

AESO 2021 Business Plan and Budget Proposal



To: AESO Board
From: Vice-President, Finance and Chief Financial Officer
Date: Thursday, October 29, 2020
Subject: **AESO 2021 Business Plan and Budget Proposal**

Enclosed is the *AESO 2021 Business Plan and Budget Proposal* (Proposal). This document was prepared by AESO Management in consultation with stakeholders and outlines:

- The process employed to develop the Proposal;
- The AESO's proposed 2021 business initiatives;
- The proposed 2021 budgets/forecasts for:
 - wires costs;
 - transmission line losses costs;
 - ancillary services costs;
 - other industry costs;
 - general and administrative and interest costs and amortization; and
 - capital costs.

AESO Management will be requesting at the December 2020 AESO Board meeting that the AESO Board approve, or amend and approve, as appropriate, the items outlined in Section 1 of this document. Prior to the December 2020 AESO Board meeting, stakeholders may request the opportunity to meet with you to discuss their written comments related to the information provided. As you are aware, these meetings are scheduled for Wednesday, November 18, 2020.

Should you have any questions or additional information requirements please let me know.

Yours truly,



Todd Fior
Vice-President, Finance and Chief Financial Officer

cc: Mike Law, President and Chief Executive Officer
Nicole Kinch, Director, Accounting & Treasury
Karen Campbell, Director, Settlement, Credit & Business Planning
Interested Stakeholders

Section 1 Board Decision Items – Executive Summary

Section 2 Stakeholder Presentations to the AESO Board

Section 3 Stakeholder Consultation Undertaken

- Terms of Reference for Budget Review Process
- Budget Review Process
- Budget Review Process Schedule

Section 4 AESO 2021 Business Plan and Budget Proposal

Section 5 Stakeholder Participation and Comments and AESO Responses

Board Decision Items – Executive Summary

Over the last several months, we have reviewed and discussed with stakeholders and the AESO Board, our proposed business initiatives for 2021 which indicate our planned direction and the focus of our operations in the upcoming year. The business initiatives being proposed, and our day-to-day operational activities form the foundation from which we have developed our 2021 budgeted costs (general and administrative, interest, amortization, capital and other industry costs). This *AESO 2021 Business Plan and Budget Proposal* (Proposal) provides an overview of our proposed business initiatives and business activities that will enable us to meet our mandate¹ and advance our *2019 – 2023 Strategic Plan*.

Our budgeted costs are based on the funding we require to achieve our business initiatives and maintain our business operations as outlined in the Proposal. In addition to this, we are also providing transmission line losses and ancillary services cost forecasts for 2021 which are within the AESO Board's mandate for approval. These forecasts have been developed internally and have been included in the process to engage stakeholders for review and comment, consistent with the process used for our budgeted costs.

We have openly engaged stakeholders interested in reviewing our proposed initiatives, budgets and forecasts and in return stakeholders have provided us with their comments as we worked through this process. This consultation process, referred to as the Budget Review Process (BRP), allows us to prepare a business plan and budget that has been reviewed and discussed. As a part of this Proposal to the AESO Board, we are providing the stakeholder written comments we have received to date and our responses to those comments. The purpose of providing these comments and responses is for the AESO Board to gain insight into some of the areas that created discussion throughout this process. We continue to believe that this open and transparent process enables us to prepare a thorough and comprehensive Proposal, and we believe our stakeholders continue to appreciate this inclusive process. The end result is a well communicated and understood Proposal that will provide us direction in the coming year. The following are the approvals that we will be requesting from the AESO Board.

¹ The Alberta Electric System Operator (AESO) is responsible for the safe, reliable and economic planning and operation of the Alberta Interconnected Electric System (AIES) and the facilitation of a fair, efficient and openly competitive (FEOC) electricity market.

AESO Board is requested to:

1. Approve the 2021 business initiatives as outlined in the Proposal.
2. Approve the following proposed 2021 budget and forecast amounts as outlined in the Proposal and summarized as follows:

	Budget Category/Year		Page Reference ²	Revenue Source (\$ million)				
				Transmission	Energy Market	Renewables	Load Settlement	Total
OWN COSTS	General and Administrative	2021	20	63.4	27.6	2.2	1.0	94.2
	Interest	2021	21	2.1	0.8	0.5	0.0	3.5
	Amortization	2021	21	19.4	6.0	0.6	0.2	26.2
	Capital	2021	23					25.3
	Other Industry Costs	2021	16	14.6	6.7	-	-	21.4
TRANSMISSION OPERATING COSTS	Wires	2021	14	1,933.8	-	-	-	1,933.8
	Transmission Line Losses	2021	14	104.4	-	-	-	104.4
	Ancillary Services	2021	15	198.3	-	-	-	198.3
SUMMARY	Own Costs	2021		84.9	34.4	3.3	1.2	123.9
	Transmission Operating Costs	2021		2,236.5	-	-	-	2,236.5

Differences are due to rounding

² Details provided on the referenced pages in Section 4 of the Proposal

Stakeholder Presentations to the AESO Board

Stakeholder presentations to the AESO Board to be inserted when received

Stakeholder Consultation Undertaken

The *Transmission Regulation*¹ (T-Reg) includes provisions addressing the approval of the AESO's own costs, transmission line losses costs and ancillary services costs. The T-Reg provides that the AESO must consult with stakeholders with respect to the proposed costs to be approved by the AESO Board. It also provides that these costs, once approved by the AESO Board, must be considered by the Alberta Utilities Commission (AUC) as 'prudent' unless interested persons satisfy the AUC otherwise.

The practice that has been established to carry out this consultation is the Budget Review Process (BRP). The BRP is a transparent process which provides a level of prudence review with input from stakeholders. At the conclusion of the BRP, AESO Management makes a recommendation with respect to own costs (general and administrative, interest, amortization, capital and other industry costs), wires, transmission line losses costs and ancillary services costs to the AESO Board for approval.

The BRP overview, terms of reference and a schedule providing the BRP milestone activities leading up to an AESO Board decision has been posted on the AESO's website. These documents have been included as Appendices A to C to this Section. At a high level, the BRP steps followed are:

- AESO Issues Notices to Stakeholders
- AESO Develops Business Initiatives
- AESO Reviews Business Initiatives with Stakeholders
- AESO Develops Own Costs Budget and Ancillary Services and Transmission Line Losses Cost Forecasts
- AESO Reviews Own Costs Budget, Ancillary Services and Transmission Line Losses Costs Forecasts with Stakeholders
- AESO Board Decision Is Made

As with prior years' BRP, the process has been open to all stakeholders and the process has been transparent as all presentation materials, stakeholder comments (if any) and the AESO's responses have been posted on the AESO's website. Through this process, all stakeholders have had an opportunity to provide input. The BRP will be re-evaluated with stakeholders at its conclusion and refinements made to the process going forward as required.

¹ A/R 86/2007

Appendix A

Terms of Reference for Budget Review Process (BRP)

Tuesday, July 7, 2020

Re: Budget Review Process (BRP) 'Terms of Reference'

Transparency is the overarching principle in the BRP. The following will help ensure transparency to stakeholders during this process.

- The process should be open to all stakeholders that are interested.
- The size of the group should not be limited.
- Stakeholders are encouraged to register as participants at the outset of each year's process in order to ensure a consistent understanding and to minimize inefficiencies.
- During stakeholder meetings, verbal comments are encouraged as they provide valuable input for general discussion and consideration.
- Written comments will be responded to by the AESO and shared with all stakeholders (i.e., posted to AESO website). As well, stakeholders will have the opportunity to comment on each other's comments.
- Written comment submissions are a requisite during the business initiatives and technical consultation period in order to be entitled to present to the AESO Board on the same comments.
- The written decision rendered by the AESO Board on these matters will contain reasons / rationale.
- Throughout the process, the AESO will endeavor to provide as much information as is reasonably possible to ensure stakeholders have all information relevant to the subject matters under review. However, the AESO and stakeholders will need to agree on the level of detail to discuss (including confidential information), on an issue by issue basis, in an effort to be most effective and efficient.
- At the end of each AESO budget process review cycle, the AESO and stakeholders will evaluate the effectiveness of the process and make appropriate changes if required for the following year.

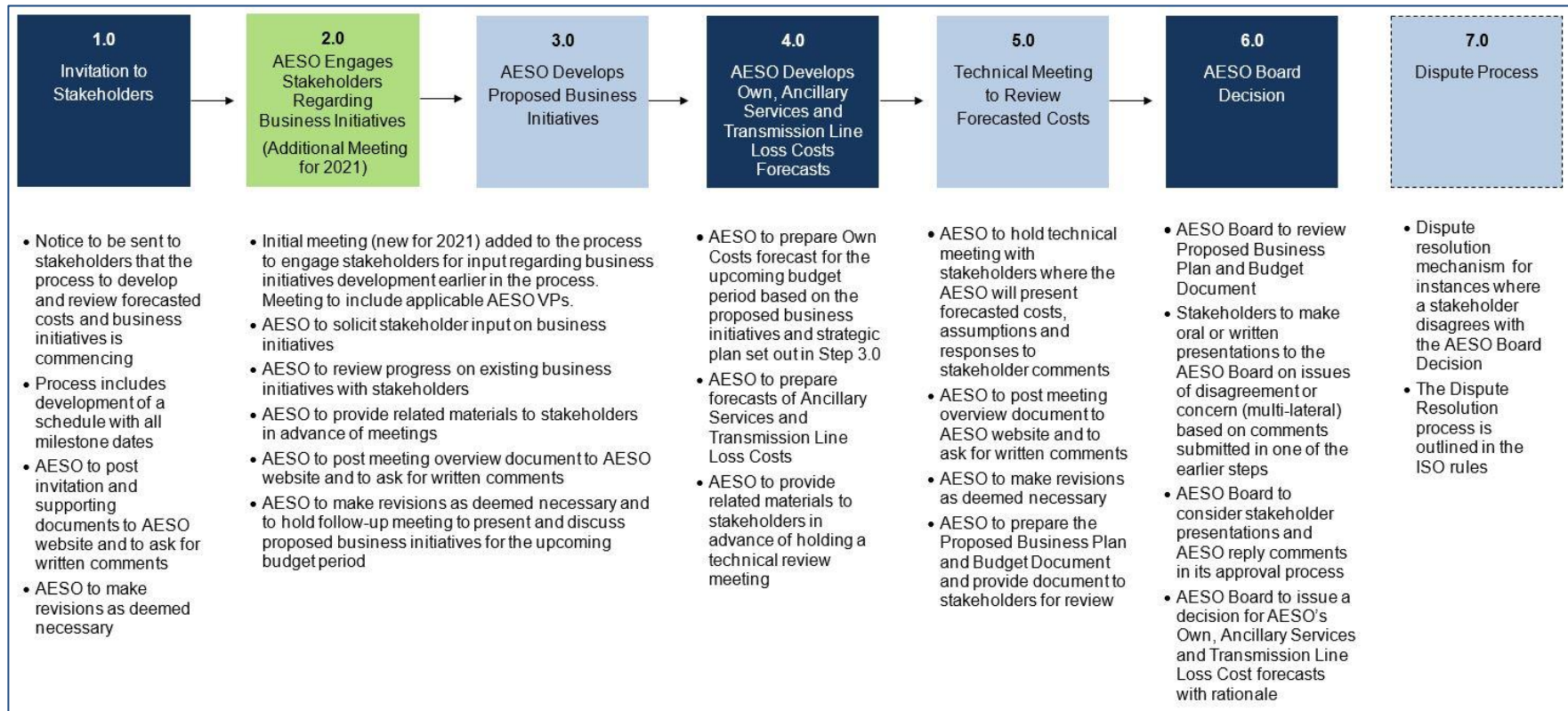
In Addition:

- Everyone is able to present their views.
- Everyone must work within the timeline agreed upon at the start of the process.
- This process is not a negotiated settlement.
- The material to be delivered to the AESO Board in order to prepare a decision does not have to be agreed upon unanimously.
- Information will be provided to all stakeholders in a timely manner as per the proposed Schedule.
- Nothing will preclude the opportunity for stakeholders to ultimately appeal any decision using the dispute mechanism outlined in the ISO rules.

Appendix B

AESO 2021 Budget Review Process Overview – Steps

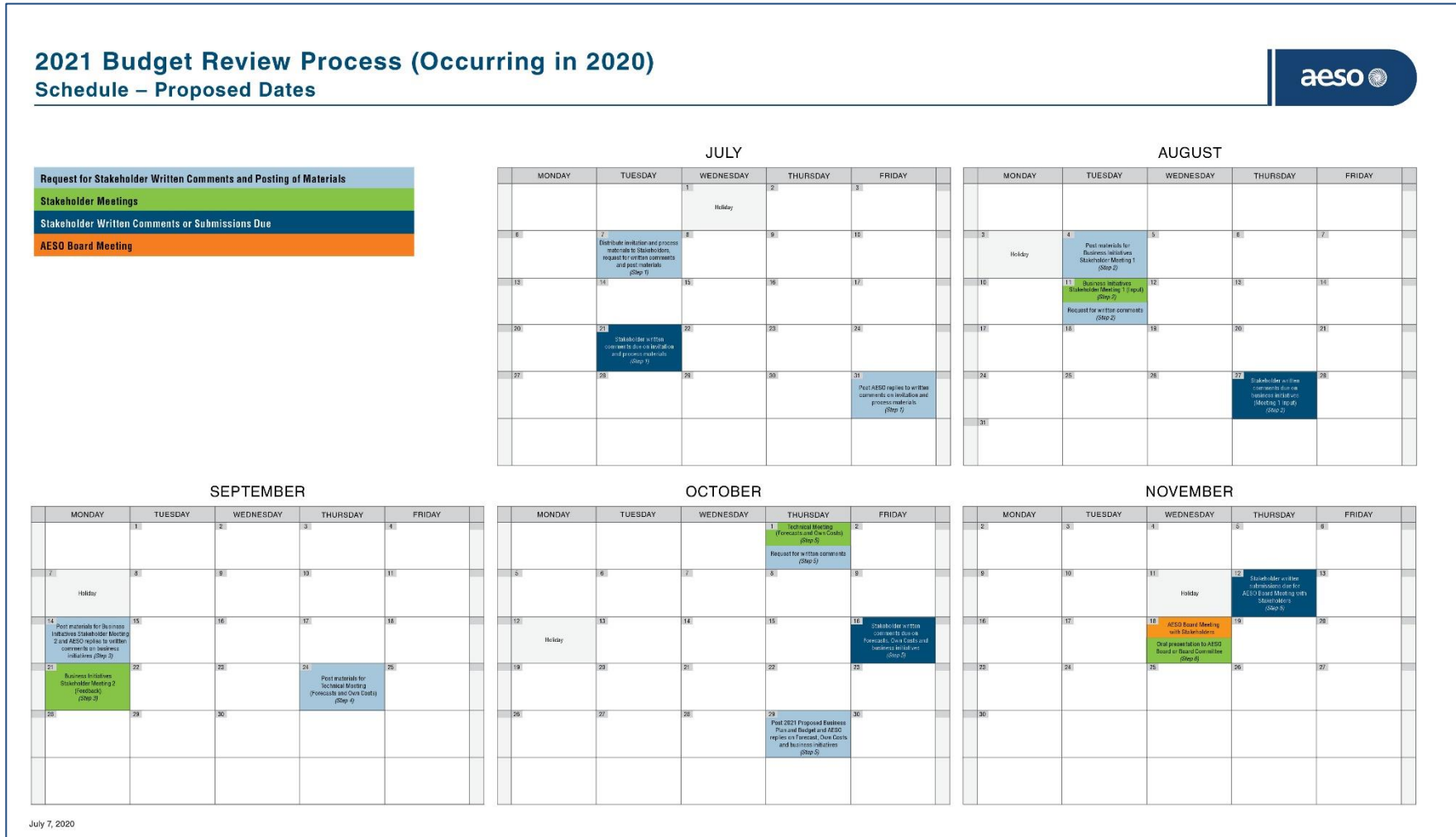
Process for stakeholder consultation and approval of forecasted Ancillary Services & Transmission Line Losses, Own Costs budget and proposed business initiatives



Appendix C

2021 Budget Review Process (Occurring in 2020)

Schedule – Proposed Dates



AESO 2021 Business Plan and Budget Proposal

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2021 Business Plan and Budget Proposal

The AESO's *2021 Business Plan and Budget Proposal* (Proposal) provides an overview of the business initiatives and expenditures the AESO proposes for the forthcoming year. It also charts the AESO's organizational approach to the objectives outlined within the *AESO 2019 – 2023 Strategic Plan*.

The strategic plan establishes our objectives for the next five years, and the Proposal outlines the specific tasks we will focus on in 2021 to meet those objectives. The strategic plan provides a path to delivery that will allow the AESO and the industry to be well positioned to manage the transformative change environment that the power industry is undergoing. Shifting generation technologies, distributed resources, changing consumer preferences and optionality expectations are driving this fundamental change. The AESO must be positioned to ensure that new technologies and consumer requirements are reliably integrated into the power system, and that there are opportunities to progress, develop or invest. Some initiatives will be completed in 2021; others will require more than one year to be completed. The Proposal provides transparency as to which initiatives we will focus on in 2021.

Over the past year, the provincial economy and the power industry have been significantly impacted by low commodity prices and COVID-19. As a result, the AESO's focus in 2021 will be on cost management and market and regulatory stability. Our comprehensive understanding of electricity in Alberta, in-depth expertise, strong leadership and focus will be instrumental to our success.

In 2021, the AESO will be focused on the delivery of mandated and top priority business initiatives which are in general alignment with stakeholder priorities and were discussed with stakeholders as a part of the AESO's 2021 Budget Review Process. The AESO will focus on the following mandated and top priority initiatives in 2021:

- continue implementing the Government of Alberta Red Tape Reduction initiative;
- implement approved tariff provisions from the 2018 General Tariff Application (GTA) into the Connection Process and AESO business;
- continue with the ISO tariff modernization initiative to simplify the ISO tariff to be more accessible, clear and agile;
- continue implementation of the Distributed Energy Resources Roadmap;
- continue to focus on optimizing the grid and minimize need or extend timing out for new infrastructure; and
- advance the technology plan for integrating new electricity value chain technologies.

In addition, the AESO will continue to focus on other external and internal business initiatives to advance its strategic plan and to maintain safe and reliable operations. The AESO will continue to efficiently and effectively deliver on its activities to create value for stakeholders and the province as a whole.

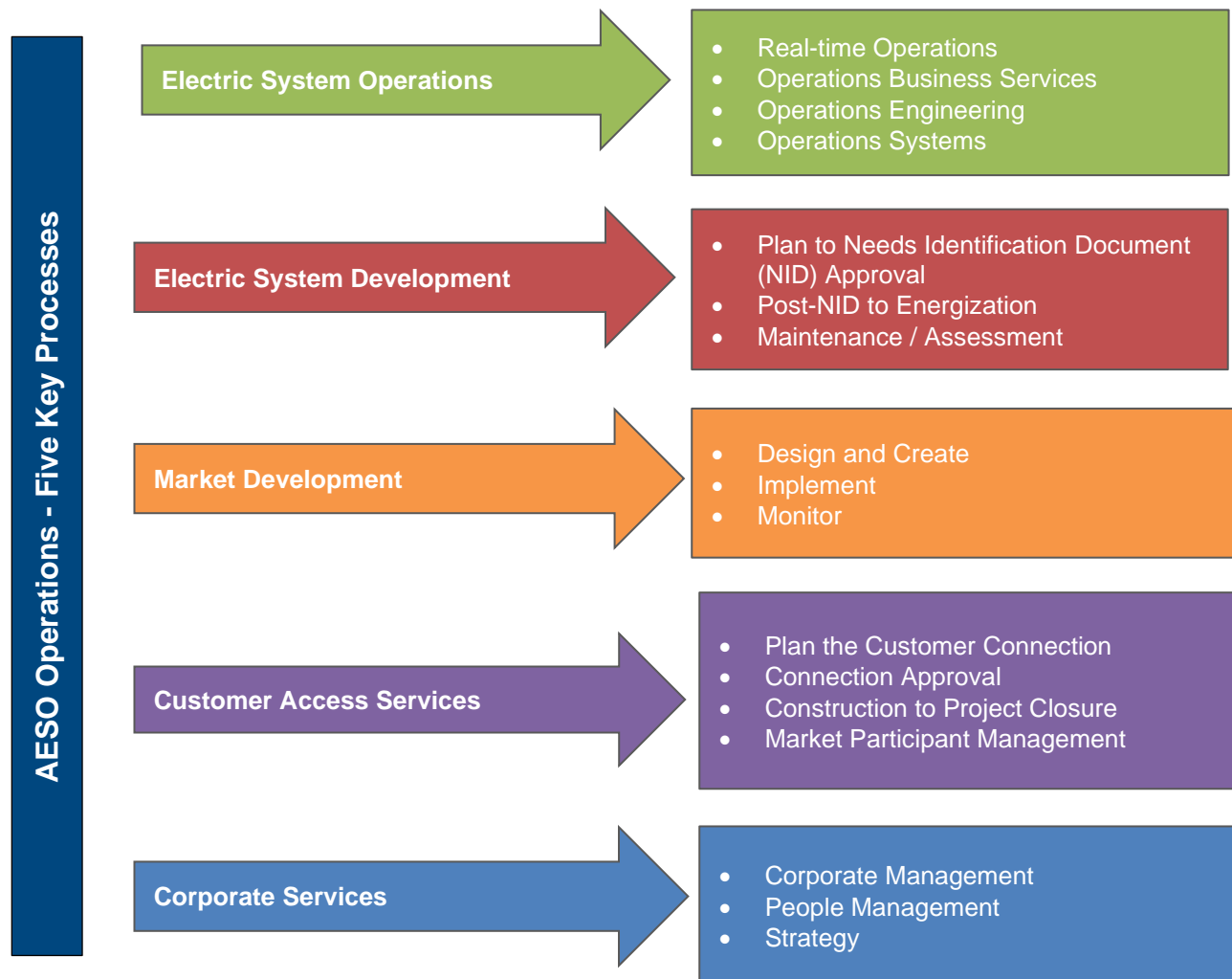
The AESO's proposed 2021 general and administrative budget is \$94.2 million, which is \$2.0 million (or 2 per cent) lower than the 2020 budget of \$96.2 million. The decrease is primarily due to reduced consulting costs as a result of the AESO requiring less specialized consulting resources to deliver on the business initiatives planned for 2021.

The 2021 proposed capital budget is \$25.3 million, reflecting a decrease in the capital budget required for key projects in 2021 and is \$4.0 million (or fourteen per cent) lower than the 2020 capital budget of \$29.3 million.

By performing the work defined within this Proposal, the AESO will continue to demonstrate that Albertans can look to our organization for electricity industry leadership, and that they can be confident the transmission system and electricity framework are managed efficiently and reliably, every day.

AESO Operations

The AESO's operations are described using five key processes which allow for a more detailed understanding of the AESO's activities and organizational awareness to ensure the operations are as efficient and focused as they should be.



Electric System Operations

Optimal management of electric system operations is a primary focus and essential part of the AESO's mandate. Effectively maximizing the use of transmission capacity and monitoring transmission system performance is critical to ensure the reliability of the Alberta Interconnected Electric System (AIES).

The AESO operates the AIES and competitive market in accordance with Alberta Reliability Standards and ISO Rules.

Electric System Development

One of the AESO's core business activities is to plan a transmission system which reliably meets the electricity needs within the province.

The AESO's Long-term Outlook and Long-term Transmission Plan documents communicate Alberta's expected future demand and energy requirements, expected generation capacity to meet those requirements, and the transmission system enhancements needed to meet these demand and generation requirements. These forecasts and plans form the basis for advancing transmission system projects for regulatory approval and support the integration of market participant projects into the AIES.

Market Development

The wholesale electricity market evolves along with changes in industry, technology and other relevant influences or circumstances. The AESO monitors developments and evaluates the impact of these changes to identify appropriate courses of action. When addressing market changes, the principle objective is to maintain a fair, efficient, and openly competitive (FEOC) market.

Customer Access Services

The primary function of Customer Access Services is to efficiently connect customers to the transmission system and provide solution-oriented customer service throughout the process. As well as, market participant management which includes the financial transactions (transmission settlement and credit management) and consultation and development of the AESO tariff.

Corporate Services

The general business operations are coordinated through the various activities by the AESO's corporate services departments.

This key process provides various organization-wide support services such as human resources, finance, legal, communications and senior management for establishing the strategic direction of the AESO.

2021 AESO Business Initiatives

The following pages provide a brief update on the progress and plans for the business initiatives in 2021. These business initiatives tend to be multi-year in nature and continue to advance the AESO's strategic objectives.

Externally Focused Initiatives – Stakeholder Participation Related

The following business initiatives for 2021 will have stakeholder impacts and the success of these initiatives will require stakeholder participation. The AESO looks forward to working with stakeholders on these initiatives in 2021.

Business Initiative	Update 2020	Plan 2021
<i>Mandated – Top Priority Business Initiatives</i>		
<p>Red Tape Reduction</p> <p>Objective:</p> <p>To be in compliance with the Government of Alberta (GoA) Red Tape Reduction Initiative, the AESO is committed to reducing regulatory requirements by one-third by 2023</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Tariff Modernization • Technology Integration • Distribution Coordination 	<p>Update</p> <p>Implementation has been initiated by the development of an inventory of all AESO documents, followed by a count of all requirements associated with such documents.</p> <p>A workplan has been prepared re: the sequence of documents to be reworked or removed in order to reduce regulatory requirements as per the GoA's schedule</p>	<p>Implementation</p> <p>Continue to advance the workplan created in 2020. It is expected that a reduction in requirements will be implemented via AESO initiated changes to non-authoritative documents in addition to changes that will need to be filed with the AUC for approval</p>
<p>General Tariff Application (GTA)</p> <p>Objective:</p> <p>Implement approved tariff provisions from 2018 GTA into Connection Process and AESO business</p> <p>File a 2021 tariff rates update in Q4 2020 for a January 1, 2021 effective date</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Technology Integration • Distribution Coordination 	<p>Update</p> <p>Filed the 2018 GTA compliance filing in January 2020</p> <p>Ongoing proceeding process for compliance approval underway with expected AUC approval for the 2018 GTA compliance filing in Q4 2020</p> <p>File a 2021 tariff <u>rates update</u> in Q4 2020 for a January 1, 2021 effective date</p>	<p>Implementation</p> <p>Implement approved tariff provisions from 2018 GTA into Connection Process and other AESO business process</p>

Business Initiative	Update 2020	Plan 2021
<i>Top Priority Business Initiatives</i>		
<p>Tariff Modernization</p> <p>Background:</p> <p>In Q2 2018, the AESO proposed to the Alberta Utilities Commission (AUC) that a consultation process be initiated to review bulk and regional transmission rate design; the AUC approved the proposal, and the AESO initiated the consultation process in Q3 2018</p> <p>Objective:</p> <p>To simplify the ISO tariff to be more accessible, clear and agile</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Red Tape Reduction • Distribution Coordination • Technology Integration 	<p>Update</p> <p>Bulk and Regional Tariff Design progress was accelerating in 2020, however engagement was paused due to COVID-19 as industry participants need to focus on core businesses</p> <p>Stakeholder engagement work has recommenced on the Bulk and Regional Tariff Design with an initial session held on Sept. 24, 2020.</p>	<p>Design, Implementation</p> <p>File Bulk and Regional Rate application with the AUC in Q2 2021</p> <p>File additional modules to address AUC Directions in Decision 22942 with AUC in Q2 2021</p> <p>In addition, proposing restructuring and simplifications to the ISO tariff to modernize it to be more accessible, clear and agile and to address RTR</p>
<p>Optimizing the Grid</p> <p>Objective:</p> <p>Optimize use of existing grid and minimize need or extend timing out for new infrastructure while ensuring reliability and market access</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Distribution Coordination • Technology Integration • OR Market Competitiveness Enhancement 	<p>Update</p> <p>Reduced interconnection costs by applying flexibility to standards through variances</p> <p>Enhanced congestion analysis methodology and its application to system and connection projects</p> <p>Assessed system projects, incorporating congestion analysis and utilization of milestone triggers to manage construction timing, and where appropriate, will file and seek approval for those projects confirmed as needed</p>	<p>Design, Implementation</p> <p>Continue to enhance methods to maximize the use of existing transmission infrastructure, increase the certainty for the timing of new infrastructure, and seek lower cost end solutions</p> <p>Review technical standards and rules to identify additional flexibility to reduce costs</p> <p>Create and publish planning region/substation level capability maps</p>
<p>Distribution Coordination</p> <p>Objective:</p>	<p>Update</p> <p>The <i>AESO Distributed Energy Resources (DER) Roadmap</i> was published in June 2020,</p>	<p>Design, Implementation</p> <p>Implement AESO DER Roadmap technical connection requirements and locational</p>

Business Initiative	Update 2020	Plan 2021
<p>Ensure coordination across the distribution and transmission system as the transformation evolves focused on optimizing transmission system while ensuring reliability and market access</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Red Tape Reduction • Technology Integration • Optimizing the Grid • Tariff Modernization • OR Market Competitiveness Enhancement • GTA 	<p>with priority work focused on defining technical connection requirements and ensuring locational information is centrally available</p> <p>Complete Transmission / Distribution Coordinated Planning Framework development for DFO driven transmission projects</p> <p>Engaged in AUC Distribution System Inquiry and future policy/regulatory related initiatives to share the AESO's principles and perspectives as it relates to mandate implications</p>	<p>information collection. Coordinate with any AUC DER/Distribution Roadmap development</p> <p>Facilitate DER integration and access to AESO electricity markets by updating any ISO rules (if needed) to remove unnecessary market access limitations while ensuring a fair, efficient and openly competitive (FEOC) market.</p> <p>Apply Transmission / Distribution Coordinated Planning Framework on future DFO driven transmission projects.</p> <p>Engage in future policy/regulatory related initiatives to share the AESO's principles and perspectives as it relates to mandate implications</p>
<p>Technology Integration</p> <p>Objective:</p> <p>Enable timely planned integration of new technologies onto the grid and into our markets</p> <p>Enable proactive awareness of future new technologies and the potential impacts to reliability, markets and tariffs</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Tariff Modernization • OR Market Competitiveness Enhancement • Optimizing the Grid • Distribution Coordination • Red Tape Reduction • Market Sustainability and Evolution, I and II • GTA 	<p>Update</p> <p>Completing the development of internal technology awareness and integration processes, developing external engagement plan for 2021, and draft AESO's first "Technology Forward". External engagement deferred to 2021 due to COVID-19</p> <p><i>AESO Energy Storage (ES) Roadmap</i> has progressed with energy and ancillary services market participation information documents (IDs), the implementation of necessary system changes within the Energy Management System (EMS) and market systems to enable the current active energy storage connection projects. The Energy Storage Information Learning Forum (ESILF) was launched in May initiating the sharing of energy storage</p>	<p>Design, Implementation</p> <p>Progress technology integration by implementing internal change plans, engage externally by publishing the AESO's first "Technology Forward" focused on the electricity value chain and potential future implications to the AESO mandate</p> <p>Progress ES Roadmap by addressing tariff treatment for energy storage within the ISO tariff, identifying any ISO rule changes needed to further enable integration of ES and filing changes, as required. Continue to share learnings and seek feedback via ESILF</p>

Business Initiative	Update 2020	Plan 2021
	learnings across 20 industry leaders	
<i>Business Initiatives</i>		
<p>Settlement Audit</p> <p>Objective: Perform an audit of the AESO's financial settlement processes</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> No interdependencies 	<p>Update</p> <p>Audit deferred to 2021 due to COVID-19, however, readiness component is in progress</p>	<p>Implementation</p> <p>Plan to continue with audit in 2021 as this is a stakeholder requested initiative</p>
<p>Operating Reserve (OR) Market Competitiveness Enhancement</p> <p>Objective: Assess ancillary service products to enable technology agnostic participation, where appropriate</p> <p>Assess alternate minor design changes in the OR market that would increase competition in active and standby markets with a focus on the regulating market</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> Technology Integration Optimizing the Grid Distribution Coordination 	<p>Update</p> <p>Proposed for 2021</p>	<p>Design, Implementation</p> <p>Review competitiveness in the operating reserve market. Potential changes will be identified that could enhance competition in the OR market, including but not limited to the design of the market, methods to improve OR market participation and a review of technical and operating requirements</p> <p>Any identified changes will be carefully assessed as to whether they are required and the appropriate timing or pace of the change. Information on the evaluation of the need for change and required timing will be provided through stakeholder engagement</p>
<p>Market Sustainability and Evolution II</p> <p>Objective: To maintain system reliability and ensure the AESO is facilitating a FEOC market for an evolving electrical system while also providing certainty and stability to the market structure.</p>	<p>Update</p> <p>Proposed for 2021</p>	<p>Design, Implementation</p> <p>The AESO is committed to supporting Alberta's economic recovery, with additional focus on cost management across the industry value chain, facilitating business in Alberta, and creating a simpler and more agile approach to our own business processes while also ensuring sustainability of the market in the long-term.</p>

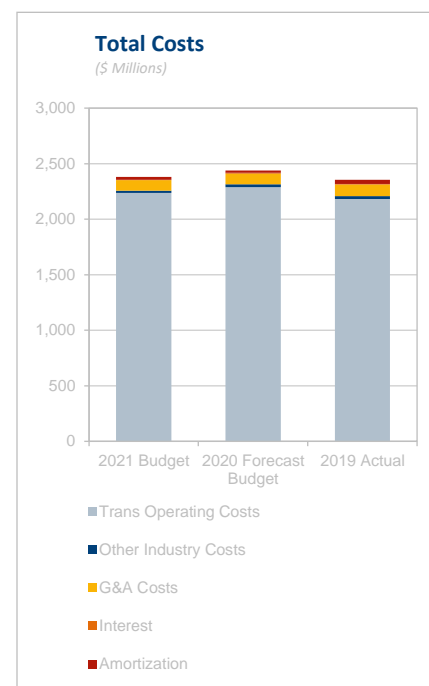
Business Initiative	Update 2020	Plan 2021
<p>Includes: Ramp Table, Dispatch Tolerance and Mothball</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Technology Integration • Market Sustainability and Evolution I 		<p>In light of that, the on-going evaluation and progress of the market initiatives (i.e., Ramp Table, Dispatch Tolerance and Mothball) may result in some of them being deferred or advanced at a slower pace than previously identified or removed from the list</p>
<p>Market Sustainability and Evolution I</p> <p>Objective:</p> <p>Make informed decisions or recommendations regarding structural changes to support market sustainability</p> <p>Interdependencies:</p> <ul style="list-style-type: none"> • Technology Integration • Market Sustainability and Evolution II 	<p>Update</p> <p>Pricing Framework (Complete) – Engaged with stakeholders to evaluate the effectiveness of the energy pricing framework in ensuring signals to promote long-term adequacy and efficient short-term market response</p> <p>Recommendation Report for Minster submitted July 31, 2020</p> <p>Flexibility Assessment (Complete) – Updated Flexibility Assessment, analysis will be relied on to evaluate Dispatch Tolerance and Ramp Table market initiatives</p> <p>Sub-hourly Settlement project and engagement was completed with an evaluation of market benefits and costs. Currently, the AESO is soliciting feedback from market participants on the interest in assessing Payment for Load on the Margin</p>	<p>Design, Implementation</p> <p>Continue to review and assess pursuing Payment for Load on the Margin</p>

Financial Highlights

As part of this 2021 Business Plan and Budget Proposal, the AESO is presenting the forecasts and budgets 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**
 - A. Year-to-date August, including 2020 projection; and
 - B. 2021 forecast.
- **Section II – General and Administrative, Interest and Amortization Costs**
 - A. Year-to-date August 31, 2020; and
 - B. 2021 budgets.
- **Section III – Capital Costs**
 - A. Year-to-date August 31, 2020; and
 - B. 2021 budgets.
- **Section IV – Revenue**



Additional information is included in Appendices B to H.

(\$ million) ~ by production year

	2021 Forecast/ Budget	2020 Projection ¹	2020 Forecast/ Budget ²	2019 Actual
Transmission Operating Costs	2,236.5	2,222.1	2,287.4	2,183.0
Other Industry Costs	21.4	18.7	24.5	24.0
General and Administrative	94.2	90.7	96.2	104.4
Interest Costs	3.5	3.9	7.1	5.4
Amortization	26.2	31.5	22.1	38.8
Capital Expenditures	25.3	23.9	29.3	40.3

Differences are due to rounding

¹ Amounts are the current projection for 2020 costs

² Amounts are from the 2020 BRP (budgets and forecasts currently AESO Board approved).

Section I – Transmission Operating and Other Industry Costs

A. Year-to-Date August 31, 2020

The following table provides a summary of actual costs as of August 31, 2020 compared to the forecasted amounts for the same period. Additional information on year-to-date costs and a cost projection for 2020 is provided in Appendix B (Year-to-Date August 31, 2020 Financial Results Detail).

Year-to-Date August 31, 2020 Costs (\$ million) ~ by production year

	YTD August Actual	YTD August Forecast	YTD August Variance	2020 Projection	2021 Forecast
Wires Costs	1,282.9	1,277.4	5.5	1,924.0	1,933.8
Transmission Line Losses	63.2	77.3	(14.1)	95.8	104.4
Operating Reserves	118.3	160.2	(41.9)	162.2	159.9
Other Ancillary Service Costs	29.5	19.2	10.3	40.1	38.4
Transmission Operating Costs	1,493.9	1,534.0	(40.1)	2,222.1	2,236.5
Other Industry Costs	14.9	16.4	(1.5)	18.3	21.4

Differences are due to rounding

B. 2021 Forecast

Transmission Operating Costs

The following table provides a summary of transmission operating costs.

Transmission Operating Costs (\$ million) ~ by production year

	2021 Forecast	2020 Projection	2020 Forecast	2019 Actual	2018 Actual
Wires Costs	1,933.8	1,924.0	1,916.0	1,864.8	1,764.8
Transmission Line Losses	104.4	95.8	113.5	106.5	98.6
Operating Reserves	159.9	162.2	229.1	186.0	235.8
Other Ancillary Service Costs	38.4	40.1	28.7	25.7	41.9
Transmission Operating Costs	2,236.5	2,222.1	2,287.4	2,183.0	2,141.2

Differences are due to rounding

Additional information on the 2021 forecast methodology and descriptions of the cost categories is provided in Appendix C (Transmission Operating Cost Definitions).

Wires

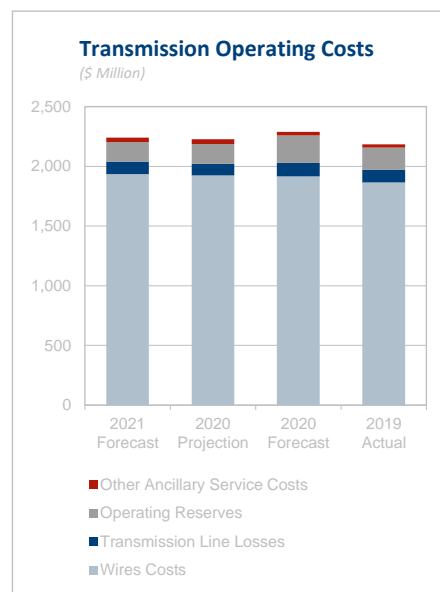
Wires costs represent the amounts paid primarily to transmission facility owners (TFOs) in accordance with their AUC approved tariffs and are not controllable costs of the AESO.

Wires costs include long-term contracts related to Invitation to Bid on Credit (IBOC) and Location Based Credit Standing Offer (LBC SO) programs, since 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.

The 2021 forecast for wires costs is \$1,933.8 million, which is \$9.8 million or less than 1 per cent higher than the 2020 projection of \$1,924.0 million. The 2021 forecast is based on TFO tariffs (\$1,929.8 million) and the AESO's forecast for IBOC and LBC SO costs (\$4.0 million).

The 2020 projection is based on TFO tariffs approved or applied-for as of August 31, 2020 with a majority of the projection reflecting: i) filed 2020 tariffs; ii) filed 2020 negotiated settlements; or iii) AUC approvals for 2019 and 2020 tariffs.

The 2021 forecast is based on TFO tariffs approved or applied-for as of November 2020 with a majority of the forecast reflecting: i) filed 2021 tariffs; ii) filed 2021 negotiated settlements; or iii) AUC approvals for 2020 and 2021 tariffs.



Transmission Line Losses

The 2021 forecast for transmission line losses is \$104.4 million, which is \$8.6 million or 9 per cent higher than the 2020 cost projection of \$95.8 million, primarily due to a forecast increase in pool prices. Transmission line losses costs were originally forecast to be \$113.5 million for 2020; however, the average pool price was less than forecast.

The 2021 transmission line losses volume forecast is 1,880 gigawatt hours (GWh), which is 36 gigawatt hours and 2 per cent lower than the 2020 projection of 1,916 gigawatt hours. Transmission losses volumes in 2020 are projected to be higher than the 2020 forecast. This increase in losses volumes is attributed to less northwest gas fired generation. Losses volumes in 2021 are expected to be at similar levels to historic values and slightly below the 2020 projected volumes.

The average pool price used for the 2021 forecast is \$54 per megawatt hour (MWh), which is 10 per cent higher than the 2020 projection of \$49 per MWh. The 2020 forecast was based on a \$58 per MWh average pool price. The 2020 projection has less hours concentrated at higher prices compared to the 2020 forecast. It reflects the impact of recent market fundamentals such as the effects of the pandemic and low oil prices on demand, carbon pricing regimes, mothballs/retirements/conversions of coal assets, natural gas prices, and renewables additions. The 2021 forecast values call for slightly higher priced hours than the 2020 projection due to an expected partial recovery of demand in 2021.

Operating Reserves

The 2021 forecast for operating reserves costs is \$159.9 million, which is \$6.3 million or 4 per cent lower than the 2020 cost projection of \$166.2 million.

The average pool price used for the 2021 forecast is \$54 per MWh, which is 10 per cent higher than the 2020 projection of \$49 per MWh. Operating reserves costs were originally forecast to be \$229.1 million for 2020, which was based on a \$58 per MWh average pool price for 2020.

Contributing to lower operating reserve costs is the impact of the active operating reserves prices, which are the most significant operating reserve costs and are 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 prices of operating reserves procured are indexed to the pool price, changes to the average pool price do not result in proportional changes to the operating reserve costs. The discounts used in the 2021 forecast follow the established forecast methodology.

The 2021 operating reserves volume forecast is 7.2 terawatt hours, which is 0.5 terawatt hours or 6 per cent lower than the 2020 projection of 7.7 terawatt hours. The 2021 forecast operating reserves volumes are lower than the 2020 projection, partly due to lower forecast import levels expected in 2021 as well as reductions in active operative reserve volumes being procured by the AESO in 2021.

Other Ancillary Services

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

Other Ancillary Services Costs (\$ million) ~ by production year

	2021 Forecast	2020 Projection	2020 Forecast	2019 Actual	2018 Actual
Load Shed Service for Imports	32.6	31.7	20.6	16.1	31.0
Contracted Transmission Must-run	-	2.8	2.4	2.9	3.1
Conscripted Transmission Must-run	0.4	0.4	0.2	0.4	0.4
Reliability Services	2.9	2.9	2.9	2.9	2.9
Poplar Hill	-	-	-	0.9	2.4
Black Start	2.4	2.3	2.3	2.3	2.2
Transmission Constraint Rebalancing	0.1	0.1	0.1	0.3	0.0
Other Ancillary Service Costs	38.4	40.1	28.7	25.7	41.9

Differences are due to rounding

The 2021 forecast for other ancillary services costs is \$38.4 million, which is \$1.7 million or 4 per cent lower than the 2020 cost projection of \$40.1 million.

Load Shed Service for imports (LSSi) 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). LSSi costs are forecasted to be \$32.6 million, which is \$0.9 million or 3 per cent higher than the 2020 projection of \$31.7 million. The 2021 forecast is based on the expected operations of the

transmission system in 2021 and reflects contract pricing for LSSi services. The forecast for 2021 is based on historical averages for armed energy and availability.

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. A generator can be contracted to provide such services in an area or 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). For 2020 year-to-date, there have been fewer events requiring conscripted TMR than was anticipated in the 2020 forecast. The 2021 forecast for conscripted TMR anticipated to be consistent with 2020 projected amounts based on similar operating conditions expected in 2020. The contract for TMR expired in August of 2020, resulting in no forecasted contracted TMR.

Reliability services are procured for grid restoration balancing support in the event of an Alberta blackout and emergency energy in the event of supply shortfall. The 2021 forecast reflects the contract terms.

The Poplar Hill generator provided voltage support (VAr) in addition to power (MW), to support the transmission system reliability in the northwest part of the province. The contract with Poplar Hill was terminated in July of 2019.

Black Start services are required in each region of the province though supplier availability may be limited in certain regions. The 2020 projection and 2021 forecast reflect contract pricing for Black Start services.

Transmission constraint rebalancing 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 Independent System Operator (ISO) rules and would receive a transmission constraint rebalancing payment for energy provided for that purpose. There are no significant events expected in 2021.

Other Industry Costs

Other industry costs represent fees or costs paid based on regulatory requirements or membership fees for industry organizations. The amounts or requirement for these costs are mandatory and not under the direct control of the AESO. These costs relate to the annual administration fee for the AUC, the AESO's share of Western Electricity Coordinating Council (WECC), Northwest Power Pool (NWPP) and North America Electric Reliability Corporation (NERC) membership fees and regulatory process costs. 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)

	2021 Forecast	2020 Projection	2020 Forecast	2019 Actual	2018 Actual
AUC Fees – Transmission	11.3	8.6	12.0	12.2	11.6
AUC Fees – Energy Market	6.6	5.6	6.4	6.5	6.3
WECC/NWPP/NERC Costs ³	2.2	2.5	2.8	2.4	2.1
Regulatory Process Costs	1.3	1.6	3.3	2.9	3.7
Other Industry Costs	21.4	18.3	24.5	24.0	23.8

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.

WECC/NWPP/NERC Fees

The AESO is an active member of the WECC, the organization that fosters and promotes reliability and efficient coordination 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 Norte, Mexico, and all or portions of the 14 Western states between.

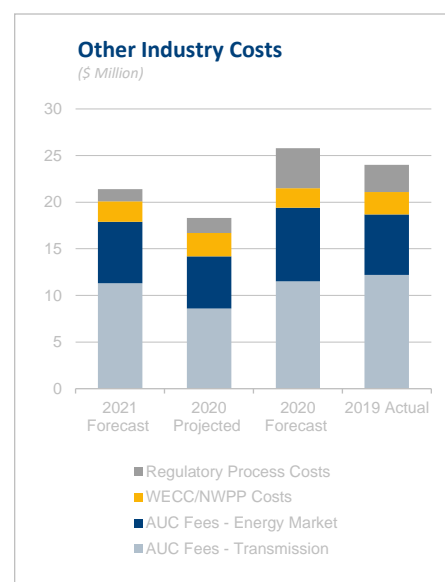
The AESO is also a member of the NWPP, which operates to achieve maximum benefits of coordinated operations for its member organizations. Participation in the NWPP allows the AESO to take advantage of their Reserve Sharing Group, thereby reducing Alberta’s reserve requirements at times.

In addition, the AESO is also a member of the NERC and supports their organization for the development of reliability standards for the North American electricity grid.

The 2021 forecast for AESO’s fees is \$2.2 million, which is consistent with prior year amounts.

Regulatory Process Costs

The costs associated with the AESO’s involvement in an AUC proceeding are included in the cost category Regulatory Process Costs; this does not include application preparation 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



³ Western Electricity Coordinating Council/Northwest Power Pool/North American Electric Reliability Corporation

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 2021 forecast for regulatory process costs is \$1.3 million, which is \$0.3 million or 19 per cent lower than the 2020 projection of \$1.6 million. The 2020 projected costs are primarily related to AESO's involvement in provisional proceedings; the general tariff proceeding; the AUC Electric System Distribution Inquiry and various Need Identification Document (NID) proceedings. It also includes costs related to the historical recalculation of loss factors in relation to AUC Decision 790-D06-2017. Decreases from the 2020 forecast and 2020 projection are the result of the estimated lower number of potential unforeseen regulatory proceedings as well as a decrease in the costs related to the historical recalculation of loss factors.

Section II – General & Administrative, Interest and Amortization Costs

A. Year-to-Date August 31, 2020

The following table provides a summary of actual costs as of August 31, 2020 compared to the budgeted costs for the same period. Additional information on year-to-date costs is provided in Appendix B (Year-to-Date August 31, 2020 Financial Results Detail).

Year-to-Date August 31, 2020 Costs (\$ million)

	YTD August 2020 Actual	YTD August 2020 Budget	YTD Variance	2020 Budget ⁴
General and Administrative Costs	59.2	64.1	(4.9)	96.2
Interest	2.7	4.7	(2.0)	7.1
Amortization of Intangible and Depreciation of Capital Assets	19.6	14.7	4.9	22.1

Differences are due to rounding

⁴ In AESO Board Decision 2020-BRP-001.

B. 2021 Budgets

In the *2021 Business Plan and Budget Proposal* (Proposal), AESO Management continues to focus on the business initiatives in 2021 as outlined earlier in this Proposal. The business initiatives tend to be multi-year in nature and are at various stages of development or implementation. The internal budget discussions focused on the delivery of these initiatives while continuing to provide the safe, reliable and economic operation of the electric system in Alberta.

The AESO, as a trusted leader, continues to focus on its vision to shape the transformation of Alberta's electricity future to deliver reliability and enhance the quality of life for Albertans. To deliver on this vision the AESO is driven to be a dynamic organization with the expertise and agility to adapt to transformative change; deliver a stable electricity framework that provides reliability at lowest cost; and provide optionality for consumers and industry to integrate new technologies and approaches.

Over the past year, the provincial economy and the power industry have been significantly impacted by low commodity prices and COVID-19. As a result, the AESO's focus in 2021 will be on cost management and market and regulatory stability.

For 2021, the business initiatives will be focused on the following mandated top priority initiatives:

- continue implementing the Government of Alberta Red Tape Reduction initiative;
- implement approved tariff provisions from the 2018 General Tariff Application (GTA) into the Connection Process and AESO business;
- continue with the ISO tariff modernization initiative to simplify the ISO tariff to be more accessible, clear and agile;
- continue implementation of the Distributed Energy Resources Roadmap;
- continue to focus on optimizing the grid and minimize need or extend timing out for new infrastructure; and
- advance the technology plan for integrating new electricity value chain technologies.

In addition, the AESO will continue to focus on other external and internal business initiatives to advance its strategic plan and to maintain safe and reliable operations. The AESO will continue to efficiently and effectively deliver on its activities to create value for stakeholders and the province as a whole

In preparing the 2021 Business Plan, AESO Management considered the information currently available to assess the impact on both the business initiatives and budget requirements. As time progresses, new information or events may require a change to the AESO's planned activities that if material in nature, may require further stakeholder and AESO Board consideration on the impact. Appendix H highlights the circumstances and processes that would be undertaken in these circumstances.

General and Administrative Costs

General and Administrative Costs (\$ million)

	2021 Budget	2020 Budget	2019 Actual	2018 Actual
Staff	66.7	66.7	77.7	74.3
Contract Services and Consultants	5.4	7.4	5.5	12.1
Administration	5.3	4.8	4.3	4.4
Facilities	4.0	4.3	3.9	7.6
Computer Services and Maintenance	11.3	11.6	11.5	11.2
Telecommunications	1.5	1.5	1.5	1.5
General and Administrative Costs	94.2	96.2	104.4	111.1

Differences are due to rounding

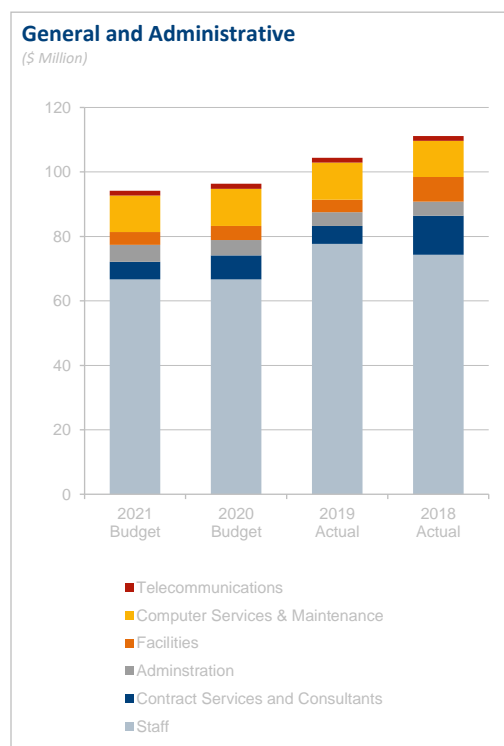
On an ongoing basis, the AESO adapts to new and changing initiatives while maintaining reliable operations of the AIES and other core AESO functions. During 2018 and 2019, the funding for the AESO's operations reflected costs to deliver on key business initiatives (design and implementation of a new market framework, design and implementation of a Renewable Electricity Program (REP) program, implementation of Critical Infrastructure Protection (CIP) Standards and operations of a new Energy Management System (EMS)). In 2020, the AESO focused on a number of initiatives including the Energy-only Market review, transmission system developments, distribution initiatives and tariff requirements. The AESO's 2021 proposed general and administrative budget is \$94.2 million, a decrease of \$2.0 million or 2 per cent from the 2020 budget of \$96.2 million and reflects a focus on cost management and market and regulatory stability as discussed previously.

Appendix D of this Proposal (2021 General and Administrative Cost Detail) provides additional narrative on the specific cost areas.

The staff costs are \$66.7 million in 2021, which is consistent with the prior year. Decreases in staff benefit costs and an increase in capitalized labor are partially offset by a proposed staff compensation adjustment (e.g. inversions, compressions and promotions).

Contract services and consultants costs typically vary from year to year as the AESO hires these resources to supplement staff when it is not practical to permanently retain staff with specific skill sets that may only be required for certain initiatives and to address workload peaks to maintain seamless operations. Contractor and consulting costs are expected to decrease by \$2.0 million in 2021 as a result of reduced requirements for current year initiatives and continued efforts to develop and retain skillsets internally to reduce costs.

Administrative 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. The higher



budgeted costs in 2021 compared to 2020 are primarily associated with an increase in insurance premiums due to market conditions.

Facilities costs relate to office space rent and operating costs, and operating costs related to the AESO System Coordination Centre (SCC). Facilities costs for 2019 forward reflect the adoption of International Financial Reporting Standard 16 – Leases (IFRS 16), which reclassifies the costs of various facility leases to amortization of right-of-use assets and interest expense. The increase in facility costs in the 2020 budget were due to the inclusion of anticipated operating costs related to completion of the AESO's SCC Expansion project in Q4 2019. The 2021 budget of \$4.0 million, which is \$0.3 million or 7 per cent lower than the 2020 budget, is primarily due to lower operating costs anticipated at the AESO Operations Complex (AOC), which includes the SCC Expansion, and the deferral of some work due to COVID-19.

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 for support. The decrease is primarily due to reducing IT services and rationalizing service levels with vendors; negotiating with vendors and achieving cost reductions; innovative thinking and redesigning infrastructure in order to avoid maintenance and licensing costs. These reductions are partially offset by growth in IT systems and tool reliance, as well as the impact of expired warranties and contracts.

The reallocations and budget changes are summarized as follows:

(\$ million)

2020 Approved Budget		\$ 96.6
Staff Costs	0.0	
Contract Services and Consultants	(2.0)	
Administration	0.4	
Facilities, Computer Services, Maintenance & Telecommunications	(0.5)	(2.0)
2021 Proposed Budget		\$ 94.2

Differences are due to rounding

Interest Costs and Amortization

Interest Costs and Amortization (\$ million)

	2021 Budget	2020 Budget	2019 Actual	2018 Actual
Interest	3.5	7.1	5.4	1.4
Amortization of Intangible and Depreciation of Property, Plant and Equipment	26.2	22.1	38.8	26.1

Differences are due to rounding

Interest expense is incurred as a result of 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. Intangible and capital assets are financed through the AESO's credit facilities and recovered over the useful lives of the assets (included in amortization).

Additional interest costs budgeted for 2020 related to accumulated working capital deficiencies, which were recovered throughout 2020 and others, such as portions of energy market and REP related deficiencies,

which are deferred and recovered in future periods. The 2021 budget reflects lower interest rates and reduced working capital deficiencies.

Intangible and capital assets are amortized over their estimated useful lives in accordance with generally accepted accounting principles and reviewed on an annual basis. The higher amortization in 2021 is mainly due to a higher depreciable asset base in 2021 and the impact of changes in the estimated useful life of significant systems, resulting in accelerated depreciation.

Additional information on the AESO's 2021 capital projects is provided in Appendix E (2021 Capital Projects).

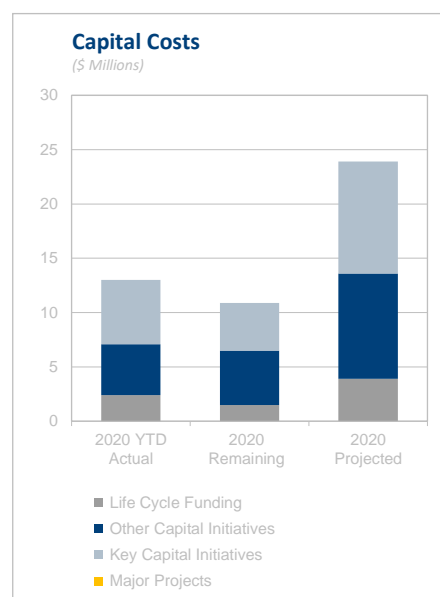
Section III – Capital Costs

A. Year-to-Date August 31, 2020

The capital spending for the first eight months of 2020 is \$13.1 million.

The following table provides a summary of the current capital project investment for 2020.

Additional information on the status and progress of specific projects is provided in the following section, Appendix B (Year-to-Date August 31, 2020 Financial Results Detail).



Capital Expenditures (\$ million)

	2020 YTD August Actual	2020 Remaining	2020 Projection ⁵
General Capital ⁶	13.1	10.8	23.9
Major Projects ⁷	-	-	-
Total Capital Spending	13.1	10.8	23.9

Differences are due to rounding

⁵ Projection – Spent to date plus estimate to complete current year

⁶ General capital includes the project categories of key, other and life cycle

⁷ Major capital includes programs or projects that due to their size (generally single project, greater than \$1 million and multiple years in duration) cannot be managed within the general capital budget

B. 2021 Budget

A detailed review of the capital requirements for 2021 takes into consideration the progress that has been made on the inflight projects that are multi-year in nature, the new requirements for 2021 and the AESO's capacity to design and implement system solutions. Based on these findings, the proposed capital budget is \$25.3 million for 2021.

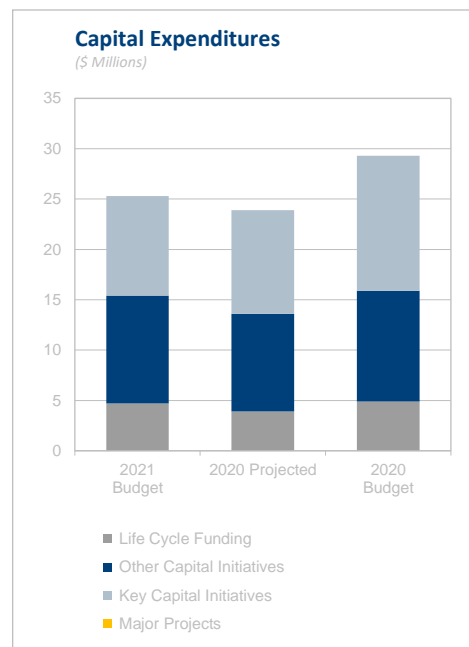
The variance between the 2020 and 2021 capital budgets is a decrease of \$4.0 million from \$29.3 million to \$25.3 million. The decrease is mainly attributable to due significant efforts to minimize and defer costs given current economic conditions and efficiency gains.

The variance between the 2020 projection and 2020 budget is a net decrease of \$5.4 million from \$29.3 million to \$23.9 million. The decrease is mainly attributable to lower than budgeted expectations due to the impacts of COVID-19 on timing and completion of work, efficiency gains and strategic efforts to minimize and defer spend.

The AESO considers the budgeting process for capital expenditures as the determination for the annual level of capital expenditures for use in the internal portfolio management process; not the review and approval of specific capital projects. All capital projects initiated by the AESO are reviewed and approved through the portfolio management process. This process is led by senior management and facilitates a regular review and prioritization of major projects to ensure business requirements are met and, at the same time, achieve the most beneficial and cost-effective results. This process also allows for the flexibility required to re-evaluate capital plans throughout the year.

The following table identifies a preliminary list of projects that are planned for 2021 based on current operations and the business initiatives. As time progresses across the identified planning period, requirements and circumstances may change and the portfolio management process will be used to manage these changes throughout the period.

Additional information on the 2021 capital projects is provided in Appendix E (2021 Capital Projects).



Capital Expenditures (\$ million)

	2021 Budget	2020 Budget	2019 Actual
Key Capital Initiatives	9.9	13.4	17.4
1. Business System Modernization	1.0	-	-
2. Cyber Security and Critical Infrastructure Protection	1.1	2.9	1.2
3. Optimizing the Grid	1.2	-	-
4. Technology Integration	0.4	-	-
5. EMS Sustainment	6.3	4.8	5.3
6. Market Evolution – Other	-	1.6	1.7
7. Productivity Applications and Tools	-	3.3	-
8. Critical Systems External Interface Modernization	-	0.8	-
9. Capacity Market	-	-	9.1
Other Capital Initiatives	10.7	11.0	3.7
Life Cycle Funding	4.7	4.9	7.7
Sub-total General Capital	25.3	29.3	28.9
Major – SCC⁸	-	-	11.5
Total Capital	25.3	29.3	40.3

Differences are due to rounding

Key Capital Initiatives represent the most critical capital projects over the planning period that must be completed within the identified timeframe.

Other Capital Initiatives are also necessary projects; however, there is more flexibility in planning or delivery, so timing is not as critical as the Key Capital Initiatives.

Life Cycle Initiatives are typically replacement of end-of-life IT hardware and recurring software upgrades.

Major Project Initiatives are programs or projects that due to their size (generally single project, greater than \$1 million and multiple years in duration) cannot be managed within the general capital budget. These programs or projects require stakeholder consultation and AESO Board approval.

⁸ System Coordination Centre Expansion

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, renewables and load settlement to maximize benefits under the *Electric Utilities Act* (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 G (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 budget 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. Based on the 2021 budget and a current trading volume forecast, an energy market trading charge of 35.2¢ per MWh traded is proposed to recover the AESO’s budgeted costs for 2021. The trading charge for 2021 is lower than 2020, reflecting the reduction in 2021 budgeted costs and efforts to reduce some of the impact of COVID-19 and the economic environment through the deferral of energy market deficits to be recovered in future periods.

The AESO costs are 29.7¢ per MWh traded, representing a decrease of 8.1¢ per MWh traded or 21 per cent from the 2020 rate of 37.8¢ per MWh traded.

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

Trading Charge Recoverable Amounts (\$ million)

	2021	2020	2019	2018	2017	2016
AESO Costs	34.3	40.0	46.8	30.4	30.2	34.5
Energy Market Shortfall / (Surplus)	1.5	8.9	4.0	(7.0)	-	-
AESO Component	35.8	48.9	50.8	23.4	30.2	34.5
AUC’s Portion of Energy Market Administration Fee	6.6	8.3	6.5	6.5	6.0	7.0
Total Recoverable Amount	42.4	57.2	57.3	29.9	36.2	41.5

Differences are due to rounding

Trading Charge (¢ per MWh)

	2021	2020	2019	2018	2017	2016
AESO Costs	28.5	31.1	34.7	23.7	26.2	26.2
Energy Market Shortfall / (Surplus)	1.2	6.7	3.0	(5.5)	-	-
AESO Component	29.7	37.8	37.7	18.2	26.2	26.2
AUC's Portion of Energy Market Administration Fee	5.4	4.8	4.8	3.2	5.3	5.3
Total	35.2	42.6	42.5	21.4	31.5	31.5

Differences are due to rounding

Renewables

The AESO is responsible to administer the Renewable Electricity Program (REP) and recover the costs through fees charged to participants in the competitive process and 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: Alberta Electric System Operator 2019-2023 Strategic Plan

The AESO develops a new strategic plan every four to five years, which serves as a foundational document for defining and communicating the direction and focus of the organization for the strategic plan timeframe. The *AESO 2019–2023 Strategic Plan* serves as the starting point for the development of this business plan, and the subsequent business plans and budgets that will follow. The AESO continues to believe the current strategic plan is applicable for 2021.

AESO Mission

The AESO provides for the safe, reliable and economic operation of the Alberta electricity system while facilitating a fair, efficient and openly competitive market for electricity.

AESO Vision

As the trusted leader, the AESO is shaping the transformation of Alberta's electricity future to deliver reliability and enhance the quality of life for Albertans.

Strategic Objectives

The AESO pursues the following three key objectives:

People

We will be a more dynamic organization with the expertise and agility to adapt to transformative change.

This is about people and process – ensuring we are positioned to meet future demands.

Framework

We will deliver a stable electricity framework that provides reliability at lowest cost through competition as we bridge from the current transition to the broader industry transformation.

With potential changes to the energy-only market, changes in transmission policy and with an evolving generation fleet, we are focused on creating a foundation that provides clarity to investors, thereby creating investor confidence.

Technology

We will provide optionality for consumers and industry to integrate new technologies and approaches while we maintain the overall reliability of the grid.

Changes in social demands and consumer preferences will drive new and innovative technologies across the entire electricity value chain; we will position the electricity system to accommodate the influx of new technologies.

These objectives are interrelated and interdependent; and by achieving them, the AESO will continue to operate in the public interest of all Albertans and ultimately realize our vision

Appendix B: Year-to-Date August 31, 2020 Financial Results Detail

Year-to-Date August 31, 2020 Transmission Operating Costs (\$ million) ~ by production year

	YTD August Actual	YTD August Forecast	YTD Variance	2020 Projection ⁹	2020 Forecast
Wires Costs	1,282.9	1,277.4	5.5	1,924.0	1,916.0
Transmission Line Losses	63.2	77.3	(14.1)	95.8	113.5
Operating Reserves	118.3	160.2	(41.9)	162.2	229.1
Other Ancillary Service Costs	29.5	19.2	10.3	40.1	28.7
Transmission Operating Costs	1,493.9	1,534.0	(40.1)	2,222.1	2,287.4

Differences are due to rounding

Transmission Operating Costs

The table above provides the transmission operating costs as of August 31, 2020 compared to the forecast for the same period.

Transmission operating costs represent wires, transmission line losses and ancillary services costs. As of August 31, 2020, actual costs of \$1,493.9 million are \$40.1 million or 3 per cent lower than the year-to-date August forecast costs of \$1,534.0 million.

Wires Costs

Wires costs as of August 31, 2020 of \$1,282.9 million are \$5.5 million or less than 1 per cent higher than the year-to-date August forecast costs of \$1,277.4 million based on the amounts paid primarily to the TFOs in accordance with their AUC-approved tariffs.

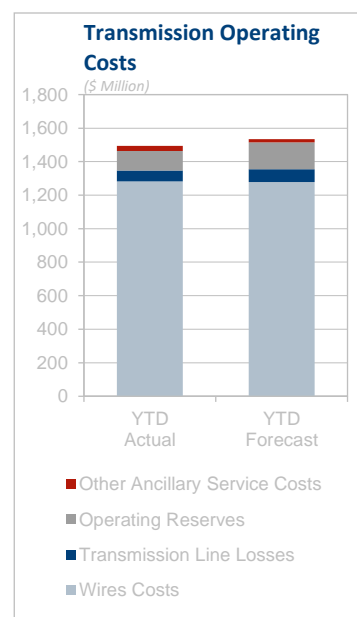
Transmission Line Losses

Transmission line losses costs as of August 31, 2020 are \$63.2 million, which is \$14.1 million or 18 per cent lower than the year-to-date August forecast of \$77.3 million. The cost of transmission line losses is impacted by a lower actual pool price than forecast pool price offset by higher actual losses volumes than forecast. Transmission line losses costs are projected to be \$95.8 million for 2020.

The year-to-date August 31, 2020 actual average hourly pool price is \$48 per MWh, which is less than the year-to-date August forecast of \$60 per MWh (by 20 per cent) and less than the annual projected pool price of \$58 per MWh.

Transmission line losses volumes to the end of August are 1,268 gigawatt hours, which is 39 gigawatt hours or 3 per cent higher than the year-to-date August 31, 2020 forecast volumes of 1,229 gigawatt hours.

Operating Reserves



⁹ Transmission Operating and Other Industry Costs are the current projection for 2020 costs

Operating reserve as of August 31, 2020 are \$118.3 million, which is \$41.9 million or 26 per cent lower than the year-to-date August 31, 2020 forecast of \$160.2 million. The cost of operating reserves is impacted by actual volumes, hourly pool prices and operating reserve prices. Operating reserve costs are projected to be \$162.2 million for 2020.

The cost variance as of August 31, 2020 is mainly attributable to lower pool prices, which are \$48 per MWh or 20 per cent lower than the year-to-date August 31, 2020 forecast of \$60 per MWh, and as a result of lower than expected load volumes and lower active operating volumes procured, which offset the effects of high import volumes. Total operating reserves volumes as of August 31, 2020 are 5,398 gigawatt hours, which is 206 gigawatt hours or 4 per cent higher than the August 31, 2020 forecast volumes of 5,192 gigawatt hours.

The prices of operating reserves procured through the online exchange are indexed to the pool price. The changes to the average pool price do not result in proportional changes to the operating reserve costs as operating reserve costs are derived from the pool price and a premium or discount to the pool price.

Other Ancillary Service 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 procurements may not be feasible, through bilateral negotiations.

Other ancillary services costs as of August 31, 2020 are \$29.5 million, which is \$10.3 million or 54 per cent higher than the year-to-date August forecast of \$19.2 million.

Other Ancillary Services Costs (\$ million) ~ by production year

	YTD August Actual	YTD August Forecast	YTD August Variance	2020 Projection	2020 Forecast
Load Shed Service for Imports	23.5	13.8	9.7	31.7	20.6
Contracted Transmission Must-run	2.6	1.6	1.0	2.8	2.4
Conscripted Transmission Must-run	0.0	0.3	(0.3)	0.4	0.2
Reliability Services	1.9	1.9	0.0	2.9	2.9
Black Start	1.5	1.5	(0.0)	2.3	2.3
Transmission Constraint Rebalancing	0.0	0.1	(0.1)	0.1	0.1
Other Ancillary Service Costs	29.5	19.2	10.3	40.1	28.7

Differences are due to rounding

Load Shed Service for imports (LSSi) 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). As of August 31, 2020, LSSi costs are \$23.5 million, which is \$9.7 million or 70 per cent higher than the year-to-date August forecast of \$13.8 million. This is due to higher imports and changes to the LSSi arming table in June 2020, as well as trip payments issued in June 2020 for an event on the system.

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. A generator can be contracted to provide such services in an area or 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). For 2020 year-to-date, there have been fewer events requiring conscripted TMR than was anticipated in the 2020 forecast to date. The contract for TMR expired in September of 2020.

The Poplar Hill generator provided voltage support (VArS) in addition to power (MW), to support the transmission system reliability in the Northwest part of the province. The contract with Poplar Hill was terminated in July of 2019.

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 blackout, black start services are used to re-energize the transmission system and provide start-up power to generators who cannot self-start. The 2020 year-to-date and forecast reflect contract pricing for Black Start services.

Transmission constraint rebalancing 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 Independent System Operator (ISO) rules and would receive a transmission constraint rebalancing payment for energy provided for that purpose. There have been no significant events in 2020 to date.

Other Industry Costs

The following table provides other industry costs as of August 31, 2020 compared to the forecast for the same period.

Year-to-Date August 31, 2020 Other Industry Costs (\$ million)

	YTD August Actual	YTD August Forecast	YTD August Variance	2020 Projection	2020 Forecast
AUC Fees – Transmission	7.1	8.0	(0.9)	8.6	12.0
AUC Fees – Energy Market	4.7	4.3	0.4	5.6	6.4
WECC/NWPP/NERC Costs	1.5	1.9	(0.4)	2.5	2.8
Regulatory Process Costs	1.6	2.2	(0.6)	1.6	3.3
Other Industry Costs	14.9	16.4	(1.5)	18.3	24.5

Differences are due to rounding

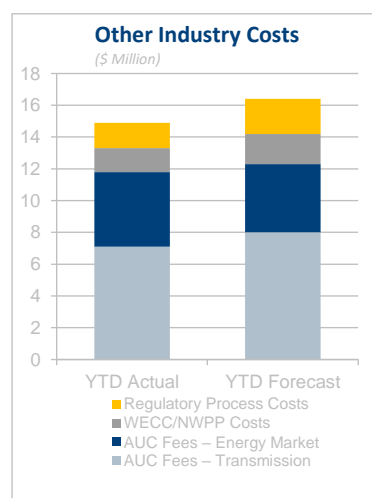
Other industry costs represent fees or costs paid based on regulatory requirements or membership fees for industry organizations. The amounts or requirement for the costs are not under the direct control of the AESO. These costs relate to the annual administration fee for the Alberta Utilities Commission (AUC); the AESO's share of Western Electricity Coordinating Council (WECC), Northwest Power Pool (NWPP) and North America Electric Reliability Corporation (NERC) membership fees; and regulatory process costs.

Other industry costs as of August 31, 2020 \$14.9 million, which is \$1.5 million or 9 per cent lower than the year-to-date 2020 forecast of \$16.4 million.

AUC fees as of August 31, 2020 are \$11.8 million, which is \$0.5 million or 4 per cent lower than the year-to-date August forecast of \$12.3 million.

The WECC/NWPP/NERC fees are projected to be less than the 2020 forecast amount.

The 2020 cost projection for regulatory processes is \$1.6 million, which is estimated to be \$1.7 million less than the 2020 budget. The 2020 projected costs are primarily related to AESO's involvement in provisional proceedings; the general tariff proceeding; the AUC Electric System Distribution Inquiry and various Need Identification Document (NID) proceedings. It also includes costs related to the historical recalculation of loss factors in relation to AUC Decision 790-D06-2017. Decreases from the 2020 budget are the result of the unforeseen nature of regulatory proceedings as well as a decrease in the costs related to the historical recalculation of loss factors.



General and Administrative Costs

The following table provides the general and administrative costs as of August 31, 2020 compared to the budget for the same period.

Year-to-Date August 31, 2020 General and Administrative Costs (\$ million)

	YTD August Actual	YTD August Budget	YTD August Variance	2020 Projection	2020 Budget
Staff Costs	44.6	44.4	0.2	65.9	66.7
Contract Services and Consultants	2.1	4.9	(2.8)	5.0	7.4
Administration	1.9	3.2	(1.3)	3.8	4.8
Facilities	2.7	2.8	(0.1)	4.1	4.3
Computer Services and Maintenance	6.8	7.7	(0.9)	10.4	11.6
Telecommunications	1.0	1.0	(0.0)	1.5	1.5
General and Administrative Costs	59.2	64.1	(4.9)	90.7	96.2

Differences are due to rounding

Staff Costs

The AESO maintains market-based compensation for staff which incorporates a benefits plan and a performance-based incentive. Staff costs to August 31, 2020 are \$44.6 million, which is \$0.2 million or less than 1 per cent higher than the year-to-date August 31, 2020 budget of \$44.4 million. The increase is due to proposed staff compensation adjustment (e.g. inversions, compressions and promotions, etc.) offset by a reduction in staff benefit costs and an increase in capitalized labor (reduces staff costs). Actual staff costs for 2020 are projected to be \$0.8 million or 1 per cent lower than the 2020 budget.

Contract Services and Consultants

The contract services and consultant costs to August 31, 2020 are \$2.1 million, which is \$2.8 million or 57 per cent lower than the year-to-date August 31, 2020 budget of \$4.9 million, due to reduced requirements for current year initiatives and continued efforts to develop and retain skillsets internally to reduce costs. Contract services and consultant costs for 2020 are projected to be \$2.4 million or 32 per cent lower than the 2020 budget of \$7.4 million due to these factors.

Administration

Administration costs include travel and training, AESO Board fees, office costs, insurance and recruiting, which represent the general operating costs of the organization. Administrative costs to August 31, 2020 are \$1.9 million, which is \$1.3 million or 41 per cent lower than year-to-date August 31, 2020 budget of \$3.2 million. The lower costs are associated with the unanticipated impact of COVID-19. Administration costs for 2020 are projected to be \$1.0 million or 21 per cent lower than the 2020 budget of \$4.8 million due to these factors.

Facilities

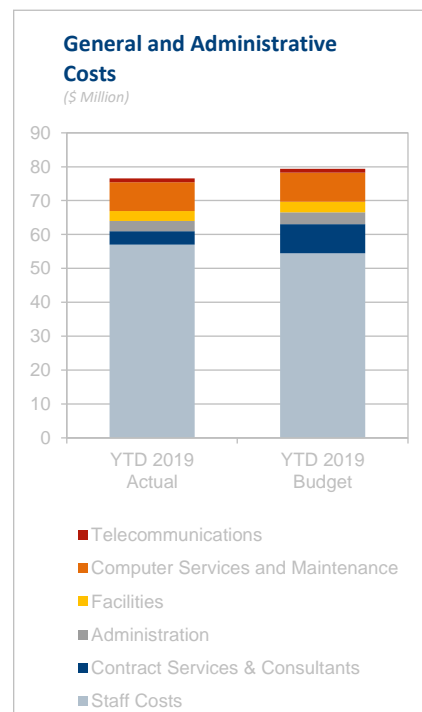
Facility costs include short-term leases and operating costs for three AESO locations. Facility costs to August 31, 2020 are \$2.7 million, which is \$0.1 million or 4 per cent lower than the year-to-date August 31, 2020 budget of \$2.8 million. The decrease is primarily due to costs for operation of the AESO's SCC and strategic changes to some maintenance work due to COVID-19. Facilities costs are projected to be \$0.2 million or 5 per cent lower than the 2020 budget of \$4.3 million due to these factors.

Computer Services and Maintenance

Ongoing costs are incurred to purchase annual software operating licences and maintenance agreements for the AESO's information technology systems. Actual computer services and maintenance costs to August 31, 2020 are \$6.8 million, which is \$0.9 million or 12 per cent lower than the year-to-date August 31, 2020 budget of \$7.7 million due to active vendor management as well as innovative thinking and redesigning infrastructure in order to avoid maintenance and licensing costs. These reductions are partially offset by growth in IT systems and tool reliance, as well as the impact of expired warranties and contracts. Computer services and maintenance costs for 2020 are projected to be \$1.2 million or 10 per cent lower than the 2020 budget of \$11.6 million due to these factors.

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. It is anticipated that these costs, based on current projections for 2020, will be consistent with the 2020 budget.



Interest and Amortization and Depreciation Costs

The following table provides the interest and amortization and depreciation costs as of August 31, 2020 compared to the budget for the same period.

Year-to-Date August 31, 2020 Costs (\$ million)

	YTD August Actual	YTD August Budget	YTD August Variance	2020 Projection	2020 Budget
Interest	2.7	4.7	(2.0)	3.9	7.1
Amortization of Intangible Assets and Property, Depreciation of Plant and Equipment	19.6	14.7	4.9	31.5	22.1

Differences are due to rounding

Interest

Interest expense is incurred primarily as a result of 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. Interest is also incurred through the amortization of right-of-use liabilities in accordance with IFRS 16. Interest costs to August 31, 2020 are \$2.7 million, which is \$2.0 million or 43 per cent lower than the year-to-date August 31, 2020 budget. The decrease is due to lower interest rates related to economic conditions. Interest costs are projected to be \$3.2 million or 45 per cent lower than the 2020 budget of \$7.1 million due to these factors.

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

Intangible assets are amortized and PP&E is depreciated over their estimated useful lives. Intangible assets include the AESO's computer software purchases and development. Amortization and depreciation is also incurred through the amortization of right-of-use assets in accordance with IFRS 16. Amortization and depreciation costs to August 31, 2020 are \$19.6 million, which is \$4.9 million or 33 per cent higher than the year-to-date August 31, 2020 budget. The increase is primarily due a greater depreciable base and the change in life of significant assets that accelerated depreciation.

Capital Expenditures

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.

To address these challenges, a vetting and prioritization process has been implemented and continues to be enhanced to ensure capital expenditures achieve the most beneficial and cost-effective results to continue to meet operating requirements. This is referred to as the portfolio management process. Throughout the year, capital projects are reviewed on an ongoing basis to assess progress and budget spending and identify potential issues. Any new or modified requirements are also reviewed and prioritized

to determine how they align with existing work. This is a continual process to ensure alignment of priorities and business needs.

The projection of capital expenditure for 2021 is \$25.3 million. It is comprised of general capital (key, other, life cycle) and is expected to be lower than AESO's approved general capital budget of \$29.3 million for 2020.

Capital Expenditures (\$ million)

	2020 YTD August Actual	2020 Remaining	2020 Projection
Key Capital Initiatives	5.9	4.4	10.3
Other Capital Initiatives	4.7	5.0	9.7
Life Cycle Funding	2.4	1.5	3.9
Major Project	-	-	-
Total Capital Spending	13.1	10.8	23.9

Differences are due to rounding

Key Capital Initiatives represent the most critical capital projects over the planning period that must be completed within the identified timeframe.

Other Capital Initiatives are also necessary projects; however, there is more flexibility in planning or delivery, so timing is not as critical as the Key Capital Initiatives.

Life Cycle Initiatives are typically replacement of end-of-life IT hardware and recurring software upgrades.

Major Project Initiatives are programs or projects that due to their size (generally single projects, greater than \$1 million and multiple years in duration) cannot be managed within the general capital budget. These programs or projects require stakeholder consultation and AESO Board approval.

Appendix C: Transmission Operating Cost Definitions

2021 Pool Price Forecast Methodology

Consistent with the 2020 BRP, the AESO has chosen to use the EDC Associates' hourly pool price forecast for 2021. 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 understood that the following assumptions have been considered by EDC:

- the effects of the pandemic and low oil prices on demand
- the impacts of carbon pricing
- pricing impacts associated with mothballs, retirements, and conversions of coal assets, and
- renewables additions

The 2021 average pool price is forecast to be \$54 per MWh compared to the 2020 projected average pool price of \$49 per MWh, an increase of 10 per cent. The higher pool prices anticipated for 2021 can be mainly attributed to an expected partial recovery of demand in 2021.

Transmission Line Losses

Transmission line losses represent the volume of energy that is lost as a result of electrical resistance on the transmission lines. 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 AIES, 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 the hourly forecast losses volumes, which are based on:

- statistical models that use forecast load as an input; and
- normal weather.

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 transmission 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.

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. Over-the-counter contracts are used only as a back-up to procure operating reserves in the absence of the availability of the online exchange. All providers who sell volumes over-the-counter are paid their offer price.

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
- represent approximately 80 per cent of total operating reserves costs
- costs are impacted by pool price fluctuations, supply of offered reserves and market participant offer behaviour

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
- represent approximately 20 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

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 such procurements may not be feasible, through bilateral negotiations.

Load Shed Service for imports (LSSI) 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).

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 blackout, 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.

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.

The Poplar Hill generator provided voltage support (VARs) in addition to power (MW), to support the transmission system reliability in the province. The contract with Poplar Hill was terminated in July of 2019.

Reliability services are provided through an agreement with Powerex Corp. for grid restoration balancing support in the event of an Alberta blackout, and for emergency energy in the event of supply shortfall.

Transmission constraint rebalancing 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 transmission constraint rebalancing payment for energy provided for that purpose.

Appendix D: 2021 General and Administrative Cost Detail

Staff, Contract Services and Consultants

Staff, Contract Services and Consultants (\$ million)

	2021 Budget	2020 Budget	2019 Actual	2018 Actual
Staff	66.7	66.7	77.7	74.3
Consulting	3.9	6.6	5.1	10.8
Legal	1.4	0.7	0.4	1.2
Audit	0.1	0.1	0.0	0.1
Staff, Contract Services and Consultants	72.1	74.1	83.2	86.4

Differences are due to rounding

Staff Costs – These 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. No base salary adjustment is proposed for 2021. There were no base salary pay adjustments in 2018, 2019 or 2020, although an amount of \$1.0 million for 2019 and 2020, was approved to adjust employee compensation for inversions, compressions and promotions. An amount of \$1.0 million has been reflected in the 2021 budget for this purpose.

Short-term (annual) incentive plan – The AESO’s short-term incentive plan is based on an assessment of corporate and individual performance, as aligned to corporate goals. In preparing the budget for 2021, the AESO has confidence in its approach to successfully deliver on its goals and has reflected this in its incentive compensation at a per cent of one’s eligibility, which is consistent with prior years.

Vacancy rate – The AESO has included a 6 per cent vacancy rate for 2021, which is consistent with the AESO’s budgeted vacancy rate for 2020. The rate takes into consideration historical averages, as well as anticipated trends for 2020.

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, defined contributions for retirement savings and federal payroll taxes. These costs are presented as a percentage of salary costs to determine a “benefits load factor”, budgeted at 21 per cent, which is consistent with prior years.

Consulting – The AESO hires consultants to supplement staff resources for two general purposes. 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. Consultants are also used to address workload peaks to maintain seamless operations and continual progression on key initiatives. Reductions in consulting costs for the 2021 budget reflect reduced requirements for current year initiatives and continued efforts to develop and retain skillsets internally to reduce costs.

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 application are included in the cost category regulatory process costs, as opposed

to the general and administrative cost category. The increase in legal costs for the 2021 budget are primarily due to expected commercial matters requiring legal assistance in 2021.

Audit/Review – To conduct audits or reviews on AESO processes, systems or reporting, the professional services of third parties are used to assist with these initiatives.

Administration

Administration (\$ million)

	2021 Budget	2020 Budget	2019 Actual	2018 Actual
Travel and Training	1.6	1.8	1.6	1.5
Insurance	1.1	0.6	0.5	0.5
AESO Board Fees	0.5	0.5	0.4	0.5
Other Administrative	2.1	1.9	1.8	1.9
Administration	5.3	4.8	4.3	4.4

Differences are due to rounding

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. The budgeted costs in 2021 have decreased by \$0.2 million from 2020 due to lower expected costs to be incurred in 2021.

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 most costly damages that would occur for business interruption and lost revenue. A \$0.5 million increase is forecast for 2021 due to premium increases due to market conditions.

AESO Board Member Fees – The AESO is governed by the AESO Board whose members are appointed by the Alberta Minister of Energy. While the number of Board 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 Administrative Costs – This category includes corporate subscriptions/memberships and professional membership fees, general office costs, printing and recruiting. An increase of \$0.2 million is forecast for 2021 compared to 2020 primarily related to additional corporate subscriptions, memberships and professional memberships.

Facilities

Facilities (\$ million)

	2021 Budget	2020 Budget	2019 Actual	2018 Actual
Facilities	4.0	4.3	3.9	7.6

Differences are due to rounding

Facility costs are associated with three office locations: i) the main offices in downtown Calgary which are leased through long-term lease arrangements, ii) the SCC, 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 in the main offices, 105,000 square feet of office space is currently leased through agreements that will expire in 2024. 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 interest cost. Short-term and immaterial leases remain classified as rent.

Facilities costs are anticipated to decrease due to costs for operation of the AESO's SCC Expansion project being slightly lower than anticipated and strategic changes to some maintenance work due to COVID-19.

Computer Services and Maintenance

Computer Services and Maintenance (\$ million)

	2021 Budget	2020 Budget	2019 Actual	2018 Actual
IT Maintenance and Services	11.3	11.6	11.5	11.2

As the AESO continues to invest in IT infrastructure to support its business operations, ongoing costs are incurred to purchase annual software and hardware operating licences and maintenance agreements for these systems with high availability requirements supported by appropriate class maintenance and support agreements. The AESO operates with a managed services model¹⁰ for IT infrastructure operating support (e.g., network, database and middleware platforms).

These costs are anticipated to decrease in 2021 over the 2020 budget due to active vendor management and the redesign of infrastructure in order to avoid maintenance and licensing costs. These reductions are partially offset by growth in IT systems and tool reliance, as well as the impact of expired warranties and contracts.

¹⁰ A managed service 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 will facilitate resource efficiencies and improve reliability.

Telecommunications

Telecommunications (\$ million)

	2021 Budget	2020 Budget	2019 Actual	2018 Actual
Telecommunications	1.5	1.5	1.5	1.5

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. The 2021 budgeted costs are consistent with prior year amounts.

Appendix E: 2021 Capital Projects

The following tables provide information on the AESO’s current capital plan for 2021. Actual projects to be completed during this period will vary and include the addition of projects yet to be determined, deferral of projects in this plan, or elimination of projects deemed no longer necessary.

Key Capital Initiatives

These are the most critical capital projects over the planning period that the AESO believes must be completed within the identified timeframe.

Key Capital Initiatives		
Business System Modernization	Description	Includes providing a single, secure, standardized, user experience for external stakeholders exchanging data with various departments across the AESO. This includes sharing data & information, receiving data and information with market participants, government agencies and the public.
	2021 Plan	Complete implementation of an external facing portal to provide a single platform to exchange data for ARS External Compliance Monitoring (ECM), FOIP requests and DER static data from DFOs. Initiate other opportunities for data exchange with external market participants.
Cyber Security and Critical Infrastructure Protection (CIP)	Description	Build on the existing cyber security foundation to protect the AESO from the ever-expanding cyber threats. Deliver improvements in the way that cyber security threats and vulnerabilities are identified, providing better visibility of security events, improved responses and coordinated recovery.
	2021 Plan	Implementation of various cyber security and CIP related projects
EMS Sustainment	Description	The EMS is used by System Controllers in grid operations to monitor, control and optimize the performance of the power system. Upgrades relating to the sustainment and optimization requirements of the EMS evergreen strategy – includes vendor software upgrades and improved analysis and reporting capabilities.
	2021 Plan	Continue the capital investment via the “Grid Reliability Support” program to sustain and enhance the EMS. In order to support renewables integration and maintain the reliable operation of the Alberta Grid and Market. Deliver a sustainable long-term EMS required to monitor and control the grid at the lowest possible cost, while generating maximum value from the investment

Key Capital Initiatives		
Technology Integration	Description	Related capital to help ensure coordination across the distribution and transmission system as the transformation evolves focused on optimizing the transmission system while ensuring reliability and market access
	2021 Plan	Includes projects related to energy storage long-term solution implementation and distributed energy resource (DER) integration
Optimizing the Grid	Description	Optimize use of existing grid and minimize need or extend timing out for new infrastructure while ensuring reliability and market access
	2021 Plan	Includes online transient stability analysis (TSA) which is currently done offline due to the processing and time requirements. Online TSA would allow for real time analysis to occur and have the results fed back to the system controllers.
Key Initiatives	2021 Budget	\$9.9 million

Other Capital Initiatives and Facilities (\$ million)

These are necessary projects that have more flexibility in planning or delivery, so timing is not as critical as the Key Capital Initiatives.

Other Capital Initiatives	Description	2021 Budget
Business Technology Solutions	Implementation of technology solutions to improve operating effectiveness, efficiency and controls – includes records management, personal productivity tools, forecasting software, contract systems, enterprise resource planning (ERP) system, and governance, risk and compliance tool	5.5
Reliability - Other	Upgrades to existing SCC, Back-Up Coordination Centre and control room systems and technologies	2.4
System Enhancement Program	Ongoing high priority minor enhancements to production applications	1.4
Other Capital Initiatives		9.3
Facilities	Life cycle replacement of chillers and generator controls at the SCC. Also includes office furniture purchase, replacement and other leasehold improvements	1.4

Differences are due to rounding

Life Cycle Initiatives (\$ million)

These are typically replacement of end-of-life hardware and recurring software upgrades.

Life Cycle Initiatives	Description	2021 Budget
Network Upgrades	Upgrade AESO voice and data networks to ensure vendor support, meet reliability requirements and address increased capacity needs. This includes data switches, remote access capabilities, and redundancy of critical network services	0.8
Server Upgrades	Retire and replace corporate server hardware/software based on a pre-determined corporate retirement plan.	0.6
Enterprise Services	Upgrades to the AESO critical middleware platforms to provide for a reliable, performant and vendor-supported environment	0.15
End User Computing	Upgrade activities that keep the end user computing platform current	0.05
Storage Upgrade	Implement selected storage infrastructure upgrades to address existing end-of-life cycle considerations	0.65
Applications Life Cycle	Upgrades to the underlying technologies that support the AESO's corporate and enterprise applications	0.5
Non-project Capital	Ongoing investment in deskside systems, services and mobile devices to replace aging software and equipment and accommodate resource growth	0.25
Critical Systems Modernization	Upgrade or replace the application server and applications utilized in multiple business areas	1.7
Life Cycle Initiatives		4.7

Differences are due to rounding

Appendix F: Major Projects

No major projects are budgeted or planned for 2021.

Appendix G: Allocation of Costs

Management reviews allocation percentages twice a year. The percentages are reviewed when the annual budget is prepared and at year-end when the allocations are finalized based on actual activities and costs for each department.

Cost Type	Allocation Methodology
Direct Operating	Individual department review/analysis for current year work focus
Shared Services – Corporate Services¹¹	Based on 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
Capital	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

¹¹ Corporate Services includes departments such as: Accounting, Settlement and Credit, Human Resources, Corporate Communications, Legal, etc.

Appendix H: Budget Amendments

As part of the established BRP 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 will review the new funding requirements with stakeholders, followed by a request for approval from the AESO Board
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
<p>A 'manageable variance' is a forecast to actual variance that would be:</p> <ul style="list-style-type: none"> • Less than 10 per cent of budgeted general and administrative expenditures • Less than 20 per cent of budgeted capital 	

Stakeholder Participation and Comments and AESO Responses

Throughout the current year Budget Review Process (BRP), the AESO held meetings with stakeholders to discuss proposed business initiatives, the business plan, budget and forecast materials and provided stakeholders with an opportunity to provide comments on this information.

The following table lists the companies that participated in the sessions and/or provided comments in the associated stakeholder comment matrices in the current year BRP and the meeting dates they attended.

Stakeholder Participation in the Budget Review Process	July 7 Invitation & Process Materials	Aug. 11 Business Initiatives	Aug. 11 Business Initiatives	Sept. 21 Business Initiatives	Oct. 1 Forecast & Budget	Oct. 1 Forecast, Budget & Business Initiatives
	Comment Matrix	Session	Comment Matrix	Session	Session	Comment Matrix
Alberta Direct Connect Consumers Association (ADC)	√	√	√	√	√	√
Alberta NewsPrint (ANC)				√	√	
AltaLink Management	√		√	√	√	
Best Consulting Solutions Inc.	√	√	√	√		
BlueEarth Renewables		√		√	√	
Canadian Renewable Energy Association (CanREA)				√		
Capital Power Corporation	√	√	√	√	√	
Chymko Consulting Ltd.		√			√	
City of Medicine Hat		√				
DePal Consulting Limited		√		√	√	
EnableUC		√				
ENMAX Corporation	√		√		√	√
Greengate Power Corporation	√		√			
Guidehouse Canada		√		√	√	
Heartland Generation Ltd.	√	√	√	√	√	√
Independent Power Producers Society of Alberta (IPPSA)	√	√	√	√	√	√
Industrial Power Consumers Association of Alberta (IPCAA)	√	√	√	√	√	√
Levvel, Inc.				√		

Stakeholder Participation in the Budget Review Process	July 7 Invitation & Process Materials	Aug. 11 Business Initiatives	Aug. 11 Business Initiatives	Sept. 21 Business Initiatives	Oct. 1 Forecast & Budget	Oct. 1 Forecast, Budget & Business Initiatives
	Comment Matrix	Session	Comment Matrix	Session	Session	Comment Matrix
Lionstooth Energy		√		√	√	
NRGCS		√		√		
Reactive Technologies Ltd, UK	√					
Smart Wires				√		
The Office of The Utilities Consumer Advocate (UCA)	√	√	√	√	√	√
TransAlta Corporation	√	√	√	√		√
Voltus Energy Canada Ltd.	√	√		√		

The following table identifies the key BRP dates in 2020.

Key BRP Dates	Purpose
July 7, 2020	Notice to stakeholders – A notice was distributed to stakeholders regarding the initiation of the BRP (i.e., stakeholder consultation process), an overview of the process steps, terms of reference, and proposed process schedule.
August 11, 2020	First stakeholder meeting – Stakeholder meeting to discuss the preliminary list of business initiatives proposed for 2021.
September 21, 2020	Second stakeholder meeting – Stakeholder meeting to discuss stakeholder feedback on preliminary list of business initiatives proposed for 2021 presented on August 11, 2020.
October 1, 2020	Third stakeholder meeting – A technical review meeting to discuss transmission line losses and ancillary services costs forecasts for 2021 and the preliminary own costs budgets (general and administrative, interest, amortization, other industry and capital) proposed for 2021.
November 18, 2020	Stakeholder and AESO Board meetings (as required).

Following stakeholder meetings and/or the posting of BRP information on the AESO’s website, we asked stakeholders for their comments. Stakeholder comments and AESO responses to those comments are enclosed.

Stakeholder Comment Matrix and AESO Replies

Request for Feedback 2021 Budget Review Process (BRP) Invitation and Process Materials | July 7, 2020



The AESO asked market participants and interested stakeholders to participate in the AESO’s consultation regarding its 2021 Business Plan and Budget. Related stakeholder comments regarding the invitation and supporting material are provided in the following matrix. The matrix also includes AESO’s replies to the stakeholder comments.

I. Invitation to Participate	
Do stakeholders accept the invitation to participate in the 2021 BRP?	
1. Alberta Direct Connect Consumers Association (“ADC”)	ADC appreciates the opportunity to participate in the 2021 BRP
2. AltaLink Management (“Altalink”)	Yes
3. Best Consulting Solutions Inc. (“BCSI”)	Yes, BCSI appreciates and accepts the invitation to participate in the BRP
4. Capital Power Corporation (“Capital Power”)	Capital Power appreciates the opportunity to participate in the 2021 Budget Review Process and accepts the AESO invitation.
5. ENMAX Corporation (“ENMAX”)	ENMAX intends to participate in the AESO’s 2021 Budget Review Process (BRP).
6. Greengate Power Corporation (“Greengate”)	Greengate appreciates and accepts the AESO’s offer to take part in the 2021 BRP.
7. Heartland Generation Ltd. (“Heartland Generation”)	Yes, Heartland Generation will participate in the BRP.
8. Industrial Power Consumers Association of Alberta (“IPCAA”)	Yes
9. Independent Power Producers Society of Alberta (“IPPSA”)	Yes, IPPSA appreciates the invitation and looks forward to participating in the BRP.

I. Invitation to Participate (cont.)	
Do stakeholders accept the invitation to participate in the 2021 BRP?	
10. Reactive Technologies Ltd, UK (“Reactive Technologies”)	Yes
11. The Office of The Utilities Consumer Advocate (“UCA”)	The Office of the Utilities Consumer Advocate (UCA) has regularly participated in the AESO’s annual Budget Review Process (BRP) in the past and plans to do so this year as well. Hence, the UCA accepts the AESO’s invitation to participate in the 2021 BRP.
12. TransAlta Corporation (“TransAlta”)	Yes, TransAlta accepts the invitation to participate in the 2021 BRP.
13. Voltus Energy Canada, Ltd. (“Voltus Energy”)	Yes
AESO Response	<ul style="list-style-type: none"> • All comments noted. • The Alberta Electric System Operator (“AESO”) thanks stakeholders for their participation, commitment and support of the process.

II. Terms of Reference	
Do stakeholders agree with or have comments on the principles set out in the Terms of Reference?	
1. Alberta Direct Connect Consumers Association (“ADC”)	ADC supports the principles set out in the terms of reference
2. AltaLink Management (“Altalink”)	n/a
3. Best Consulting Solutions Inc. (“BCSI”)	<p>BCSI suggests the AESO might consider the following addition to recognize the current virtual environment:</p> <ul style="list-style-type: none"> • During stakeholder meetings, verbal comments are encouraged as they provide valuable input for general discussion and consideration. Given that the BRP will be conducted via webinar and not in person, extra effort will be applied by the AESO to ensure participants have opportunity to make verbal comments.
4. Capital Power Corporation (“Capital Power”)	Capital Power agrees with the principles set out in the Terms of Reference.
5. ENMAX Corporation (“ENMAX”)	The Terms of Reference appear reasonable.
6. Greengate Power Corporation (“Greengate”)	Greengate agrees with the principles outlined in the terms of reference.
7. Heartland Generation Ltd. (“Heartland Generation”)	<p>Yes, Heartland Generation agrees with the principles outlined in the Terms of Reference. Heartland Generation thinks that it is especially important that the written decision rendered by the AESO Board on these matters contain detailed reasons and rationale. Should the AESO not agree with stakeholder feedback, Heartland Generation suggests that these reasons should specifically explain why the AESO does not agree.</p> <p>Heartland Generation is willing to sign a non-disclosure agreement if that would facilitate the sharing of more complete information between the AESO and those stakeholders in the BRP process.</p>

II. Terms of Reference (cont.)	
Do stakeholders agree with or have comments on the principles set out in the Terms of Reference?	
8. Industrial Power Consumers Association of Alberta (“IPCAA”)	Yes – agree. No comments at this time.
9. Independent Power Producers Society of Alberta (“IPPSA”)	IPPSA supports the Terms of Reference provided.
10. Reactive Technologies Ltd, UK (“Reactive Technologies”)	We agree with, we do not have comments on the principles.
11. The Office of The Utilities Consumer Advocate (“UCA”)	While the UCA generally agrees with the principle of transparency as outlined in the Terms and Reference, the UCA believes that the consultation should be meaningful and not just formal.
12. TransAlta Corporation (“TransAlta”)	We support and agree with the principles set out in the Terms of Reference.
13. Voltus Energy Canada, Ltd. (“Voltus Energy”)	Yes

II. Terms of Reference (cont.)	
Do stakeholders agree with or have comments on the principles set out in the Terms of Reference?	
<p>AESO Response</p>	<ul style="list-style-type: none"> • All comments noted. • The AESO values verbal discussion and will ensure stakeholders have opportunities to make verbal comments during the sessions as per the BRP Terms of Reference. • The AESO will consider providing additional rationale in the written Decision by the AESO Board and in its responses when not in alignment with stakeholder comments. A non-disclosure agreement would not be required as the AESO wants the rationales to be transparent and available to all market participants and interested parties, not just a BRP participant. • As per the AESO's <i>Stakeholder Engagement Framework</i>, the AESO's stakeholder engagement approach is conducted strategically and in a coordinated manner such that we are compliant with our legislative and regulatory obligations, and stakeholders are provided with a consistent and meaningful experience to help us make well-informed decisions for the benefits of Albertans.

III. Process Steps	
Do stakeholders agree with or have comments on the steps identified in the 2021 BRP? <i>Note: An additional meeting regarding Business Initiatives added to this year's process cycle</i>	
1. Alberta Direct Connect Consumers Association (“ADC”)	ADC supports the steps identified in the 2021 BRP.
2. AltaLink Management (“Altalink”)	n/a
3. Best Consulting Solutions Inc. (“BCSI”)	BCSI questions if either of the Industry Roundtables will be involved in the BRP, or have input into the BRP, and if so, should that be recognized in the process steps.
4. Capital Power Corporation (“Capital Power”)	Capital Power supports the inclusion of an additional meeting to discuss the AESO’s Business Initiatives. Including AESO leadership in this process step to speak to the initiatives will ensure there is constructive dialogue with stakeholders. This will be a positive addition to the 2021 BRP process.
5. ENMAX Corporation (“ENMAX”)	At this time, ENMAX does not have any comments on the steps identified in the 2021 BRP.
6. Greengate Power Corporation (“Greengate”)	Greengate agrees with the steps outlined in the 2021 BRP document. Greengate believes that the initial meeting regarding the business initiatives will be helpful in creating an understanding with stakeholders on the AESO’s proposed key initiatives.
7. Heartland Generation Ltd. (“Heartland Generation”)	Heartland Generation does not have any comments at this time
8. Industrial Power Consumers Association of Alberta (“IPCAA”)	Yes – agree. No comments at this time.
9. Independent Power Producers Society of Alberta (“IPPSA”)	IPPSA greatly appreciates and supports the inclusion of the new step in the process, which enables a discussion of the AESO’s key initiatives with relevant AESO vice presidents. This will help stakeholders better understand what the AESO proposes for the year ahead and will help in rationalizing its priorities.

III. Process Steps (cont.)	
Do stakeholders agree with or have comments on the steps identified in the 2021 BRP? <i>Note: An additional meeting regarding Business Initiatives added to this year's process cycle</i>	
10. Reactive Technologies Ltd, UK (“Reactive Technologies”)	We agree with and do not have comments on the steps.
11. The Office of The Utilities Consumer Advocate (“UCA”)	The UCA has no comments regarding the steps outlined in this year's BRP.
12. TransAlta Corporation (“TransAlta”)	We support the addition of the meeting regarding the business initiatives. We commend the AESO for amending their process from 2020 in light of the stakeholder comments that were made about the need for more information and justification of the business initiatives that the AESO presents in its BRP.
13. Voltus Energy Canada, Ltd. (“Voltus Energy”)	We agree with the steps identified in the 2021 BRP, and appreciate the opportunity to weigh in on business initiatives development earlier in the process.
AESO Response	<ul style="list-style-type: none"> • All comments noted. • The industry roundtables are separate processes, however, like other AESO processes there will be coordinated alignment between processes and the BRP where possible. • Thank you for your support for the additional meeting regarding business initiatives and for the stakeholder feedback and support during last year's process that prompted the AESO to amend the BRP timing and process to accommodate this additional meeting. AESO leadership will be participating in both business initiative meetings (August 11 and September 21).

IV. Calendar and Schedule	
Do stakeholders agree with the proposed BRP stakeholder calendar and schedule? Are there any comments regarding the meetings scheduled?	
1. Alberta Direct Connect Consumers Association (“ADC”)	Does the AESO anticipate all of the meetings including the AESO Board presentations will be held virtually? Or will there be an option to accommodate virtual attendance for those not able to attend in person?
2. AltaLink Management (“Altalink”)	n/a
3. Best Consulting Solutions Inc. (“BCSI”)	<p>BCSI suggests that the AESO consider combining the following two activities onto one date. They are only separated by a long weekend and having two postings so close together could lead to confusion/overload.</p> <ul style="list-style-type: none"> • Post AESO replies to written comments on invitation and process materials (Step 1) July 31 • And “Post materials for Business Initiatives Stakeholder Meeting 1 (Step 2) August 4
4. Capital Power Corporation (“Capital Power”)	Capital Power agrees with the proposed schedule of meetings and has no additional comments
5. ENMAX Corporation (“ENMAX”)	The proposed BRP stakeholder calendar and schedule appear reasonable. Depending on the forum used for future meetings, stakeholder engagement and dialogue may continue to be limited. The AESO may need to adjust their schedule or provide a workaround to ensure stakeholders have a reasonable opportunity to provide feedback and ask questions on the content being presented.
6. Greengate Power Corporation (“Greengate”)	Greengate has no comments and agrees on the stakeholder calendar and schedule.
7. Heartland Generation Ltd. (“Heartland Generation”)	The schedule appears reasonable. Heartland Generation does not have any further comments at this time.

IV. Calendar and Schedule (cont.)	
Do stakeholders agree with the proposed BRP stakeholder calendar and schedule? Are there any comments regarding the meetings scheduled?	
8. Industrial Power Consumers Association of Alberta (“IPCAA”)	IPCAA has no immediate concerns with the proposed calendar.
9. Independent Power Producers Society of Alberta (“IPPSA”)	IPPSA supports the calendar as proposed.
10. Reactive Technologies Ltd, UK (“Reactive Technologies”)	Yes. No comments on the meetings schedules.
11. The Office of The Utilities Consumer Advocate (“UCA”)	The UCA has no concerns regarding the steps outlined in this year’s calendar or schedule.
12. TransAlta Corporation (“TransAlta”)	The proposed BRP stakeholder calendar and schedule provide reasonable amounts of time between process steps and should facilitate adequate stakeholder engagement.
13. Voltus Energy Canada, Ltd. (“Voltus Energy”)	Yes, no comments.

IV. Calendar and Schedule (cont.)

Do stakeholders agree with the proposed BRP stakeholder calendar and schedule? Are there any comments regarding the meetings scheduled?

AESO Response

- All comments noted.
- At this time, the AESO has not determined if the AESO Board stakeholder meetings, and future BRP meetings, will be held virtually or in person, nevertheless, there will be an option to attend virtually.
- With respect to the posting on July 31 “AESO replies to written comments on invitation and process material”, these stakeholder comments and AESO replies should not provide a significant review burden for stakeholders as they are process related comments. The August 4 “materials for Business Initiatives Stakeholder Meeting 1”, stakeholders will have five business days to review the documents (prior to the meeting). The stakeholders will have the opportunity to provide comments based on this first meeting and the presentation by August 27. With starting the process earlier, there is additional time for review and discussion and there will be many opportunities throughout the process to provide comments.
- The AESO will ensure stakeholders have a reasonable opportunity to provide feedback and ask questions on the content being presented.

V. Other Comments	
Do stakeholders have any other comments to offer at this time?	
1. Alberta Direct Connect Consumers Association (“ADC”)	No other comments at this time.
2. AltaLink Management (“Altalink”)	n/a
3. Best Consulting Solutions Inc. (“BCSI”)	No further comments
4. Capital Power Corporation (“Capital Power”)	Capital Power has no additional comments at this time.
5. ENMAX Corporation (“ENMAX”)	ENMAX would expect that the AESO’s 2021 Budget will evolve based on the cost-benefit for each of its proposed initiatives. Given the economic climate, reducing costs to market participants and ensuring initiatives are reflective of market needs should remain a priority for the AESO.
6. Greengate Power Corporation (“Greengate”)	Greengate is concerned over the lack of current loss factor analysis available to project developers. Greengate would recommend that some form of loss factor analysis be available to developers well prior to the project coming into service. Greengate looks forward to AESO initiatives regarding loss factor developer analysis.
7. Heartland Generation Ltd. (“Heartland Generation”)	n/a
8. Industrial Power Consumers Association of Alberta (“IPCAA”)	n/a

V. Other Comments (cont.)	
Do stakeholders have any other comments to offer at this time?	
9. Independent Power Producers Society of Alberta (“IPPSA”)	IPPSA thanks the AESO for the opportunity to comment within its Budget Review Process and we appreciate the process change to allow for dialogue with AESO’s vice presidents. IPPSA’s interest in the Budget Review Process is to look for opportunities to rationalize AESO priorities and to reduce the trading charge. The AESO’s 2020 trading charge is the highest its ever been, which comes at a challenging time for the AESO’s customers.
10. Reactive Technologies Ltd, UK (“Reactive Technologies”)	We are interested in engaging with AESO in a meaningful discussion about the statement made that “Available Transfer Capability will potentially be reduced in response to low system inertia, the reduced ATC will be established based on real-time inertia calculations.” We can’t see directly projects that will measure or increase inertia in the budget for 2021 and were wanting to discuss and engage with the right people on this matter.
11. The Office of The Utilities Consumer Advocate (“UCA”)	With respect to a number of other stakeholder sessions, the AESO recently changed its mind regarding decisions that were originally established based on information and principles presented at the beginning of the consultation. The UCA would like to reiterate that the outcome of the BRP should be driven by the discussion and concerns raised during the consultation.
12. TransAlta Corporation (“TransAlta”)	No additional comment at this time.
13. Voltus Energy Canada, Ltd. (“Voltus Energy”)	No.

V. Other Comments (cont.)	
Do stakeholders have any other comments to offer at this time?	
<p>AESO Response</p>	<ul style="list-style-type: none"> • All comments noted. • As the organization responsible for managing the safe, reliable and economic operation of the provincial power system, the AESO is committed to doing what we can within our mandate to enable Alberta's future prosperity. The AESO has already actioned several near-term cost management initiatives and will continue to work with the Government of Alberta and industry to identify longer-term opportunities to put downward pressure on costs and to reduce red tape and regulatory burden. For more information related to cost management and the AESO, please see https://www.aeso.ca/aeso/cost-management/ • The concern noted above regarding loss factor analysis (being available prior to coming into service for project developers) will be shared with the applicable AESO area and the AESO leadership. You are also encouraged to continue to actively and directly work with the applicable AESO area and their respective processes. • With respect to the comment above regarding ATC, upon receiving this request, the AESO has connected you with applicable AESO areas.

Stakeholder Comment Matrix and AESO Responses

Request for Feedback on 2021 Budget Review Process (BRP) Proposed Business Initiatives

August 11, 2020



The AESO asked market participants and interested stakeholders to participate in the AESO's consultation regarding its 2021 Business Plan and Budget. Related stakeholder comments regarding the AESO's Proposed Business Initiatives Session 1 presentation are provided in the following matrix. The matrix also includes AESO's responses to the stakeholder comments.

Session 1 Feedback	
Please comment on the AESO's 2021 BRP Proposed Business Initiatives Session 1 hosted on August 11, 2020. Was the session valuable? Was there something the AESO could have done to make the session more helpful? Please be specific.	
Alberta Direct Connect Consumers Association ("ADC") and Industrial Power Consumers Association of Alberta ("IPCAA")	<p>The session was valuable; however, there are some lessons for the AESO on responding to consumer requests: industrial consumers have been asking about plans for the next ISO tariff application and require a clear description of what will be filed by the AESO and when.</p> <p>The AESO made reference to a July 27th submission in the <i>2018 ISO Tariff Compliance Filing Pursuant to Decision 22942-D02-2019 and 2020 ISO Tariff Update Application</i> proceeding. ADC and IPCAA had already reviewed this submission and found it unclear. The AESO's submission states:</p> <p><i>"In accordance with the AESO's commitment to update the Commission on the anticipated timing for the filing of the AESO's next comprehensive tariff application, the AESO expects to file:</i></p> <p><i>Phase 1 on or before March 31, 2021; and</i></p> <p><i>Phases 2 and 3 on or before June 30, 2021.</i></p> <p><i>The AESO is of the view that the substation fraction methodology should be dealt with holistically as part of the Contribution Policy component of the Phase 2 application."</i></p> <p>Thus, we assume that Bulk and Regional rate design are in Phase 1 and Contribution Policy is in Phase 2. It would be easier if customers were provided with a list on the AESO's website.</p> <p>It was mentioned on the webinar that this filing is available on the AESO website. Typically, tariff application material is published here: https://www.aeso.ca/rules-standards-and-tariff/tariff/current-applications/</p> <p>The July 27th submission (25175_X0095) is not available from this location.</p> <p>Two things would be helpful for customers going forward:</p>

	<ul style="list-style-type: none"> Once the AUC has an e-filing Proceeding ID associated with an AESO application, please post that Proceeding ID with the application material on the AESO website. Customers are consistently asking for this information. The AESO could save stakeholders time by posting this. Major AESO filings and submissions should always be posted on the AESO's website, not simply on the AUC's e-filing system. Many customers do not have or want e-filing access. It should not be necessary if customers are only interested in reading key AESO documents and learning when major items will be filed. <p>In the "new pandemic world" where in-person meetings are rare, we need to provide customers with clear and easy-to-find information.</p> <p>It was helpful to have the AESO VPs attend the session. Thank you to Karen and her team for organizing this.</p>
AESO Response	<p>The AESO appreciates the input. Further clarity on individual ISO tariff activities and filings has been provided in the AESO 2020-2021 Plan for ISO Tariff-Related Activities. The AESO will strive to make information on its ISO tariff filings more accessible, while not duplicating the AUC e-filing site and purpose.</p>
AltaLink Management ("Altalink")	<p>The Session provided a good overview of the topics/initiatives that will be reviewed moving forward in Session Two.</p>
AESO Response	<p>Noted</p>
Best Consulting Solutions Inc. ("BCSI")	<p>n/a</p>
AESO Response	<p>n/a</p>
Capital Power Corporation ("Capital Power")	<p>Capital Power appreciates the opportunity to participate in the AESO's 2021 Budget Review Process. The BRP Initiatives Session hosted on August 11, 2020 was a valuable opportunity to hear from AESO leadership and understand the proposed initiatives that will form the basis for the 2021 budget.</p> <p>The prior consultation that was undertaken on the AESO's 2020-2021 Market-Related Initiatives provided stakeholders with an opportunity in advance of the BRP to understand the priorities and scope of work that would be advanced in the coming year. This process resulted in several iterations of the plan, which did consider stakeholder feedback on the necessity, priority and scope of the proposed initiatives. A similar sequence of consultation should be used in the future to ensure stakeholders have an opportunity to provide comments on the AESO's proposed initiatives in advance of the BRP.</p>

AESO Response	Noted. We will continue to seek opportunities to improve the BRP in the future and coordinate activities with other stakeholder processes where appropriate.
ENMAX Corporation (“ENMAX”)	Yes, the session was valuable.
AESO Response	Noted.
Greengate Power Corporation (“Greengate”)	The session was very helpful in understanding the AESO's 2021 business initiatives. As mentioned in the session, having each VP speak to the initiatives in their area was beneficial. The AESO's new focus on stakeholder engagement is appreciated and is proving effective in consultations with stakeholders.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland Generation”)	Yes, the August 11th session was valuable. In particular, it was valuable to have the AESO's Vice Presidents available to explain the proposed business initiatives.
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	<p>IPPSA appreciates the opportunity to participate in the AESO's 2021 Budget Review Process.</p> <p>We valued the participation of AESO vice-presidents in the first session. That enabled stakeholders to better understand each of the AESO's priorities within those respective areas. We hope that level of engagement continues in future BRPs.</p>
AESO Response	Noted. We are committed to seeking ongoing improvements to the AESO's BRP engagement process.
The Office of The Utilities Consumer Advocate (“UCA”)	<p>The AESO's 2021 BRP Proposed Business Initiatives Session 1 stakeholder consultation was helpful in understanding the AESO's focus and priorities for 2021. While the session provided significant detail, the UCA would like to better understand which initiatives (in reference to slide #26), if any, the AESO hopes to complete in 2021.</p> <p>Also with respect to timing, the UCA would like to know if the AESO's Tariff review and modernization initiative will impact the 2018 GTA tariff updates for 2021.</p>
AESO Response	The AESO plans to complete 2018 GTA and Settlement Audit in 2021. In regards to the AESO's Tariff review and modernization initiative please refer to the AESO 2020-2021 Plan for ISO Tariff-Related Activities for more information.

<p>TransAlta Corporation (“TransAlta”)</p>	<p>TransAlta appreciates the changes made to the 2021 BRP process, which added a forum for the functional leads to describe the initiatives that their areas plan to pursue in the upcoming year. In previous years, the initiatives were described in the BRP documents but beyond providing a very brief summary of each initiative there was little detail to allow stakeholders to understand what was being proposed. This incremental improvement was helpful and should be continued in future BRP processes.</p> <p>We continue to see a need to further improve this process by providing more insight into how those initiatives drive costs included in the budget including internal resources usage (FTE allocated to each initiative) and other costs (e.g. consulting costs, operating and capital expenditures, etc.). We further note that many if not most AESO initiatives are multi-year. Greater transparency should be provided into the extended multi-year plan and the internal resource allocations and cost associated with AESO activities.</p> <p>In summary, we recommend the following improvements:</p> <ul style="list-style-type: none"> • Provide a multi-year plan of initiatives including the AESO’s prioritization of those initiatives (e.g. why those initiatives are necessary, interdependences between initiatives, ranking the initiatives to each other based on their relative importance). • Show the internal resource allocations and budgetary costs associated with each initiative.
<p>AESO Response</p>	<p>Noted. The AESO plans to provide a ranking of the business initiatives at the September 21, 2020 stakeholder meeting by noting the mandated and top priority business initiatives. In addition, at the October 1, 2020 BRP meeting on the budget the AESO plans to provide certain cost information by business initiative in relation to the budgeted consulting and capital costs that are expected to be spent in relation to each business initiative in 2021. The AESO does not intend to add any new staff resources in 2021 for the proposed business initiatives. The AESO assesses its staff requirements holistically. Existing staff will be required to deliver on both base load work and business initiatives in 2021.</p>

II. 2021 Proposed Business Initiatives	
<p>a) In your view, are the newly proposed 2021 external business initiatives ones the AESO should advance in 2021? And why? Please be specific.</p>	
<p>Alberta Direct Connect Consumers Association (“ADC”) and Industrial Power Consumers Association of Alberta (“IPCAA”)</p>	<p>ADC and IPCAA address specific external business initiatives (or lack thereof) as follows:</p> <p><u>Tariff Modernization</u></p> <p>ADC and IPCAA have concerns with the AESO’s “Tariff Modernization” initiative. The title itself is confusing and the AESO representatives did not make it clear what modernization actually means. In addition to this, there is no clarity as to which aspects of the ISO tariff application will be filed in Q1 2021. Will it simply be the Bulk and Regional Rate Design piece? See comments above.</p> <p>ADC and IPCAA are also concerned that the AESO is attempting to “modernize” the tariff to address “prosumers” when the majority of these types of customers connect through distribution systems and pay distribution tariffs. The ISO tariff does not translate directly through the various distribution tariffs in Alberta. As such, it is difficult to understand how the AESO wants to achieve “modern” rates for “prosumers” through this Business Initiative. The AESO’s plan for “restructuring and simplifications to the ISO tariff to modernize it to be more accessible, clear and agile” will only work if customers pay the ISO tariff via the same components. Does the AESO have a plan to work with Distribution Facility Owners (DFOs) and the Alberta Utilities Commission (AUC) to achieve a coordinated approach to rate design?</p> <p><u>Optimizing the Grid</u></p> <p>ADC and IPCAA support this initiative; however, we have concerns that the work that the AESO is conducting is not being effectively communicated to the Department of Energy (DOE). For example, regarding milestone triggers to manage construction timing – the DOE does not appear to be aware that CETO phases are front-end loaded with ~90% of the project costs in the first phase of the project. ADC and IPCAA recommend improved communication with the DOE. Additional concerns with CETO are mentioned in a subsequent section [II.b)].</p> <p>ADC and IPCAA recommend that the AESO provide additional clarity on where it sees the limit of AESO oversight with regard to distribution infrastructure. Consumers are concerned that there is a dearth of oversight of distribution costs with various agencies assuming other agencies are taking responsibility.</p>

	<p><u>Settlement Audit</u></p> <p>ADC and IPCAA continue to stress the importance of this independent audit.</p> <p><u>Cost Management</u></p> <p>ADC and IPCAA submit that Cost Management should be a stand-alone priority item. See comments in II.b) below.</p>
<p>AESO Response</p>	<p><u>Tariff Modernization</u></p> <p>The AESO provided additional information on AESO planned tariff activities in the recently released 2020-2021 Plan for ISO Tariff-Related Activities. Additional information on the intent and proposed process for Tariff Modernization is also included. There will be further opportunities for stakeholders to provide input on areas of value and priority as the AESO progresses its work on Tariff modernization.</p> <p><u>Optimizing the Grid</u></p> <p>The DOE was updated on the CETO project, including the milestone triggers and the staging approach. Additional updates were provided following the feedback from IPCAA and ADC to ensure the DOE understood the details and the AESO's reasons for recommending proceeding with the CETO project as filed.</p> <p>The AESO considers it is within the AUC's mandate to provide oversight to distribution costs. The AESO will focus on the interface between the distribution and transmission system, including coordinated planning and determining the need for any new transmission infrastructure.</p> <p><u>Settlement Audit</u></p> <p>Noted. Audit will be conducted by a third party as indicated at the initial BRP meeting on business initiatives.</p> <p><u>Cost Management</u></p> <p>The AESO's strategic focus is on cost management as an organization given COVID-19 and the state of the Alberta economy. Some of the proposed initiatives already include elements of cost management (e.g. Red Tape initiative) and the AESO has a 2021 corporate goal on cost management to create corporate focus. The AESO believes this is the best approach to obtain organizational focus on cost management.</p>

AltaLink Management (“Altalink”)	Please refer to the response provided in section c) of this Matrix.
AESO Response	See section c) of the Matrix for response
Best Consulting Solutions Inc. (“BCSI”)	n/a
AESO Response	n/a
Capital Power Corporation (“Capital Power”)	<p>Capital Power provided comments to the AESO on the 2020-2021 Market-Related Initiatives and within the individual consultations on the necessity, priority and scope of the respective initiatives. The AESO has considered and incorporated some of this feedback to produce the list of initiatives that was presented at the BRP Initiatives Session.</p> <p>While Capital Power may disagree on the necessity, priority or scope of certain initiatives, the company is supportive of the general direction. The current plan reflects the importance of regulatory stability in the Alberta market and signals to investors that the major components of the market structure will be retained. The plan also reflects the increasing importance and priority of initiatives related to tariffs, cost allocation, and system planning. Capital Power agrees with this direction.</p>
AESO Response	Noted. The AESO agrees that achieving regulatory stability is important and believes this has been reflected in how the AESO has organized its 2021 business initiatives for the September 21, 2020 stakeholder meeting by category (mandated, top priority). The AESO believes its initiatives for 2021 are generally in alignment with stakeholders.
ENMAX Corporation (“ENMAX”)	To better determine whether a particular initiative should be advanced by the AESO in the coming year, ENMAX requires a better understanding of the costs and benefits for each of the proposed initiatives. While the information provided at the last session was useful for stakeholders to better understand the AESO’s business plans for 2021, the information provided was high-level and lacked sufficient detail on the associated costs. Without visibility on the cost-benefit for each project, ENMAX is unable to determine at this point in time whether the AESO’s proposed initiatives have been prioritized appropriately to reflect the needs of the market.
AESO Response	Noted. The AESO plans on providing a form ranking of the initiatives at the next BRP stakeholder meeting on September 21, 2020. Also, at the October 1, 2020 BRP meeting on the budget the AESO plans to provide consulting and capital information for the initiatives that we plan to proceed with in 2021.

Greengate Power Corporation (“Greengate”)	<p>Greengate believes that the listed external business initiatives are reasonable for 2021. The Bulk and regional tariff application has been delayed and is causing market uncertainty, which is opposite of the AESO's strategic focus in 2021 of Facilitating business in Alberta. Moving ahead with this initiative will reduce uncertainty.</p> <p>Greengate fully supports the AESO's initiative to apply flexibility to standards in interconnections and in using a reasonable approach to congestion analysis. These initiatives will provide value to generators and loads and should continue to be fostered, while at the same time allowing interconnections to proceed in an agile manner.</p>
AESO Response	<p>The AESO agrees the delayed progress of the Bulk and Regional Rate design has extended market uncertainty. However, the AESO firmly believes that pausing the engagement earlier this year due to the impacts of COVID on stakeholders was appropriate. It is currently a reasonable time to restart this engagement, with the next session scheduled for September 24, 2020. The AESO has communicated to the AUC that it will be filing an application related to Bulk and Regional Rate design by March 31, 2021.</p> <p>The AESO acknowledges the support for flexibility in applying standards in interconnections and using a reasonable approach to congestion analysis.</p>
Heartland Generation Ltd. (“Heartland Generation”)	<p>HGL looks forward to discussing the newly proposed Market Sustainability and Evolution II and the Ancillary Services Market Review in the meeting planned for September 21, 2020. The AESO has included the Mothball Rule as part of the Market Sustainability and Evolution II initiative, HGL submits that the Mothball Rule should be a priority for the AESO (further comments can be found in response to part b).</p>
AESO Response	<p>Noted</p>
Independent Power Producers Society of Alberta (“IPPSA”)	<p>IPPSA’s high-level recommendation for the AESO – given continuing Covid-realities and the over-arching need for market stability – is that it pursue as few initiatives as possible. To the point, tariff reform is complex and warrants the engagement of stakeholders and significant AESO resources. Grid optimization is similarly an important priority.</p> <p>Accordingly, it is our recommendation that other matters such as those under market sustainability (ramp table, dispatch tolerance and the mothball rule) and operating reserve review first undergo a careful assessment of whether the initiatives are required at this time. Each should have a defined goal that it is to achieve and we’d ask that the AESO secure stakeholder support of those goals before proceeding.</p>
AESO Response	<p>The AESO agrees that tariff reform is complex and warrants the engagement of stakeholders and significant AESO resources. That said, the market-related initiatives that have been identified to progress in 2021 are important to the long-term sustainability of the energy-only market structure, to maintaining system reliability, and to ensuring the AESO is</p>

	<p>facilitating a fair, efficient and openly competitive (FEOC) market for an evolving electrical system while also providing certainty and stability to the market structure. These initiatives cannot, therefore, be paused indefinitely. The AESO is undertaking careful assessment of each initiative, to determine what, if any, change is required and the appropriate timing or pace of the change. Information on the evaluation of need for change and required timing will be provided through stakeholder engagement on each market initiative.</p>
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a
TransAlta Corporation (“TransAlta”)	<p>We disagree that any significant market initiatives in the Market Sustainability and Evolution bucket should be pursued in 2021 other than work related to energy storage and distributed resource roadmap. We expect the focus in 2021 and 2022 will be on the economic recovery from the pandemic. Any discretionary change to the market will serve to add greater uncertainty at a time when the Alberta economy is already facing unprecedented challenges and investments are being made into the transition from coal to gas. This is not the time to engage in unnecessary industry consultation that may distract or raise investment risk during this time.</p>
AESO Response	<p>As noted in the Market-Related Initiatives Plan, the market-related initiatives that have been identified to progress in 2021 are important to the long-term sustainability of the energy-only market structure, to maintaining system reliability, and in ensuring the AESO is facilitating a fair, efficient and openly competitive (FEOC) market for an evolving electrical system while also providing certainty and stability to the market structure.</p> <p>However, the AESO recognizes the increased vigilance that is required to balance the need for evolution and change with the need for stability and certainty in the market. The AESO is committed to supporting Alberta’s economic recovery, with additional focus on cost management across the industry value chain, facilitating business in Alberta, and creating a simpler and more agile approach to our own business processes while also ensuring sustainability of the market in the long-term. In light of that, the on-going evaluation and progress of the market initiatives may result in some of them being deferred or advanced at a slower pace than previously identified or removed from the list. These decisions will be communicated as part of the engagement regarding each initiative.</p>

II. 2021 Proposed Business Initiatives (cont.)	
b) In your view, are there certain business initiatives that are more critical than others? And why? Please be specific.	
Alberta Direct Connect Consumers Association (“ADC”) and Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>ADC and IPCAA submit that Cost Management is paramount. The AESO should be allocating additional resources to managing wires costs in Alberta. We submit that managing distribution costs should be an AESO priority. In addition, it is concerning that the AESO is moving forward with CETO at a potential cost of ~\$470M without completing a Cost-Benefit Analysis to prove to customers that the overall project, and the generation that it is being built for, will lower the cost of delivered electricity to consumers.</p> <p>Transmission costs in Alberta are on average \$37/MWh. Distribution costs in Alberta are do not reflect the underlying load growth on the distribution system. The AESO’s own Delivered Cost of Electricity report indicates that residential customers in ATCO Electric service territory pay \$300/MWh in delivered electricity costs. In order to facilitate the economic recovery, the AESO needs to manage wires costs for customers. This should be a high enough priority to have its own CRITICAL business initiative and an AESO VP dedicated to achieving cost reductions.</p> <p>Alberta businesses need competitive electricity rates in order for their businesses to recover and remain competitive with their global peers.</p>
AESO Response	The AESO is committed to cost management across the electricity value chain, to the degree the AESO’s mandate enables. The CEO and entire senior leadership team is dedicated to achieving cost reductions, where appropriate. The CETO project is needed to enable generation integration forecasted in the future and to meet the existing regulations associated with the market structure as it relates to congestion levels.
AltaLink Management (“Altalink”)	Please refer to the response provided in section c) of this Matrix.
AESO Response	See section c) of the Matrix for response
Best Consulting Solutions Inc. (“BCSI”)	n/a
AESO Response	n/a

II. 2021 Proposed Business Initiatives (cont.)	
b) In your view, are there certain business initiatives that are more critical than others? And why? Please be specific.	
Capital Power Corporation (“Capital Power”)	As noted above, Capital Power submits that the proposed initiatives reflect the Government of Alberta’s decision to retain the energy-only market and supports investment in the province through improved regulatory certainty. While there are enhancements that can be made in the regulatory environment to reflect changing technologies and to support competition, the fundamental design elements of the energy-only market remain. Capital Power submits that the priority should be given to initiatives that enhance the efficiency of current tariffs, cost allocation and approaches to system planning.
AESO Response	The AESO agrees that priority should be given to initiatives that enhance the efficiency of current tariffs, cost allocation and approaches to system planning. That said, as noted in the response to IPPSA’s II.a) comment, the market-related initiatives that have been identified to progress in 2021 are important to the long-term sustainability of the energy-only market structure, to maintaining system reliability, and in ensuring the AESO is facilitating a fair, efficient and openly competitive (FEOC) market for an evolving electrical system while also providing certainty and stability to the market structure, and therefore cannot be paused indefinitely. The AESO is undertaking careful assessment of each initiative, to determine what, if any, change is required and the appropriate timing or pace of the change. Information on the evaluation of need for change and required timing will be provided through stakeholder engagement on each market initiative.
ENMAX Corporation (“ENMAX”)	<p>See response to question II. a).</p> <p>Given the current economic climate, it is important for the AESO to ensure its priorities are justifiable and remain relevant to the market. It may be more appropriate to shift certain priorities to help reduce costs. Furthermore, some initiatives were originally identified in capacity market discussions and should be considered in light of the existing energy-only market.</p> <p>A few initial comments:</p> <p>Distribution coordination – ENMAX Power Corporation (EPC) continues to utilize its existing processes to manage DER interconnections, with adoption rates and impacts anticipated to remain manageable for the foreseeable future. As such, the timing of a coordinated distribution and transmission planning framework for a two-way electricity flow (over what is currently already in place) is premature.</p> <p>The integration of DERs on the Alberta Interconnected Electric System (AIES) will rely on future policy direction from the Government of Alberta (GoA) and will depend on the objectives identified in government policy. Until such clarity is provided, the AESO’s DER Roadmap should not introduce significant changes to the existing framework but could work to inform the industry of the challenges ahead.</p>

II. 2021 Proposed Business Initiatives (cont.)	
b) In your view, are there certain business initiatives that are more critical than others? And why? Please be specific.	
	<p>Market sustainability and evolution I – To date, majority of stakeholders have indicated that a change to the existing settlement interval is not needed. ENMAX would expect that unless the benefits for implementing a change can be clearly demonstrated as outweighing the costs, this initiative should not proceed at this time.</p> <p>Market sustainability and evolution II – The requirement to introduce ramp table submissions under ISO Rule 203.1 – Offers and Bids for Energy, was initially identified through capacity market discussions. The AESO should undertake a new consultation on Section 203.1 to determine whether a new requirement for ramp table submissions is still needed and relevant to the existing energy-only market. Introducing a new requirement would result in IT-related costs and the development of new processes; therefore, a clear cost-benefit analysis is needed to demonstrate the overall value to the market.</p> <p>Technology integration – The AESO’s presentation referenced potential future implications on the AESO’s mandate resulting from new technologies being integrated on the system. Similar to the comments made above regarding distribution coordination, further direction from the GoA is required on the integration of DERs on the AIES, including the evolution of existing roles and responsibilities. The AESO’s plan to publish a “Technology Forward” should not introduce significant changes to the existing framework but (similar to the DER Roadmap) could work to inform the industry of challenges ahead.</p>
AESO Response	<p>Market sustainability and evolution I The AESO has been evaluating the costs and benefits of a change to the existing settlement interval; this evaluation will be presented at the upcoming stakeholder session and will be used to inform the recommendation on the path forward for the settlement interval.</p> <p>Market sustainability and evolution II The AESO will undertake a new consultation on Section 203.1 should it be determined that a new requirement for ramp table submissions is still needed and of value to the existing energy-only market.</p> <p>Distribution coordination – the AESO’s work on the DER Roadmap and with the DFOs on transmission/distribution coordination have no intention of changing the existing framework, policy, legislation or regulations. The AESO’s work with DFOs related to DERs is intended to proactively address DER technical interconnection and static site data to enable the AESO to ensure reliability of the AIES, as part of its mandate. The AESO appreciates some DFOs may not be experiencing as significant of DER growth as other DFOs. The AESO’s work with DFOs on coordinating planning is focused on impacts at the transmission/distribution interface and the need for new transmission infrastructure which is within the AESO’s existing mandate.</p> <p>Technology integration – the AESO, through its Energy Storage and DER roadmaps are working to integrate these</p>

II. 2021 Proposed Business Initiatives (cont.)	
b) In your view, are there certain business initiatives that are more critical than others? And why? Please be specific.	
	<p>technologies within the existing framework. The Technology Forward is intended to be a proactive awareness of future electricity value chain technologies, providing industry with awareness of these emerging technologies and early AESO views of potential implications to reliability, markets and tariffs within the existing framework.</p>
<p>Greengate Power Corporation (“Greengate”)</p>	<p>While the AESO has many ongoing initiatives for energy storage, this focus is not evident in the 2021 strategic plan. Greengate strongly advocates that the AESO look for non-wires alternatives such as energy storage and justify the selection of wires solutions when an energy storage alternative may be possible. Greengate advocates for the inclusion of a specific energy storage tariff as a separate initiative, apart from the Bulk and Regional tariff initiative.</p> <p>The AESO's Red tape initiative may be very helpful however Greengate would advocate for reducing red tape that gets in the way for new business. While the AESO must meet its mandated red tape reduction it would be helpful for the AESO to understand what AESO rules/policies/ tariffs are causing most stakeholders concerns.</p>
<p>AESO Response</p>	<p>The AESO’s Energy Storage roadmap work will continue into 2021 focused on the longer term integration plan which may require rule related changes that will take longer to bring into effect. The AESO has incorporated energy storage as an option within its planning processes and should energy storage be the best overall solution, the AESO will proceed with that solution.</p> <p>While a primary focus for the AESO will be meeting its obligations under the Red Tape Reduction initiative, this will not preclude the organization from pursuing other opportunities to streamline certain business activities to achieve reductions in regulatory burden more generally. The AESO is open to feedback from stakeholders in this respect.</p>
<p>Heartland Generation Ltd. (“Heartland Generation”)</p>	<p>Yes. Within the Market Sustainability & Evolution II, the mothball initiative should be prioritized over the ramp table and dispatch tolerance initiatives. HGL submits that the Mothball Rule is even more important than other 2020 market-related initiatives being undertaken, such as sub-hourly settlement. Market entry and exit rules are inextricably linked to investor confidence in Alberta’s generation market. Existing and potential market participants require clear and concise ISO rules in order to make significant timing decisions related to retirement, commercial outages, and new entry.</p> <p>HGL supports the characterization of the General Tariff Application as one of the AESO’s largest priorities. Bulk and regional transmission rate design is highly contentious and has one of the greatest impacts on electricity consumers, especially since transmission costs will likely remain a significant portion of consumer bills over the next decade. Proper consultation and transmission tariff design is essential to maintaining the efficiency of the Alberta electricity market.</p>

II. 2021 Proposed Business Initiatives (cont.)	
b) In your view, are there certain business initiatives that are more critical than others? And why? Please be specific.	
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	In IPPSA’s view, tariff redesign and grid optimization are more critical. Other initiatives should have their goals carefully defined and then stakeholder support sought before proceeding.
AESO Response	Noted.
The Office of The Utilities Consumer Advocate (“UCA”)	Yes, with a focus on the 3 highly integrated initiatives of Tariff Modernization, Transmission/Distribution Coordination, and DERS. All of the preceding initiatives should be considered priorities for the AESO as they are driven by a shift in consumer preferences.
AESO Response	Agreed. The AESO has classified these business initiatives as a top priority for the organization in 2021.
TransAlta Corporation (“TransAlta”)	<p>The market tariff and issues related to it are critical in 2020/2021. We note that issues with the tariff are now spanning multiple regulatory proceedings and limited progress has been made to resolve these issues. We view the AESO’s role as central and integral in leading towards resolving these matters or, at the very least, narrowing the issues to a scope that can be decided by the AUC with some finality and without pushing these issues into other venues (future regulatory applications and other regulatory proceedings).</p> <p>We note that the regulatory lag in approving the 2018 ISO Tariff highlights the concern with respect to how these issues impact participants. At this time, the final 2018 ISO tariff appears as though it will not be until the end of 2020. This is problematic for all market participants in that this contributes regulatory uncertainty to an already uncertain time.</p>
AESO Response	The AESO shares TransAlta’s observation. As noted in the recently released 2020-2021 Plan for ISO Tariff-Related Activities the ISO tariff is central to many on-going changes in the Alberta electricity industry. The current ISO tariff rate design needs to evolve and adapt to these changes. At the same time, consumers need clear and stable price signals to be provided by the ISO tariff so they can make effective business decisions. To promote a more nimble approach which enables issues to be resolved in more reasonable timeframes, the AESO has proposed to address changes to tariff provisions with the AUC using a modular approach as opposed to a comprehensive tariff filing. The AESO expects, as described in the AESO’s 2018 compliance filing, that a modular approach, “will allow issues to be considered and consulted upon with greater efficiency than the current approach of filing comprehensive tariff applications that bundle and address multiple significant issues within a single application, and will also allow the AESO to address required tariff changes in a

II. 2021 Proposed Business Initiatives (cont.)	
b) In your view, are there certain business initiatives that are more critical than others? And why? Please be specific.	
	<p>more agile and adaptable manner in response to industry change.” As such, stakeholders will continue to see the AESO progress these activities as distinct pieces where practicable. Further details on the Tariff activities AESO is progressing are provided in the 2020-2021 Plan for ISO Tariff-Related Activities document.</p>

II. 2021 Proposed Business Initiatives (cont.)	
c) In your view, are there any business initiatives not captured that you believe the AESO should advance? And why? Please be specific.	
Alberta Direct Connect Consumers Association (“ADC”) and Industrial Power Consumers Association of Alberta (“IPCAA”)	Please see comments above re: Cost Management.
AESO Response	Please see AESO response re: Cost Management, in b) above
AltaLink Management (“Altalink”)	<p>The AESO included “Priced Interties” as part of its original plan, published at the end of 2019, for 2020 market related initiatives. The rationales the AESO put forward are copied below:</p> <p>“Priced Interties</p> <p>One of the primary functions of the AESO mandate is to operate a FEOC market. Currently, intertie transactions are required to buy and sell in Alberta’s electricity market as a price taker, meaning all offers to sell must be at \$0/MWh and all bids to purchase must be \$999.99/MWh. Unlike intra-Alberta generators, intertie market participants are unable to reflect their respective costs in their bids and offers. Price fidelity is a key driver of any openly competitive market. Enabling intertie market participants to reflect the cost of their energy in their energy bids and offers creates a better reflection of the true market value of energy. During the conceptualization of the capacity market, the AESO conducted stakeholder engagement on the design and development of ISO rules for the integration of priced interties. The AESO sees value in facilitating priced interties in the energy-only market framework and will leverage the previous work done on this initiative.”</p> <p>In the latest update of the 2020 work plan published in July, the “Priced Intertie” piece was removed and the new initiative Ancillary Services (AS) Markets Review was added. There was no specific discussion or rationale in the updated plan other than “(AS) will review the operating reserves (OR) market and contracted services such as transmission must-run (TMR) and Load Shed Services for imports (LSSi), with a focus on increasing competition. Changes may include minor design changes to the (OR) market, making qualification for participation technology agnostic, and considering lowering size requirements to increase participation.”</p> <p>AltaLink recommends the AESO continue to include the “Priced Intertie” piece as originally proposed for the following reasons:</p> <p style="padding-left: 40px;">a) The rationales discussed in the original proposal remain valid.</p>

II. 2021 Proposed Business Initiatives (cont.)	
c) In your view, are there any business initiatives not captured that you believe the AESO should advance? And why? Please be specific.	
	<p>b) The AESO has invested time and made progress on “Sub-hourly Settlement” work. As Alberta moves to shorter settlement intervals which are more aligned with other regional markets, the benefit of interties setting prices would be even greater.</p> <p>c) Efficient use of interties is an essential part of Alberta’s market, therefore the “Priced Intertie” should be treated as a high priority initiative. As stated in the 2003 Transmission Policy paper, “Inter-ties are essential to a well-functioning market structure. Alberta is integrated with the electric systems of our neighbours. Transmission policy and the regulatory environment must facilitate open access to larger markets, while ensuring Alberta’s needs are met.”</p> <p>d) While we are not opposed to the “OR Review” initiative, the inclusion of it in the 2020-21 work plan should not be at the expense of cancelling/delaying the “Price Intertie” initiative. Based on the limited information the AESO shared, AltaLink does not think Ancillary Services (AS) initiative review of the operating reserves (OR) market offers more value than the “Priced Intertie.”</p> <p>e) If the AESO sees value to include the “Priced Intertie” and “OR Review” in the 2020 -2021 plan, AltaLink supports more resources being allocated to support both initiatives.</p>
AESO Response	As indicated by a number of parties in their comments, the AESO needs to prioritize the initiatives and market changes that it is investigating in the context of market stability, cost management and overall capability for AESO and stakeholder resources, to focus on a manageable number of activities. AESO has added the Operating Reserve Market Competitiveness Enhancement review due to conclusions drawn in the Market Power Mitigation Review for GoA released earlier this year. This initiative, and other market initiatives, have been deemed higher priority, and of greater value, than priced interties.
Best Consulting Solutions Inc. (“BCSI”)	n/a
AESO Response	n/a
Capital Power Corporation (“Capital Power”)	Given the increasing emphasis and importance of tariff related initiatives, the AESO should provide stakeholders, including partner agencies, a clear articulation of the strategic direction that will guide tariff development at the AESO over the coming years. The current approach to tariff development is occurring in disparate proceedings that do not lend themselves to discourse on the strategic direction of the ISO tariff. The AESO should articulate the competing policy objectives and key

II. 2021 Proposed Business Initiatives (cont.)	
c) In your view, are there any business initiatives not captured that you believe the AESO should advance? And why? Please be specific.	
	<p>principles that will guide the evolution of the document. Recognizing the evolution of the tariff will take time, there should be clear articulation of the immediate tactical changes that are required to gradually achieve the strategic objectives over time.</p> <p>In the current environment, cost management continues to be a priority for all stakeholders in Alberta. In relation to system planning and wires costs, there is no single forum where these discussions are occurring. The strategic importance of these issues to the market is well understood by all stakeholders. It would be beneficial to convene a single forum where all stakeholders can transparently discuss the overarching issues relating to system planning and wires costs.</p>
AESO Response	<p>The AESO agrees the ISO tariff is central to many on-going changes in the Alberta electricity industry. To provide greater clarity of the AESO direction and focus the 2020-2021 Plan for ISO Tariff-Related Activities was recently released. This document lists tariff related activities AESO is progressing in 2020-2021 while also providing commentary on AESO objectives and priorities guiding the listed activities.</p> <p>The AESO remains focused on cost management across industry including wires costs.</p>
ENMAX Corporation (“ENMAX”)	No comment at this time.
AESO Response	Noted.
Greengate Power Corporation (“Greengate”)	<p>Greengate is concerned on the lack of AESO processes and help in ensuring that generation developers have a reasonable, AESO verified, loss factor estimate for their projects. In the past, the AESO would provide a loss factor estimate to a generation developer, this is no longer the case. The AESO will only present a loss factor to a Market Participant when their facility is nearing energization. The loss factor methodology is very complex and no party other than the AESO has all the necessary data to reliably determine a loss factor. This places risk on the project developer that can easily be mitigated by the AESO. To date, it is Greengate's understanding is that the AESO is unable to provide this loss factor estimate due to resource restrictions. The AESO staff and contractors are fully engaged in developing loss factors for prior years. Greengate is advocating for an AESO initiative to provide funding in 2021 to the loss factor group to develop processes and offer loss factor estimates to project developers. Greengate cannot overstate the importance of this initiative which will allow project developers to more readily understand their project costs and allow for rational decision making. This initiative will also help the AESO strengthen its location signals to project developers.</p>

II. 2021 Proposed Business Initiatives (cont.)	
c) In your view, are there any business initiatives not captured that you believe the AESO should advance? And why? Please be specific.	
AESO Response	The AESO will have completed the historical loss factor work primarily by the end of 2020 and has insourced future loss factor work to reduce costs. The AESO will explore in 2021 the complexity of providing loss factor estimates at an earlier stage in the connection process.
Heartland Generation Ltd. (“Heartland Generation”)	HGL encourages the AESO to consider broader ways to meet its Red Tape Reduction initiative. Earlier this year, IPPSA requested streamlining the ETS software to prevent common compliance contraventions. As a result of this request, an ETS Workshop Goals and Agenda was held in March. The AESO should continue to review software modifications to ETS in 2021 in order to reduce ISO Rules contraventions related to the current ETS system. HGL submits that ETS reforms could reduce the regulatory burden on all market participants, the AESO, and the MSA.
AESO Response	While a primary focus for the AESO will be meeting its obligations under the Red Tape Reduction initiative, this will not preclude the organization from pursuing other opportunities to streamline certain business activities to achieve reductions in regulatory burden more generally.
Independent Power Producers Society of Alberta (“IPPSA”)	We appreciate the AESO’s work with stakeholders on improvements to ETS. We look forward to closing this work off in the near term. Finally, it is our view that intertie restoration should continue to be deferred. Given supply overhang, softened demand and the concern on the part of consumers with existing wires cost, we agree with the AESO that this is not a near term priority.
AESO Response	Noted.
The Office of The Utilities Consumer Advocate (“UCA”)	No.
AESO Response	Noted.
TransAlta Corporation (“TransAlta”)	TransAlta does not recommend adding any additional business initiatives in 2021. As stated above, we recommend that the AESO further rationalize and reduce the number and scope of the business initiatives proposed by the AESO.
AESO Response	Noted, and see above for responses on the number and scope of the business initiatives proposed by the AESO.

III. Additional Comments	
Do you have any other comments to offer at this time?	
Alberta Direct Connect Consumers Association (“ADC”) and Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>ADC and IPCAA thank the AESO for the opportunity to comment and would be happy to meet (virtually) to discuss our comments further – particularly those regarding Tariff “Modernization” and Cost Management.</p> <p>As a part of this Budget Review Process, ADC and IPCAA request that the AESO provide its Board with the following benchmarking analysis, similar to other jurisdictions:</p> <p>The AESO cost in comparison to other ISOs including services provided;</p> <p>Alberta transmission costs in comparison to other ISOs;</p> <p>Alberta distribution costs in comparison to other ISOs.</p> <p>ADC and IPCAA submit that this information will be vital in informing the AESO Board’s decision-making.</p>
AESO Response	<p>Noted. The AESO will provide the AESO Board with the required information to make a decision on the AESO’s 2021 business initiatives and related budgets. The AESO’s strategic focus is on cost management as an organization given COVID-19 and the state of the Alberta economy. Some of the proposed initiatives have elements of cost management (e.g. Red Tape initiative) and the AESO will have a 2021 corporate goal on cost management to create corporate focus. Some of this cost information may be published as a part of specific AESO engagements with stakeholders (e.g. bulk and regional rate tariff engagement). Historically, the benchmarking of AESO own costs against other ISO own costs has not provided value due to differences in the ISO’s operations and the scale of each ISO’s operations.</p>
AltaLink Management (“Altalink”)	<p>AltaLink does not have any other comments to share at this time.</p>
AESO Response	<p>Noted.</p>
Best Consulting Solutions Inc. (“BCSI”)	<p>BCSI appreciates that the AESO is considering applying flexibility to standards alternatives to optimize the grid and to reduce costs.</p> <p>Can the AESO please publish summary statistics (number of documents, etc.) and the work plan for the Red Tape Reduction initiative?</p>

II. 2021 Proposed Business Initiatives (cont.)	
c) In your view, are there any business initiatives not captured that you believe the AESO should advance? And why? Please be specific.	
AESO Response	The AESO is in the midst of finalizing the long-term work plan and it is also currently assessing how to best present the status of its work on the Red Tape Reduction Initiative on the website.
Capital Power Corporation (“Capital Power”)	Capital Power has no additional comments at this time.
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	ENMAX looks forward to reviewing the AESO’s cost-benefit analysis for each of the proposed initiatives.
AESO Response	Noted.
Greengate Power Corporation (“Greengate”)	n/a
AESO Response	Noted
Heartland Generation Ltd. (“Heartland Generation”)	HGL does not have any other comments at this time. We look forward to further stakeholder engagement in the AESO 2021BRP.
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	We look forward to further engagement in the 2021 budget review process.
AESO Response	Noted.
The Office of The Utilities Consumer Advocate (“UCA”)	<p>The Government of Alberta (GoA) has committed to reducing regulatory requirements by one-third by 2023. To be in compliance with the government’s Red Tape Reduction Initiative, the AESO is committed to reducing regulatory requirements in its ID documents, tariffs, and connection processes.</p> <p>Some AESO recommended changes to the ISO Tariff structure remove provisions requiring the AESO to deem supply-related (DCG charge) and demand-related amounts for distributed connected generators (DCGs), instead passing on this obligation to the DFOs. The UCA would like the AESO to consider that such actions are not likely to reduce regulatory</p>

II. 2021 Proposed Business Initiatives (cont.)	
c) In your view, are there any business initiatives not captured that you believe the AESO should advance? And why? Please be specific.	
	burden but rather defer the requirement to other entities, adding to their respective lists of regulatory requirements and obligations.
AESO Response	Noted, this will be considered as part of the Local Interconnection Costs: Substation Fraction and DFO Flow-through tariff initiative.
TransAlta Corporation (“TransAlta”)	No further comments at this time.
AESO Response	Noted.

Stakeholder Comment Matrix and AESO Replies – October 1, 2020

Request for Feedback on 2021 Budget Review Process (BRP) -

2021 Proposed Business Initiatives Session 2 and 2021 Preliminary Forecast and Budget Session



The AESO asked market participants and interested stakeholders to participate in the AESO’s consultation regarding its 2021 Business Plan and Budget. Related stakeholder comments regarding the AESO’s Proposed Business Initiatives Session 2 and the 2021 Preliminary Forecast and Budget Session are provided in the following matrix. The matrix also includes AESO’s replies to the stakeholder comments.

I. Session Feedback	
<i>Please comment on the AESO’s 2021 BRP Proposed Business Initiatives Session 2 hosted on September 21, 2020. Was the session valuable? Was there something the AESO could have done to make the session more helpful?</i>	
Alberta Direct Connect Consumers Association (“ADC”)	The ADC appreciates the opportunity to participate
AESO Response	Noted
ENMAX Corporation (“ENMAX”)	No comment at this time.
AESO Response	Noted
Heartland Generation Ltd. (“Heartland”)	Yes, the session was helpful and the AESO staff and executives at the session were able to provide explanations to the questions raised.
AESO Response	Noted
Independent Power Producers Society of Alberta (“IPPSA”)	The session went well. We appreciated the comparison of annual costs.
AESO Response	Noted

Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>The session was helpful in laying out the various AESO initiatives for 2021.</p> <p>A concern we have heard over red tape reduction efforts by all agencies is the removal of transparency which tends to be a “low hanging fruit”. IPCAA believes the AESO should continue to strive for as much market transparency as possible.</p> <p>Again, IPCAA submits that Cost Management should be a stand-alone priority item. The AESO should be allocating additional resources to managing wires costs in Alberta, including both transmission and distribution costs. This should be a high enough priority to have its own critical business initiative and an AESO VP dedicated to achieving cost reductions.</p>
AESO Response	<p>Noted that the AESO should be mindful of transparency impacts related to proposed red tape reductions. With respect to cost management, the AESO would reiterate that it is very committed to this work in 2021. The organization intends to have a corporate goal specific to cost management initiatives.</p>
The Office of The Utilities Consumer Advocate (“UCA”)	<p>The sessions overall were valuable. However, we observed some redundancy in the process. For example, Session 2 could have been omitted altogether and Session 1 and 3 could focus on the business initiatives and budget/forecast. It is recommended that the AESO, as it has done in the past, limit the process to two sessions.</p>
AESO Response	<p>Noted</p>
TransAlta Corporation (“TransAlta”)	<p>The AESO’s session on September 21, 2020 and the accompanying presentation were helpful. The presentation provided the key assumptions that were used to forecast 2021 and the costs in the categories presented in previous years so that year-to-year comparisons can be made.</p>
AESO Response	<p>Noted</p>
<p><i>Please comment on the AESO’s 2021 Preliminary Forecast and Budget Session hosted on October 1, 2020. Was the session valuable? Was there something the AESO could have done to make the session more helpful?</i></p>	
Alberta Direct Connect Consumers Association (“ADC”)	<p>The ADC appreciates the opportunity to participate</p>
AESO Response	<p>Noted</p>

ENMAX Corporation (“ENMAX”)	No comment at this time.
AESO Response	Noted
Heartland Generation Ltd. (“Heartland”)	Yes, the 2021 Preliminary Forecast and Budget session was helpful. It would be helpful to understand how the forecasted load growth impact’s the development of the AESO’s budget for various market initiatives and its own costs.
AESO Response	<p>The AESO considers load growth on a continuous basis. The 2020 Long-term Transmission Plan identifies current and future transmission needs for a range of possible demand and generation conditions and sets out flexible plans to respond to them. The long-term transmission plan is just one of the inputs and considerations of the AESO’s strategic plan. Market initiatives, such as the tariff-related activities, remain central to our strategic plan and consider not only load growth, but the changing ways the transmission system is used. The AESO undertakes an extensive evaluation of its strategic plan and underlying initiatives on an annual basis, with consideration of these factors.</p> <p>Our budgeted costs are based on the funding we require to achieve our business initiatives and maintain our business operations. Our day-to-day business operations are not significantly impacted by load growth and planning for the future of the electric system and its infrastructure is a continuous process with many considerations. It is considered a critical function regardless of the trends or inputs that impact plan.</p>
Independent Power Producers Society of Alberta (“IPPSA”)	The session went well.
AESO Response	Noted
Industrial Power Consumers Association of Alberta (“IPCAA”)	IPCAA appreciates the AESO’s efforts to reduce costs and provide clarity regarding its forecasted costs. The AESO has heard consumers concerns over the continued escalation of transmission & distribution costs; however, more work needs to be done to drive these costs down. See comments above.
AESO Response	The AESO will continue to focus on cost management opportunities, particularly in those cost areas the AESO has direct influence or control over. For those cost areas in other parts of the electricity value chain such as distribution, the AESO will seek to bring our influence and perspective to them, within the scope of our AESO mandate.
The Office of The Utilities Consumer Advocate (“UCA”)	The session was helpful.

AESO Response	Noted
<p>TransAlta Corporation ("TransAlta")</p>	<p>The AESO's 2021 Preliminary Forecast and Budget presentation was helpful. The presentation provided the key assumptions that were used to forecast 2021 and the costs in the categories presented in previous years so that year-to-year comparisons can be made. The effects of the pandemic have been significantly challenging for forecasting exercises and we had hoped that the AESO's approach for 2021 may have provided different scenarios to show how the 2021 budget may change or flex in response to the range of outcomes that lay before us. We note that in comparison to more normal years where the drivers for change establish themselves in a more gradual fashion, the pandemic has had far reaching impacts in a very sudden fashion.</p> <p>We ask the AESO to consider showing what its flex budgets may look like under scenarios where forecast growth is even lower than the 1.3%, how the AESO may respond in terms of moderating its activities/costs, and what reductions in budgeted costs could be expected if it reduced the delivery of AESO initiatives. It would also be helpful to see how the trading charge would change in scenarios where the AESO's activities were reduced.</p>
<p>AESO Response</p>	<p>The AESO considered the impact of the pandemic on its strategic initiatives and operations while planning its budget. The impact of COVID-19 on the AESO's operations is evident in projected 2020 costs for general and administrative expenses that are \$5.5 million under budgeted expectations. The pandemic impacted consulting costs as well as travel and training-related administrative costs. Like other organizations, the AESO relied on its agility to address changing conditions and has implemented process changes and technology tools to change the way work is performed, enable a remote workforce and facilitate third-party collaboration and services. It has considered the impact on travel and administrative costs, but the impact is minimal as these are relatively small costs for the organization and training is anticipated to be resumed as it is considered important to ongoing development and our technical resources.</p> <p>The AESO has focused its priorities for 2021 on cost management across the industry value chain, facilitating business in Alberta and ensuring a simple and agile approach to operations. The AESO feels these priorities align with stakeholder expectations and clearly take the pandemic into consideration. Budgeted costs are based on the funding we require to achieve our business initiatives and maintain our business operations. Business operations are critical and do not change in relation to changes in growth. Should the AESO determine that the initiatives should be deferred, the direct consulting and capital costs associated with those initiatives are \$0.8 million and \$1.5 million, respectively, as noted in the October 1, 2020 AESO 2021 Preliminary Forecast and Budget Information presentation. The impact of these items would not be material on the trading charge as the AESO has already deferred costs related to the trading to future years.</p>

II. 2021 Proposed Business Initiatives	
<p><i>Following the September 21 and the October 1 sessions, do stakeholders have any additional comments on the newly proposed 2021 external business initiatives? Please only provide new comments – i.e. please do not include / repeat comments that were previously provided and responded to by the AESO in the <u>AESO Replies to Stakeholder Comments on Session 1 and the Proposed Business Initiatives</u>.</i></p>	
<p>1. Red Tape Reduction</p>	
<p>Alberta Direct Connect Consumers Association (“ADC”)</p>	<p>The ADC suggests that AESO undertake a review of the reliability standards and ensure the applicability of standards and effort required to meet those standards are appropriately considered. Tremendous effort goes into compliance and we often hear that certain requirements don’t seem to have a significant impact on grid reliability, especially where it pertains to generation that is serving on-site load.</p>
<p>AESO Response</p>	<p>The AESO consults with stakeholders in the adoption of North American Electric Reliability Corporation (NERC) reliability standards in Alberta, including the need and applicability of the standard itself. Where a stakeholder believes that the standard or requirement has ‘marginal reliability’ value, the ‘criteria is too strict’, or it should not apply to a situation, the AESO seeks and considers that input in the development of the standard. Should a market participant identify standards or requirements that should not apply after the standard is in effect, the AESO will assess if the standard can be excluded from being applicable to that market participant. The AESO continues to update Information Documents to clarify understanding of standards and responds to Requests for Information to address stakeholder concerns.</p> <p>AESO treats reliability seriously along with the industry and expects that all market participants do their part in complying with the Alberta Reliability Standards (ARS). This typically requires market participants to include processes, controls, reporting (typically in their own internal compliance program) to be in compliance and to show compliance in an audit. If a market participant does not know and does not track if they are in compliance with an applicable standard, they may not be doing their part in supporting reliability of the grid for the rest of industry.</p> <p>The ARS Compliance Monitoring Program establishes the scope of an individual audit considering the market participant’s impact on the grid, risk to the grid, past history and other factors which may exclude a market participant from providing evidence of a lower impact or risk requirement in an audit. This, however, does not exclude the market participant from complying with the standard or requirement itself.</p>

ENMAX Corporation (“ENMAX”)	No additional comments at this time.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	Heartland Generation fully supports red tape reduction. Heartland Generation appreciates that one of the AESO’s goals is to lessen its requirements by 30 percent. Heartland Generation encourages the AESO to not only reduce its requirements but also to think of process changes to reduce the regulatory burden, including streamlining the ETS software.
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a
Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>While IPCAA would agree that Red Tape Reduction is important, it should not simply be undertaken as a method to reduce transparency.</p> <p>In addition, the issue of compliance was not discussed. While IPCAA would agree that compliance is an absolute necessity, we also believe that the AESO’s bar may be set too low and in doing so has increased the regulatory burden of IPCAA members and others at a marginal enhancement in reliability. It would be worthwhile for the AESO to re-examine its reliability criteria to determine if they are being too strict. As the AESO said in its Session 2 presentation, “Moving obligations to another entity does not reduce regulatory burden....”</p>
AESO Response	See AESO response to ADC comment above.
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a

TransAlta Corporation ("TransAlta")	<p><i>The Red Tape Reduction is an opportunity for cultural change and improving efficiency.</i></p> <p>TransAlta fully supports the red tape reduction initiative. This presents an opportunity to develop a culture of continuous improvement that aligns with the desires of market participants and customers. The regulatory requirements in the electricity industry are significant and create an overly complex and administratively burdensome framework. We hope that the red tape reduction initiative is not only an exercise of reducing the regulatory requirements but also a change in philosophy that creates true efficiency improvements (e.g. simplifying processes, reducing the administrative forms, paperwork, and eliminating and reducing the bureaucratic silos within the AESO).</p>
AESO Response	<p>Noted.</p>
<p>2. General Tariff Application (GTA)</p>	
Alberta Direct Connect Consumers Association ("ADC")	<p>The ADC is very concerned about the GTA process. Earlier in 2020, customer groups were thoughtfully engaged in the process, but were abruptly disbanded. The ADC suggests that the results of the Navigant study should be made available, and that any cost causation studies or analysis also be made available to stakeholders. The ADC also suggests that there are at least 2 key items that the industry is awaiting policy direction on that could materially change the course of the tariff design. These are the self-supply and export issue, and the transmission regulation review and update.</p>
AESO Response	<p>Noted.</p> <p>The AESO will continue to engage stakeholders, including on tariff-related matters, in alignment with the objectives of the <i>AESO Stakeholder Engagement Framework</i>, which includes meaningful, inclusive and transparent engagement. The AESO agrees there are numerous aspects undergoing evolution in Alberta's electricity system and is of the view that tariff design should progress in parallel.</p>
ENMAX Corporation ("ENMAX")	<p>No additional comments at this time.</p>
AESO Response	<p>Noted.</p>
Heartland Generation Ltd. ("Heartland")	<p>Heartland Generation supports the characterization of the General Tariff Application as one of the AESO's largest priorities. Transmission rate design is highly contentious and has significant impact on electricity consumers. Fulsome consultation on the transmission tariff design is essential to maintaining the efficiency of the Alberta electricity market.</p>
AESO Response	<p>Noted.</p>

Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a
Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>IPCAA agrees that the AESO GTA is important to ensure rate stability, as well as to provide certainty for future investment in Alberta. However, we submit that it is too early to actually move forward with a major overhaul until other elements of the transmission and distribution puzzle are “nailed down”. It would not be worthwhile undertaking this GTA in order to simply require another major update to the GTA due to:</p> <ul style="list-style-type: none"> - A Government decision on self-supply and export - An AUC decision on DCG credits that will likely impact transmission tariffs - An AUC proceeding and decision on ensuring that all consumers receive the transmission price signal. In its recent Distribution System Inquiry, the AUC heard a consistent message from all four of the market experts it met with that there was a necessity for all consumers to be put on the same playing field in terms of costs signals. As the AESO in its presentation indicated, there is a necessity for both technology coordination and distribution co-ordination in its proposed GTA (slide 22). <p>IPCAA believes that any or all of these decisions will, in turn, disrupt the proposed GTA and require and a further enhanced GTA. IPCAA would prefer not to have two major tariff overhauls in short order. We need to provide consumers with clarity and certainty.</p>
AESO Response	The AESO agrees there are numerous aspects undergoing evolution in Alberta’s electricity system and is of the view that tariff design should progress in parallel.
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a
TransAlta Corporation (“TransAlta”)	TransAlta supports the GTA as a business initiative.
AESO Response	Noted

3. Tariff Modernization	
Alberta Direct Connect Consumers Association (“ADC”)	ADC is concerned that the tariff modernization is unnecessary and is creating additional uncertainty to many industrial customers that are currently in survival mode. The ADC members, who comprise the majority of the price responsive load, are specifically being harmed with cost increases well over 100%. This will have negative consequences on the Alberta economy, rural Albertans, and many secondary industries that depend on the viability of the energy intensive trade exposed industrials. Considering what is at risk, the AESO needs to take the appropriate time to fully explore the consequences and justify to industry why this change is necessary in light of other policy uncertainty. The ADC submits this isn’t possible to accomplish within the timelines proposed by the AESO.
AESO Response	<p>The AESO is of the view that the ISO tariff needs to evolve and adapt with the changes underway on the electricity system, to ensure price signals from the ISO tariff align with the changing use of the transmission system. The AESO recognizes that this needs to be done in a minimally disruptive fashion to support effective business decisions. The AESO will work with stakeholders to understand issues and implications of changes to evolve the ISO tariff in a manner that is effective, but minimally disruptive.</p> <p>In response to stakeholder feedback requesting additional time for the development of proposals for the Bulk and Regional Tariff Design Session 3, and more generally in the overall schedule, the AESO pushed out Session 3 and took this opportunity to evaluate the overall engagement and filing schedule to ensure that there is sufficient time to properly explore options and develop a robust design with effective engagement. The overall schedule has been extended adding in an additional engagement session (Session 4) to ensure there is sufficient time for the AESO to receive meaningful feedback on the design options, and to identify areas of agreement and disagreement.</p>
ENMAX Corporation (“ENMAX”)	No additional comments at this time.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	Heartland Generation appreciates that the current Bulk and Regional Tariff Design has been in place for many years; however, the AESO should provide substantiated evidence to justify why a significant tariff redesign is necessary at this juncture. Please see our comments in response to the first and second TDAG sessions.
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	n/a

<p style="text-align: center;">AESO Response</p>	<p>n/a</p>
<p>Industrial Power Consumers Association of Alberta (“IPCAA”)</p>	<p>As stated previously, IPCAA has concerns with the word “modernization”.</p> <p>It appears that the AESO is concerned about the cost signal it is sending (after the AESO-driven large transmission build with its resultant costs) to loads to reduce their transmission requirements. If the AESO feels this transmission build was more than what was needed in the Alberta market, it would be helpful for the AESO to acknowledge this and review any learnings from this process. Consumers have been warning the AESO about the risk of overbuild since 2009.</p>
<p style="text-align: center;">AESO Response</p>	<p>As communicated in recent BRP sessions and the recent Optimizing the Grid session, the AESO is deliberately applying congestion analysis and milestone triggers to large system projects to help manage the risk of timely transmission development in the future. The AESO will continue to utilize approaches such as remedial action schemes and look at new technologies that will assist to optimize the existing network and defer the need for new infrastructure.</p>
<p>The Office of The Utilities Consumer Advocate (“UCA”)</p>	<p>n/a</p>
<p style="text-align: center;">AESO Response</p>	<p>n/a</p>
<p>TransAlta Corporation (“TransAlta”)</p>	<p><i>Tariff Modernization should be a high priority; staff should be shifted to support the resourcing requirements to support the initiative</i></p> <p>TransAlta supports the Tariff Modernization work as a key priority for the AESO. While GTAs are filed routinely, we view the Tariff Modernization as setting up the framework that provides greater certainty about tariff price signals for the foreseeable future, contemplates changes in customers behavior, and supports the development and integration of new technologies.</p> <p>TransAlta recommends that the AESO shift its allocation of resources away from market initiatives to the tariff. There is considerable analysis and work needed to develop, consider and evaluate the various approaches that deserve consideration for the tariff. The resources required to do this work is considerably greater than what we believe can be handled by a resource complement that is staffed to deal with a typical year of tariff filings. If resources are not diverted from areas with lower needs this year (due to the pandemic and increased need for market stability), we are concerned that the intent and scope of the initiative will fail to achieve its objectives, devolve into a piecemeal, multiyear initiative, and/or result in increased resource requirements and higher AESO costs.</p>

AESO Response	Noted. Internal resources have already been reallocated to support tariff modernization. We will continue to allocate additional resources to successfully deliver on this initiative, if required, while balancing the needs of other AESO functions.
4. Optimizing the Grid	
Alberta Direct Connect Consumers Association (“ADC”)	ADC supports efforts in optimizing the grid, but with DTS load at levels less than in 2017, does not see the need for any additional transmission infrastructure. In light of the fact that DoE is reviewing the transmission regulation, the AESO should be submitting ideas for strong locational signals for generators so that any future transmission is minimalized.
AESO Response	The AESO plans the transmission system over a 10 to 20-year horizon and acknowledges the current Demand Transmission Service (DTS) load growth will impact the timing of any potential need for load growth driven transmission. Transmission may also be needed to integrate future generation, including renewables, to enable customer connections, to address broader system reliability issues or to capture other economic benefits. Should the Department of Energy (DoE) enable a review of the transmission regulation, the AESO will participate and bring forward AESO perspectives for improvement within the DoE enabled process
ENMAX Corporation (“ENMAX”)	No additional comments at this time.
AESO Response	Noted
Heartland Generation Ltd. (“Heartland”)	Heartland Generation supports this initiative and believes that non-wires alternatives and other new technologies can be used in optimizing the grid to reduce costs for customers. Heartland Generation also encourages the AESO to competitively procure both wires and non-wires solutions to allow competition to discipline costs.
AESO Response	Noted
Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a

Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>IPCAA would like to better understand the potential value associated with optimizing the grid. As the AESO is aware, congestion has been sparse recently due to the large AESO-initiated transmission build. We would like to see better value for the wires investments that have been made; however, it would be worthwhile for the AESO to undertake a cost / benefit analysis prior to initiating any expensive new undertakings.</p>
AESO Response	<p>The AESO will continue to only bring forward through the transparent needs identification process those new transmission infrastructure supporting a demonstrated need, respecting the legislated framework in Alberta.</p>
The Office of The Utilities Consumer Advocate (“UCA”)	<p>n/a</p>
AESO Response	<p>n/a</p>
TransAlta Corporation (“TransAlta”)	<p>TransAlta supports the optimizing the grid initiative. TransAlta has previously advocated for the improvements to the AESO’s planning approach and we believe that congestion analysis and considering applications of technologies that optimize the use of the existing transmission system rather than defaulting to building new transmission assets is a way to manage transmission costs for customers.</p>
AESO Response	<p>Noted.</p>
5. Distribution Coordination	
Alberta Direct Connect Consumers Association (“ADC”)	<p>The ADC has previously submitted that the AESO should examine the overall contract capacity in the distribution system versus peak load and undertake an effort to audit and reconcile the difference. Our review suggests that there may be 1000’s of MW of unused contract capacity in the distribution system that is leading to unnecessary expansion of distribution assets which leads to unnecessary expansion of transmission assets. Having a fulsome understanding of this could lead to possible solutions to free up capacity while at the same time helping distribution customers right size their contracts.</p>
AESO Response	<p>The AESO appreciates ADC’s feedback on this concern and will incorporate this concern into the Distribution Coordination initiative in 2021. Of note, the AESO does not plan the transmission system based on contracted DTS levels but rather historical and forecasted loading and power flows.</p>

ENMAX Corporation (“ENMAX”)	No additional comments at this time.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	Heartland Generation has no comments at this time.
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a
Industrial Power Consumers Association of Alberta (“IPCAA”)	IPCAA supports efforts will ultimately reduce the overall distribution and transmission costs. IPCAA is concerned with the willingness of distribution utilities to participate in these efforts.
AESO Response	Noted.
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a
TransAlta Corporation (“TransAlta”)	TransAlta supports distribution coordination. We believe that the AESO should play a more active role in coordination and planning including ensuring consistency in Distribution Facility Owner’s and the ISO Tariff rate designs. We continue to see significant gaps and inconsistency between the designs including the models like the distribution connected generation credits that need to be rationalized from a distribution and transmission system perspective.
AESO Response	Noted.

6. Technology Integration	
Alberta Direct Connect Consumers Association (“ADC”)	No Comment
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	No additional comments at this time.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	Heartland Generation supports the technology integration roadmaps for Energy Storage and DERs. These technologies, if competitively procured, will create value for Albertans.
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a
Industrial Power Consumers Association of Alberta (“IPCAA”)	IPCAA supports the AESO and TFOs undertaking Dynamic Line Ratings on the transmission lines connected to wind generation, in order to maximize the transmission lines’ capability.
AESO Response	The AESO will incorporate dynamic line ratings into our 2021 review of potential technologies that can assist in optimizing the existing network.
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a

TransAlta Corporation ("TransAlta")	<p>TransAlta supports the technology integration roadmaps for Energy Storage and Distributed Energy Resources (DER). We are somewhat concerned that these roadmaps may devolved into information gathering forums rather than concrete initiatives that provide the regulatory certainty for these technologies to be integrate. Both of these technology classes are already on the system now and so we can ill afford to spend time only "creating awareness" but rather need to advance to providing certainty on how to advance the market, tariff and system framework to allow these resources to fully participate and contribute to the Alberta Interconnected Electric System.</p>
AESO Response	<p>The AESO is progressing forward in 2021 at pace with the Energy Storage and Distributed Energy Resources (DER) roadmaps which are focused on actual integration of these technologies into the existing framework. The "creating awareness" portion of technology is focused on future technologies that may arise across the electricity value chain to ensure the AESO can deliver timely integration of those technologies should they arise and require integration into the existing framework (power system, markets, tariffs, etc.).</p>
7. Settlement Audit	
Alberta Direct Connect Consumers Association ("ADC")	<p>No Comment</p>
AESO Response	<p>Noted.</p>
ENMAX Corporation ("ENMAX")	<p>No additional comments at this time.</p>
AESO Response	<p>Noted.</p>
Heartland Generation Ltd. ("Heartland")	<p>Heartland Generation supports the settlement audit to give confidence to market participants, as billions of dollars are transacted through the AESO each year.</p>
AESO Response	<p>Noted.</p>
Independent Power Producers Society of Alberta ("IPPSA")	<p>n/a</p>
AESO Response	<p>Noted.</p>

Industrial Power Consumers Association of Alberta (“IPCAA”)	IPCAA continues to press for a complete, independent, end-to-end settlement audit and welcomes the AESO’s commitment to such an audit. Prior to undertaking the audit, it would be appropriate for the AESO to stakeholder the Terms of Reference with consumers.
AESO Response	Noted. The audit performed will be similar to audits performed by other ISOs in North America.
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a
TransAlta Corporation (“TransAlta”)	TransAlta supports the settlement audit. As we understand this is the first audit of its kind of the AESO’s settlement systems and processes, which involves billions of dollars in transactions. Market participants need assurance that the settlement system and processes are robust, accurate and reliable.
AESO Response	Noted.
8. Operating Reserve (OR) Market Competitiveness Enhancement	
Alberta Direct Connect Consumers Association (“ADC”)	No Comment
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	No additional comments at this time.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	Heartland Generation is of the view that an OR market redesign is not warranted at this time and appreciates that a final decision to pursue this initiative has not been made.

<p>AESO Response</p>	<p>The Operating Reserve (OR) Market Competitiveness Enhancement initiative is focused on reviewing and fostering competitiveness in the operating reserve market to support efficient market outcomes. This initiative was added as a result of the conclusions drawn in the Market Power Mitigation Review for the Government of Alberta (GoA) released earlier this year. The scope of and decision to proceed on any particular changes will be determined via a stakeholder engagement process.</p>
<p>Independent Power Producers Society of Alberta (“IPPSA”)</p>	<p>We appreciated Mr. Fior’s comments that progress on this initiative still faces a ‘go/no-go’ decision. We look forward to participating in a stakeholder engagement process on the proposed scope of this initiative and the opportunity to help inform the AESO on its ‘go/no’ go decision.</p>
<p>AESO Response</p>	<p>Noted.</p>
<p>Industrial Power Consumers Association of Alberta (“IPCAA”)</p>	<p>Many market experts in the recent AUC capacity market proceeding advocated for a closer to real-time OR market. It would be useful for the AESO to provide a list of the proposed initiatives.</p>
<p>AESO Response</p>	<p>High level information on the proposed initiative was released in the Market Related Initiatives plan released June 25, 2020 and posted on the AESO website at www.aeso.ca. Located on the Market Related Initiatives page here.</p>
<p>The Office of The Utilities Consumer Advocate (“UCA”)</p>	<p>n/a</p>
<p>AESO Response</p>	<p>n/a</p>
<p>TransAlta Corporation (“TransAlta”)</p>	<p>As stated in our previous comments submitted on August 27, 2020, we do not support the inclusion of unnecessary market initiatives. The scope of this initiative is unclear and overly broad/vague. The OR market has been reviewed several times in the past and we question what has changed that the AESO feels this initiative ought to be repeated as we deal with a pandemic and challenging economic uncertainty. This initiative should have a narrower scope and be limited to consider the integration of new technologies like energy storage to enhance the competition in the OR market.</p>
<p>AESO Response</p>	<p>Please see the response to Heartland Generation Ltd. in this section.</p>

9. Market Sustainability and Evolution II	
Alberta Direct Connect Consumers Association (“ADC”)	No Comment
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	No additional comments at this time.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	Heartland Generation does not support all the initiatives within the Market Sustainability and Evolution II. Under the current regime there is a requirement to submit ramping information to the AESO to assist AESO system
AESO Response	Noted.
Independent Power Producers Society of Alberta (“IPPSA”)	Please see our previous comments where we ask the AESO to proceed with only what is necessary and that these initiatives first undergo a careful assessment of whether they are needed at this time. Each should have a defined goal that it is to achieve and we’d ask that the AESO secure stakeholder support of those goals before proceeding.
AESO Response	Please see AESO’s previous response to those comments.
Industrial Power Consumers Association of Alberta (“IPCAA”)	While it would be useful for the AESO to update its Mothball Rule, it is not clear to IPCAA how many generators are / or will be mothballed going forward.
AESO Response	Noted.
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a

TransAlta Corporation (“TransAlta”)	<p>TransAlta does not support the market sustainability and evolution II initiative.</p> <p>We note that TransAlta and other market participants opposed the dispatch tolerance initiative when it was raised in the capacity market consultation and as a group (including the AESO) we arrived at a proposal to submit ramp table information to assist the AESO system controllers to understand the ramping capabilities of generating units. The AESO has now proposed a separate ramp table and dispatch tolerance initiative, which is a significant departure from the previous discussion. TransAlta maintains the view that a ramp table requirement is reasonable but opposes the dispatch tolerance initiative.</p> <p>We do not see the need or desire for another consultation on the mothball rule at this time. This initiative appears to be entirely discretionary and should be removed from the 2021 plan.</p>
AESO Response	<p>Noted.</p>
10. Market Sustainability and Evolution I	
Alberta Direct Connect Consumers Association (“ADC”)	<p>The ADC still supports efforts to plan to move to shorter settlement interval.</p>
AESO Response	<p>As noted in the sub-hourly settlement stakeholder session 3 on September 23, 2020, the AESO was not able to demonstrate justification for the sub-hourly settlement initiative and will not be proceeding with the initiative at this time. Session materials can be found on the AESO website at www.aeso.ca located on the Market Efficiency – Sub-hourly Settlement page here: However, the AESO continues to investigate whether a load equivalent of payment for suppliers on the margin should be implemented.</p>
ENMAX Corporation (“ENMAX”)	<p>No additional comments at this time.</p>
AESO Response	<p>Noted</p>
Heartland Generation Ltd. (“Heartland”)	<p>Heartland Generation supports the AESO’s analysis on shortening the settlement interval. Heartland Generation believes that this initiative should be removed.</p>
AESO Response	<p>Please see the response to ADC in this section.</p>

Independent Power Producers Society of Alberta (“IPPSA”)	<p>Please see our previous comments where we ask the AESO to proceed with only what is necessary and that these initiatives first undergo a careful assessment of whether they are needed at this time. Each should have a defined goal that it is to achieve and we’d ask that the AESO secure stakeholder support of those goals before proceeding.</p>
AESO Response	<p>Please see AESO’s previous responses to these comments.</p>
Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>IPCAA submits that prior to the AESO making a judgment on settlement interval it should wait until it hears any results from the AUC Distribution System Inquiry on interval metering. The AESO’s decision may prematurely influence the outcome of that AUC Decision.</p>
AESO Response	<p>The record informing the distribution system inquiry closed in July 2020; also, please see the response to ADC in this section.</p>
The Office of The Utilities Consumer Advocate (“UCA”)	<p>n/a</p>
AESO Response	<p>n/a</p>
TransAlta Corporation (“TransAlta”)	<p>TransAlta notes that the AESO’s own work on sub-hourly settlement shows that the costs outweigh the benefits of pursuing this initiative at this time. TransAlta recommends that this business initiative be removed from 2021.</p>
AESO Response	<p>Please see the response to ADC in this section.</p>

III. Pool Price Forecast and Load Outlook for 2021	
Do stakeholders have any comments on the Pool Price forecast and Load outlook for the upcoming year?	
Alberta Direct Connect Consumers Association (“ADC”)	No Comment
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	Please see other comments below.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	n/a
AESO Response	n/a
Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a
Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>DTS load has consistently fallen since the peak of 61 TWh in 2018 and is forecasted to still be down close to 3 TWh by the end of 2021. This is an over 4% reduction in the load that is paying transmission costs. These numbers should be concerning.</p> <p>The AESO has to continue to focus on transmission and distribution cost management - new technologies and enhanced energy efficiency will continue to reduce or eliminate load growth going forward.</p>

<p>AESO Response</p>	<p>The AESO continues to update its load forecasting models to include up-to-date inputs and emerging load drivers. For the 2021 BRP, additional variables were included in AESO’s DTS load forecast model, to capture the offsetting effect from the growth in load served by distributed generation (>5 MW) and the effects of the pandemic on DTS load.</p> <p>For the development of the upcoming LTO, a number of scenarios are being considered. These scenarios capture the evolving landscape of the electricity sector in Alberta, including impacts of new technologies that are both transmission connected and distribution connected, enhanced energy efficiency, economic dynamics due to COVID-19 and oil price volatility, and oilsands and cogeneration outlooks, among others.</p>
<p>The Office of The Utilities Consumer Advocate (“UCA”)</p>	<p>The Covid-19 pandemic has negatively impacted an already fragile Alberta economy, which continues to be challenged from low oil prices. Given these challenging circumstances, the AESO is encouraged to revise its 2021 YoY load growth forecast of 1.3% for AIL as this forecast is expecting average monthly AIL to be similar to January 2020 levels (pre-pandemic).</p>
<p>AESO Response</p>	<p>The AESO notes that the UCA’s statement is incorrect with respect to the 2021 forecast average monthly AIL values being similar to the January 2020 historic level. The forecast average monthly AIL values for 2021 are consistently below the January 2020 historic average AIL level (found on slide 29 here).</p> <p>As a result of the pandemic, low oil prices, and lower economic growth, AIL is projected to decrease by 2.6% in 2020. To that effect, the impact of the pandemic and volatility in oilsands production was captured in the AIL forecast model. This is in line with a previous analysis published by the AESO on the impact of COVID-19 and low oil prices on load (found here). It is important to note that the 1.3% forecast AIL growth in 2021 represents a modest recovery from the projected annual low in 2020. The forecast AIL growth in 2021 can be attributed to several factors including an expected partial recovery from the pandemic, forecasted growth in the economy and employment, forecasted growth in load served by distributed generation (>5 MW), and forecasted oilsands production recovery.</p>
<p>TransAlta Corporation (“TransAlta”)</p>	<p>See our comment to section I above.</p>
<p>AESO Response</p>	<p>Noted</p>

IV. AESO Wires, Ancillary Services and Transmission Line Losses Costs Forecast for 2021	
Do stakeholders have any comments on the Wires, Ancillary Services and/or Transmission Line Losses costs forecasts for the upcoming year?	
Alberta Direct Connect Consumers Association (“ADC”)	<p>The ADC asserts that the underlying wires costs are too high and that efforts to reduce the existing revenue requirement should be a priority undertaken by the AESO and all TFO’s. The AESO should publish the utilization of all of the CTI projects with a comparison to what was expected at the time of project design and approval with a fulsome explanation for any differences. For example, the Heartland line was designed for 500 kV, is it still operating at 240 kV? Will it ever need to be used at its design rating? Had the line been designed at 240kV, how much investment would have been avoided?</p> <p>Consumers have a right to full transparency in order to understand the benefit of the billions of investment in transmission that has happened over the past 10 years.</p>
AESO Response	The AESO acknowledges significant investment has progressed through a combination of regulatory review processes and legislative CTI requirements. The AESO will consider how best to address ADCs concerns on transmission utilization.
ENMAX Corporation (“ENMAX”)	Please see other comments below.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	n/a
AESO Response	n/a
Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a

Industrial Power Consumers Association of Alberta (“IPCAA”)	<p>IPCAA is very concerned with the current level of wires costs in Alberta. The AESO should work with the TFOs to make every effort to reduce the existing revenue requirement. In addition, the AESO should publish the utilization of transmission lines, and the CTI projects in particular. These should be compared with what was expected when then projects were proposed. Key differences should be explained to consumers.</p>
AESO Response	<p>The AESO acknowledges significant investment has progressed through a combination of regulatory review processes and legislative CTI requirements. The AESO will consider how best to address ADCs concerns on transmission utilization.</p>
The Office of The Utilities Consumer Advocate (“UCA”)	<p>The UCA would like to understand the need for increased utilization of LSSi due to higher import demand and changes made to the LSSi arming table, resulting in an increase in costs (\$20.6M-\$32.6M, or 58.3%) from the 2020 BRP and the 2021 Forecast, all while the pool price between the two projections is expected to drop (\$57.81-\$53.93, or -7.2%).</p> <p>Why is the AESO anticipating an increase in import volumes in 2021 when operating reserve volumes and subsequently AS Costs are expected to drop?</p>
AESO Response	<p>The 2020 projected and 2021 forecast LSSi costs incorporate changes to the LSSi arming table that occurred in June 2020 resulting from the June 7, 2020 Trip event. The changes to the LSSi arming table require increased LSSi arming volumes and reduced contingency reserve volumes for the corresponding volume of imports, during times of high utilization along the BC/MATL interconnection. The 2021 forecasted LSSi and Operating Reserve (OR) costs materially align with the 2020 projected full year forecast.</p>
TransAlta Corporation (“TransAlta”)	<p>No comments at this time.</p>
AESO Response	<p>Noted.</p>

V. AESO Own Cost Preliminary Budget for 2021	
Do stakeholders have any comments on the 2021 Preliminary General and Administrative Budget information presented?	
Alberta Direct Connect Consumers Association (“ADC”)	No Comment
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	Please see other comments below.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	Heartland Generation supports the AESO’s efforts to reduce its General and Administrative Budget. Heartland Generation is interested in the AESO further breaking down its consulting fees by initiative. Given the economic environment, Heartland Generation believes that consultant services should be paired down to how the AESO used consultants in 2016-2017 unless there are well defined projects where external expertise is required.
AESO Response	<p>In response to similar inquiries in previous years, the AESO presented the contractor and consultant costs which were directly related to business initiatives on slide 46 of the October 1, 2020 Preliminary Forecast and Budget Session stakeholder meeting. Within this slide it was noted that \$0.3 million would be utilized toward the Tariff Modernization and General Tariff Application; \$0.3 million would be required for Technology Integration; \$0.1 million towards the settlement audit and \$0.1 million towards Market Sustainability Evolution I, II and the Operating Reserve Market Competitive Enhancement. The remainder of consulting services are required to maintain and ensure the ongoing operations of the AIES and IT systems, as well as contract audit services, CIP audit and advisory services and for other internal operational support. The amount also includes budgeted external legal costs, which are required to obtain specialized legal resources for commercial matters.</p> <p>The AESO notes that actual contract services and consultants’ costs in 2017 and 2016 were \$13.9 and \$9.0 million, respectively. The 2021 budget of \$5.4 million is \$8.5 and \$3.6 million lower than 2017 and 2016, respectively. The ASEO has made significant efforts to secure and grow required technical expertise internally to mitigate the higher cost of consultants. Careful consideration was made of the minimum contractor and consultant costs required to minimize costs, which management feels is reflected in the 2021 budget.</p>

Independent Power Producers Society of Alberta (“IPPSA”)	IPPSA appreciates the AESO’s efforts to manage its own costs and to reduce the trading charge.
AESO Response	Noted.
Industrial Power Consumers Association of Alberta (“IPCAA”)	As we will present at the AESO Board, the Alberta ISO continues to be one of the most expensive ISOs in North America. While we appreciate that AESO costs have fallen by 5.6% from the 2017 proposed G and A budget (that was the last pre-Capacity Market) and forecasted load will have gone up 1.4% from 2017, IPCAA still believes the AESO has a long way to go compared to its peers.
AESO Response	<p>Noted. The AESO has undertaken significant efforts to keep costs low as we have echoed this messaging in our strategic focus for the 2021 budget on cost management. Tremendous effort is made to mitigate costs and to manage any price increases that also impact the AESO. Careful consideration is made of all resource requirements both internally and externally to ensure the continued operations of the AESO including the safety and reliability of the AIES. It should be noted that AESO budgeted costs have decreased by \$16.9 million compared to 2018 actual costs. The AESO also believes that it is critical to continue to advance its strategic plan to create value for stakeholders and the province as a whole. The strategic plan provides a path to delivery that will allow the AESO and the industry to be well positioned to manage the transformative change environment that the power industry is undergoing. Shifting generation technologies, distributed resources, changing consumer preferences and optionality expectations are driving this fundamental change. The AESO must be positioned to ensure that new technologies and consumer requirements are reliably integrated into the power system, and that there are opportunities to progress, develop or invest. The AESO feels the 2021 initiatives are generally aligned with stakeholder priorities.</p> <p>The AESO believes that the current 2021 budgeted costs are appropriate to meet its mandate and pursue these initiatives.</p>
The Office of The Utilities Consumer Advocate (“UCA”)	n/a
AESO Response	n/a
TransAlta Corporation (“TransAlta”)	See our comment to section I above.
AESO Response	Noted.

<i>Do stakeholders have any comments on the 2021 Preliminary Capital Budget information presented?</i>	
Alberta Direct Connect Consumers Association (“ADC”)	No Comment
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	Please see other comments below.
AESO Response	Noted.
Heartland Generation Ltd. (“Heartland”)	n/a
AESO Response	n/a
Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a
Industrial Power Consumers Association of Alberta (“IPCAA”)	It is unclear what the difference is between \$7.3M for EMS Sustainment and Life Cycle Funding. What has caused the EMS Sustainment to rise by \$3.4M from 2020 levels? Can the AESO please clarify.
AESO Response	The 2021 Budget for EMS Sustainment has been revised to \$6.3 million from \$7.3 million. The 2020 projected amount from the October 1, 2020 presentation was \$3.9 million as costs have been deferred from 2020 to 2021.
The Office of The Utilities Consumer Advocate (“UCA”)	The UCA would like to understand what the extra capital (87% higher relative to 2020 projected costs) in the EMS Sustainment line item will be used for, considering ongoing sustainment activities were only scheduled from 2018-2020.

<p style="text-align: center;">AESO Response</p>	<p>There are two primary reasons for the 2021 budget increase compared to 2020 projected costs. The first is due to some EMS sustainment work moving into 2021 as a result of pandemic impacts on project execution. The second is requirements beyond sustaining the EMS but required for reliable control center operations and reliability coordinator obligations have been included within this line item for 2021.</p>
<p>TransAlta Corporation ("TransAlta")</p>	<p>See our comment to section I above.</p>
<p style="text-align: center;">AESO Response</p>	<p>Noted.</p>

VI. Other Comments	
Do stakeholders have any other comments to offer at this time?	
Alberta Direct Connect Consumers Association (“ADC”)	The ADC appreciates the opportunity to provide feedback.
AESO Response	Noted.
ENMAX Corporation (“ENMAX”)	<p>Transparency of the total cost and scope details for each initiative (i.e., AESO and participant costs) will be key in order to determine whether an initiative should move forward. It would also be helpful to understand what the expectations are for participants to allocate time and resources towards each initiative.</p> <p>ENMAX appreciates the AESO’s efforts to reduce its own costs. Going forward, it will be important for the AESO to continue to prioritize its initiatives to avoid introducing unnecessary requirements or increased costs to the market.</p>
AESO Response	<p>Noted. The AESO will continue to engage with stakeholders as initiatives are advanced, in accordance with the AESO’s <i>Stakeholder Engagement Framework</i>. In some cases, discussions on the various proposed initiatives for 2021 have already occurred with stakeholders, and in other cases these discussions are forthcoming and may include information on AESO and participant costs depending on the initiative (e.g. shorter settlement). As the AESO engages with stakeholders on the initiatives, the expectations of stakeholders from a time and resource perspective will become clearer.</p> <p>Beyond solely looking at the costs of the initiative to each of the AESO and stakeholders, it will also be important to consider the contribution of the initiative to market sustainability, technology integration and system flexibility. In many cases quantifying the magnitude of such contribution is highly challenging. Given the AESO’s role, it has sought to strike an appropriate balance between the introduction of change and maintenance of the long-term effectiveness of the framework.</p>
Heartland Generation Ltd. (“Heartland”)	n/a
AESO Response	n/a

Independent Power Producers Society of Alberta (“IPPSA”)	n/a
AESO Response	n/a
Industrial Power Consumers Association of Alberta (“IPCAA”)	Thank you for the opportunity to provide input into this process.
AESO Response	Noted
The Office of The Utilities Consumer Advocate (“UCA”)	The UCA cautions the AESO to carefully consider its forecasts as they are subject to economic fluctuations and volatility. The AESO is encouraged to constantly monitor them and adapt the budget accordingly, with the latest economic inputs available given market volatility, as there is no assurance that the economic recovery and employment growth will occur in the manner that is being anticipated.
AESO Response	We appreciate your concern and are dedicated to continuous monitoring and prioritization. We understand the current economic impacts and carefully consider changes to our assumptions. The AESO performs an in-depth evaluation of its strategic plan and initiatives each year, taking drivers in current economic, social, environmental and technological impacts into consideration. Changes to the drivers identified are carefully considered throughout the year in consideration of the fluctuations and volatility. We also monitor and evaluate forecasts against budgeted and strategic expectations throughout the year with specific focus on prioritizing work and initiatives.
TransAlta Corporation (“TransAlta”)	No comments at this time.
AESO Response	Noted