

Grid in Transition: Kickoff for 2022 study

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Agenda

- **Background & 2022 study deliverable**
 - Concerns expressed at December ICAP/MWIG
- **Proposed Plan**
- **Next Steps**

Today's Goal: Communicate the study plan and get stakeholder feedback.

Background & 2022 study deliverable

Grid in Transition

■ Background:

- A rapid transition is underway in New York State from a power grid where energy is largely produced by central-station fossil fuel generation, towards a grid with increased intermittent renewable resources and distributed generation.
- A grid characterized by high levels of intermittent renewable resources and distributed generation will require new thinking. We approach potential market enhancement efforts with two guiding principles:
 - (1) all aspects of grid reliability must be maintained; and
 - (2) competitive markets should continue to maximize economic efficiency and minimize the cost of maintaining reliability while supporting the achievement of New York's climate policy codified in the CLCPA.
- The study will inform the NYISO's planning, forecasting, and operations, as well as the development of wholesale market mechanisms to enhance grid resilience.

Grid in Transition

- **Deliverable: Q4 Study Complete**
- **Project Description:**
 - Using the work completed to date across various NYISO studies and initiatives, including the Reliability and Market Considerations for a Grid in Transition work and Climate Change Study work, the 2022 effort will identify and, if possible, quantify through a 2022 study, the potential level of system flexibility and/or grid attributes needed to reliably maintain system balance.

Excerpted from the August 27 2021 presentation of 2022 Market Project Candidates

<https://www.nyiso.com/documents/20142/24145498/02%20Proposed%202022%20Market%20Project%20DescriptionsI.pdf/1950d339-57d7-7e0d-dcc2-4ac1e6a738bc>

Concerns Expressed By Stakeholders

- **At the December 2, 2021 ICAP/MIWG meeting, the NYISO presented an overview of Grid in Transition activities and projects**
- **As part of the 2022 discussion, the following concerns were expressed by stakeholders**
 - Concerns that the needs of the grid of the future are not clear
 - Concerns that we need to consider how the grid will be operated
 - What products and tools are the operators going to need to keep the lights on?
 - Concerns that we need to understand if new products are needed
- **The planned study endeavors to address these concerns by leveraging the data in existing NYISO studies and focusing on the relevant information.**

Proposed Plan

Multi phase study

- **First phase – leverage the Climate Change Phase 1 data to look at the questions**
- **Second phase – coordinate with 2022 planning studies**
 - Leverage the upcoming Outlook study Policy Case
 - Possibly leverage the RNA in a similar way

First Phase: Leverage the Climate Change Phase 1 Study

- Focus on now through 2030 and 2030 through 2040
- Look at evolution of load and net load shapes (load net of wind and solar) over time
 - Summer Peak
 - Winter Peak
 - Shoulder period
- Look at the distribution of hourly ramps over time
- Look at periods (multi day) with low wind and solar and what that implies for net energy and hourly ramps

Second Phase: Coordinate with the Outlook study

- **Coordinate with the Outlook study to communicate the system needs**
 - Focus on the Policy Case
 - Look at
 - Load shapes over time
 - Ramp distributions over time
 - Reserve and Regulations needs over time
 - Stakeholder presentations would be Q2/Q3 and would be coordinated with the Outlook presentations

Coordination with the RNA study

- **In a similar way, the NYISO will be looking to possibly coordinate with the RNA study to communicate the system needs**
 - This would be late in 2023 given the timeline of the RNA
 - Would focus on one of the cases
 - Is planned to look at similar things like
 - Load shapes over time
 - Ramp distributions over time
 - Reserve and Regulations needs over time

Next Steps

Planned Next Steps

- Today – present plan to stakeholders for comment
- March/April – present Climate Change Phase 1 analysis
- April - Discuss the implications of how this study and other Grid in Transition work will help inform the next steps for product development and real time market changes.
- Q2/Q3 – present Outlook information
- Q4 – present RNA information
- Q4 Finalize study

Our Mission & Vision



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

Questions?