Long-Term Adequacy Report November 2026

Introduction

The following report provides information on the long-term adequacy of the Alberta electric energy market. The report contains metrics that include information on generation projects under development and changes to existing generation assets, a five-year summer and winter reserve margin forecast, a two-year daily supply cushion forecast, and a two-year probabilistic forecast of supply adequacy shortfall.

The Long-Term Adequacy (LTA) Metrics provide an assessment and information that can be used to facilitate further assessments of long-term adequacy. This report is updated quarterly and published in February, May, August, and November. Inquiries on the report can be made at forecast@aeso.ca.

Updates to the LTA metrics calculations and methodologies

As of the November 2026 LTA, the AESO has implemented updates to the LTA metrics calculations and methodologies. For more information on the changes, please see the materials posted on the AESO Engage webpage.

To assist with the transition, the LTA will include the supply cushion, reserve margin, and two-year probability of supply adequacy metrics calculated with both the current and previous methodologies until the February 2028 LTA.

Summary of Installed Capacity and Projects Under Development

Table 1 below summarizes the total capacity of installed generation and generation projects at various stages of development in Alberta. For more information on specific projects, see the Summary of Changes Since Last Report and New Generation and Retirements Metric sections.

Table 1: Summary of capacity of generation and storage projects[1]

Stage	Solar (MW)	Wind (MW)	Storage (MW)	Gas (MW)	Hydro and Other (MW)	Total (MW)
Operational	1,950	5,684	351	14,201	1,376	**23,562**
Met Project Inclusion Criteria	2,985	619	464	937	-	**5,005**
Received Alberta Utilities Commission Approval	2,791	234	1,358	2,812	17	**7,212**
Announced	5,974	459	10,752	18,045	550	**35,780**
Total	13,700	6,996	12,926	35,995	1,943	**71,559**
2-Year Average Alberta Internal Load Forecast				**10,460 MW**		

[1] Total operational capacity in Table 1 may differ from the Current Supply and Demand Report (CSD). This occurs when an in-service generation project is not included on the CSD page as a new or separate asset (e.g., hybrid energy storage)

Reserve Margin Metric

The Reserve Margin Metric has been updated to reflect changes to the Connection Project List and the 2024 Long-Term Outlook Alberta Internal Load forecast (AIL).

Supply Cushion Metric

The Supply Cushion Metric has been updated to reflect the new time period and updated using the 2024 Long-Term Outlook AIL forecast.

Two-Year Probability of Supply Adequacy Shortfall Metric

New values for the metric have been calculated with Expected Unserved Energy (EUE) equaling 0.005 MWh. This value is below the 2,092 MWh threshold. The Two-Year Probability of Supply Adequacy Shortfall Metric has been updated to reflect the new time period and updated using the 2024 Long-Term Outlook AIL forecast.

New Generation and Retirements Metric

The New Generation and Retirements Metric has been updated to reflect generation project changes since the previous LTA.

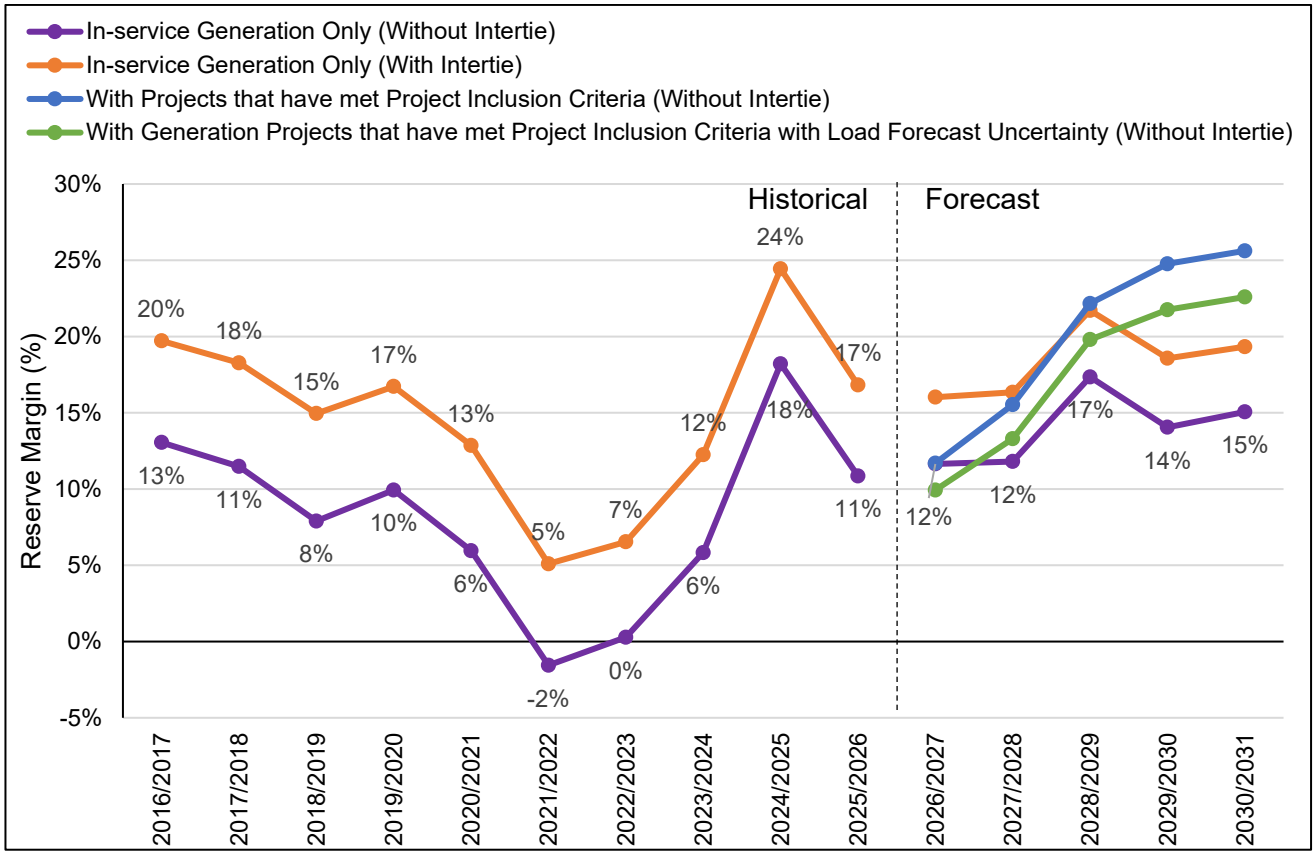
Reserve Margin Metric

The Reserve Margin Metric, shown in Figure 1 and Figure 2, is a comparison of seasonal generation supply and demand in Alberta. It is calculated as expected generation capacity in excess of seasonal peak AIL, expressed as a percentage of seasonal peak AIL.[2] The Reserve Margin Metric is calculated for both winter (October to March) and summer (April to September).

Expected generation is defined as installed and future generation capacity, adjusting for seasonal availability. Expected generation availability is calculated using a rolling ten years of historical data and represents the median availability factor for each generation technology during the tenth percentile supply cushion hours per month.

Four forecast reserve margins are presented, each with different future supply or demand assumptions. Forecast supply additions include generation projects that have met Project Inclusion Criteria in the New Generation Projects and Retirements Metric.[3] Additionally, the metric is calculated with and without intertie capacity since full import capability may not always be available at the time of seasonal peak demand. One reserve margin forecast accounts for positive load forecast uncertainty to provide a sensitivity for higher-than-expected seasonal peak load.

Figure 1: Winter Alberta Internal Load Reserve Margin, 2016/2017 to 2030/2031



[2] Information on the seasonal peak AIL within the reserve margin can be found on the AESO's Forecasting web page.
[3] For a description of the project inclusion criteria please see ID #2018-018T, *Provision of System Access Service and the AESO Connection Process*.

Figure 2: Summer Alberta Internal Load Reserve Margin, 2016 to 2031

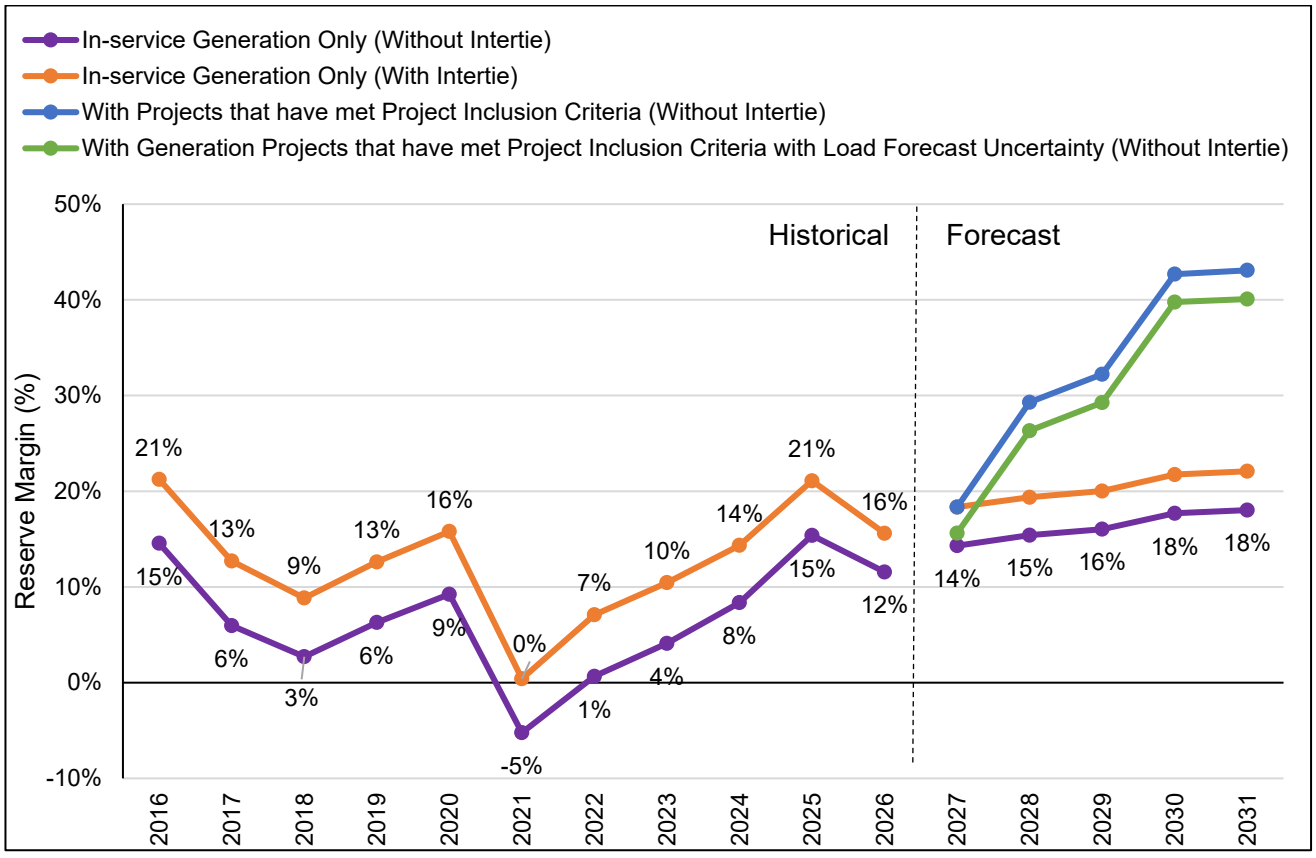
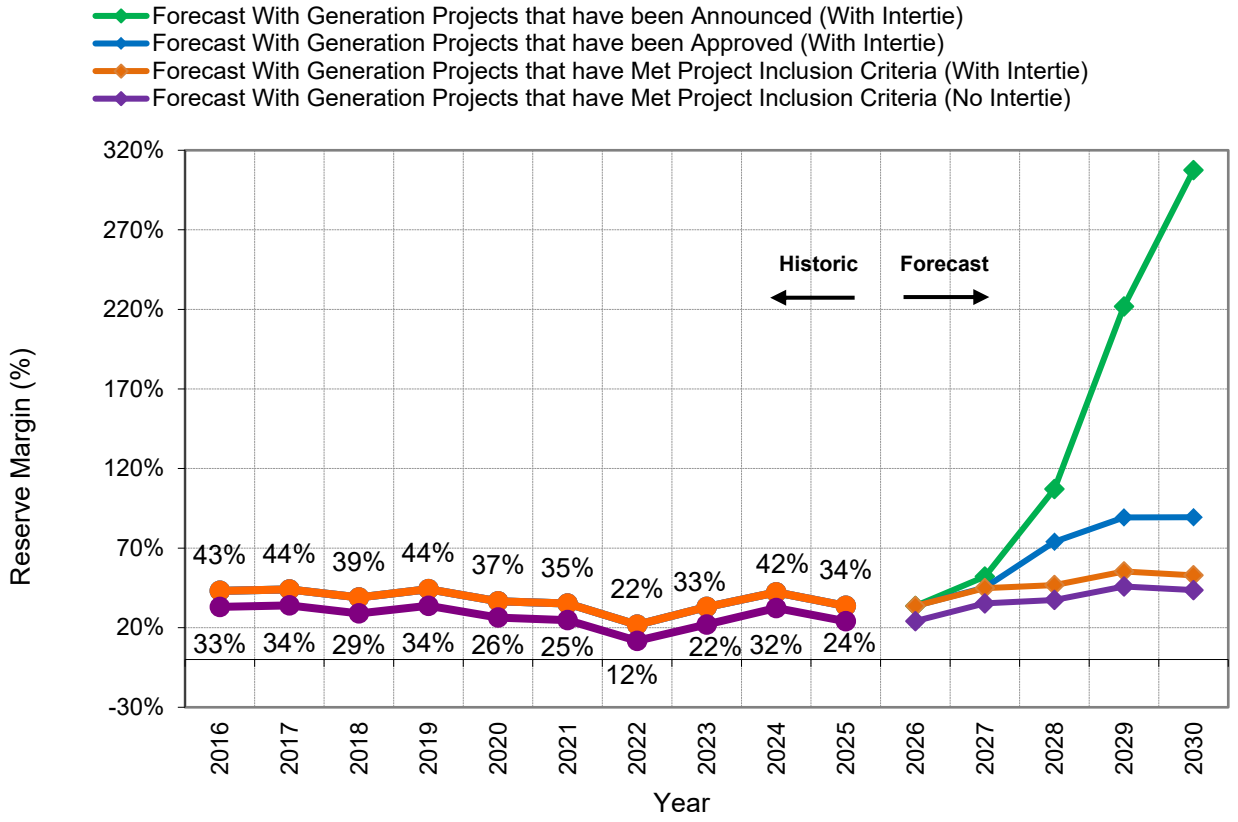


Figure 3: Alberta Interconnected Electric System (AIES) Reserve Margin (Previous Methodology), 2016 – 2030



Supply Cushion Metric

The Supply Cushion Metric, shown in Figure 4, is a comparison of daily generation supply and demand in Alberta. It is calculated as the difference between daily expected available generation, accounting for both forced and planned generation outages, and peak AIL.

Expected generation is defined as installed and future generation capacity, adjusting for monthly availability. Expected generation availability is calculated using a rolling ten years of historical data and represents the median availability factor for each generation technology during the tenth percentile supply cushion hours per month. The Supply Cushion Metric includes only existing generation and projects that have met Project Inclusion Criteria.

A negative or low supply cushion does not mean a supply shortfall will occur, as actual system conditions may differ from forecast assumptions. This may include greater-than-expected available generation, available imports, price-responsive load, demand response, or other operational measures.

Figure 4: Alberta Internal Load Supply Cushion, November 1, 2026, to October 31, 2028

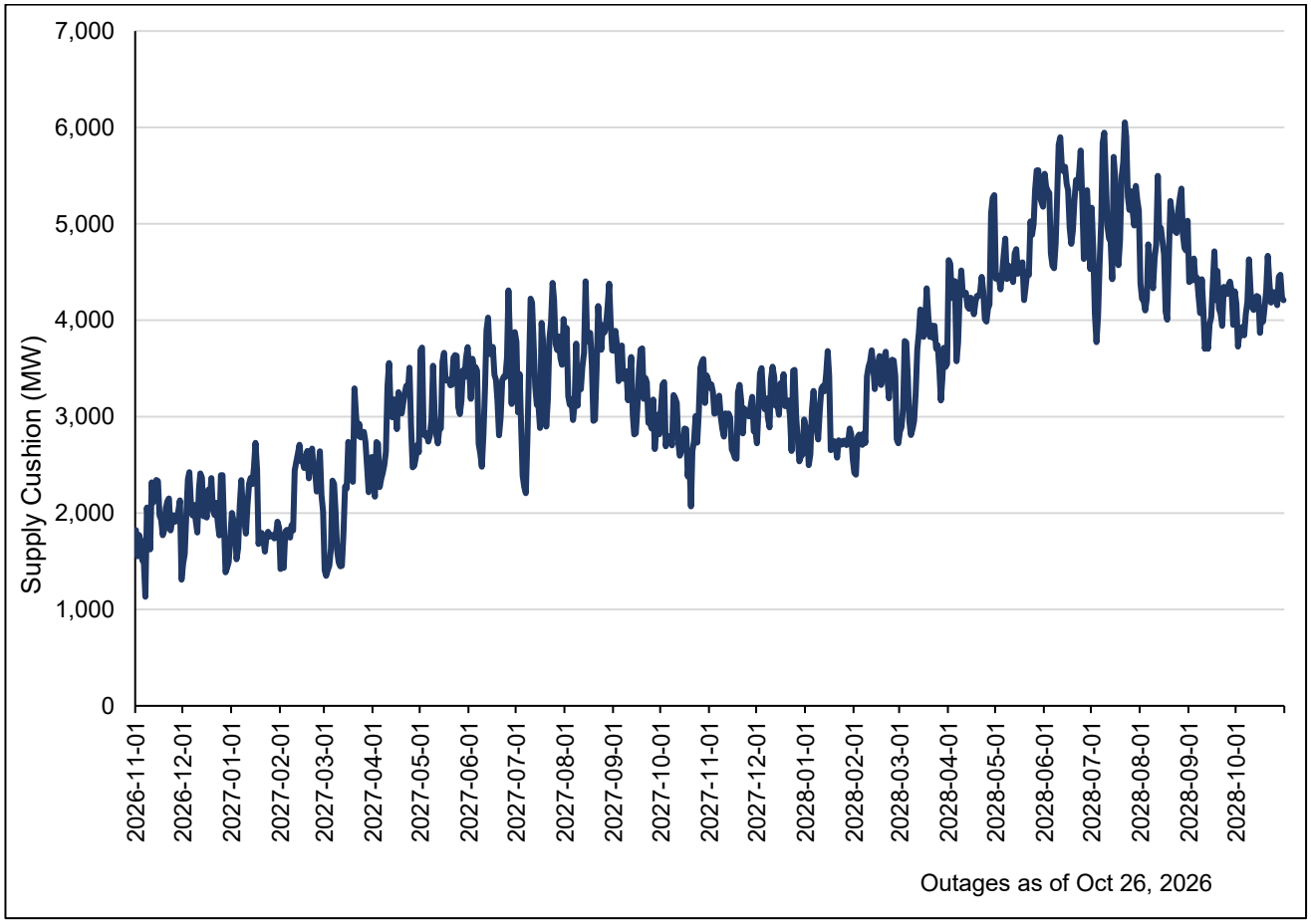


Figure 5: Alberta Internal Load Daily Peak Demand and Available Supply, November 1, 2026, to October 31, 2028

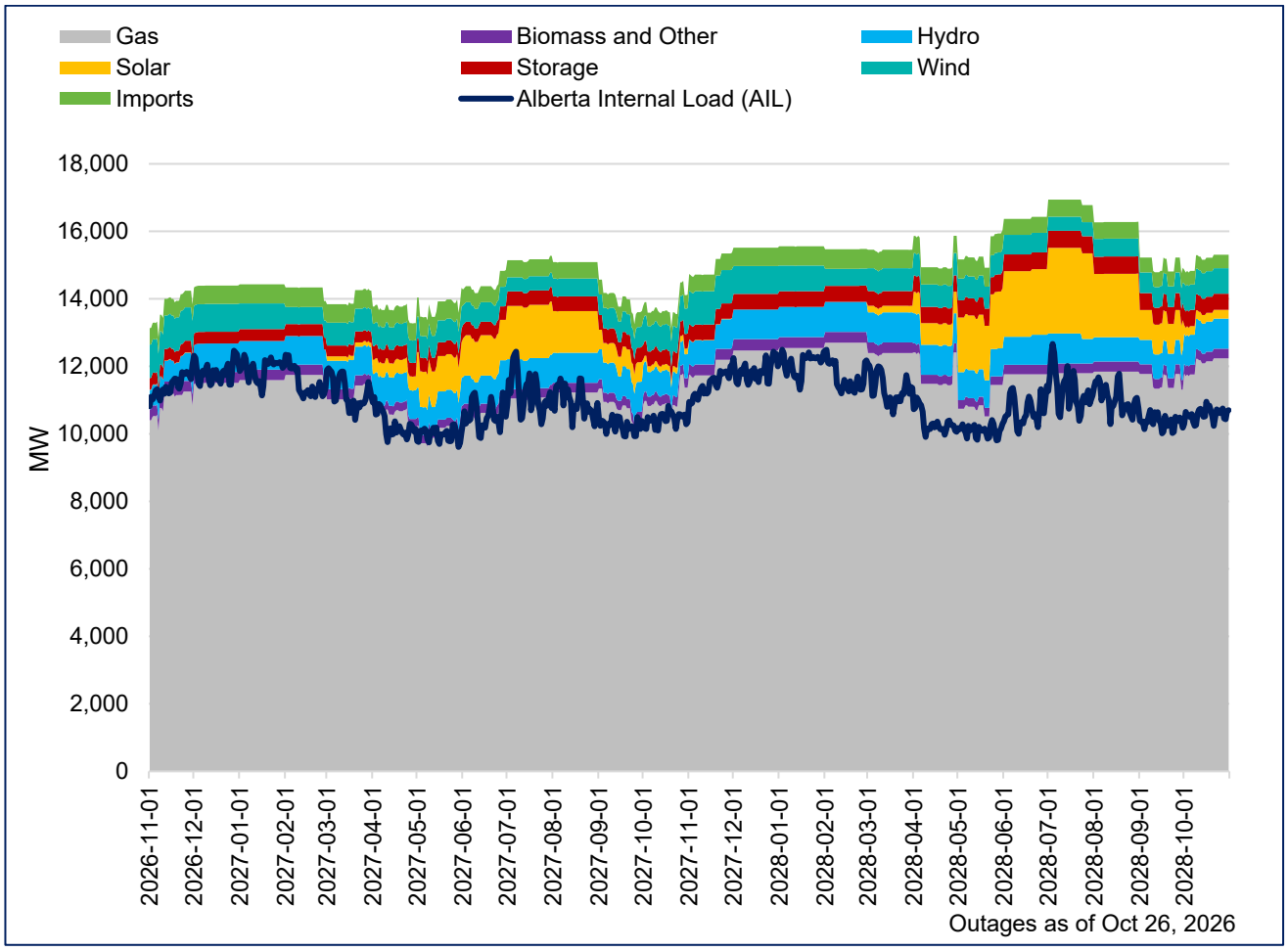
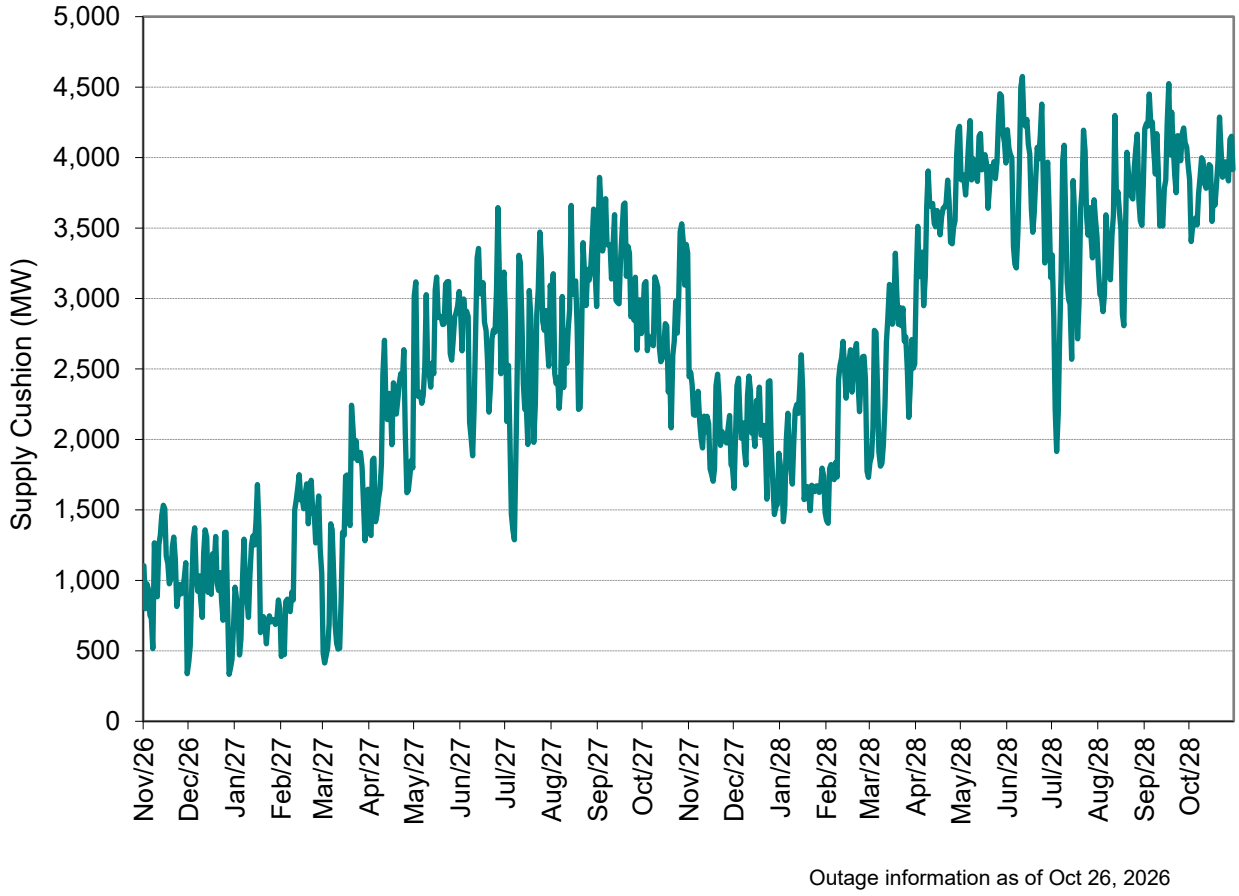
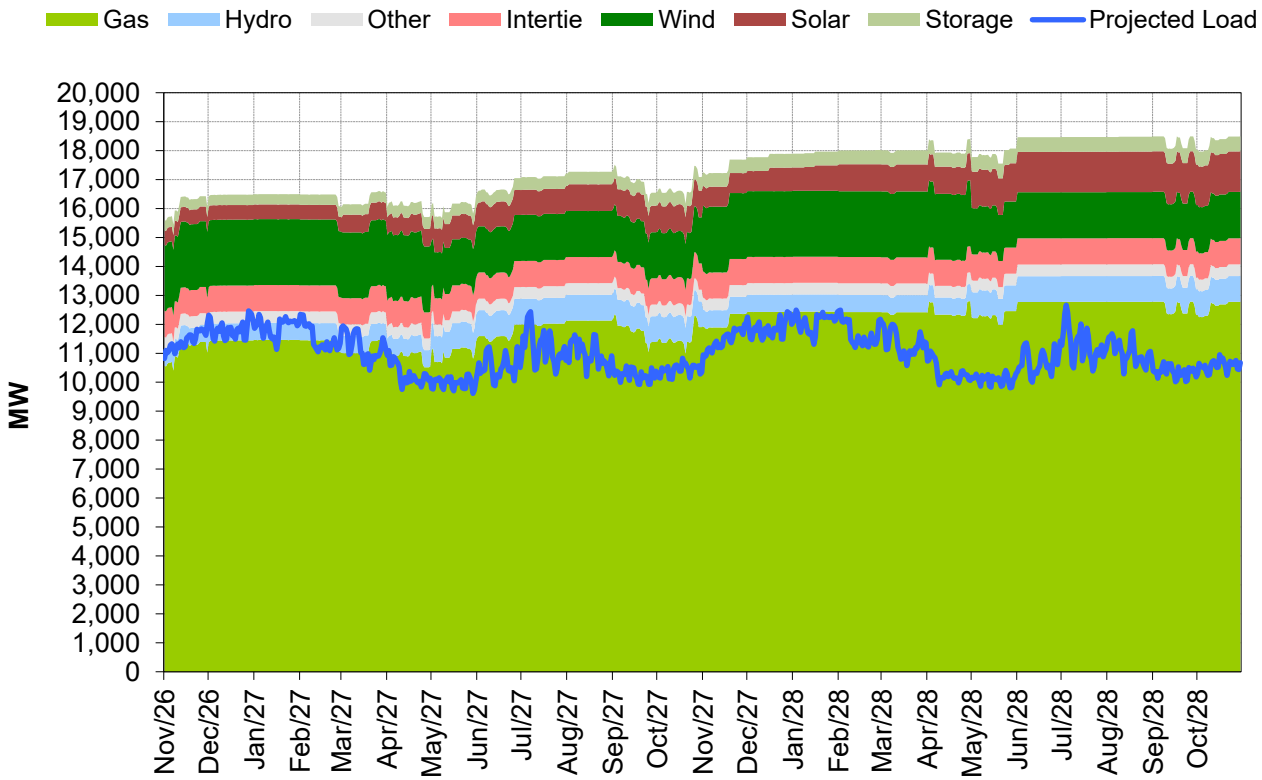


Figure 6: Alberta Internal Load Supply Cushion (Previous Methodology), November 1, 2026, to October 31, 2028



Outage information as of Oct 26, 2026

Figure 7: Alberta Internal Load Daily Peak Demand and Available Supply (Previous Methodology), November 1, 2026, to October 31, 2028



Outage information as of Oct 26, 2026

Two-Year Probability of Supply Adequacy Shortfall Metric

The Two-Year Probability of Supply Adequacy Shortfall Metric, shown in Table 2 and Table 3, is a probabilistic assessment of encountering a supply shortfall over the next two years. It is calculated using the Strategic Energy Risk Valuation Model (SERVM)[4] and incorporates economic load growth uncertainty, historical weather-year profiles, location-specific wind and solar profiles, forced and planned thermal outages, and intertie availability.

Several resource adequacy metrics are reported for the two-year forecast period as well as for each year within the forecast period. These metrics are:

- Expected unserved energy (EUE), which is the amount of unserved load in megawatt-hours (MWh) in the forecast. This is a measure of the magnitude of supply shortfall.
- Loss of Load Hours (LOLH), which is the count of hours with any amount of unserved load in the forecast. This is a measure of the duration of supply shortfall.
- Loss of Load Expectation (LOLE), which is the count of days with any amount of unserved load in the forecast. This is a measure of the frequency of supply shortfall.

Based on extensive consultation with stakeholders, when the forecast EUE exceeds the Long-term Adequacy Threshold in Table 2, consistent with ISO rule 202.6 subsection 5(1), the AESO may take certain actions to bridge the temporary supply adequacy gap while maintaining investor confidence in the market.

Table 2: Two-Year Probability of Supply Adequacy Shortfall, November 1, 2026, to October 31, 2028

Long-term Adequacy Threshold (MWh)	EUE (MWh)	LOLH (Hours)	LOLE (Days)
2,092	0.005	0	0

Table 3: Probability of Supply Adequacy Shortfall per Year, November 1, 2026, to October 31, 2028

Year	EUE (MWh)	LOLH (Hours)	LOLE (Days)
2026	0.016	0.000	0.000
2027	0.000	0.000	0.000
2028	0.000	0.000	0.000

[4] https://power-gem.co/software/servm-resource-adequacy-planning/

Table 4:Two-Year Probability of Supply Adequacy Shortfall (Previous Methodology), November 1, 2026, to October 31, 2028

Worst Shortfall Hour (MW)	# of Hours in Shortfall	Total Energy Not Served (MWh)
0.000	0.00	0.000

New Generation Projects and Retirements Metric

The New Generation Projects and Retirements Metric is a summary of generation at various stages of development in Alberta. In Alberta's deregulated electricity market competitive forces determine the location, magnitude, and timing of new generation additions.

Information on prospective generation additions and retirements provides context for the future market in Alberta. The information is drawn from a variety of public sources and includes new generation, changes to existing generation, and the retirement of generating units. Changes in project in-service dates and regulatory stages occur as projects move forward and/or market conditions change. Current information on connection project in-service dates can be found in the Connection Project List and information on power plant applications can be found at the Alberta Utilities Commission website.

The New Generation and Retirements Metric is available in the datafile posted on the Long-term Adequacy Metrics webpage.

Appendix

Expected generation availability within the Reserve Margin and Supply Cushion metrics is based on a rolling ten years of historical data and calculated using the median availability factor for each generation technology during the tenth percentile supply cushion hours per month (Table 5).

- Availability factors for combined cycle, gas-fired steam, irrigation hydro, large hydro, storage, and simple cycle are calculated using total declared energy (TDE)
- Availability factors for cogeneration, wind, solar, and biomass and other are calculated using hourly generation output
- Availability factor for interties is calculated using available transfer capability (ATC)

Table 5: Monthly availability factors by generation technology

Generation Technology	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Coal	0.98	0.82	0.77	0.77	0.74	0.74	0.78	0.82	0.78	0.74	0.77	0.89
Cogeneration	0.84	0.85	0.80	0.72	0.64	0.66	0.67	0.67	0.63	0.73	0.79	0.82
Combined Cycle	0.90	0.93	0.87	0.75	0.72	0.85	0.86	0.86	0.86	0.83	0.88	0.92
Dual Fuel	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Gas-Fired Steam	0.85	1.00	1.00	0.82	0.82	0.85	0.97	0.99	0.94	0.85	0.85	0.94
Irrigation Hydro	0.08	0.08	0.07	0.12	0.59	0.80	0.86	0.77	0.62	0.11	0.10	0.08
Large Hydro	0.86	0.82	0.83	0.86	0.84	0.91	0.94	0.92	0.74	0.69	0.86	0.89
Simple Cycle	0.79	0.86	0.85	0.79	0.77	0.71	0.80	0.82	0.76	0.76	0.75	0.79
Wind	0.13	0.09	0.12	0.12	0.11	0.10	0.07	0.09	0.11	0.13	0.17	0.15
Solar	0.00	0.00	0.05	0.18	0.45	0.49	0.64	0.47	0.22	0.06	0.00	0.00
Storage	0.98	0.99	0.90	0.99	1.00	0.98	0.99	1.00	0.97	0.93	0.97	0.97
Biomass and Other	0.67	0.65	0.65	0.56	0.53	0.58	0.59	0.61	0.59	0.60	0.67	0.70
Intertie	0.63	0.64	0.61	0.57	0.62	0.52	0.56	0.54	0.49	0.44	0.54	0.60