

September 27, 2024

RE: AESO's Strategic Reserve Proposal

SUMMARY

Market participants were first notified of the AESO's plans to contract for strategic reserves (SR) on August 28, 2024, when the AESO posted its presentation on SR to the AESO webpage.¹ Then, on September 5, 2024, at the end of a day-long session related to the Restructured Energy Market (REM), the AESO held a discussion about "Strategic Reserves to Address Supply Adequacy" and informed stakeholders about:

- the AESO's 5-plus-year supply adequacy risk assessment, including impacts of potential coal-to-gas (CTG) retirements;
- its decision to proceed with design of an SR; and
- its implementation of an SR.²

While the concept of an SR is new to Alberta's electricity market, this does not necessarily mean that it has no merit. However, it is the MSA's view that, based on the evidence presented by the AESO at its stakeholder session and elsewhere, the SR proposal is without merit and should be abandoned.

SUPPLY ADEQUACY ASSESSMENT OF THE COAL-TO-GAS RETIREMENT RISK

On slide 3 of the AESO's presentation,³ it indicated that there are eight CTG units with a combined capacity of 3,078 MW that are currently in service in Alberta. It stated that the "economics of some of these assets are expected to become strained over the coming years as new supply [enters] the market," that it "expects owners are contemplating near-term retirement of select assets," and that "market uncertainty may limit the market's ability to respond to shifting supply and demand fundamentals with new supply." The AESO provided no analysis to support these speculative expectations and suppositions.

On slide 4 of the AESO's presentation,⁴ it went on to state that "the combination of supply and demand uncertainties over the next five to seven years highlights the importance of considering

¹ AESO, [Strategic Reserves to Address Supply Adequacy](#).

² Ibid., slide 2.

³ Ibid., slide 3.

⁴ Ibid., slide 4.

strategic reserves as an insurance policy over this transitional period in Alberta's energy market.” Based on this claim, the AESO reached the “strategic implication” that the “identified risk requires proactive decisions now to ensure supply adequacy in five to seven years from now,” again without any supporting analysis. The AESO then proffered its conclusion that “given uncertainties in the future supply/demand balance, the AESO needs to develop a strategy to mitigate the risk of insufficient supply adequacy in five to seven years.”

With the greatest possible respect, written comments on two presentation slides with no supporting analysis hardly constitute a “supply adequacy risk assessment,”⁵ much less one that would merit a decision to propose fundamental change to Alberta's electricity market design.

It is important to be clear: the AESO deciding to create an SR to prevent inefficient generation assets from retiring because they cannot cover their forward-looking costs, particularly in the absence of a documented reliability issue, would constitute a fundamental change to Alberta's market design. Alberta's existing fair, efficient, and openly competitive generation market does not only induce efficient investment in new capacity; it also incentivizes existing inefficient generation capacity to retire. The way it does this is by providing insufficient revenue to inefficient generation assets to cover their forward-looking costs.

The AESO's proposal does not contemplate any adverse effects from the creation of an SR. No consideration is given to the potential that dissuading the exit of inefficient capacity may dissuade entrance of new, efficient capacity by forward-looking investors. This would harm the market and undermines investor confidence: if the AESO will intervene now for no demonstrated reason, why would anyone believe that it will not do so again? Clear evidence of a near-term problem, which was not provided, is essential to avoid outcomes of this sort.

THERE ARE MANY OUTSTANDING ISSUES

There is insufficient information to assess the AESO's proposal

The AESO has not defined the SR product. It is unclear to the MSA how this product will be defined, how this product will be used, and exactly what this product is being procured to remedy.

Outstanding questions

- What will be the performance requirements? What will be the availability/capacity requirements?
- If the AESO is to proceed with the creation of SR, how will contracts be designed? Will the development of contracts be transparent? Will the contracts, terms, and payments be made public?

⁵ Ibid., slide 2.

- How will the AESO ensure that contracted outcomes will not result in compensation greater than what would have been experienced in the market?
- How will compensation for units be determined?
- Why has the AESO proposed the use of long-term contracts without discussing the possibility of employing open competition and competitive procurements to acquire SR?

The AESO's own forecasts do not support SR

The AESO asserts that SR are necessary to address “the potential for supply adequacy risk in the five-to-seven-year timeframe arising from CTG retirements.” However, the AESO's own forecasts show minimal, if any, supply adequacy risk. The minimal risk to supply adequacy does not justify procurement of SR, given the significant impact contracts for SR will have on market outcomes, as discussed below.

The AESO is obligated to update its plan for the transmission system every two years, including forecast load and generation for the next 20 years.⁶ The AESO fulfills this obligation, in part, through its Long-Term Outlook (LTO), the most recent of which the AESO published in May 2024. In that report, the AESO stated that:

The Alberta generation supply forecast for the Reference Case, High Electrification and Alternative Decarbonization scenarios is expected to meet the resource adequacy standards in the base years of 2028, 2030, 2033, 2035 and 2043, indicating low to negligible risk.⁷

In other words, as of May 2024, the AESO's view was that there is “low to negligible” risk of any supply adequacy issues for the next 10 years. The 2024 LTO also indicates improvement from the AESO's 2021 LTO.⁸ While the 2024 LTO suggests some supply adequacy risk in 2038, the AESO notes that its reliability results for that year “warrant cautious interpretation.”⁹ It is not apparent why, for the purposes of its long-term transmission planning, the AESO forecasts “low or negligible” risk to supply adequacy, but anticipates sufficient “potential for a supply adequacy risk in the five-to-seven-year timeframe”¹⁰ to justify SR.

In addition to the LTO, the AESO also provides its Long-term Adequacy (LTA) report on a quarterly basis.¹¹ Each LTA report includes the AESO's calculation of the “two-year probability of

⁶ *Transmission Regulation*, section 10(1).

⁷ AESO, [AESO 2024 Long-Term Outlook](#), page 13.

⁸ AESO, [AESO 2021 Long-Term Outlook](#).

⁹ AESO, [AESO 2024 Long-Term Outlook](#), page 13.

¹⁰ AESO, [Strategic Reserves to Address Supply Adequacy](#), slide 3.

¹¹ AESO, [Long-Term Adequacy Metrics](#).

supply adequacy shortfall,” which estimates the amount of load (in MWh) that will go unsupplied in the next two years. Only when

this unserved energy exceeds **2,054 MWh** (consistent with ISO rule 202.6, Section 5(1)), the Alberta Electric System Operator may take certain actions to bridge the temporary supply adequacy gap while maintaining investor confidence in the market.¹²

As of August 1, 2024, the AESO’s two-year probability of supply adequacy shortfall calculation was as follows:

Worst Shortfall Hour (MW)	# of Hours in Shortfall	Total Energy Not Served (MWh)
0	0	0

The same calculation in each of the LTA reports the AESO published in 2024 yielded the same result.¹³

The AESO describes SR as a “bridging mechanism” to provide time for a restructured energy market to provide “insurance until new dispatchable capacity enters the market,” as a means to “rebuild investor confidence by providing adequacy insurance until new market driven supply is operational.”¹⁴ However, in respect of the AESO’s own LTA report, the threshold for even temporary action to address a supply adequacy gap has not been met.

Based on the AESO’s 2024 LTO and most recent LTA report, there is no risk to supply adequacy in the five-to-seven-year period for which the AESO asserts SR are necessary. If the AESO has information indicating that the 2024 LTO or any of its LTA reports are inaccurate, the MSA urges the AESO to publish such information at its next available opportunity. More rigorous assessment should be done on this matter, and the analysis and required assumptions should be clearly communicated.

Outstanding questions

- Can the AESO provide analysis to support its concerns regarding the impact of asset retirement on supply adequacy in the next 5 to 7 years?

Modelling asset retirements is complex and uncertain

The retirement of CTG assets will undoubtedly increase the pool price, and therefore, the economics of a retirement decision for the first CTG asset will differ from the decision for subsequent units. The MSA is unclear how or if the AESO has taken this basic market implication

¹² AESO, [Long-Term Adequacy Report – August 2024](#), page 22.

¹³ AESO, [Long-Term Adequacy Report – May 2024](#), page 23.

¹⁴ AESO, [Strategic Reserves to Address Supply Adequacy](#), slide 5.

into consideration in its assessment and would be supportive of increased transparency regarding the assumptions made by the AESO when conducting its modelling.

The AESO asserts that SR are required to address supply adequacy risk arising from retirement of CTG generating units. However, this risk appears to be based only on the statement that “[t]he AESO expects owners are contemplating near-term retirement of select assets.”¹⁵ The AESO has not provided any analysis demonstrating that any CTGs are currently unprofitable or are expected to become unprofitable, whether in the near, medium, or long term. Given the AESO’s 2024 LTO forecast of “low or negligible” risk to supply adequacy until at least 2038, the expected risk of retirements appears to be based on speculation.

While the LTO forecasts CTG retirements in 2025, it suggests a wide range from 0 MW to 1,196 MW. The majority of CTG retirements are forecasted by the AESO to occur in 2038.¹⁶ The MSA has not been advised that any of the CTG units are expected to be retired. The AESO’s reporting in the 2024 LTA does not indicate the announced retirements of any generation projects.¹⁷ It also states that over 5,000 MW of capacity of generation and storage projects are currently under construction, with an additional 5,000 MW having received AUC approval as seen in the figures below.

Table 4: Generation Projects that have Announced to be Retired/Derated

Sponsor(s)	Project Name	Fuel	Unit Capacity*	Date	Status
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Table 5: Summary of installed capacity of generation and storage projects

Stage	Solar (MW)	Wind (MW)	Storage (MW)	Gas (MW)	Hydro and Other (MW)	Total (MW)
Operational	1,658	4,748	190	13,128	1,338	21,062
Under construction	2,414	1,307	148	1,268	0	5,137
Received AUC approval	3,096	522	461	895	0	4,974
Announced	11,700	4,248	5,982	3,243	0	25,173
Total	18,868	10,825	6,781	18,533	1,338	56,345
2-Year Average Alberta Internal Load (AIL) Forecast	10,268					

¹⁵ AESO, [Strategic Reserves to Address Supply Adequacy](#), slide 3.

¹⁶ AESO, [AESO 2024 Long-Term Outlook](#).

¹⁷ AESO, [Long-Term Adequacy Report – August 2024](#), page 22.

Outstanding questions

- Has the AESO performed analysis on how sequential retirements will impact the pool price and thus the retirement decisions of subsequent coal-to-gas assets?
- The economics of the initial coal-to-gas asset retiring will differ greatly from the seventh or eighth retiring coal-to-gas asset. How has the AESO taken this into account?

The AESO’s Energy Emergency Alert forecasting does not support procurement of SR

The AESO has stated that SR will be committed to minimum stable generation when an Energy Emergency Alert (EEA) event is forecasted to minimize market distortions.¹⁸ However, its ability to forecast these events has proven neither accurate nor consistent.

The AESO releases the Market Supply Cushion (MSC) Report, which provides a short-term forecast of supply cushion conditions in Alberta. This report ranks the expected supply cushion for the upcoming hours using a scale from 0 to 6, as seen below. It is updated every five minutes for the current day and hourly for the next six days. The rankings are based on forecasts from various adequacy indicators, including available capability from all source assets (excluding solar, wind, and imports), Alberta's internal load, behind-the-fence generation, net interchange, wind and solar output, contingency reserve requirements, and constrained-down generation.

- 0 = 0 MW or less of market supply cushion
- 1 = above 0 up to 200 MW of market supply cushion
- 2 = above 200 up to 400 MW of market supply cushion
- 3 = above 400 up to 600 MW of market supply cushion
- 4 = above 600 up to 800 MW of market supply cushion
- 5 = above 800 up to 1000 MW of market supply cushion
- 6 = above 1000 MW of market supply cushion

Table 1: EEA and MSC Forecasting (2024)

			MSC Forecast				
EEA Start Date	EEA End Date	Duration of Event	24 hrs	12 hrs	6 hrs	3 hrs	1 hr
1/12/2024 16:15	1/12/2024 21:12	4.9	1	2	2	2	0
1/13/2024 15:30	1/13/2024 20:40	5.2	6	5	3	3	2
1/14/2024 15:42	1/14/2024 22:12	6.5	4	1	1	0	1
1/15/2024 8:00	1/15/2024 9:05	1.1	2	1	0	0	0
4/3/2024 19:26	4/3/2024 20:40	1.2	6	6	6	4	0
4/5/2024 6:49	4/5/2024 11:00	4.2	4	4	1	1	2
7/8/2024 20:25	7/8/2024 21:34	1.1	6	6	4	4	3

Table 1 presents a summary of the seven EEA events that have occurred thus far this year, comparing them to the AESO’s MSC forecasts 24, 12, 6, 3, and 1 hour(s) prior. A MSC ranking of 0 indicates an EEA event.

¹⁸ AESO, [Strategic Reserves to Address Supply Adequacy](#), slide 6.

Of the seven EEA events, only two were predicted more than an hour in advance. Furthermore, five of the seven EEA events were projected to have a supply cushion of at least 600–800 MW 24 hours before they occurred. In April and July, the MSC forecast predicted a supply cushion of 600–800 MW until three hours prior to the EEA events.

Additionally, there appears to be no correlation between the severity of an EEA event and the accuracy of the AESO's forecasts. One might expect that larger, longer EEA events would be forecasted more reliably than smaller, shorter ones, but this has not been the case. For instance, the most accurate MSC forecast occurred on January 15, six hours before a 1.1-hour event, while on January 13, a supply cushion of 400–600 MW was predicted three hours ahead of a 5.2-hour EEA event.

The AESO has not demonstrated a reliable ability to forecast EEA events, raising questions about the supply adequacy benefits of the SR and concerns about market distortions.

Outstanding questions

- How can the AESO minimize market distortions by committing SR assets to MSG if it cannot accurately forecast EEA events?

Procurement of SR is contrary to the fair, efficient, and openly competitive operation of the Alberta electricity market

In its recommendation to the Minister of Affordability and Utilities to develop a Restructured Energy Market, the AESO correctly stated that:

Long-term contracting is a significant intervention in the market and is likely to dampen investments in controllable supply not supported by contracts, which will reduce the market's ability to maintain long-term supply adequacy. The introduction of these contracts is therefore a “no turning back” decision and should not be taken lightly.¹⁹

The use of long-term contracts for controllable supply will distort the energy market price signal and alter long-run investment signals for the Alberta electricity market.

SR may induce threats of early retirement

Proposing the use of SR in anticipation of retirements may give assets an incentive to threaten early exit, in anticipation of obtaining long-term contracts. This implies additional risk by further removing capacity from the energy market and raises the spectre of incremental, persisting contracting for supply adequacy.

¹⁹ AESO, [Alberta's Restructured Energy Market: AESO Recommendation to the Minister of Affordability and Utilities](#), page 31.

SR will blunt investment signals

The AESO's LTA reports rely on market signals. The purpose of the metrics in these reports is to signal supply adequacy issues that may arise within a two-year time frame, which will in turn "give generation developers every opportunity to respond to market signals and build new generation, resulting in the market providing adequacy for the system on its own, without additional market interventions."²⁰

However, based on the stated purpose of the LTA reports, if supply adequacy concerns are detected in the report, they will be implicitly captured in price signals and incent investment in generation required to meet supply adequacy needs.

If the AESO no longer believes this is the purpose of the LTA reports, it should explicitly state this.

Outstanding questions

- How will the AESO determine which assets are eligible for contracts and what merit will be used to determine how these contracts will be awarded?
- The AESO has stated that ISO rules will be required to define the product, specify operational requirements, and minimize market impact. What procedure will be used to formalize these rules?

During the REM stakeholder information session, the use of SR with long-term contracts was advertised as a mechanism to "provide time needed for the REM to rebuild investor confidence."²¹ The MSA does not agree with the AESO's statement, and is concerned that the use of long-term contracts will induce early retirement and hinder investor confidence in their ability to recoup costs in the energy market of the future without the use of capacity contracts.

The MSA has profound, foundational concerns with the AESO's SR proposal and respectfully suggests that the AESO abandon this initiative.

Andrew Wilkins, Director, Market Assessment, would be happy to make himself available to address any questions that the AESO may have regarding the concerns noted above.

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²⁰ AESO, [Long Term Adequacy Metrics: Threshold and Threshold Actions Recommendation Paper](#), page 5.

²¹ AESO, [Strategic Reserves to Address Supply Adequacy](#), slide 5.