

Internal Controllable Lines: Energy Market Design Proposal

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Agenda

- **Background**
- **Proposal Overview**
- **Next Steps**
- **Appendix: Previous Presentations**

Background

Background

- There are currently no internal controllable lines (ICL) in operation within the NYCA
- NYSERDA's Tier 4 REC initiative has driven the prioritization of this project, which will develop market participation rules for ICL
- 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 provide a comprehensive description of the current energy market design proposal

Proposal Overview

Energy Market Participation

- **Internal controllable lines (ICL) will be able to reflect operating characteristics and costs in the NYISO's Day-Ahead and Real-Time Markets**
 - Relevant costs could include, but are not limited to, variable O&M
- **Offers from an ICL will represent a spread bid between the sink and source prices**
 - For example, an offer of \$5 represents a willingness to be scheduled if the sink price is at least \$5 higher than the source price
 - ICL withdrawals and injections priced at source/sink nodes

Energy Market Participation (Cont'd)

- **ICL will need to provide certain information in order to participate in energy market**
 - Resource characteristics typically provided during registration, including Ramp Rate, Loss Percentage and Physical Limits
 - Bid information provided in MIS, such as Hourly Bid Curves
 - Commitment Parameters, such as Upper and Lower Operating Limits

Energy Market Participation (Cont'd)

- **The ICL will buy power at the source LBMP and sell the power it delivers at the sink LBMP**
 - The amount of power delivered at the sink will be less than the amount of power withdrawn at the source due to line losses
 - The ICL owner retains congestion rents (the LBMP differential) created by the operation of the line, which could include losses
- **No Transmission Service Charges (TSC) will be collected on withdrawals at the ICL source**
- **Any Renewable Energy Credit (REC) payments will occur outside of the NYISO settlement system**
- **The NYISO design is intended to apply to ICL flows in either direction**

Energy Market Scheduling

- **The NYISO will optimize ICL flows based on economic dispatch, meeting New York State load at least as-bid cost, taking account of the incremental bids and incremental losses of ICL operation**
 - Scheduling of the line would occur simultaneously with the scheduling of resources
 - Revisions to NYISO Tariffs and Manuals will be necessary to incorporate rules for scheduling and pricing of ICL

Ancillary Services

- **Consistent with other transmission facilities, ICL may be eligible to provide Voltage Support Service based on technology chosen for the ICL, but will not be eligible to provide other Ancillary Services**

Energy Market Mitigation

- **ICL will be subject to energy market mitigation rules**
 - The NYISO and stakeholders will need to assess what Tariff and procedure changes will be necessary to incorporate ICL
 - Treatment expected to be similar to Energy Storage Resources, as ICL will have both withdrawal and injection energy (Attachment H)

Operator Actions and Cost Guarantees

- **ICL will be required to operate consistent with operator out-of-merit (OOM) instructions to protect system or local reliability**
 - ICL will be eligible for certain cost guarantee payments when NYISO instructs the line to operate OOM in a manner that is not consistent with the economics of its offers (or mitigated offers)
 - Eligibility for other forms of cost guarantees will be evaluated during the market design process

Outage Scheduling

- **ICL will be required to comply with NYISO outage scheduling requirements**
 - Additional outage scheduling requirements apply if the ICL is a capacity supplier
 - The NYISO has authority to defer, postpone, or cancel scheduled transmission outages of facilities under NYISO operational control

Additional information about the NYISO's outagescheduling rules can be found in the Outage Scheduling Manual:
https://www.nyiso.com/documents/20142/2923301/outage_sched_mnl.pdf/1c2cc085-0fce-6540-fded-c95d0c662568.

Transfer Limit Determination and Contingency Modeling

- The NYISO operates a multi-step co-optimization of energy and reserves with network constraints
- ICLs will be included in the network model with a transfer limit and become an additional contingency in the Network Security Analysis
 - The ICL contingency may become a binding contingency in the market solution
 - The ICL may also be limited by pre- or post-contingency constraints on the parallel transmission elements

Interconnection

- **The NYISO currently has rules for evaluating interconnection requests for proposed ICL, which cover**
 - The interconnection study process for evaluating ICL projects and identifying Identification of required reliability upgrades; and
 - The process for evaluating ICL projects requesting CRIS (to obtain UDRs) and identifying deliverability upgrades required to make the projects deliverable at their requested CRIS level
 - Transmission projects that seek UDRs, which must request CRIS must be evaluated through the Large Facility Interconnection Procedures in Attachment X (including a Class Year Study)
 - If not requesting CRIS, a transmission project can be evaluated in the Transmission Interconnection Procedures in Attachment P
- **The NYISO will propose additional detail to the Transmission Expansion and Interconnection Manual regarding how ICLs will be evaluated vis-à-vis existing internal NYCA interface definitions and dispatch assumptions under the Minimum Interconnection Standard**

Next Steps

Next Steps

■ June:

- Continued Energy Market discussions as needed (ICAPWG/MIWG)
- Continued Capacity Market discussions as needed (ICAPWG/MIWG)

■ July:

- Discuss any open items (ICAPWG/MIWG)

■ July, August:

- Consumer Impact Analysis discussions (ICAPWG/MIWG)

■ End of Q4:

- Market Design Concept Proposed (ICAPWG/MIWG)

Appendix

Previous Project Presentations

- **2/3/22: Kick-Off presentation discussing project scope and timeline**
 - [2/3/22 MIWG Presentation](#)
- **3/16/22: Energy Market Design Real-Time Scheduling and Settlement Examples**
 - [3/16/22 MIWG Presentation](#)
- **4/19/22: Energy Market Two-Settlement Examples**
 - [4/19/22 MIWG Presentation](#)

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