

The cover features a large, dark blue triangle on the left side, which contains a complex, abstract graphic of glowing blue and orange lines and nodes, resembling a network or data visualization. The right side of the cover is a light blue background with a subtle, diagonal line pattern.

AESO 2025 Business Plan and Budget Proposal

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Executive Summary

The following 2025 Business Plan and Budget Proposal identifies the AESO's strategic initiatives and the budget required to ensure their successful implementation.

We are focused on three key areas:

- urgently stabilizing and enhancing grid reliability,
- successfully implementing market and transmission policy reforms, and
- proactively preparing for the continually evolving future of electricity.

While these elements are all crucial, our transformation and future-proofing efforts must not compromise the reliability of the grid. Reliability is not just a priority but the foundation that supports our economy, ensures the safety of Albertans, and enables us to carry out market reforms in a stable environment.

The work and investment of the AESO today will enable Alberta's long-term vision and growth. We must advance the most significant restructuring of Alberta's electricity market in its history, implement major changes to Alberta's transmission policy and continue to reliably operate the grid. The budget reflects a careful consideration of the investments, decisions, and resources to ensure the AESO is able to advance these initiatives and ensure their timely and effective implementation.

Reliability

Ensuring reliability on the Alberta Interconnected Electric System (AIES) is paramount and urgent. The AESO continues to explore tools to address the high-priority issues identified in the *2023 Reliability Requirements Roadmap*.

Real-time operational challenges have increased due to the rapid pace of renewables generation connecting to the grid, including the appearance of multiple congestion areas that require continuous mitigation. Additionally, outage planning, outage management and forced outage response in weaker areas of the system are becoming more complex.

Dynamic studies are needed for more complex congestion and restoration, along with identification and impact analysis of load electrification. An adequate supply mix must be available to provide energy and reliability to meet demands. Reliability attribute products continue to be evaluated.

Restructured Energy Market

Design for the Restructured Energy Market (REM) is underway and will continue to involve significant industry, government and agency consultation and coordination to arrive at final details. In addition to significant internal resource requirements, consultants are supporting facilitation, quantitative modelling, and design.

System and Tools

Final market design details will determine requirements for systems and tools, as well as the degree of implementation effort involved. The restructured energy market is a significant change in complexity. This will require change management efforts to ensure preparedness across the province.

The AESO has consulted with other ISOs and vendors regarding the implementation costs of Market Management and Energy Settlement Systems in deriving the project budget. Insights into resources required to manage and maintain the systems and added operational complexity were also considered in the forecast of resource needs through 2027.

Other Impacts

The allocation of resources to energy market activities result in an increase to the trading charge. This is also driven by changes in the classification of projects for International Financial Reporting Standards (IFRS), as well as the increased budget required to deliver on the strategic initiatives outlined herein.

There is significant uncertainty in the actual costs to deliver these initiatives given the early stages of their design and development. The AESO is committed to managing and reducing its costs at any opportunity and strives for efficiency. The 2025 budget represents a transparent estimate of costs considering the critical need to deliver a restructured energy market that creates investor certainty, reliability, and affordability for Albertans.

The draft budget, incorporating the focus areas and priorities, was presented to the Board for its initial input and discussion in September. The AESO then provided the proposed budget for to stakeholder in early October. Questions were addressed at stakeholder session on November 5th.

Summary of the Aggregated Forecast and Budgeted Costs for 2025 (\$ million)

	2025 Forecast/ Budget	2024 Forecast/ Budget ¹	\$ Variance	% Variance
Transmission Operating Costs	2,410.9	2,479.4	(68.5)	(3)
Other Industry Costs	27.6	25.0	2.6	10
General and Administrative	163.5	132.9 ²	30.6	23
Borrowing Costs	1.6	0.7	0.9	129
Amortization and Depreciation	26.0	25.3	0.7	3
Project Expenditures	109.3	51.6	57.7	112

Differences are due to rounding

¹ Amounts are from the 2024 Budget Development Process (BDP)

² Amended General and Administrative Budget as approved by the AESO Board on October 8, 2024, to address REM-related costs not anticipated during the BDP process

Background

Stakeholder Engagement

The AESO believes earlier involvement and engagement amongst the Board, the Executive and stakeholders is essential, including communicating clear expectations on the process and ultimate budget outcome. The AESO gains stakeholder insight on areas of focus early in the process and facilitates a meaningful exchange with stakeholders to influence the type, timing and priority of work the AESO undertakes.

Stakeholder insights on these matters assist the AESO with the allocation of its staff resources and the determination of consulting and project expenses. The AESO budget, including what is allocated for its workforce, has typically not been subject to significant swings on a year-to-year basis. As such, the AESO budget has remained largely consistent year over year as it works to meet its legislated mandate unless significant industry initiatives are undertaken.

In May, we initiated the Budget Development Process (BDP) for the upcoming 2025 three-year budget cycle³ with one-on-one meetings with a subset of the AESO Board, Executive and the senior level executive(s) of 17 organizations. Attending organizations ranged from generators (new and incumbent), renewables, utilities, transmission and distribution companies, to consumer groups and industry associations. Strategic discussions were had on what they believed the AESO should be focusing on in the upcoming years. Stakeholders acknowledged the AESO has made solid progress on priorities noted in 2024, and appreciated the opportunity to share their perspectives on what they believe is of strategic importance to our industry for 2025 and the years to come.

Below are the three areas of critical importance, outlined by stakeholders at the June meetings with the AESO Board:

Reliability during accelerated load growth – Industry understands that the pace of transformation continues at an enhanced speed. As such, the discussions were overall supportive of creating more transmission in the province to increase capacity to meet load growth over time, avoid curtailment due to congestion and enhance system stability to offset the current supply mix. The potential for significant load growth introduced by data centres and the electrification of the oil and gas industry were top of mind. Stakeholders encouraged explicit consideration of locational signals to address both the challenges and opportunities posed by data centres and encouraged collaborated forecasting efforts to provide the most reliable forecasts of load.

Additional topics of discussion included challenges and opportunities around advancing storage capacity, as well as Carbon Capture, Utilization and Storage (CCUS) and other technologies.

Finally, stakeholders emphasized the importance of working together and communicating effectively as an industry to proactively prepare for and mitigate the operational risks of wildfires.

³ 2025 budget to be approved by the AESO Board, with forecasted costs for 2026 and 2027 included as information for stakeholders

Policy, market design and investor certainty – Stakeholders are aware and accept that there is substantial change coming, especially around the Transmission and Clean Electricity Regulations. Most stakeholders conveyed explicit concerns around the high degree of policy uncertainty impeding investment decisions in the province. Ongoing transparency, clear objectives and updates on AESO activities, clarity for impact on cost to consumers and stability in the market, and stakeholder education for all changes will be paramount as we navigate the transformation ahead.

Supply chain challenges – Stakeholders expressed concerns regarding increasing procurement challenges with multi-year queue lengths, stressing the ability to source equipment and deliver on projects in a timely manner. There was interest in finding collaborative solutions that aligned with connection timing.

As the sector continues to transform at a rapid pace, stakeholders recognize the significant and complex issues facing the industry and support the need for the AESO to be appropriately resourced to effectively deliver on its mandate and make the necessary changes to ensure continued reliability and affordability as we move to a decarbonized future.

The Transformation

The AESO has a leadership role in enabling the transformation while maintaining system reliability, acting in the public's interest, and providing guidance to policymakers and industry. The work ahead of us is critical and timing is urgent. The pace of change continues to accelerate. We must be adequately prepared with the required expertise and resources to effectively deliver the AESO's priorities. Proper execution and planning today will have far-reaching cost and reliability benefits in the future.

Restructured Energy Market

The AESO is enhancing Alberta's reliability, reforming the Electricity Framework and implementing new policies to achieve reliability, affordability, and decarbonization, while establishing a foundation that ensures investor confidence in Alberta's electricity market.

The government has directed the AESO to advance the Restructured Energy Market (REM) technical design, with the following decisions:

- move forward with the introduction of a mandatory day-ahead market;
- allow the price of energy to be determined by the strategic offers of market participants, while using market mitigation to limit the potential for excessive exercise of market power;
- maintain a province-wide uniform price for electricity;
- implement security constrained economic dispatch and shorter settlement intervals; and
- review the price floor and ceiling as well as the co-optimization of energy and ancillary services.

On a go-forward basis government has decided to:

- move away from the current zero-congestion transmission planning standard to an optimally planned transmission planning standard, and
- allocate new transmission infrastructure costs and all ancillary services costs based on cost causation principles.

Financial Highlights

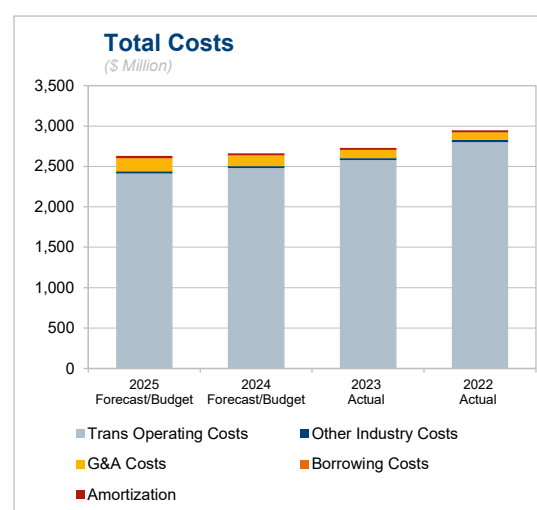
As part of this *2025 Business Plan and Budget Proposal*, the AESO is presenting the budgets and forecasts which are required to meet the needs of the organization to deliver on its commitments and to demonstrate that financial management continues to be a focus.

The financial information is presented in the following four sections:

- **Section I** – Transmission Operating and Other Industry Costs
- **Section II** – General and Administrative, Borrowing Costs and Amortization and Depreciation
- **Section III** – Project Costs
- **Section IV** – Revenue

Additional information is included in Appendices A through D.

(\$ million)



	2025 Forecast/ Budget	2024 Forecast /Budget ⁴	\$ Variance	% Variance	2023 Actual	2022 Actual
Transmission Operating Costs	2,410.9	2,479.4	(68.5)	(3)	2,580.5	2,801.8
Other Industry Costs	27.6	25.0	2.6	10	22.2	24.7
General and Administrative	163.5	132.9 ⁵	30.6	23	102.8	97.9
Borrowing Costs ⁶	1.6	0.7	0.9	129	0.6	0.6
Amortization and Depreciation	26.0	25.3	0.7	3	23.0	24.1
Project Expenditures	109.3	51.6	57.7	112	24.7	23.2

Differences are due to rounding

⁴ Amounts are from the 2024 BDP

⁵ Amended General and Administrative Budget as approved by the AESO Board on October 8, 2024, to address REM-related costs not anticipated during the BDP process

Section I – Transmission Operating and Other Industry Costs

Transmission Operating Costs

The following table provides a summary of transmission operating costs.

Transmission Operating Costs (\$ million)

	2025 Forecast	2024 Approved Forecast ⁷	\$ Variance	% Variance	2023 Actual	2022 Actual
Wires Costs	2,021.7	1,937.2	84.5	4	1885.7	1,933.8
Transmission Line Losses	136.9	178.3	(41.4)	(23)	285.4	332.7
Operating Reserves ⁸	191.6	308.4	(116.8)	(38)	370.0	494.1
Other Ancillary Services Costs	60.7	55.5	5.2	9	39.4	41.2
Transmission Operating Costs	2,410.9	2,479.4	(68.5)	(3)	2,580.8	2,801.8

Differences are due to rounding

Additional information on the 2025 forecast methodology and descriptions of the cost categories is provided in Appendix B (Transmission Operating Cost Definitions).

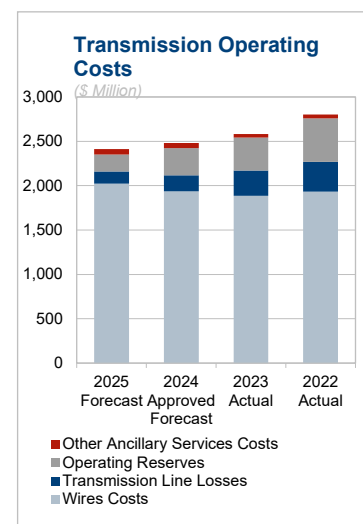
Wires Costs

Wires costs represent the amounts paid primarily to transmission facility owners (TFOs) in accordance with their Alberta Utilities Commission (AUC) approved tariffs. They are not controllable costs of the AESO, nor are they approved by the AESO Board.

In the 2023 approved forecast and prior years, wires costs included long-term contracts related to Invitation to Bid on Credit (IBOC) and Location Based Credit Standing Offer (LBC SO) programs. These programs were initiated as incentives for generation to locate closer to major load centres and provide a non-wires solution to transmission wires issues in Alberta. These contracts have since expired and are no longer included in the 2025 forecast.

The 2025 forecast is based on TFO tariffs of \$2,021.7 million (2024 - \$1,937.2 million), which have been approved or applied-for as of August 2024 with a majority of the forecast reflecting:

- i. filed 2025 tariffs;
- ii. filed 2025 negotiated settlements; or
- iii. AUC approvals for 2024 and 2025 tariffs.



⁷ Amounts are from the 2024 BDP

⁸ Includes both contracted and conscripted operating reserves

Transmission Line Losses

The 2025 forecast for transmission line losses is 23 per cent lower than the 2024 approved forecast. This decrease is primarily attributable to a decrease in the 2025 forecasted average pool price of \$54 per megawatt hour (MWh), which is 35 per cent lower than the 2024 forecast of \$83 per MWh. The lower anticipated average pool price can be primarily attributed to the increased generation capacity on the grid as large thermal assets entered commercial operations and increased renewable generation has come online throughout 2024, with 2025 observing the full year impact.

The 2025 transmission line losses volumes forecast is 2,526 gigawatt hours, which is 22 per cent higher than the 2024 forecast of 2,077 gigawatt hours. This increase in losses volumes follows the continued historical trends observed since 2018, which are the result of an increase in renewable generation located far away from load centers, which tend to have higher loss factors. In addition, losses are positively correlated with load growth, therefore the increase in losses volumes forecast for 2025 is consistent with the one per cent forecast increase in Alberta internal load.

Operating Reserves

The 2025 forecast for operating reserves costs is 38 per cent lower than the 2024 approved forecast. The cost of operating reserves is impacted by actual volumes, hourly pool prices, and operating reserve prices.

The 2025 operating reserves volumes forecast is 6,601 gigawatt hours, which is three per cent higher than the 2024 approved forecast of 6,431 gigawatt hours.

The average pool price used for the 2025 forecast is \$54 per MWh, which is 35 per cent lower than the 2024 forecast of \$83 per MWh.

Lower operating reserves costs are impacted by active operating reserves prices, derived from pool price and a premium or discount to pool price. During periods of low pool prices, the discounts offered reflect the offer strategies associated with the lower pool prices, which are low or small discounts. In periods of higher pool prices, the discounts will typically increase to correspond with the higher pool prices. While the price of operating reserves procured is indexed to the pool price, changes to the average pool price do not result in proportional changes to the operating reserves costs. The premiums and discounts used in the 2025 forecast follow the established forecast methodology.

Other Ancillary Services Costs

The AESO procures other ancillary services for the secure and reliable operation of the AIES. These services are procured through a competitive procurement process where possible, or in such instances where procurement may not be feasible, through bilateral negotiations.

Other Ancillary Services Costs (\$ million)

	2025 Forecast	2024 Approved Forecast ⁹	\$ Variance	% Variance	2023 Actual	2022 Actual
Frequency Response & Balancing Services ¹⁰	34.6	42.1	(7.5)	(18)	23.1	30.7
Transmission Constraint Rebalancing	16.0	4.0	12.0	300	5.4	1.8
Transmission Must-Run—Contracted and Conscripted	4.3	3.7	0.6	16	5.4	3.3
Reliability Services	2.9	2.9	-	-	2.9	2.9
Black Start	2.9	2.8	0.1	4	2.6	2.5
Other Ancillary Services Costs	60.7	55.5	5.2	9	39.4	41.2

Differences are due to rounding

The 2025 forecast for other ancillary services costs is 9 per cent higher than the 2024 approved forecast primarily due to the following:

- Frequency response and balancing services for 2025 are forecast to be 18 per cent lower than the 2024 approved forecast, primarily driven by a low import forecast combined with the transition of the LSS program at the end of 2024 to the new FFR program.
- The voluntary load curtailment protocol (VLCP) program was terminated in early 2024 and is no longer included in the 2025 forecast and beyond. The 2025 forecast for transmission constraint rebalancing (TCR) is 300 per cent higher than the 2024 approved forecast. This is primarily due to increased congestion on the grid resulting from renewables energization and is consistent with the increase in costs experienced in 2024.

The 2025 forecast for transmission must-run (TMR) is 16 per cent higher than the 2024 approved forecast, primarily due to an increase in forecast events requiring both contracted and conscripted TMR.

Other Industry Costs

Other industry costs are those not under the direct control of the AESO or those that could not have been forecast prior to the budget year in which they arose. They include mandatory administration and membership fees, regulatory proceeding costs, other regulatory process costs, unforeseen litigation costs, and non-compliance penalties.

Mandatory administration and membership fees relate to the annual administration fee for the AUC, as well as the AESO's share of Western Electricity Coordinating Council (WECC), North

⁹ Amounts are from the 2024 BDP

¹⁰ Includes Load Shed Service ("LSS"), Fast Frequency Response ("FFR"), Voluntary Load Curtailment Program ("VLCP") in 2024 and prior years, Transferred Frequency Response ("TFR"), and Other

America Electric Reliability Corporation (NERC), and Western Power Pool (WPP) membership fees.

Regulatory process costs are associated with the AESO's involvement in AUC proceedings and costs incurred to respond to specific agency-related directions or recommendations that are beyond the routine operations of the AESO. This does not include application preparation costs.

Other Industry Costs (\$ million)

	2025 Forecast	2024 Approved Forecast ¹¹	\$ Variance	% Variance	2023 Actual	2022 Actual
AUC Fees – Transmission	11.7	11.2	0.5	4	10.2	8.9
AUC Fees – Energy Market	9.4	8.4	1.0	12	7.5	6.8
WECC/NERC/WPP ¹² Fees	3.7	3.2	0.5	16	2.8	2.4
Regulatory Process Costs	2.7	2.2	0.5	23	1.8	6.5
Other Industry Costs	27.6	25.0	2.6	10	22.2	24.7

Differences are due to rounding

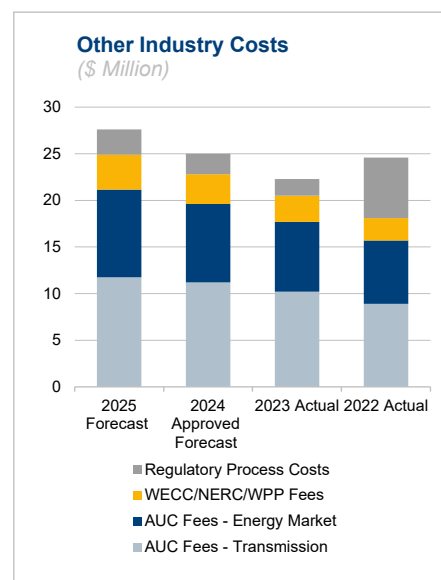
AUC Fees

The AESO is required to pay annual administration fees to the AUC. The AUC recovers its operating and capital costs through an administration fee imposed on the natural gas and electricity market participants that it has jurisdiction over or any person to whom the AUC provides services.

The AUC uses a cost assessment model to allocate its costs to the various classes and categories of utilities and persons, and to determine the amount of the administration fee. Two classes of fees are paid to the AUC – one related to transmission operations and the other to energy market operations.

Industry Membership Fees

The AESO is an active member of the Western Electricity Coordinating Council (WECC), the organization that promotes bulk power system reliability and security in the Western Interconnection. Its members coordinate the day-to-day interconnected system operations and long-range planning required to provide reliable electric service in the WECC region that extends from Canada to Mexico and includes the provinces of Alberta and British Columbia, the northern portion of Baja California, Mexico, and all or portions of the 14 Western states in between.



¹¹ Amounts are from the 2024 BDP

¹² Western Electricity Coordinating Council/North American Electric Reliability Corporation/Western Power Pool

The AESO is also a member of the North American Electric Reliability Corporation (NERC) and supports their organization for the development of reliability standards for the North American electricity grid.

In addition, the AESO is a member of the Western Power Pool (WPP), which operates to achieve maximum benefits of coordinated operations for its member organizations. Participation in the WPP allows the AESO to take advantage of their Reserve Sharing Group, thereby reducing Alberta's reserve requirements at times.

Regulatory Process Costs

Costs associated with the AESO's involvement in an AUC proceeding, excluding application preparation costs, are included in the cost category Regulatory Process Costs. These proceedings become a high priority relative to other business initiatives that were identified in the business planning process, and the level of AESO resources required to address these matters brought before the AUC is difficult to determine in advance of a budget year. To ensure ongoing focus and achievement of the planned business initiatives and to avoid constraints on the general and administrative budget management, these costs appear as other industry costs. Intervener costs that received AUC cost order approval are also included in this category.

The 2025 forecast for regulatory process costs is 23 per cent higher than the 2024 approved forecast primarily due to an increase in the estimated number of complex regulatory proceedings and litigation matters that are expected to be heard before the AUC and the Courts.

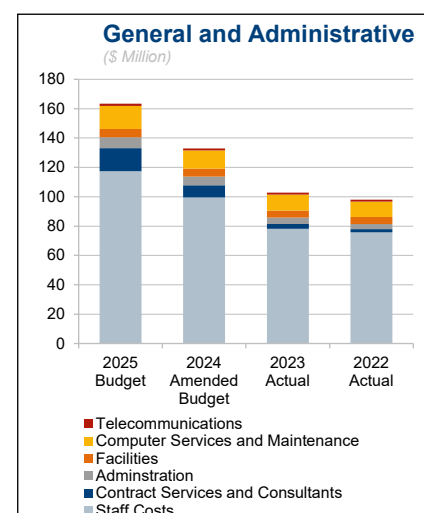
Section II – General and Administrative, Borrowing Costs and Amortization and Depreciation

2025 Budgets

The following table provides a summary of the general and administrative costs budgeted for 2025. AESO Management believes these costs appropriately represent the resources required to successfully deliver on the strategic focus and priorities outlined in earlier sections of this Proposal, while continuing to provide the safe, reliable, and affordable operation of the electric system in Alberta.

The AESO is committed to leadership for the transformation of the province's electricity sector and will continue to efficiently and effectively deliver on its strategic focus areas to create value for stakeholders and the province as a whole.

In preparing the budget proposal, AESO Management considered the information currently available to assess the impact on both the strategic plan and budget requirements. As time progresses, new information or events may require a change to the AESO's focus areas that if material in nature, may require further stakeholder and AESO Board consideration on the impact. Appendix D highlights the circumstances and processes that would be undertaken in these circumstances.



General and Administrative Costs

General and Administrative Costs (\$ million)

	2025 Budget	2024 Amended Budget ¹³	\$ Variance	% Variance	2023 Actual	2022 Actual
Staff Costs	117.5	99.5	18.0	18	78.1	75.7
Contract Services and Consultants	15.6	8.4	7.2	86	3.3	2.3
Administration	7.5	5.9	1.6	27	4.4	3.5
Facilities	5.6	5.4	0.2	4	4.8	4.7
Computer Services and Maintenance	15.6	12.3	3.3	27	10.9	10.4
Telecommunications	1.6	1.4	0.2	14	1.3	1.3
General and Administrative Costs	163.5	132.9	30.6	23	102.8	97.9

Differences are due to rounding

The AESO's 2025 proposed general and administrative budget represents a 23 per cent increase from the 2024 amended budget and reflects the anticipated resources required to continue to deliver on its capacity as a leader in enabling the accelerated transformation of the electricity industry in Alberta. In 2025, this includes addressing near-term reliability concerns as well as advancing the REM technical design.

Current International Financial Reporting Standards and interpretations are driving the reclassification of some implementation project costs that would have historically been recorded as capital costs to general and administrative. The AESO's project costs budget for 2025 includes \$26.8 million in anticipated costs to be allocated to general and administrative costs and are discussed further in *Section III – Project Costs*. These costs are subject to variability and are therefore excluded from the general and administrative costs presented in the table above but will be recovered in a similar manner.

¹³ Amended General and Administrative Budget as approved by the AESO Board on October 8, 2024, to address REM-related costs not anticipated during the BDP process

Each of the general and administrative costs categories above are discussed in more detail in the sections that follow.

Significant variances from the 2024 approved budget are as follows:

(\$ million)

2024 Amended Budget	\$ 132.9
Additional resources to deliver on strategic work	12.0
Impact of market, inflation, timing, and turnover on staff costs	6.1
Increase in contract services and consultants	7.2
Small scale generation administration	0.2
Insurance renewal savings	(0.2)
Increase in administration costs	1.6
Increase in facilities costs (operating costs, utilities, taxes, etc.)	0.2
Increase in IT maintenance and telecommunications costs	3.5
2025 Proposed Budget	\$ 163.5
Anticipated project costs allocated to general and administrative costs	26.8
Forecasted connection fee revenue offset	(5.6)
2025 Proposed Budget Impact	\$184.7

Differences are due to rounding

Staff Costs

The AESO maintains market-based compensation for staff which incorporates a benefits plan, pension plan and a performance-based variable pay program.

Budgeted staff costs for 2025 are 18 per cent higher than the 2024 amended budget. This increase reflects the annualized 2025 impact of \$4.7 million in additional unbudgeted resource needs for 2024 and a proposed \$6.6 million in additional resource needs for 2025. It also includes market adjustments for 2024 and proposed adjustments for 2025 of \$1.8 million and \$2.6 million respectively, as well as increases to other employee benefits costs, including variable pay, of \$2.4 million. These additional resources, market adjustments and other employee benefits costs are paramount to the AESO's ability to retain and attract the talent it requires to continue to deliver on its strategic work in 2025.

Staff costs are based on several key budget variables or factors:

Base pay adjustments – The AESO continues to review the general economic indicators and salary survey information to determine the impact on employee compensation. The proposed market adjustment for 2025 is five per cent, which also takes into consideration adjustments to employee compensation for inversions, compressions and promotions.

Variable pay program – The AESO's variable pay program is based on an assessment of corporate and individual performance, as aligned to corporate objectives and key results.

Benefit costs – In addition to their salary, each employee participates in the organization’s comprehensive benefit plan. This represents costs such as health and dental coverage, a defined contribution pension plan, a post-retirement benefit plan and federal payroll taxes. These costs are presented as a percentage of salary costs to determine a “benefits load factor”. While health and dental benefits costs continue to experience notable increases, the overall costs are budgeted at 28 per cent of staff salaries for 2025, a slight decrease from the 2024 budgeted costs of 29 per cent.

Connection fee revenue of \$5.6 million has been forecasted for 2025. This revenue will offset, in large part, budgeted staff costs to provide connection study services and appropriately manage the growing connections queue, as well as other associated but less material budgeted general and administrative costs.

Contract Services and Consultants

(\$ million)

	2025 Budget	2024 Approved Budget ¹⁴	\$ Variance	% Variance	2023 Actual	2022 Actual
Consulting	13.0	5.9	7.1	120	2.7	2.1
Legal	2.5	2.4	0.1	4	0.5	0.2
Audit	0.1	0.1	-	-	0.1	0.1
Contract Services and Consultants	15.6	8.4	7.2	86	3.3	2.3

Differences are due to rounding

Contract services and consultants’ costs typically vary from year to year based on requirements to meet business initiatives or strategic focus areas.

Budgeted contract services and consultants’ costs for 2025 are 86 per cent higher than the 2024 approved budget. This increase is reflective of the significant work ahead of the AESO in its capacity to lead the transformation of the electricity industry, including the advancement of the REM design, which requires specific skill sets that may not exist within the AESO.

Consulting – The AESO hires consultants to supplement staff resources for two general purposes. The first is when it is not practical to permanently retain staff with specific skill sets that may only be required for certain initiatives. In these circumstances, consultants are utilized to either complete the work or assist in training AESO staff. The second purpose is to hire consultants to address workload peaks to maintain seamless operations and continual progression on strategic focus areas.

Legal – Legal counsel is retained to support general business operations by supplementing in-house legal resources and to provide expertise on regulatory filings and more complex commercial matters. Costs associated with the AESO’s involvement in an AUC proceeding to hear objections and complaints to ISO rules or any regulatory

¹⁴ Amounts are from the 2024 BDP

application are included in the cost category of other industry costs - regulatory process costs, as opposed to the general and administrative cost category.

Audit – The professional services of third parties are used to conduct audits or reviews on AESO processes, systems, or reporting.

In 2025, \$10.0 million of contract services and consultants' costs are budgeted to primarily support strategic initiatives, most notably the REM. The connection fee revenue forecasted for 2025 will, in part, serve to offset the \$0.8 million in contract services and consultants' costs budgeted to provide connection study services.

Administration

(\$ million)

	2025 Budget	2024 Approved Budget ¹⁵	\$ Variance	% Variance	2023 Actual	2022 Actual
Travel and Training	2.5	1.4	1.1	79	1.0	0.5
Insurance	1.4	1.7	(0.3)	(18)	1.5	1.4
AESO Board Fees	0.6	0.6	-	-	0.5	0.4
Other Administration	3.0	2.2	0.8	36	1.4	1.2
Administration	7.5	5.9	1.6	27	4.4	3.5

Differences are due to rounding

Administration costs primarily relate to insurance, office costs, corporate subscriptions, general business travel, staff recruiting and training, and associated travel, corporate meetings and related meals, including costs related to stakeholder consultation sessions.

Budgeted administration costs for 2025 are 27 per cent higher than the 2024 approved budget. The increase is primarily associated with travel, training, meals and stakeholder consultation costs that support the progression of the AESO's strategic initiatives, including the REM.

Travel and Training – The travel and training category covers costs incurred for general business travel, staff training and associated travel, corporate meetings, and related meals, including costs related to stakeholder consultation sessions.

Insurance – The *Electric Utilities Act* (EUA) provides limited statutory protection for the business risks of the AESO organization, directors, officers, and staff. To ensure business risks are properly insured, the AESO carries insurance for exposures not covered by the EUA, specifically for direct damages resulting from negligence. The AESO has statutory protection for indirect damages, which would typically be the costliest damages that would occur for business interruption and lost revenue.

AESO Board Member Fees – The AESO is governed by the AESO Board whose members are appointed by the Government of Alberta. While the number of Board

¹⁵ Amounts are from the 2024 BDP

members can vary from time to time, there can be no more than nine members, with their compensation based on a retainer fee and additional fees based on their Board committee involvement and time spent on corporate matters.

Other Administration Costs – This category includes corporate subscriptions, memberships and professional membership fees, general office costs, corporate relations and recruiting.

Facilities

Facilities costs are associated with rent and operating costs for the AESO's three office locations:

- i) the main offices in downtown Calgary which are leased through long-term lease arrangements;
- ii) the AESO Operations Complex (AOC), which includes the System Coordination Centre (SCC) and additional office space, all of which is owned and operated by the AESO; and
- iii) additional space for the AESO's Back-Up Coordination Centre to accommodate redundant computer systems to support seamless operating performance in the event of a disruption to the operations at the SCC.

To accommodate staff and contract resources, the AESO has secured 90,201 square feet of newly leased office space for a 10-year term commencing January 1, 2025, with an additional 23,900 square feet commencing April 1, 2025. Due to their long-term nature, these leases are classified as right-of-use assets and corresponding right-of-use liabilities in accordance with IFRS 16. Amortization of the right-of-use assets is captured as amortization of intangible assets, with interest related to the time value of money captured as borrowing costs. Short-term and immaterial leases remain classified as rent.

Budgeted facilities costs for 2025 are 4 per cent higher than the 2024 approved budget. The increase is primarily associated with market driven maintenance costs for owned facilities and operating costs for leased facilities observed in the first half of 2024, which are expected to continue throughout 2025.

Computer Services and Maintenance

On an annual basis, the AESO invests in software applications and systems to support the business and IT infrastructure needs, which then require ongoing maintenance and licence agreements to support the high availability requirements of these systems. The AESO operates with a managed services model¹⁶ for IT infrastructure operating support (e.g., network, database, and middleware platforms).

Budgeted costs for 2025 are 27 per cent higher than the 2024 approved budget. The increase is driven by several factors, including:

- increased software, licensing and data storage costs;
- the movement of capital costs to general and administrative as software tools are commissioned and placed into service; and
- inflationary and foreign exchange impacts observed in 2024, which are expected to continue into 2025.

The increase in wind and solar facilities in the province has also led to the procurement of an additional wind forecasting provider for 2025.

Telecommunications

The AESO incurs costs for network systems and telecommunications to support general business operations and, to a much larger extent, to support real-time grid and market operations. The strategy for developing and maintaining the telecommunication infrastructure is based upon the requirement for high availability, which necessitates redundancies of services and equipment.

Budgeted costs for 2025 are 14 per cent higher than the 2024 approved budget. The increase is primarily driven by the increase in staff resources and related mobility costs.

Borrowing Costs and Amortization and Depreciation

(\$ million)

	2025 Budget	2024 Approved Budget ¹⁷	\$ Variance	% Variance	2023 Actual	2022 Actual
Borrowing Costs	1.6	0.7	0.9	129	0.6	0.6
Amortization and Depreciation	26.0	25.3	0.7	3	23.0	24.1

Differences are due to rounding

¹⁶ A managed services model is where the AESO transfers the day-to-day management and operations of a support function (not the strategic management) to a third-party provider. With this support approach the AESO is able to leverage available technical resources and tools to provide more effective support for its critical processes. The managed services approach facilitates resource efficiencies and improves reliability.

¹⁷ Amounts are from the 2024 BDP

Borrowing Costs

Borrowing Costs are incurred primarily because of interest charges on bank debt held throughout the year and the associated borrowing rate. Bank debt is issued to fund intangible and capital asset purchases, prepayments of future expenses and working capital deficiencies due to timing differences in the collection of revenues and payment of expenses. Borrowing costs are also incurred through the amortization of right-of-use liabilities in accordance with IFRS 16.

Budgeted costs for 2025 are 129 per cent higher than the 2024 approved budget, reflecting an increase in right-of-use liability accretion related to the new office leases commencing in 2025. Borrowing requirements are anticipated to remain low for 2025, consistent with 2024.

Amortization of Intangible Assets and Depreciation of Property, Plant and Equipment (PP&E)

Intangible and capital assets are financed through the AESO's credit facilities and associated costs are recovered over the useful lives of the assets (included in amortization and depreciation) in accordance with IFRS. The useful lives are reviewed on an annual basis. Intangible assets include the AESO's computer software purchases and development. Amortization and depreciation are also incurred through the amortization of right-of-use assets in accordance with IFRS 16.

The 2025 budget is three per cent higher than the 2024 approved budget, reflecting a higher depreciable asset base in 2025, consistent with the increased capital budget year-over-year.

Additional information on the AESO's 2025 project costs is provided in the following section.

Section III – Project Costs

2025 Budget

The AESO has three main asset categories: people, technology and processes. While investment occurs in all three areas, only the technology assets (computer systems and System Coordination Centre) are the focus for capital expenditures, with a very small percentage being allocated to leasehold improvements. The development and acquisition of capital assets is a major budget component given the AESO's significant reliance on IT infrastructure and applications for business operations. As with all IT-intensive organizations, the challenge is to find the right balance between implementing technology advancements, determining the level of IT development that can be supported by business operations, and then establishing the funding requirements to make it all happen.

As noted earlier in *Section II* related to general and administrative costs, current International Financial Reporting Standards and interpretations are driving the reclassification of some project costs that would've historically been recorded as capital costs to general and administrative. Specifically cloud computing solutions such as software as a service, or those where there is a trend of suppliers limiting product rights to the end consumer, are resulting in reduced capitalization. IT solutions and their underlying accounting treatment is often unknown until a final product and vendor are chosen, hence the allocations above are noted as anticipated, and are subject to variability as project work progresses throughout 2025.

The AESO always reports on its capital projects given their critical and strategic nature and is presenting its projects in the same manner for the 2025 Budget and Forecast, regardless of the final classification as capital or general and administrative.

Projects are classified into the following programs.

Strategic Related Initiatives – Strategic-related initiatives that must be completed within the timeframe identified.

Critical Initiatives – The most critical projects that must be initiated in 2025, but flexibility on how they are paced. These are more internal AESO operational, business and/or security-related projects.

Other Project Initiatives & Life Cycle Funding – Other business projects and leasehold improvements that may have more flexibility in planning or delivery, so timing may have more flexibility. Includes hardware replacements (end of useful life) and recurring software upgrades that have required cyclical timing for updating or replacement.

Special Projects – Major projects that are over \$10 million. These tend to be non-typical capital projects that are not part of operational initiatives or life cycle programs.

Projects initiated by the AESO are approved through a portfolio management process and reviewed on an ongoing basis to ensure appropriate prioritization, assess progress and budget spending, and to identify potential issues. Any new or modified requirements are reviewed and

prioritized to determine how they align with existing work; part of a continual process to ensure alignment of priorities and business needs.

The following table identifies a preliminary list of programs that are planned for 2025 based on current operations and the business initiatives.

Project Expenditures

(\$ million)

	2025* Budget	2024 Approved Budget ¹⁸	\$ Variance	% Variance	2023 Actual	2022 Actual
Strategic Related Initiatives	74.7	7.8	66.9	858%	11.2	8.6
Enabling Transformation	72.6	4.8	67.8	1,413%	4.1	0.5
Restructure Energy Market (REM)	63.5	-	-	-	-	-
Other Transformation	9.1	4.8	4.3	90	4.1	
EMS Sustainment	2.1	2.9	(0.8)	(28)	7.1	8.1
Critical Initiatives	14.8	9.6	5.2	54	1.3	3.1
Business System Modernization	4.4	0.4	4.0	1,000	0.3	1.4
Productivity and Critical Systems Modernization	10.4	9.2	1.2	13	1.0	1.7
Other Capital Initiatives and Life-Cycle Funding	11.9	12.5	(0.6)	(5)	10.8	11.5
Total General Project (excludes REM and Special Projects)	37.9	29.9	8.0	27	23.3	23.2
Special Project**	8.0	21.7	(13.7)	(63)	1.3	-
Total Project	109.3	51.6	57.7	112	24.7	23.2
General and Administrative component****	26.8					
Capital component***	82.5					

Differences are due to rounding

*Preliminary

**Downtown Office Relocation Project

***Anticipated

¹⁸ Amounts are from the 2024 BDP

Project requirements for 2025 take into consideration the progress that has been made on the inflight projects that are multi-year in nature, the new requirements for 2025 and the AESO's capacity. Based on these requirements, the proposed general project budget for 2025 is 27 per cent higher than the 2024 approved project budget. This increase is mainly attributable to an increase in costs associated with the transformation initiatives, specifically the REM IT implementation. The REM IT implementation supports a significant increase in the complexity of our current market structure.

Section IV – Revenue

The AESO recovers its operating and capital costs through four separate revenue sources. Each is designed to recover the costs directly related to a specific service as well as a portion of the shared corporate services costs. The AESO's operations integrate the functions of transmission, energy market, load settlement and the Renewable Electricity Program (REP) administration to maximize benefits under the EUA. This integration results in cost allocations in many parts of the organization for the purpose of cost recovery. In determining the revenue requirement on a function-by-function basis, all AESO costs are assigned or allocated to one of the four functions. Additional information on the cost allocation methodology is provided in Appendix C (Allocation of Costs).

Transmission

The AESO is responsible for paying the costs of the provincial transmission system and recovering the costs through a tariff approved by the AUC. The ISO tariff is designed to allocate the costs to all users of the transmission system based on level of usage. The budgeted costs related to the transmission function will be incorporated into the AESO's tariff rates.

Energy Market

The AESO recovers the costs of operating the real-time energy market through an energy market trading charge on all megawatt hours traded. In accordance with the EUA, these costs may also include expenses of other related powers, duties, responsibilities and functions of the AESO.

Based on the 2025 budget and a current trading volume forecast, an energy market trading charge of 60.7¢ per MWh traded is proposed to recover the AESO's budgeted costs for 2025. The trading charge for 2025 is higher than 2024, reflecting the increase in the 2025 general and administrative budget and related allocation to the energy market, as well as the reclassification of some project costs to general and administrative that were previously recorded as capital costs. Partially offsetting these increases in costs is the continuity of a refund of overcollection from previous years.

The AESO costs are 57.2¢ per MWh traded, representing an increase of 27.6¢ per MWh traded or 93 per cent from the 2024 rate of 29.6¢ per MWh traded.

These trading charge amounts exclude the Market Surveillance Administrator (MSA) charge. The MSA cost recovery amount is approved by the Chair of the AUC in an independent budget process and are included in the final trading charge.

Trading Charge (¢ per MWh)

	2025	2024	2023	2022	2021	2020
AESO Costs	57.2	29.6	25.6	23.0	28.5	29.8
Energy Market Shortfall / (Surplus)	(4.0)	(3.3)	(1.8)	(2.8)	1.2	6.6
AESO Component	53.2	26.3	23.8	20.2	29.7	36.4
AUC's Portion of Energy Market Administration Fee	7.5	6.9	6.3	6.3	5.4	6.2
Total	60.7	33.2	30.1	26.5	35.1	42.6

Differences are due to rounding

Trading Charge Recoverable Amounts (\$ million)

	2025	2024	2023	2022	2021	2020
AESO Costs	72.0	35.7	31.9	28.5	34.3	40.0
Energy Market Shortfall / (Surplus)	(5.0)	(4.0)	(2.3)	(3.5)	1.5	8.9
AESO Component	67.0	31.7	29.7	25.0	35.8	48.9
AUC's Portion of Energy Market Administration Fee	9.4	8.4	7.8	7.9	6.6	8.3
Total	76.4	40.0	37.5	32.9	42.4	57.2

Differences are due to rounding

Renewable Electricity Program

The AESO is responsible for administering the REP and recovering the costs through fees charged to generators that receive renewable energy credits. Any cumulative shortfalls of revenue over costs will be recovered at the conclusion of the program.

Load Settlement

Expenses that the AESO incurs to provide services related to administering provincial load settlement are charged to the owners of electric distribution systems and wire service providers conducting load settlement under AUC Rule 21 *Settlement System Code Rules*.

Appendix A: 2024 Updated Forecast vs 2024 Budget Development Process (BDP)

Transmission Operating Costs

(\$ million)

	2024 Updated Forecast	2024 Approved Forecast ¹⁹	\$ Variance	% Variance
Wires Costs	1,975.3	1,937.2	38.1	2
Transmission Line Losses	156.5	178.3	(21.8)	(12)
Operating Reserves	248.0	308.4	(60.4)	(20)
Other Ancillary Services Costs	42.6	55.5	(12.9)	(23)
Transmission Operating Costs	2,422.4	2,479.4	(57.0)	(2)

Differences are due to rounding

Wires Costs

The 2024 updated forecast for wires costs is two per cent higher than the 2024 approved forecast based on the amounts paid primarily to the TFOs in accordance with their AUC-approved tariffs.

The 2024 updated forecast is based on TFO tariffs approved or applied-for as of August 2024 with the majority of the updated forecast reflecting:

- i) filed 2024 tariffs;
- ii) filed 2024 negotiated settlements; or
- iii) AUC approvals for 2024 tariffs.

Transmission Line Losses

Transmission line losses costs in the 2024 updated forecast are 12 per cent lower than the 2024 approved forecast. The decrease is primarily due to a 19 per cent decrease in the 2024 updated forecast of average pool price of \$67 per MWh compared to the 2024 approved forecast pool price of \$83 per MWh. The decrease in average pool price is driven by a multitude of factors, most notably the addition of new generation capacity, a reduction in gas prices, and the impact of interim market power mitigation regulations.

The 2024 updated forecast of transmission line losses volumes is 2,418 gigawatt hours, which is 16 per cent higher than the 2024 approved forecast of 2,077 gigawatt hours and is primarily driven by higher actual losses volumes in the first half of 2024. Increases in losses are driven by the increase of renewable generation located far away from load centers such as the wind and solar generation based in the south of Alberta. In addition, losses are positively correlated with load growth, therefore the increase in losses in 2024 is consistent with the three per cent forecast increase in Alberta internal load.

¹⁹ Amounts are from the 2024 BDP

Operating Reserves

Operating reserves costs in the 2024 updated forecast are 20 per cent lower than the 2024 approved forecast. This decrease is primarily due to a 19 per cent decrease in the 2024 updated forecast of average pool price of \$67 per MWh compared to the 2024 approved forecast pool price of \$83 per MWh.

The 2024 updated forecast of operating reserves volumes is 6,609 gigawatt hours, which is three per cent higher than the 2024 forecast of 6,431 gigawatt hours.

Other Ancillary Services Costs

The 2024 updated forecast for other ancillary services costs is 23 per cent lower than the 2024 approved forecast. This decrease is primarily due to a reduction in actual and anticipated frequency response services costs, which are required to enable transmission system market access for imports in support of the AESO's obligation to restore the intertie without compromising system reliability. Alberta has been a net exporter for most of 2024, leading to the decrease in the forecast for these services. Additionally, the VLCP was terminated early in the year with no costs incurred.

Other Industry Costs

(\$ million)

	2024 Updated Forecast	2024 Approved Forecast ²⁰	\$ Variance	% Variance
AUC Fees – Transmission	10.7	11.2	(0.5)	(4)
AUC Fees – Energy Market	9.6	8.4	1.2	14
WECC/NERC/WPP Fees	3.2	3.2	-	-
Regulatory Process Costs	1.6	2.2	(0.6)	(27)
Other Industry Costs	25.1	25.0	0.1	0

Differences are due to rounding

The 2024 updated forecast for other industry costs is consistent with the 2024 approved forecast, with forecast increases in AUC Fees offset by forecast decreases in regulatory process costs.

²⁰ Amounts are from the 2024 BDP

General and Administrative Costs

(\$ million)

	2024 Forecast	2024 Amended Budget ²¹	\$ Variance	% Variance
Staff Costs	98.4	99.5	(1.1)	(1)
Contract Services and Consultants	9.4	8.4	1.0	12
Administration	5.5	5.9	(0.4)	(7)
Facilities	5.2	5.4	(0.2)	(4)
Computer Services and Maintenance	12.3	12.3	-	-
Telecommunications	1.5	1.4	0.1	7
General and Administrative Costs	132.3	132.9	(0.6)	0

Differences are due to rounding.

Staff costs for 2024 are forecast to be one per cent lower than the 2024 amended budget primarily due to the impact of delays in planned hires and unanticipated vacancies more than offsetting increased benefits costs.

Contract services and consultants' costs for 2024 are forecast to be 12 per cent higher than the 2024 approved budget primarily due to unanticipated REM activities and the timing and reprioritization of other initiatives requiring external legal and consulting services.

Forecast costs for 2024 for all other general and administrative cost categories above do not vary significantly from the 2024 amended budget.

Borrowing Costs and Amortization and Depreciation

(\$ million)

	2024 Forecast	2024 Approved Budget ²²	\$ Variance	% Variance
Borrowing Costs	0.6	0.7	(0.1)	(14)
Amortization and Depreciation	25.3	25.3	-	-

Differences are due to rounding.

Borrowing Costs

Borrowing costs for 2024 are forecast to be 14 per cent lower than the 2024 approved budget due to a reduction in borrowing rates.

²¹ Amended General and Administrative Budget as approved by the AESO Board on October 8, 2024, to address REM-related costs not anticipated during the BDP process

²² Amounts are from the 2024 BDP

Amortization and Depreciation

Amortization and depreciation costs for 2024 are forecast to be consistent with the 2024 approved budget, noting that variability exists due to the timing of assets being completed and placed into service.

General Project Budget

(\$ million)

	2024 Forecast	2024 Approved Budget ²³	\$ Variance	% Variance
Strategic Related Initiatives	9.0	7.8	1.2	15
Critical Initiatives	7.3	9.6	(2.3)	(24)
Other Initiatives & Life Cycle	13.7	12.5	1.2	10
Total General Project Costs	29.0	29.9	(0.9)	(3)

Differences are due to rounding

Forecast costs for 2024 do not vary significantly from the 2024 approved general project budget.

²³ Amounts are from the 2024 BDP

Appendix B: Transmission Operating Cost Definitions

2025 Pool Price Forecast Methodology

Consistent with previous BDPs, the AESO used EDC Associates' hourly pool price forecast for 2025. The hourly pool prices were taken from the seed that had an average annual price closest to the EDC summary monthly price. The hourly pool price forecast is used as an input to calculate the ancillary services and transmission line losses costs.

There are numerous variables and assumptions used in the hourly pool price forecast and it is noted that recent market fundamentals, such as those below, have been considered by EDC:

- Provincial and Federal energy policies
- Natural gas prices
- Extreme weather conditions
- Outage of generation units and transmission assets

Transmission Line Losses

Transmission line losses represent the volume of energy that is lost as a result of electrical resistance on the transmission system. Volumes associated with line losses are determined through the energy market settlement process as the difference between generation and import volumes, less consumption and export volumes. The hourly volumes of line losses vary based on load and export levels, generation (baseload, peaking units and import) available to serve load, weather conditions, and changes in the transmission topology. System maintenance schedules, unexpected failures, dispatch decisions on the AES, and short-term system measures (such as demand response) may also affect the volume of losses.

The annual volume forecast for transmission line losses is based on statistical models that use variables such as economic inputs, weather, and seasonal effects to forecast hourly losses volumes.

The annual forecast for transmission line losses costs is the aggregate of the hourly forecast losses volumes multiplied by the hourly forecast pool prices. As such, the transmission line losses costs are highly correlated with the pool price forecast.

Ancillary Services

Ancillary services are procured by the AESO to ensure reliability of the system and include operating reserves and services with generation capacity and load reduction capabilities. Ancillary services are procured through various methods including a daily competitive exchange for operating reserves and competitive processes that result in contracts for other types of ancillary services. In circumstances where procurement may not be feasible, other ancillary services may be secured through bilateral negotiations.

Operating Reserves

Operating reserves are generating capacity or load that is held in reserve and made available to the System Controller to manage the transmission system supply-demand balance in real time. The procurement of operating reserve volumes is directly correlated to load and generation. Operating reserves are procured through an online, day-ahead exchange. In exchange for this payment, the AESO obtains the right to utilize the provider's energy and/or capacity as reserves.

Categories of Operating Reserves

Active operating reserves:

- Required to automatically balance small changes in supply and demand.
- Required to maintain system reliability during unplanned events such as the loss of a generator, loss of a transmission line, or a sudden increase in demand.
- Alberta Reliability Standards (ARS) define the minimum levels that must be procured.
- Costs are the product of volumes procured multiplied by operating reserve price, which is indexed to the hourly pool price.
- Represents approximately 90 per cent of total operating reserves costs.
- Costs are impacted by pool price fluctuations, supply of offered reserves and market participant offer behavior.

Standby operating reserves:

- Provide additional reserves when the active operating reserves are insufficient to ensure system reliability.
- Pricing includes two components:
 - i) an option premium, paid for the capability to activate the standby reserves; and
 - ii) an activation price, paid only if the standby reserves are activated to provide energy.
- Represents approximately 10 per cent of total operating reserves costs.

Operating Reserve Products (in both the active and standby markets)

- 1) **Regulating reserves** – The generation capacity, energy and maneuverability responsive to the AESO's automatic generation control (AGC) system that is required to automatically balance supply and demand on a minute-to-minute basis in real time.
- 2) **Spinning reserves** – Unloaded generation that is synchronized to the transmission system, automatically responsive to frequency deviation and ready to provide additional energy in response to an AESO System Controller directive. Spinning reserve suppliers must be able to ramp up their generator within 10 minutes of receiving a System Controller directive.
- 3) **Supplemental reserves** – While similar to spinning reserves, supplemental reserves are not required to respond to frequency deviations. They include unloaded generation, off-line generation or system load that is ready to serve additional energy (generator) or reduce energy (load) within 10 minutes of receiving a System Controller directive.

Other Ancillary Services

Load shed service (LSS) is interruptible load that can be armed to trip, either automatically or manually, on the loss of the Alberta-British Columbia intertie to allow for increased import available transfer capability (ATC). LSS is also utilized to restore the Most Severe Single Contingency (MSSC) limit while the AIES is weakly connected or islanded from the rest of the Western Interconnection.

Fast Frequency Response (FFR) service is based on LSS, but has been adapted for new technology, such as energy storage.

The voluntary load curtailment program (VLCP) supports system reliability by providing voluntary curtailable load during periods of energy emergency alerts. This program ended in early 2024.

Transferred frequency response (TFR) is a product which helps to satisfy the AESO's frequency response obligation within the WECC.

Transmission constraint rebalancing (TCR) costs are incurred when the transmission system is unable to deliver electricity from a generator to a given electricity consuming area without contravening reliability requirements. When this occurs, a market participant downstream of a constraint may be dispatched for purposes of transmission constraint rebalancing under the ISO Rules and would receive a TCR payment for energy provided for that purpose. TCR came into effect on November 26, 2015.

Transmission must-run (TMR) occurs when generation is required to mitigate the overloading of transmission lines associated with line outages, system conditions in real time or the loss of generation in an area. In circumstances when this service is required for an unforeseeable event and there is no contracted TMR, non-contracted generators may be dispatched to provide this service (referred to as conscripted TMR). In the event of foreseeable TMR, the AESO may enter into a contract with a generator to provide TMR services. In 2022 the AESO ran a competitive procurement for a TMR contract within the area known as the Grande Prairie Loop. The successful proponent entered into a TMR contract which commenced in July 2022.

Reliability services are provided through an agreement with Powerex Corp. for grid restoration balancing support in the event of an Alberta blackout and emergency energy in the event of supply shortfall. The agreement came into effect on April 1, 2015.

Black Start services are provided by generators that are able to restart their generation facility with no outside source of power. In the event of a system-wide black-out, Black Start services are used to re-energize the transmission system and provide start-up power to generators who cannot self-start. Black Start providers are required in specific areas of the AIES to ensure the entire system has adequate start-up power.

Appendix C: Allocation of Costs

Management reviews allocation percentages on an ongoing basis and adjusts accordingly throughout the year.

Cost Type	Allocation Methodology
Direct Operating	Individual department input/analysis for current year work focus
Shared Services – Corporate Services²⁴	Individual department input/analysis for current year work focus, as well as allocation of direct operating group costs
Shared Services – Information Technology	Activity-based analysis on system and resource costs
Shared Services – Office Leases	Based on AESO staff count
Project Expenditures	Assigned on a project-by-project basis
Other Industry Costs – Fees and Memberships	Based on related function
Other Industry Costs – Regulatory Process Costs	Individual review/assessment for each proceeding

²⁴ Corporate Services includes departments such as: Accounting, Settlement and Credit, People & Culture, Corporate Communications, Law, etc.

Appendix D: Budget Amendments

As part of the established budget development process, should an unplanned funding requirement be identified during the budget period and a material budget amendment required, management will proceed following the steps outlined in the following table.

Results of Forecast	Related Budget Process
If the forecast is <u>below or in line</u> with the previously approved budget amount	At management's discretion, any under-budget amounts will be used to advance future year business priorities or will be accumulated in the deferral accounts
If the forecast is <u>above</u> the previously approved budget amount and the amount is determined to be a 'manageable variance'	Management would request approval from the AESO Board and would subsequently issue a stakeholder communication
If the forecast is <u>above</u> the previously approved budgeted amount and the amount is in excess of a 'manageable variance'	Management will review the new funding requirements with stakeholders, followed by a request for approval from the AESO Board
A 'manageable variance' is a forecast to actual variance that would be: • Less than 10 per cent of budgeted general and administrative expenditures • Less than 20 per cent of budgeted project expenditures Variances related to the application of IFRS to the financial statements do not qualify as a reportable variance.	

Alberta Electric System Operator

3000, 240 - 4 Avenue S.W.
Calgary, Alberta T2P 4H4
403-539-2450
www.aeso.ca