



# Study Plan

- Purpose & Objective
- Study Approach
- Concurrent Studies
- Key Deliverables
- Schedule



# **Purpose and Objective**

- Purpose:
  - Identify approaches that can achieve environmental goals while maintaining electric system reliability and, adequacy of capacity and energy resources
  - Explore operating limitations that must be introduced under various system conditions
  - Assess the impact of various future fuel mix assumption on environmental compliance, system reliability and the markets
  - Advise regulatory rule makings on approaches for maintaining reliability
- Objective:
  - Understand how the NY compliance approaches might interact with existing market rules and system reliability criteria under various scenarios for RGGI, CPP, and CSAPR



## **Study Approach**

- Phase I Coordinate with DEC, DPS, and NYSERDA to explore in the study year 2024:
  - Reference Scenario builds on 2015 CARIS
    - Sensitivities for AC Transmission and Western New York Transmission
    - First year studied by NYSPSC SRP study
  - Develop operation limits that comply with RGGI, CPP, and CSAPR
  - Reduce fossil unit installed capacity and energy production while increasing renewable resource penetration
  - Estimate changes in essential reliability service capabilities: voltage support, frequency control, and ramping
  - Examine changes in intra-hour starts and shut downs
  - Report changes in production metrics
  - Evaluate potential new market products to satisfy new system operating requirements



# Study Approach (cont.)

#### Phase 2

- Extend RNA to 2030
- Examine other scenarios
  - FitzPatrick and Ginna retired
  - 1000 MW Canadian Imports
  - No Nuclear generation in 2030
    - Replace with Renewable Energy
    - Replace with NG GTs
- Perform production cost simulations and stability analyses to explore changes in resource adequacy requirement and system voltage and stability performances.



# **Concurrent Studies**

### NYSPSC-SRP Study

- Commission directed study to examine production costs and resource adequacy of future states consistent with state goals
- NERC
  - Resource adequacy study on a national level

#### • EPRI

 Examining trading strategies and inter-state partnerships



# **Key Deliverables**

- Phase 1.
  - Estimates of renewable resources necessary to comply with RGGI, CPP, and CSAPR in 2024
  - Identification of generation operational limits and possible requirement for new market products
  - Potential changes in IRM and other production metrics for 2024
  - Estimates of allowances levels or Emission Rate Credits necessary to achieve compliance
- Phase 2.
  - Review of NY Initial Submittal of CPP
  - Same analyses as Phase 1 with additional 2030 scenarios

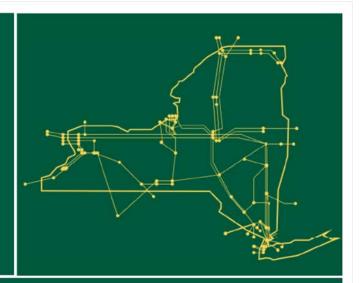


### Schedule

- July 15 Review preliminary results for Phase 1 evaluation with stakeholders
- Nov. 15 Draft Report that reviews the Phase 2 scenario evaluation
- Dec. 15 Final Report



The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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