexibility according to:***
 - **Type of generation utilized at the site**
 - **Test length will be consistent with the type of generating resource behind the meter**

BTM:NG Coincident Load Determination

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- ◆ **NYISO proposes to use an average of the Top 20 of 40 NYCA Peak load hours during the Prior Equivalent Capability Period**
 - *Modified approach based on the current SCR Average Coincident Load (ACL) methodology*
- ◆ **Would be used to estimate the coincident peak load portion for calculating the Net ICAP of a BTM:NG resource**
- ◆ **NYISO believes this approach is more appropriate for these resources than the Run-of-River methodology**

Current Run-of-River Methodology

- ◆ **Methodology is used in lieu of a DMNC for each Capability Period**
- ◆ **Rolling average of the hourly net energy provided during the 20 highest NYCA-integrated real-time load hours in each of the five previous Summer or Winter Capability Periods, as appropriate**

Similarities between objectives of ACL and BTM:NG Coincident Load Determination

- ◆ Estimate available load levels of resources during NYCA peak load hours
- ◆ Also recognize that individual load levels during NYCA peak load hours may vary by taking into consideration shutdowns and other low load hours during coincident load hours
- ◆ Relatively simple to calculate and implement over other methodologies proposed
 - *This methodology reduces barrier to entry*
- ◆ 2013-2014 SCR Baseline Study concluded that the ACL methodology produced a valid estimate of seasonal peak load

Current ACL Methodology for SCRs

- ◆ Top 40 coincident hours are derived from the NYCA Top 100 Peak Load hours for the Prior Equivalent Capability Period
- ◆ Specific time window from which the hours are selected
- ◆ Exclusions to NYCA peak load hours for determining SCR Load Zone Peak Hours:
 - *Any hours in which reliability events, including tests, were called*
 - *The hour before and hour after an event or test, up to eight hours per Capability Period*
- ◆ Add-backs are applied to reported metered loads for TO-based DR program reductions and load reductions in DADRP or DSASP
- ◆ Hours are identified on a zonal basis as the SCR Load Zone Peak Hours
- ◆ The NYISO calculates the ACL for each SCR from the 40 hourly meter data values reported by the RIP for the SCR, incorporating any add-back values, as applicable

BTM:NG Coincident Load

- ◆ The proposal for estimating the peak load a BTM:NG resource is to use the average of the top 20 of 40 hours of gross load supported by the BTM:NG resource during the corresponding NYCA peak load hours during the Prior Equivalent Capability Period
 - *Provides a blend of the Run-of-River approach and the ACL approach for SCRs*
- ◆ Differences from the ACL methodology for SCRs:
 - *Uses the first 40 NYCA peak load hours, not hours within a specific time window*
 - *No exclusions of hours or add backs*

Generator Availability Data System (GADS)

UCAP – Generator Availability Data System

- ◆ **Currently, generators are required to report Generator Availability Data System (GADS) data that is used to calculate an EFORd for the unit**
 - *At NYISO, generators (non-SCRs) participating in the ICAP market*
 - *At NERC, conventional generators >20 MWs connected at $\geq 100\text{kV}$ are required to submit GADS data*
 - Conventional includes fossil, nuclear, hydro/pumped storage, combined cycle, etc.
 - Variable energy resources (e.g., wind, solar) are not included in mandatory GADS
- ◆ **NYISO's use of GADS data**
 - *Calculation of Derating Factors (EFORd) the Installed Capacity (ICAP) Market*
 - *NYISO and the New York State Reliability Council's (NYSRC) Reliability Studies*
 - *Installed Reserve Margin (IRM) determination for the New York Control Area (NYCA)*
- ◆ **Additional Information regarding GADS data at:**
 - [Generating Availability Data System \(GADS\) as Used Under NYISO Rules \(Training Course\)](#)
 - [ICAP Manual, Attachments J and K](#)
 - [Generating Availability Data System \(GADS\) at the NERC](#)
 - [Maintenance Outage Scheduling \(See also MST 5.12.1 and 5.12.3, ICAP Manual 4.3\)](#)

Unforced Capacity (UCAP)

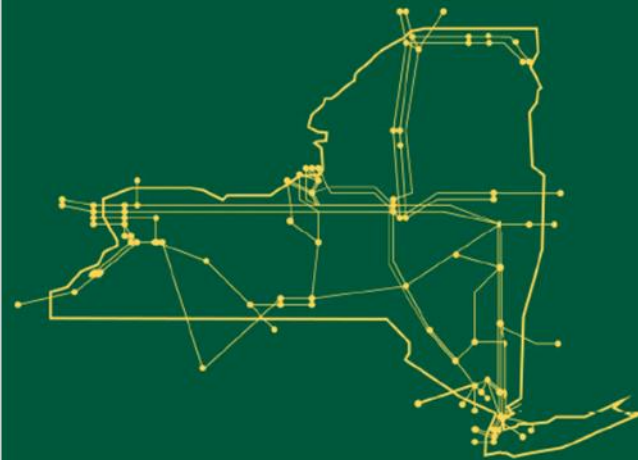
UCAP Determination - EFORd

- ◆ **Proposed BTM:NG Rules will require GADS reporting to calculate Net UCAP available from the BTM:NG**
 - *Net UCAP = Net ICAP * (1-EFORd)*
 - *EFORd will be calculated by the NYISO per Att. J of the ICAP Manual, as current market generators is calculated*
- ◆ **Resources new to the market that have not previously reported GADS will be assigned a class average EFORd by technology**
- ◆ **NYISO will need to have at least two Capability years of load and generation hourly metering data to compare to the GADS data**
 - *The NYISO has this type of data (generation) available for generators*

Next Steps

- ◆ **Additional Capacity market concepts will be brought to upcoming meetings in May and June**
- ◆ **NYISO will seek concept approval at BIC**

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