

2025 NPCC Québec Interim Review of Resource Adequacy

Prepared by :
Optimisation des bilans énergétiques et fiabilité
(Energy Supply Optimization and Reliability)
Hydro-Québec

Approved by the NPCC RCC on December 1, 2025

This page is intentionally left blank.

1. EXECUTIVE SUMMARY

The Québec Balancing Authority Area submits this assessment of resource adequacy to comply with the Reliability Assessment Program established by the Northeast Power Coordinating Council (NPCC). The guidelines for the review are specified in Appendix D of the NPCC Regional Reliability Reference Directory #1, “*Guidelines for Area Review of Resource Adequacy*”.

This 2025 Interim Review of Resource Adequacy is the second update from the 2023 Comprehensive Review and covers the period from winter 2025-2026 through winter 2027-2028. Changes in assumptions since the 2024 Interim Review, and the impact of these changes on the overall reliability of the Québec electricity system, are highlighted herein.

The internal demand forecast is lower than the demand forecast of the last Interim Review. Available hydro capacity for winter 2025-2026 is reduced due to lower water levels. Resource projections for the final two winters are higher, reflecting increased demand response targets.

Results of this Interim Review show that the loss of load expectation (LOLE) for the Québec Area is below the NPCC reliability criterion of not more than 0.1 days per year for all years of the assessment in the base case scenario and the high load scenario.

Table 1 – Summary of LOLE Results

Winter	LOLE (days/year)	
	Base Case Scenario	High Load Scenario
2025-2026	0.039	0.088
2026-2027	0.016	0.055
2027-2028	0.012	0.053

2. INTRODUCTION

This Interim Review is the second update of the 2023 NPCC Québec Balancing Authority Area Comprehensive Review of Resource Adequacy approved by the Reliability Coordinating Committee (RCC) on December 5th, 2023. This review covers the period from November 2025 through October 2028. The Québec Area is a winter peaking system with the peak load generally occurring in January. Major assumptions of this review are consistent with the Hydro-Québec 2025 Supply Plan update, filed with the Québec Energy Board on October 31st, 2025. The Québec area's level of resource adequacy is calculated using PowerGEM's SERVIM software.

3. ASSUMPTION CHANGES

3.1 Base Case Demand Forecast

The Québec Area peak load forecast over the period of this review is lower than the load forecast presented in the 2024 Interim Review. Table 2 below compares the peak load forecast between the two reviews. The load forecast includes expected capacity exports (including losses) to New England for winter 2025-2026.

Table 2 – Base Case Load Forecast Comparison (MW)

Winter	Base Case Scenario		
	2025 Interim Review	2024 Interim Review	Difference
2025-2026	41,799	41,911	-112
2026-2027	41,238	41,573	-335
2027-2028	41,853	42,069	-216

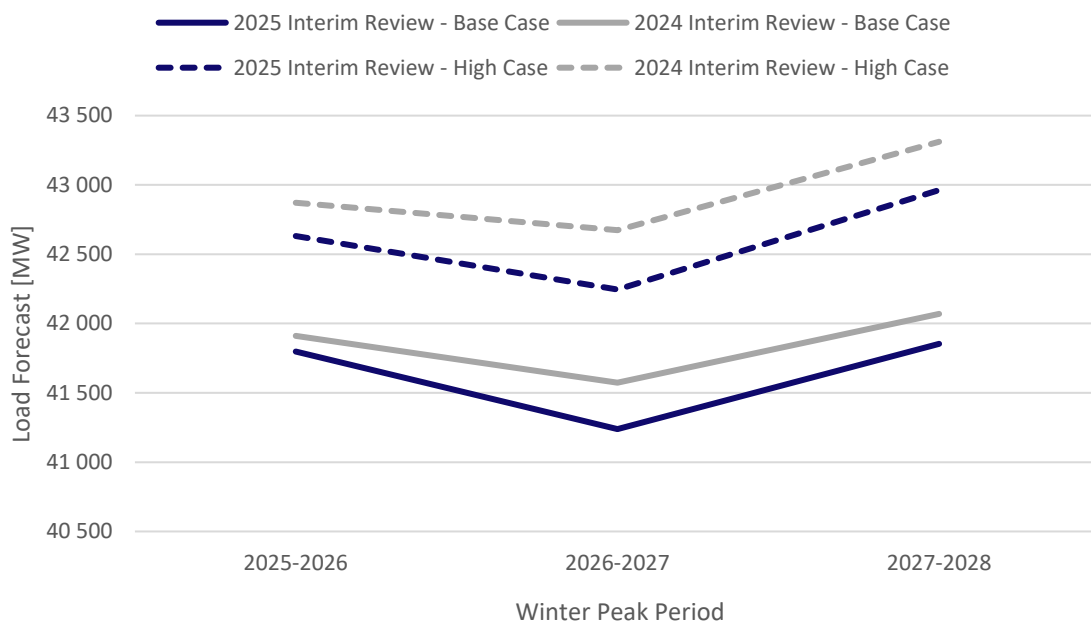
3.2 High Load Forecast

The high load forecast shown in Table 3 reflects a scenario of higher-than-expected economic growth with a 10% probability of being exceeded. When simulating LOLE for the high load scenario, the load forecast uncertainty is limited to weather conditions. The load forecast includes expected capacity exports (including losses) to New England for winter 2025-2026.

Table 3 – High Load Forecast Comparison (MW)

Winter	High Case Scenario		
	2025 Interim Review	2024 Interim Review	Difference
2025-2026	42,631	42,871	-240
2026-2027	42,245	42,673	-428
2027-2028	42,963	43,311	-348

Figure 1 – Comparison of Demand Forecasts



3.3 PLANNED RESOURCES

In this review, planned resources are consistent with the most recent available capacity data updates for the Area. Since the last Interim Review, planned resources have been revised slightly downward for winter 2025-2026 and upward for the rest of the assessment period. The differences in planned resources are explained by:

- A change of available hydro capacity due to lower reservoir levels in the short-term and revised maintenance and refurbishment schedules (-341 MW in 2025-2026, -42 MW in 2026-2027, +59 MW in 2027-2028)
- An update of wind and biomass projects commissioning dates (-17 MW in 2025-2026, -79 MW in 2026-2027, -4 MW in 2027-2028)
- An increase in demand response program targets (+331 MW in 2025-2026, +355 MW in 2026-2027, +417 MW in 2027-2028)

Table 4 – Planned Resources Comparison (MW)

Winter	2025 Interim Review	2024 Interim Review	Difference
2025-2026	48,016	48,043	-27
2026-2027	48,071	47,838	+233
2027-2028	48,967	48,495	+472

4. LOLE RESULTS

4.1 Base Case Demand Scenario

Table 5 shows that the Québec Area meets the NPCC LOLE criterion of no more than 0.1 event-day per year throughout the review period. The LOLE is slightly higher in winter 2025-2026 compared to the 2024 Interim Review, but lower in other years due to larger reserve margins. Table 6 presents the LOLH and LOEE/EUE reliability metrics, which are not tied to any reliability criterion.

Table 5 – Planned Reserve and LOLE Results

Winter	Planned Reserve (MW)		LOLE (event-days/year)	
	2025 Interim Review	2024 Interim Review	2025 Interim Review	2024 Interim Review
2025-2026	6,217	6,132	0.039	0.035
2026-2027	6,833	6,265	0.016	0.037
2027-2028	7,114	6,425	0.012	0.039

Table 6 – Other Reliability Metrics

Winter	LOLH (hours/year)		LOEE/EUE (MWh/year)	
	2025 Interim Review	2024 Interim Review	2025 Interim Review	2024 Interim Review
2025-2026	0.107	0.130	64	140
2026-2027	0.041	0.130	21	136
2027-2028	0.039	0.145	24	150

4.3 High Load Scenario

Results shown in Table 7 indicate that, in the high load scenario, the loss-of-load expectation values are less than 0.1 day/year for the three years of the assessment.

Table 7 – Planned reserve and LOLE - High Load Demand Forecast

Winter	Planned Reserve (MW)		LOLE (event-days/year)	
	2025 Interim Review	2024 Interim Review	2025 Interim Review	2024 Interim Review
2025-2026	5,385	5,172	0.088	0.087
2026-2027	5,826	5,165	0.055	0.103
2027-2028	6,005	5,183	0.053	0.128

5. Conclusion

The results of this review show that the Québec Balancing Authority Area will meet the NPCC resource reliability criterion (LOLE = 0.1 event-days/year) for all the years of the assessment, under the base case and the high load scenarios.