

DER Dual Participation

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Agenda

- Background
- Dual Participation Scenarios
- Dual Participation Dispatch
- Market Products
- Coincidence and Value Streams
- Conceptual Process Overview
- Additional Open Questions
- Appendix

Background

- **NYISO's Roadmap recognizes that Dual Participation means simultaneous participation at the Wholesale and Retail levels**
 - NYISO must take into account Local Host needs when evaluating dynamics of Dual Participation
- **A NYISO market design proposal incorporating DER dual participation will need to align with New York State's REV proposal to establish a Distributed System Platform ("DSP")**
 - The New York Public Service Commission (PSC) envisions the DSP modernizing the distribution system "to create a flexible platform for new energy projects and services, to improve overall system efficiency and to better serve customer needs." (Reforming the Energy Vision, New York State Department of Public Service Staff Report and Proposal at 11-12 (Apr. 24, 2014))

Background, con't

- NYISO's intent is to create a set of wholesale market rules to allow participation in both wholesale markets and retail programs
- These market rules will conjointly:
 - Help to ensure reliability
 - Minimize costs to end use consumers through efficient market rule design
 - Harmonize wholesale market rules with New York State public policy

Dual Participation Scenarios

Dual Participation Scenarios

- **“Dual Participation”** for the purposes of this presentation may mean:
 - Utility + NYISO
 - Local Host Need + NYISO
 - Local Host Need + Utility + NYISO

Dual Participation Dispatch

Dual Participation Dispatch

- **Dual Participation Dispatch will occur when a DER Aggregation is enrolled in programs at both the retail and wholesale level**
 - NYISO must also account for the local host need of DER
- **The NYISO has considered the following points when formulating a market design concept for Dual Participation:**
 - Bulk system reliability
 - Operational visibility for the NYISO, utility, and DER Aggregation
 - Value streams
 - Double payment
 - Coincidence

Reasons for Dual Participation Dispatch

- **NYISO proposes to have the Utility coordinate dispatch of DER needed for distribution system needs through the NYISO**
 - A utility may dispatch a DER Aggregation for:
 - Reliability
 - Non-Reliability
 - Utility's dispatch of a DER Aggregation through the NYISO provides operational visibility to both parties
 - Monitor and adjust for energy injection
 - Prevent coincident dispatch

Reasons for Dual Participation Dispatch, con't

- **Timing of utility dispatch of DER Aggregation impacts NYISO and utility operations; DER Aggregation can be dispatched:**
 - When the DER aggregation is not committed/dispatched by NYISO; or
 - When the DER aggregation is committed/dispatched by the NYISO and utility dispatches the DER aggregation contrary to it's NYISO schedule
 - Contrary dispatch could be for a different product, or a different base-point

Reasons for Dual Participation Dispatch, con't

- DER within an aggregation may also be operated to address individual facility needs
 - Reliability (e.g., power quality management)
 - Non-Reliability (e.g., peak shaving)
- NYISO continues to look at market design concepts for DER meeting local host needs

Market Products

Market Products Available to DER

- Wholesale level market product participation:
 - Likely:
 - Energy
 - Capacity
 - Ancillary Services
 - Regulation Services
 - Reserves (Sync and Non-sync, 10/30)
 - Not Likely:
 - Ancillary Services
 - Voltage Support
 - Black Start

Market Products Available to DER, con't

■ Not Likely, Voltage Support

- At this time, the NYISO believes that distribution-level connected voltage support services from a DER would not directly translate to transmission level voltage support services
- The NYISO will continue to review the efficacy of DER to provide voltage support services

■ Not Likely, Black Start

- At this time, the currently perceived DER resource mix would not be able to produce sufficient power flow to provide adequate Black Start services

Coincidence and Value Streams

Coincidence

- **Coincidence occurs when an entity has competing obligations in overlapping periods**
 - Same Day
 - Same Interval
- **Coincident dispatch occurs when an entity is required to serve both:**
 - NYISO + Local Host Need
 - NYISO + Utility

Coincidence and Value Streams

- **NYISO's market rules will appropriately address:**
 - Bulk system reliability
 - Conflicting/Competing operation signals for the DER or DER Aggregation
 - Rules will seek to prevent separate and conflicting signals from both the NYISO and Utility for an interval
 - Double Payment for the same product delivered

Coincidence and Value Streams, con't

- Aggregators will not be required to identify each retail program a DER chooses to participate in, prior to registering with the NYISO
- Market rules (through availability, performance, and penalty calculations) will discourage DER and DER Aggregations from committing the same capability to multiple entities for an interval

Conceptual Process Overview

Existing Processes

- **NYISO currently employs multiple processes to schedule a resource outside of the economic evaluation, and possibly contrary to pre-existing schedule**
 - Out Of Merit
 - Day Ahead Reliability Unit Commitment
 - Supplemental Resource Evaluation
 - Self Schedule
 - Etc.

Conceptual Process Overview

- The NYISO is developing a process to accommodate scheduling of DER engaged in dual participation
- NYISO intends to rely on automated processes to address scheduling for DER engaged in dual participation
- Such automation may address:
 - Dispatching entity
 - NYISO vs Utility vs Local Host Need
 - Dispatching reason
 - Reliability vs Non-Reliability
 - Difference from possible schedule

Conceptual Process Overview, con't

- The automated process will likely address:
 - Dispatch level
 - Dispatch duration
 - Whether or not the dispatch sets price
 - The value which the resource is paid
 - LBMP, Cost or other
 - Cost allocation methodology
 - NYISO
 - Other, ex: pass-through to other party

Additional Points for Consideration

Additional Points for Consideration

- **The NYISO is currently evaluating the opportunities and limits for DER dual participation, for example:**
 - Should aggregations greater than 1 resource be allowed to participate in more than 1 retail program, across the aggregation
 - Should all resources within an aggregation belong to the same retail program
- **The NYISO welcomes feedback on these topics from stakeholders**
 - This evaluation and feedback is for the development for market rules, and will not be specifically addressed in the 2017 Market Design Concepts paper

Additional Points for Consideration, con't

- “If a storage resource charges at a wholesale rate and discharges to an end-use customer through a retail program, does the electric storage resource become a LSE by engaging in sales for resale? What regulatory issues are implicated by occasional sales for resale?” *

*Text taken directly from NYISO DER Roadmap

- **NYS REV refers to dual participants as ESCOs**
 - Section 2.b. Products and Services – NYS REV, April, 2014, Page 19 & 20

Appendix

Appendix - Acronyms

- DER – Distributed Energy Resource
- DCE – DER Coordinator Entity
- DCEA – DCE Aggregation
- DSP – Distributed System Platform provider
- DR – Demand Response
- RT - Real-Time
- DA – Day-Ahead
- RTC – RT Commitment
- RTD – RT Dispatch
- DAM – DA Market
- REV – Reforming the Energy Vision
- RTM – RT Market
- SCUC – Security Constrained Unit Commitment

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers 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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