

# DER Pilot Program

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**Business Issues Committee**

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# Previous Materials

Date	Working Group	Discussion points and links to materials
02-02-17	Posted	<a href="#">Distributed Energy Resources Roadmap for New York's Wholesale Electricity Market</a>
02-28-17	Market Issues Working Group (MIWG)	<a href="#">Comparison of pilot projects and programs in organized wholesale electric markets</a>
05-05-17	Market Issues Working Group (MIWG)	<a href="#">Pilot program framework proposal</a> Topics: program intent, draft eligibility and participation rules, and high level pilot objectives
06-21-17	Market Issues Working Group (MIWG)	<a href="#">Pilot program framework proposal</a> Topics: detailed pilot objectives, pilot selection criteria, scheduling process, and reporting obligations

# Today's Agenda

- Background & objectives
- Eligibility & selection criteria
- Reporting obligations
  
- Acronyms used in today's presentation
  - DER – Distributed Energy Resource
  - DCE – DER Coordination Entity
  - DCEA – DCE Aggregation
  - DSP – Distributed System Platform

# DER Pilot Program – Background & Objectives

# Background

- As part of DER Roadmap efforts, NYISO will work with interested parties to establish Pilot Projects
  - Purpose is to demonstrate DCEA/DER capabilities, integration, coordination, and dual participation
- Tariff amendments will not be submitted for the DER Pilot Program
- The DER Pilot Program will be administered through a test environment, not in the NYISO's production (*i.e.*, "live") market and operations system
- Pilot Program participants will not be compensated by the NYISO for participation in the DER Pilot Program
- NYISO will make available on its public website and present at a future Market Issues Working Group (MIWG) meeting a DER Pilot Program Guide that will include the registration information, rules, selection criteria, and other forms that will be used in the administration of the DER Pilot Program

# NYISO DER Pilot Program Objectives

1. Assess the capability of homogeneous and heterogeneous DER aggregations to provide energy and ancillary services and the associated benefits to the wholesale markets
2. Develop and evaluate DER and DCEA measurement and verification (M&V) and monitoring and control (M&C) requirements
3. Establish and evaluate an operational coordination framework between NYISO, utilities, DCE, and DER
4. Establish and evaluate DER and DCEA registration processes

# Pilot Program – Program Rules & Selection Criteria

# DER Pilot Program Rules

- **Pilot Program limits**
  - Maximum of 50 MW state-wide enrollment at any one time
  - Maximum of 10 MW enrolled capability serving a single transmission node
    - Limitation will minimize market and operational impacts at the node
  - Maximum of 5 individual Pilot Projects at any one time
    - Will consider adjusting this limit as appropriate based on staffing requirements and other factors
- **Individual Pilot Project limits**
  - Minimum of 100 kW of aggregated capability for energy and reserves, 200 kW for regulation service
  - Maximum of 10 MW of aggregated capability
  - Maximum project duration of 12 months
    - NYISO will have discretion to extend an individual project to meet program objectives
    - NYISO will also have discretion to terminate a project before anticipated end date
- **Resources participating in the wholesale markets, except for Demand Side Resources, will not be eligible to participate in the Pilot Program**
  - NYISO will review wholesale market Demand Side Resource participation on a case-by-case basis to ensure the resource can meet its existing wholesale market obligations if also in the Pilot Program

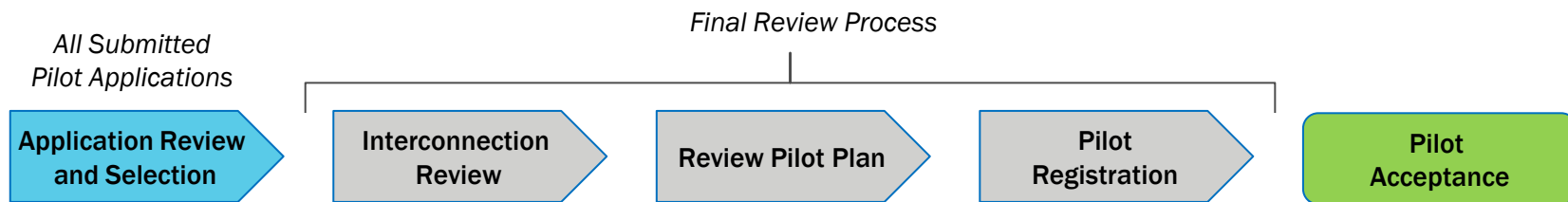


# DER Pilot Program Rules

- **The Pilot Participant is not required to be a Market Participant, however will be required to form a Participating Pilot Agreement with the NYISO before being formally accepted in the Pilot Program**
- **The Pilot Project must be fully funded**
- **All DERs in the Pilot Project must have an approved interconnection with the local utility, if applicable**
- **All DERs in the Pilot Project must have, at minimum, hourly interval meters**
  - Revenue grade quality metering is not required for participation in the Pilot Program
- **The Pilot Project must be capable of responding to dispatch signals on a 5-min periodicity for energy, and 6-sec periodicity for reserves and regulation**
- **Pilot Projects should have 6-second telemetry**
  - However, a Pilot Project proposal will still be considered when it cannot provide 6-second telemetry if the proponent can justify to the NYISO that the project will be able to satisfy DER Pilot Program objectives
  - Preference during the Pilot Program selection process will be given to Pilot Project proposals that can meet the desired 6-second scan rate
- **The Pilot Project must communicate any required telemetry to the NYISO using the Inter-Control Center Communication Protocol (ICCP)**

# DER Pilot Program Application Process Flow

- The following is the general application process when NYISO opens enrollment to its DER Pilot Program



- It is anticipated that as DER Pilot Projects are completed, the NYISO will periodically open enrollment to additional DER Pilot Project applications
- NYISO will announce future open enrollment periods at its Market Issues Working Group meetings

# Selection Criteria – Step 1: Screens

The first step of NYISO's DER Pilot Program selection process is to screen pilot proposals based on the following criteria:

- Program eligibility rules
- Alignment with NYISO DER Roadmap and REV goals
- Pilot funding
- Ease of implementation
- Readiness

# Selection Criteria – Step 2: Value Assessment

The second step of NYISO's DER Pilot Program selection process is to assess pilot proposals based on the following criteria (in descending order of importance):

- Ability to meet DER Pilot Program objectives with clear and feasible Pilot Plan
- Capability to demonstrate Energy and/or Ancillary Services
- Blend of resource types
- Technology maturity
- DER and aggregation deployment experience
- Testing availability

# DER Pilot Program – Reporting Obligations

# Reporting to NYISO Stakeholders

- **NYISO will present stakeholders with the following information for each registered Pilot Project:**
  - Zone and transmission node
  - Project in-service date and anticipated completion date
  - Pilot Project capability (MW)
  - High level description of the particular Pilot Project objective being addressed and the technologies tested
- **NYISO will present stakeholders with the following information after a Pilot Project is complete:**
  - Actual completion date
  - Actual MWh test energy

# Periodic Reporting to NYISO Stakeholders

- **General Public Reporting Guidelines**
  - Periodic updates will focus on information relevant to DER Pilot Program objectives
  - Presentation of the DER Pilot Program data will be masked and aggregated to disguise identity of Pilot Participants
- **Updates of the DER Pilot Program may consist of:**
  - Information on demonstrated capabilities of aggregations ("Can they...")
  - Information on dispatch performance of general pilot population ("How well...")
  - Information on effectiveness of proposed DER integration processes and methodologies
  - General verbal feedback of pilot experience from Pilot Participants
  - Suggested changes to DER Pilot Program or DER market design and rules

# NYISO & Pilot Participant Reporting

- **Information that Pilot Participants can expect to receive from NYISO:**
  - Operational instructions (e.g. basepoints)
  - NYISO system data via public website and other established methods
  - The test profiles used by the NYISO (after-the-fact)
  - Performance metrics for the Pilot Project (based on aggregated meter data and telemetry)
  - Detailed verbal feedback on its pilot performance and lessons learned
  - Weekly status and coordination meeting between each Pilot Participant and NYISO staff, as needed
- **Information that the NYISO expects to receive from Pilot Participants:**
  - Information required for registration and modeling
  - Factors impacting performance during Pilot Project
  - Appropriate metering and telemetry data
  - Cause and explanation of any de-rates or unavailability of the pilot resource
  - After-the-fact MW dispatch activity of individual DER to meet aggregation basepoint instruction



# Next Steps: Anticipated Timeline for DER Pilot Projects

- The DER Pilot Program will start in April 2018, when the first Pilot Projects are anticipated to be announced, and end in April 2020

	Anticipated Dates
Business Issues Committee (BIC) Presentation	August 9, 2017
Present Final Draft Pilot Program Guide and Registration Materials to Market Issues Working Group (MIWG)	September 29, 2017
Publish Pilot Program Guide and Registration Materials <sup>1</sup> and Enrollment Opens	October 20, 2017
Close Applicant Question Period <sup>2</sup>	November 3, 2017
Close Pilot Program Enrollment <sup>3</sup>	December 15, 2017
Finalists Notified	February 2018
Pilots Accepted and Announced	April 2018
NYISO Pilot Test Environment Ready to Begin Pilot Testing	June 2018

<sup>1</sup> NYISO will publish the final DER Pilot Program Guide and Registration Materials on the NYISO website and present at a future Market Issues Working Group (MIWG) meeting, which will include public materials related to the DER Pilot Program.

<sup>2</sup> Interested Applicants can submit questions for clarification to the NYISO regarding the DER Pilot Program and the associated public materials that are made available.

<sup>3</sup> The NYISO will evaluate 45 days after open enrollment whether to close or extend enrollment based on the volume of proposals received by that time.



# Feedback?

- Email additional feedback to: [pilots@nyiso.com](mailto:pilots@nyiso.com)

# 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



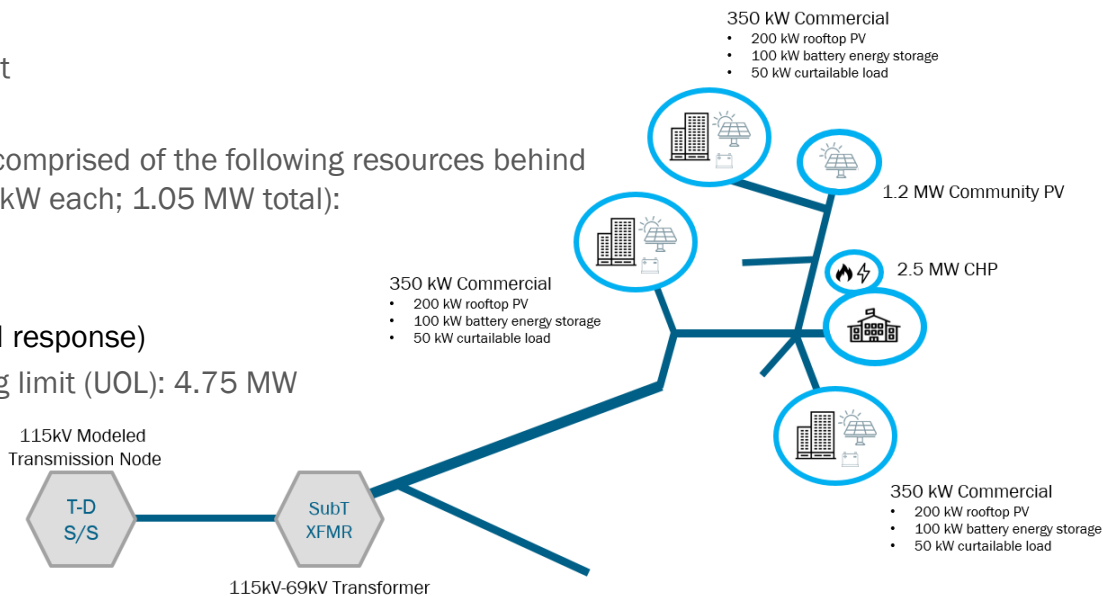
[www.nyiso.com](http://www.nyiso.com)

# Appendix: DER Pilot Program – Scheduling Example

An illustrative example how a pilot project may be scheduled for testing

# Pilot Project Example

- The following is a hypothetical and illustrative example of how a Pilot Project may participate in the NYISO Pilot Program.
- **Hypothetical Pilot Project aggregation:**
  - 2.5 MW combined heat and power unit
  - 1.2 MW standalone community PV
  - Three commercial installations, each comprised of the following resources behind its facility interconnection meter (350 kW each; 1.05 MW total):
    - 200 kW commercial PV
    - 100 kW battery energy storage
    - 50 kW curtailable load (demand response)
  - Maximum aggregation upper operating limit (UOL): 4.75 MW



# Scheduling Process for the DER Pilot Program

- Pilot Participants will coordinate with NYISO on the first business day of each week to communicate the Project's availability in a given week

		First Business Day of Week	Remaining Business Days of Week				
		2 Days Prior to Operating Day	1 Day Prior to Operating Day			Operating Day (Real-Time)	
		<i>*T = time of dispatch start</i>					
Time		1500	0500	1100	1300	1500	T-5 mins and T-6 secs
From	Pilot Participant	DSP	Pilot Participant	ISO	Pilot Participant	DSP	ISO
To	ISO	Pilot Participant, ISO	ISO	Pilot Participant, DSP	DSP	Pilot Participant, ISO	Pilot Participant
Information	Status Update and Weekly Commitment	Network Conditions Impacting Pilots	DA "Hourly Capability" Deadline	DCEA DA Schedule	Individual DER DA Schedule	Network Conditions Impacting Pilots	DCEA RT Dispatch
Communication Method	Teleconference	Report - Email	Spreadsheet - Email	Spreadsheet - Email	Spreadsheet - Email	Report - Email	Telemetry

# Submitting Hourly Capability

- **The DER Pilot Program will initially operate from HB8 to HB16, unless otherwise agreed upon by the Utility, NYISO and Pilot Participant**
  - Pilot Participants are required to submit capability for those hours
  - NYISO may propose to expand the operating hours and/or days at a future date
- **NYISO will develop and use test profiles for Pilot Projects through the DER Pilot Program**
- **NYISO will use a Pilot Project's Hourly Capability to schedule it for testing and will respect operating parameters provided by participants at registration**

# Establishing Pilot Schedules

- NYISO will provide Day-Ahead advisory schedules to each Pilot Project, provided that the Pilot Project is available for testing in a given week
- Depending on whether the unit chooses to operate “Flexible” or “Fixed”, basepoints may be adjusted in real-time

RESOURCE NAME	RESOURCE PTID	DATE & TIME	MARKET	SCHED ENERGY	SCHED 10 MIN SPIN	SCHED 30 MIN SPIN	SCHED REG CAPACITY	MESSAGE
PILOT1	10004	05/22/2017 08:00:00 EDT	DAM	0.65	0.1	0	0.25	

\* TABLE IS FOR ILLUSTRATIVE PURPOSES ONLY