New York ISO
Independent System Operator

Champlain Hudson Power Express (CHPE): 2026-2027 IRM Study Modeling Considerations

Installed Capacity Subcommittee #303

April 29, 2025

Agenda

- Background
- Modeling assumptions (from 2024 Tan45 Whitepaper)
- Prior testing results (from 2024 Tan45 Whitepaper)
- Considerations for the 2026-2027 IRM study
- Recommended next steps

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Background

- CHPE is a 1,250 MW high-voltage direct current (HVDC) transmission project connecting Hydro Quebec to Zone J
- Construction began in November 2022, with publicly available information currently indicating an in-service date of May 2026[1]
- Inclusion of new resources in the installed reserve margin (IRM) base case is based on publicly available information and standardized screening criteria
  - CHPE inclusion may warrant additional considerations due to findings identified in NYISO's 2024 Reliability Needs Assessment (RNA) and Short-Term Assessment of Reliability (STAR) studies
- Assumptions for CHPE modeling for the 2026-2027 IRM study are important to facilitate timely sensitivities and assess impacts to system reliability

[1] https://chpexpress.com/construction-progress/

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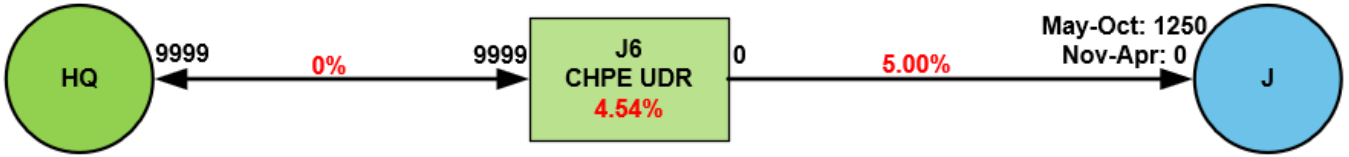
Modeling Assumptions (2024, Tan45 whitepaper)

- The following CHPE modeling assumptions were developed during 2024 Tan45 Whitepaper consistent with assumptions in the NYISO's reliability planning studies

Interface	Positive Line Rating (MW)	Negative Line Rating (MW)	EFORd	Emergency Assistance Available
HQ_TO_J6	9,999	9,999	0%	Y[1]
J6_TO_J (Summer)	1,250	0	5%	Y[1]
J6_TO_J (Winter)	0	0	5%	N

Resource	Zone	Summer Capacity (MW)	Winter Capacity (MW)	EFORd
CHPE UDR	J6[2]	1,250	0	4.54%*

* NERC class average for hydro resources, to be updated with new NERC data



[1] Emergency assistance can be provided across the interface if the Unforced Capacity Deliverability Right (UDR) is on forced outage

[2] Consistent with other UDRs, MW associated with CHPE are added to the supply in Load Zone

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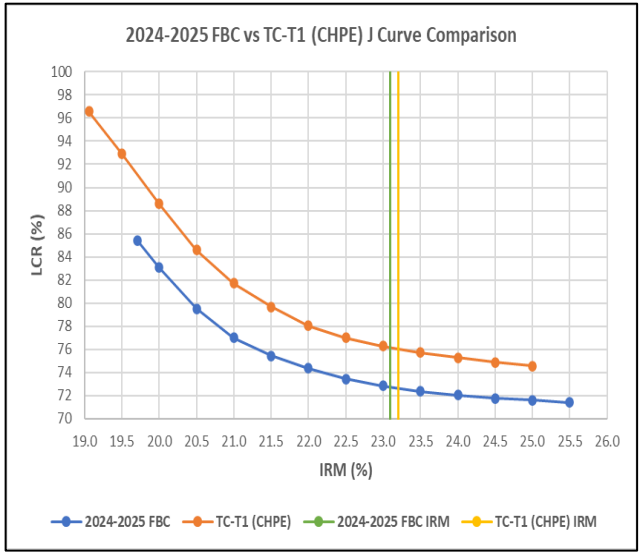
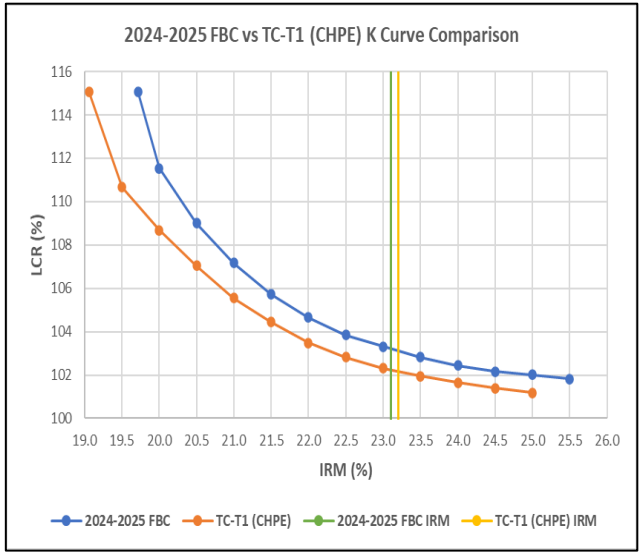
CHPE Testing Results (2024, Tan45 Whitepaper)

Case	IRM	J LCR	K LCR	G-J LCR
2024-2025 FBC	23.1%	72.73%	103.21%	84.58%
TC-T1 (CHPE)	23.2%	76.09%	102.18%	87.04%





- As part of the 2024 Tan45 Whitepaper, a preliminary impact assessment was conducted for CHPE modeling using the 2024-2025 IRM Final Base Case (FBC) producing the following observations:
  - The IRM increased by 0.1% following the inclusion of CHPE
  - The Load Zone J and Load Zone K curves retained the same general shape despite different “low points”.
    - The low point decreases as more ICAP can be removed from upstate than is added with CHPE, partially due to the higher EFORds in upstate vs Load Zone J
  - Load Zone J curve shifted upward and leftward due to higher “as-found” capacity in Load Zone J after the addition of CHPE
  - Load Zone K curve shifted leftward due to increased capacity in Load Zone J, which resulted in the ability to remove more capacity from upstate at the same IRM targets

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2025 New York City Reliability Need

- The NYISO's 2023 Quarter 2 STAR found a Near-Term Reliability Need beginning in the summer 2025 within New York City (Load Zone J), with a deficiency by as much as 446 MW for a duration of nine hours during peak day expected weather conditions when accounting for forecasted economic growth and policy-driven increases in demand[1]
  - The reliability need is based on a deficient transmission security margin
- The transmission security margin is expected to improve in 2026 if the CHPE project enters service on schedule in spring 2026
  - Forecasted reliability margins within New York City may not be sufficient if (i) CHPE experiences a significant delay; (ii) if additional power plants become unavailable; or (iii) demand significantly exceeding forecasts
- Following a solicitation for solutions, the NYISO's Short-Term Reliability Process Report for the 2025 Near-Term Reliability Need[2] identified the temporary and permanent solutions to the identified 2025 New York City need
- The NYISO determined that temporarily retaining the generators on the Gowanus 2 & 3 and Narrows 1 & 2 barges as being necessary to address the need
  - The permanent solution to the Near-Term Reliability Need is the CHPE project
- The NYISO Quarter 1 2025 STAR affirmed that operation of the generators on the Gowanus 2 & 3 and Narrows 1 & 2 barges beyond May 2025 continues to be necessary to address the reliability need identified in the 2023 Quarter 2 STAR[3]
  - Additionally, Con Edison's local analysis identified that until the Gowanus-Greenwood 345/138kV phase angle regulator (PAR) controlled feeder is placed into service (currently scheduled for May 2026), the Narrows and Gowanus generators would be required to remain in service

[1] NYISO 2023 Q2 STAR Report
[2] Short-Term Reliability Process Report: 2025 Near-Term Reliability Need
[3] NYISO 2025 Q1 STAR Report

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Gowanus and Narrows Barges

- As indicated in the 2024 NYISO Load & Capacity Data report (Gold Book), the Gowanus 2 & 3 barges and Narrows 1 & 2 barges are composed of 32 generating units with a combined total of 573.7 MW of summer capability
- 3 of the 32 Gowanus and Narrows generators have recently experienced forced outages and have submitted notices to enter into an ICAP Ineligible Forced Outage (IIFO) state.
  - Gowanus GT 3-6 (15.6 MW), Narrows GT 2-1 (18.8 MW), and Narrows GT 2-7 (18.5 MW)
- The NYISO recommends modeling the Gowanus GT 3-6, Narrows GT 2-1, and Narrows GT 2-7 as out-of-service in the 2026-2027 IRM study
  - These units are currently reflected in the 2026-2027 IRM Study Assumptions Matrix as being modeled out-of-service for the 2026-2027 IRM Preliminary Base Case

[1] 2024 Load and Capacity Report ("Gold Book")
[2] NYISO 2025 Q1 STAR Report

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Considerations for the 2026-2027 IRM Study

- **New generator inclusion criteria to consider modeling resources that are expected to be in-service prior to June 1, 2026**
  - Most recent public information suggests CHPE developers are targeting an in-service date in May 2026
  - As with any large infrastructure project, the NYISO acknowledges that there are a myriad of risks/considerations that could result in potential project delays
  - The NYISO does not recommend adoption of CHPE into 2026-2027 IRM Preliminary Base Case (PBC) at this time
  - The NYISO recommends continued monitoring of the project's status to inform the appropriate modeling assumptions for the 2026-2027 IRM FBC
- **Previous testing results indicate that the addition of CHPE is likely to initially have minor impacts to the IRM study results**
- **Therefore, the CHPE modeling decision may not materially impact results for the 2026-2027 IRM PBC and deferring a final modeling decision provides additional time to monitor the project's status in advance of finalizing assumptions for the 2026-2027 IRM FBC**

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Recommended Next Steps

- Continue monitoring progress of CHPE construction and provide periodic updates to ICS as warranted
- 6/4/2025 ICS: Finalize 2026-2027 IRM PBC modeling assumptions and 2026-2027 IRM study sensitivities
  - Sensitivity for the addition of CHPE on the 2026-2027 IRM PBC is recommended for informational purposes
- Finalize CHPE modeling recommendation for the 2026-2027 IRM study during the development of the FBC

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