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Independent System Operator

Champlain Hudson Power Express (CHPE) and Fuel Availability Constraints – 2026-2027 Installed Reserve Margin (IRM) Preliminary Base Case (PBC) Considerations

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Background

- **The NYSRC Installed Capacity Subcommittee (ICS) and Executive Committee (EC) have approved fuel availability constraints modeling assumptions for the 2026-2027 IRM study**
  - Modeling and assumption details for the 2026-2027 IRM study were presented and approved at the April 15, 2025 Executive Committee[1]
- **Modeling assumptions for CHPE for the 2026-2027 IRM Preliminary Base Case (PBC) remain under discussion with ICS and the EC**
  - Most recent feedback from ICS appears to support modeling CHPE as in-service for the 2026-2027 IRM PBC and conducting a sensitivity that would model CHPE as out-of-service for the 2026-2027 IRM PBC
  - Regardless of the inclusion decision, finalization of the overall modeling framework for CHPE is needed to facilitate analysis of CHPE's impacts
- **Discussions with ICS and EC have also included the status assumptions for the Gowanus 2 & 3 and Narrows 1 & 2 barges that were identified as a temporary solution to the Near-Term Reliability Need identified for New York City in the NYISO Quarter 2 2023 Short-Term Assessment of Reliability (STAR)**
  - CHPE was identified as the permanent solution to this Near-Term Reliability Need
  - NYISO's Quarter 1 2025 STAR affirmed that operation of the Gowanus 2 & 3 and Narrows 1 & 2 barges continues to be necessary to address the reliability need identified in the Quarter 2 2023 STAR until CHPE demonstrates dependable capacity supply during summer peak load conditions

[1] Fuel Constraints Modeling Phase 2 - April 15, 2025 Executive Committee

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CHPE Modeling Assumptions: Prior NYISO Recommendations

At the 6/4/2025 ICS meeting, the NYISO recommended the following modeling assumptions for CHPE and Hydro Quebec (HQ) emergency assistance for the 2026-2027 IRM study (see Appendix for additional details):

1. Model CHPE capacity supply to Load Zone J as a "curtailable contract" during the Summer season (May – October)
   - Up to 1,250 MW of capacity flows from HQ to Load Zone J through "J6" depending on interface outages and capacity surplus in HQ
2. Model the CHPE line unavailability based on the New York Control Area (NYCA) 10-year class average cable outage rates (i.e., 5.80% for the 2026-2027 IRM study)
3. Model CHPE with a 0 MW Winter line rating and assuming 0 MW capacity supply to Load Zone J during the Winter season (November – April)
4. Set the HQ Chateauguay and Cedars interface to 0 MW during the Winter season (November – April) to limit of emergency assistance to the NYCA
   - HQ Chateauguay and HQ Cedars are represented as a single interface in the IRM model as Hydro Quebec to Load Zone D

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Consideration of CHPE Modeling

- **Discussion of CHPE modeling and HQ winter emergency assistance should continue at the ICS and EC to finalize assumptions in the 2026-2027 IRM Final Base Case (FBC)**
  - Discussions should include consideration of questions raised in response to the NYISO's recommendations presented at the 6/4/2025 ICS meeting
- **Questions were raised regarding 1) consistency of the "curtailable contract" functionality with the market requirements for curtailment priority of capacity supplied by Control Area System Resources, and 2) consistency of the recommended CHPE modeling with existing modeling of the Chateauguay External Capacity Resource Interconnection Service (CRIS) rights and Cedars External-to-ROS Deliverability Rights (EDRs)**
  - Modeling capacity imports related to CHPE as either a "firm contract" or "curtailable contract" is not likely to result in significant availability differences for the 2026-2027 IRM study as HQ is expected to have sufficient excess capacity during potential NYCA loss of load events for the study year
  - Chateauguay and Cedars are modeled as "within NYCA" in the IRM model and are effectively treated as "firm contracts"
    - NYISO is currently assessing the potential impacts of revising the current modeling assumption for HQ imports to treat such imports as "curtailable contracts" within the IRM model
  - Currently, capacity transactions that are associated with Control Area System Resources are given the same priority as native load in the applicable control area and are subject to being curtailed on a "pro-rata" basis
    - Seeking to replicate this construct in the IRM model would introduce additional complexity and may not be feasible to implement in GE Multi-Area Reliability Simulation software program (MARS)
    - The NYISO is currently discussing with its stakeholders potential changes to the requirements for capacity supplied by Control Area System Resources, including a requirement to provide first-priority on such capacity transactions (i.e., essentially treating such capacity akin to a "firm contract")
      - Any approved changes to the current market participation requirements for capacity supplied by Control Area System Resources that result for such ongoing discussions can be considered in a future IRM study cycle
- **Additional questions were raised regarding whether capacity supply to Load Zone J using CHPE could be supported by capacity supplies from the rest of state region that are imported to HQ via Chateauguay**
  - The NYISO's current market participation requirements for capacity supplied by Control Area System Resources would not permit HQ to import capacity from the rest of state region to increase available capacity from HQ
  - In addition, replicating such flow of the capacity would introduce additional complexity in the modeling and may not be compatible with the current MARS construct

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2026–2027 IRM PBC: NYISO Recommendations

- **The NYISO recommends use of the proposed CHPE modeling and HQ emergency assistance assumptions presented at the 6/4/2025 ICS meeting for the 2026-2027 IRM PBC (as summarized on slide 3 of this presentation).**
  - These modeling assumptions are subject to revision/refinement as part of the ongoing discussions to finalize assumptions for the 2026-2027 IRM FBC
- **Consistent with the preference expressed by ICS, the 2026-2027 IRM PBC should represent CHPE as in-service and the Gowanus 1 & 2 and Narrows 2 & 3 generators as out-of-service.**
  - The NYISO recommends that a special sensitivity be conducted with CHPE out-of-service and the Gowanus 2 & 3 and Narrows 1 & 2 barges in-service
  - The NYISO recommends continued monitoring of the status of the CHPE project as part of ongoing discussions to finalize the status assumptions for CHPE and the Gowanus 2 & 3 and Narrows 1 & 2 barges for the 2026-2027 IRM FBC

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Preliminary Observations

- CHPE is effectively a summer-only capacity resource (May – October)
- The "fuel availability constraints" model is applied as a winter-only constraint (December-February)
- As a result, the incorporation of CHPE and the fuel availability constraints in the IRM model indicate the potential for an increase in the winter loss of load expectation (LOLE) and a decrease in the summer LOLE.
- Based on the initial testing during the parametric study process, the NYISO observed that incorporating both CHPE and the fuel availability constraints model, the winter LOLE increased to ~15%, while fuel constraints modeling may independently only introduce ~5% of winter LOLE.
  - Parametric results are still being reviewed at this time and will be provided at the 8/6/2025 ICS meeting.
  - Actual impacts should be reviewed with the Tan45 results of the PBC and associated sensitivity cases
- The NYISO will provide Tan45 results for the 2026-2027 IRM PBC at the 8/6/2025 ICS meeting.

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Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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Appendix:

NYISO Recommended CHPE and HQ Modeling Assumptions for the 2026-2027 IRM PBC

6/4/2025 ICS: NYISO Recommended CHPE and HQ

Emergency Assistance Modeling Assumptions

- Model CHPE capacity supply to Load Zone J as a "curtailable contract" during the Summer season (May – October)
  - Up to 1,250 MW of capacity flows from HQ to Load Zone J through J6 depending on interface outages and capacity surplus in HQ
- Model CHPE line unavailability at 5.80% based on the NYCA 10-year class average cable outage rates
- Model 0 MW Winter CHPE line ratings and 0 MW CHPE capacity supply to Load Zone J in the Winter season (November – April)
- Model 0 MW emergency assistance from HQ to Load Zone D in the Winter season (November – April)

Interface	Positive Line Rating (MW)	Negative Line Rating (MW)	EFORd	Emergency Assistance Allowed
HQ_TO_J6	1,250	0	0%	Y[1]
J6_TO_J (Summer)	1,250	0	5.80%	Y[1]
J6_TO_J (Winter)	0	0	5.80%	N

[1] Emergency assistance (EA) is allowed to flow from HQ into Load Zone J, but in the current recommendation would not as the interface is being fully utilized by the curtailable contract

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