New York State Resource Planning Analysis

Presentation to NYISO Management Committee

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Background

New York State Department of Public Service has initiated a State Resource Planning (SRP) study to examine the effects of various public policies on the State's bulk power system

Study Goals:

- Determine what mix of resources (generation, transmission, and DER) will need to be deployed by 2030 to meet various public policies and regulations in a cost effective manner while maintaining reliability

- Identify the reliability boundaries of the bulk power system and the upgrades (gas and electric) that would be required to maintain a reliable bulk power system

Study Participants: NYDPS, NYSERDA, NYDEC, NYISO, NYDOS(UIU) and NYTOs

Consultants:

- GE – Power Flow (PSLF), Resource Adequacy (MARS), Production Cost (MAPS)

- ICF – Resource Mix (IPM)

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Scenarios to be studied:

1. **Base Case:** Study years 2024 and 2030 will be developed by extrapolating the 2015 CARIS Base Case under a Business as Usual scenario

   - Sensitivity 1: Retire Indian Point Units #2 and #3
   - Sensitivity 2: High gas fuel price & high load levels
   - Sensitivity 3: Reduction in or no dual-fuel generation

2. **Clean Power Plan Case**

   - Policy Scenario 1: Each state meets its own mass-based cap
   - Policy Scenario 2: RGGI or national "trading-ready" exchange under mass-based cap
     - ➢ Sensitivities to be finalized

3. **State Energy Plan/REV Implementation Case:** Guide implementation to focus on local resources to meet SEP goals

   - ➢ Sensitivities to be finalized

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Methodology

The studies will be performed in two steps for each identified scenario:

1. Develop resource mixes, perform power flow transfer analysis and resource adequacy analysis, then model the resulting generation mix and power flows to generate system production cost and emissions data.

2. Determine infrastructure (gas pipelines and electric transmission) that will be required to support each resource mix.

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Base Case Assumptions

- **Modeling Regions:** NYISO, ISO-NE, PJM, other U.S. regions, and Canadian provinces

- **Statewide and Local Capacity Reserve Requirements:** Utilize 2016-2017 IRM recently approved by NYSRC and corresponding LCRs

- **Capacity Market Parameters:** Utilize current Demand Curves

- **Gas Price Forecast:** Use average of AEO's 2015 Base Case & High Resource Case prices

- **Load Forecast:** Use 2015 Gold Book forecast for 2015 through 2025 and extrapolate through 2030 using the growth rate from the last two years of this forecast

- **Load Duration Curve:** Utilize 2006 load shape for production models (IPM/MAPS) and 2002/2006/2007 optimized load shape for reliability models (MARS)-consistent with CARIS & IRM assumptions.

- **Non-Nuclear Generators –** New builds, return to service and retirements based on latest known information

- **Nuclear Units:** All units remain in-service until license expiration, then assumed retired

- **Other Assumptions:**

  - Solar, wind and EE will grow at existing rates
  - RGGI cap for CO_2 emissions to be extended at 2020 level
  - External systems will be modeled to preserve reserve margins

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Schedule – Stakeholder Updates

- December 17   Base Case Assumptions
- February 5   Base Case Results
- March 7   CPP Case & SEP/REV Case Assumptions
- March 22   Base Case Sensitivity Results
- June 22   CPP Case Scenario & Sensitivity Results
- July 5   SEP/REV Case Scenario & Sensitivity Results
- Aug 9   Final Report

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