New York ISO
Independent System Operator

Consumer Impact Analysis Methodology: Internal Controllable Lines

Tariq N. Niazi

Senior Manager, Consumer Interest Liaison

ICAPWG/MIWG

August 4, 2022

Agenda

- Project Description
- Background
- Consumer Cost Impact Analysis Methodology: Energy Market
- Consumer Cost Impact Analysis Methodology: Capacity Market
- Other Impacts
- Next Steps

New York ISO

Project Description

- **The objective of this project, prioritized as a result of NYSERDA's Tier 4 REC initiative, is to develop market participation rules for internal controllable lines (ICL)**
  - There are currently no ICL in operation within the NYCA
- **The NYISO's proposed design is intended to accommodate ICL with a range of different project structures**
  - The project will culminate in a Market Design Concept Proposed (MDCP) by Q4 2022
- **The purpose of today's presentation is to discuss with stakeholders the proposed methodology for estimating the consumer impact of this project**

New York ISO

Market Design Proposal Summary

- **The NYISO will optimize ICL flows in the Energy Market based on economic dispatch, meeting New York State load at least as-bid cost, while taking account of the incremental bids and incremental losses of ICL operation**
  - The ICL will buy power at the source LBMP and sell the power it delivers at the sink LBMP
- **Consistent with the proposed Energy Market design for an Internal Controllable Line, the proposed Capacity Market Design will not tie supply to specific generators**
- **The amount of MW counted as supply from an Internal UDR will not be modeled as LCR reduction, and any remaining MW not counted as supply will be modeled as LCR reduction**
  - Additional detail on the NYISO's proposed market design for Internal Controllable Lines can be found in the Internal Controllable Lines presentation at the August 4, 2022 ICAP/MIWG meeting

New York ISO

Potential Project Benefits

- Optimizing Internal Controllable Lines in the Energy Market enables efficient scheduling and supports reliability
- Enabling capacity market participation for ICL will facilitate cost recovery for merchant controllable transmission projects, that , unlike other transmission lines, are not eligible for rate base cost recovery

New York ISO

Consumer Impact Analysis Guiding Principles

- Since we don't know how many ICL will enter the market, we are focusing our analysis on the Clean Path New York (CPNY) project as an example of the potential consumer impact
  - This analysis is not to determine the effectiveness or efficiency of CPNY, but is designed to compare practical wholesale market design choices for the purposes of demonstrating the potential cost impacts to consumers of the choices
- The cost impact of ICL on energy market and capacity market prices will depend on the amount of additional MW available through ICL facilities to the wholesale market
- We will assume that ICL facilities will elect to participate in the NYISO capacity market to the greatest extent possible

New York ISO

Consumer Impact Evaluation Areas

Reliability	Cost Impact/Market Efficiencies
Environment/New Technology	Transparency

New York ISO

Energy Market Consumer Impact

- The market design proposal for ICL will allow the resource to offer economically and be flexibly scheduled in the NYISO system optimization
- As the objective function of the NYISO energy market optimization is to minimize as-bid system production cost, economic dispatch of an ICL should benefit consumers with lower production costs and lower LBMPs
- To evaluate the consumer benefit from the economic operation of an ICL will be compared to the fixed operation of an ICL
- As no Internal Controllable Line currently exists a scenario-based approach will be used

New York ISO

Energy Market Cost Impact Methodology

- **The System & Resource Outlook study developed by NYISO's planning department includes a future scenario of the New York power grid that includes an ICL:**
  - https://www.nyiso.com/documents/20142/31614758/0621_ESPWG_System_Resource_Outlook_Update_Final.pdf/b358688a-dec9-e83e-813c-9ea28c8168c4
- **Propose to use the 2030 "contract case" developed in the Outlook study's Multi-Area Production Simulation (MAPS) model that includes an ICL**
  - In the base case run the model with the ICL on a fixed schedule
  - In the change case run the model with the ICL scheduled economically
- **The difference in the two scenarios should indicate the difference in production costs, LBMPs and emissions between serving system load with an ICL on a fixed schedule versus an ICL with and economic schedule**
  - The LBMPs resulting from MAPS runs may not indicate actual market outcomes. MAPS does not consistently calculate LBMPs that reflect actual market prices derived from NYISO's DAM or RTM

New York ISO

Capacity Market Cost Impact Assumptions

- **The capacity market impact analysis will estimate the change in capacity market procurement cost based on whether an ICL (Internal UDR) participates in the capacity market or not**
  - The analysis will be based on the CPNY project as an example of potential capacity market impact
  - No market participation (Base Case) will be modeled as impacting capacity requirements, without adding the ICL to the capacity market supply stack
  - Market participation (Change Case) will be modeled by adding the ICL to the capacity market supply stack, with no impact on capacity requirements
- **The capacity market analysis will leverage data from the Reliability Needs Assessment (RNA) and the Capacity Accreditation project**
  - This will provide capacity market requirements with the line modeled as in-service

New York ISO

Capacity Market Cost Impact Assumptions (cont'd)

- ICL derating factor will be modeled as 5%, recognizing that expected derating factors for ICL are uncertain since ICL is a new construct
- ICL will be modeled in the analysis consistent with the capacity supplier payment structure proposed in the stakeholder process
- Leverage the load forecast assumptions, resource mix, demand curve reference points from the 2030 RNA case, which will model the CPNY line as in-service

New York ISO

Capacity Market Cost Impact Methodology: Short Term

- **For the base case (No Market Participation), model the line in-service with impacts to capacity requirements**
  - Calculate total capacity procurement costs by capacity zone
- **For the change case (Market Participation), model the ICL as supply in the capacity market**
  - The ICL will not impact capacity requirements in this case
  - Calculate deltas in capacity procurement costs by capacity zone
- **The short-run impact analysis will assume no additional changes to generation**
- **Impacts shown in the short run may not be sustainable, given potential retirements and other supply changes**
  - We address this in the long run analysis, which assumes a supply level based on the historic level of excess

New York ISO

Capacity Market Cost Impact Methodology: Long Term

- **For the base case, model the line in-service with impacts to capacity requirements**
  - Calculate total capacity procurement costs by capacity zone
- **For the change case, model the ICL as supply in the capacity market**
  - The line will not impact capacity requirements in this case
  - Calculate deltas in capacity procurement costs by capacity zone
- **For the supply level, we will use the historic excess defined as a percentage of excess above the requirement observed within the last three Capability Years in each of the different Localities**

New York ISO

Other Impacts

- **Evaluate other impacts:**
  - Reliability Impact
  - Environmental Impact
  - Impact on Transparency

New York ISO

Next Steps

- **August/September:**
  - Continued Consumer Impact Analysis discussions (ICAPWG/MIWG)
  - Targeting to discuss analysis results with stakeholders by mid October

New York ISO

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

New York ISO