

## 3 Balancing Intermittency (SOM)

### 3.1 Problem / Opportunity

In a time of unprecedented change in the electricity sector, New York’s competitive electricity markets must be positioned to unleash the innovation and flexible energy solutions necessary for a reliable transformation towards a zero-emissions power grid. 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.

The pace of this transition is driven primarily by state policy, notably the Climate Leadership and Community Protection Act (CLCPA). In addition, technological advancements are expanding the capabilities of new resources and lowering their costs, further driving broader industry changes.

A grid characterized by high levels of intermittent renewable resources, Energy Storage Resources (ESR), and Distributed Energy Resources (DER) will require new thinking to adequately balance intermittency on the system and meet associated flexibility and ramping needs. The NYISO is actively working on developing market enhancements to meet these future challenges. ~~A grid characterized by high levels of intermittent renewable resources, Energy Storage Resources (ESR), and Distributed Energy Resources (DER) will require new thinking to adequately balance intermittency on the system and the associated system ramps.~~ The NYISO approaches this work 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 2022 Grid in Transition Study will identify the potential level of system flexibility that will be required with increases in intermittent resources and evaluate grid and/or resource attributes necessary to continue to reliably maintain system balance. This project continues that work and supports State of the Market recommendations 2021-1.

### 3.2 Project Objective(s) & Anticipated Deliverable(s)

Using the work completed to date across various NYISO studies and initiatives, including the Reliability and Market Considerations for a Grid in Transition work, Grid in Transition project work, and any relevant external studies on the ramp and flexibility needs of the future, this project will examine the existing NYISO market structures, including the level of dispatchability and ramping capability that may be needed to balance intermittency. This effort will also assess existing and market rules and will determine appropriate compensation mechanisms that incentivize such attributes including the potential for if there are any new market products, such as ramping or new reserve products, or other market changes or additions needed to support maintain reliability. The 2023 project effort, 2023 project deliverable will be Market Design Concept Proposed.

Proposed changes to “2023 Market Project Candidates” document shared at May 31<sup>st</sup> 2022  
BPWG meeting

### 3.3 Project Justification

The CLCPA includes the following goals:

- 100% of the state’s electricity must be emissions free by 2040
- 9,000MW of offshore wind energy must supply NY by 2035
- 6,000MW of solar energy be installed in NY by 2025
- Statewide reduction of 185 trillion BTUs through energy efficiency
- 3,000MW of energy storage capacity must be installed to serve NY by 2030

~~Continuation of this~~ This project will help to identify the means to maintain system reliability while addressing the state’s goals and mandates in a cost-effective way through the creation of proper market mechanisms.