

# AESO 2022 Business Plan and Budget Proposal



**To:** AESO Board  
**From:** Vice-President, Finance  
**Date:** Tuesday, November 2, 2021  
**Subject:** **AESO 2022 Business Plan and Budget Proposal**

Enclosed is the *AESO 2022 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 2022 business initiatives;
- The proposed 2022 budgets/forecasts for:
  - wires costs;
  - transmission line losses costs;
  - ancillary services costs;
  - other industry costs;
  - general and administrative, interest costs and depreciation and amortization; and
  - capital costs.

AESO Management will be requesting at the December 2021 AESO Board meeting that the AESO Board approve, or amend and approve, as appropriate, the items outlined in Section 1 of this document. At the AESO Board Meeting on Wednesday, November 17, 2021, stakeholders who have expressed their intent to present will make oral and written presentations to the AESO Board on issues of concern or support regarding proposed 2022 business initiatives and the AESO's 2022 preliminary forecast and budget information.

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

Yours truly,



Nicole Kinch

Vice-President, Finance

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

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## 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 2022 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 2022 budgeted costs (general and administrative, interest, depreciation and amortization, capital and other industry costs). This *AESO 2022 Business Plan and Budget Proposal* (Proposal) provides an overview of our proposed business initiatives and business activities that will enable us to meet our mandate<sup>1</sup> and advance our 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 2022, 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.

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<sup>1</sup> 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 2022 business initiatives as outlined in the Proposal.
2. Approve the following proposed 2022 budget and forecast amounts as outlined in the Proposal and summarized as follows:

	Budget Category/Year		Page Reference <sup>2</sup>	Revenue Source (\$ million)				
				Transmission	Energy Market	Load Settlement	Renewables	Total
<b>OWN COSTS</b>	General and Administrative	2022	21	72.7	21.1	1.0	0.9	95.7
	Interest	2022	27	1.3	1.3	0.1	0.1	2.8
	Amortization	2022	27	18.1	5.9	0.2	0.4	24.6
	Capital	2022	28					25.3
	Other Industry Costs	2022	19	16.0	8.1	-	-	24.1
<b>TRANSMISSION OPERATING COSTS</b>	Wires	2022	16	1,896.7	-	-	-	1,896.7
	Transmission Line Losses	2022	17	143.3	-	-	-	143.3
	Ancillary Services	2022	17	210.1	-	-	-	210.1
<b>SUMMARY</b>	Own Costs	2022		92.1	28.3	1.3	1.4	123.1
	Transmission Operating Costs	2022		2,250.1	-	-	-	2,250.1

*Differences are due to rounding*

<sup>2</sup> 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*<sup>1</sup> (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, depreciation and amortization, capital and other industry costs), wires, transmission line losses costs and ancillary services costs to the AESO Board for approval.

The BRP process overview, terms of reference and engagement 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 Notice to Stakeholders
- AESO Develops Initial Proposed Business Initiatives
- AESO Engages Stakeholders and Seeks Input on Initial Proposed Business Initiatives
- AESO Develops Own Costs Budget and Transmission Operating Forecasts
- AESO Engages Stakeholders and Seeks Input on Proposed Business Initiatives and Preliminary Forecasts and Budget
- AESO Prepares 2022 Business Plan and Budget Proposal
- Interested Stakeholders Present to the AESO Board
- 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.

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<sup>1</sup> A/R 86/2007

# Appendix A – Terms of Reference

Published on aeso.ca: June 15, 2021

## 2022 Budget Review Process Terms of Reference



### Terms of Reference (TOR)

Transparency is the overarching principle in the Budget Review Process (BRP). The following will help ensure transparency to stakeholders during this process.

- All interested stakeholders are welcome to participate in the BRP; stakeholders are not required to register to participate in the applicable year's BRP.
- 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).
- Written comment submissions are a requisite during the proposed business initiatives and preliminary forecasts and budget consultation period in order to present to the AESO Board on the same comments.
- 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.
- The AESO Board in its Board Decision includes key findings on the 2022 Business Plan and Budget Proposal including consideration of stakeholder comments, presentations as well as AESO replies.
- At the end of each AESO budget review process cycle, the AESO and stakeholders will evaluate the effectiveness of the process and make appropriate changes to continuously improve the process 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.

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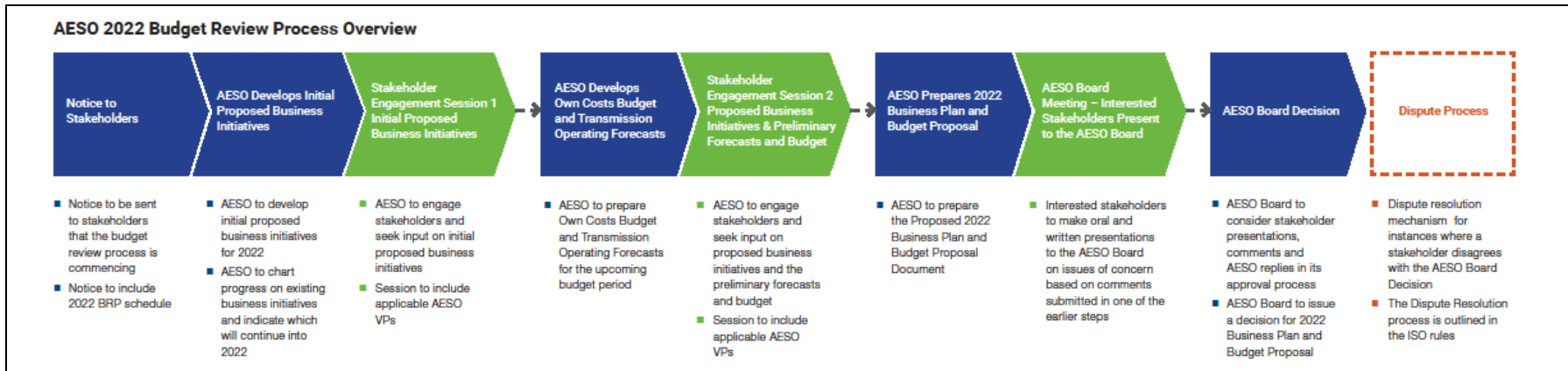
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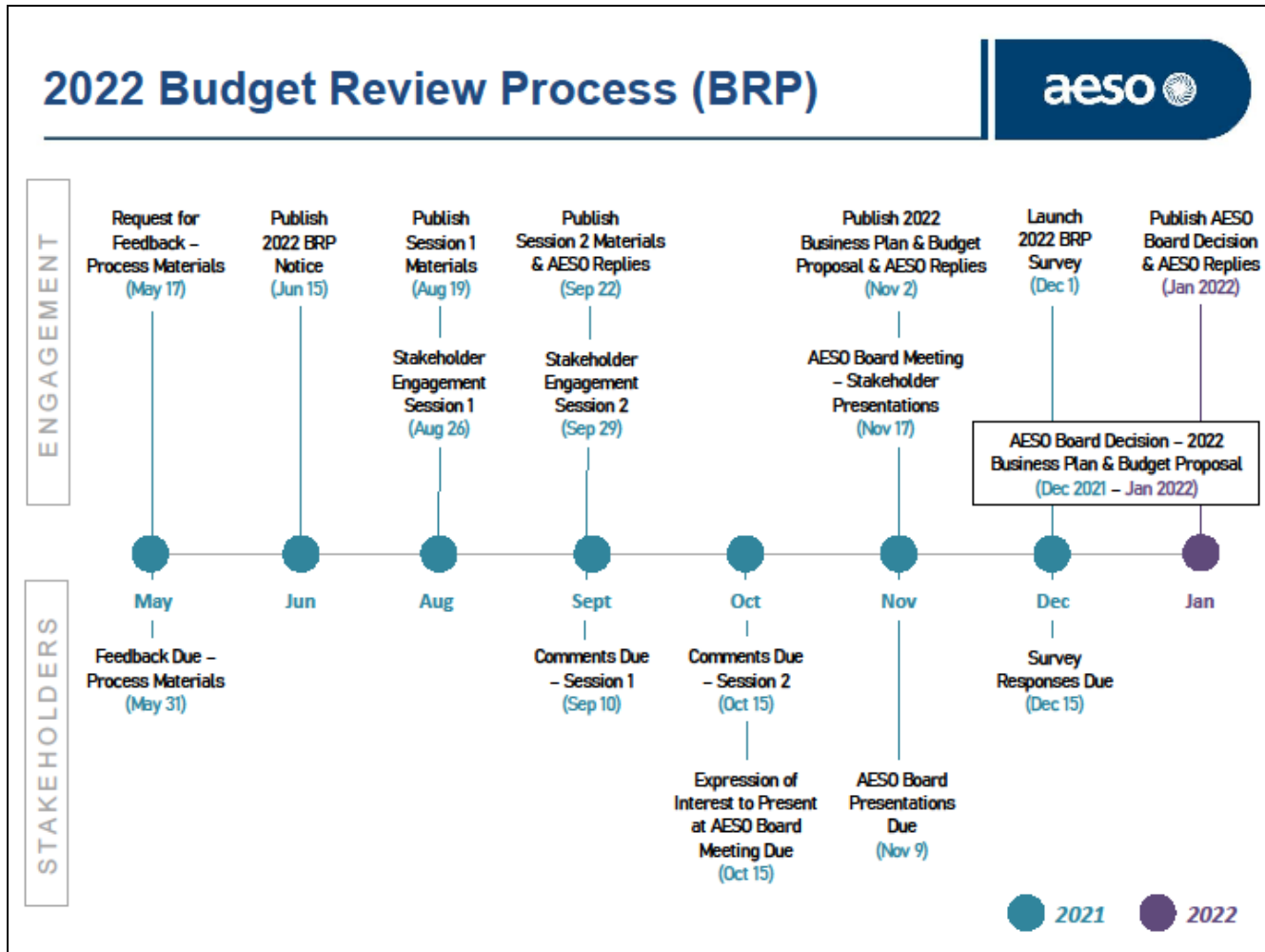
# Appendix B – Process Overview

Published on aeso.ca: June 15, 2021



## Appendix C – Engagement Schedule

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## AESO 2022 Business Plan and Budget Proposal

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## 2022 Business Plan and Budget Proposal

The AESO's *2022 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 its strategic plan.

The strategic plan serves as a foundational document for defining and communicating the direction and focus of the organization. It establishes our objectives for the next year, and the Proposal outlines the specific tasks we will focus on in 2022 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 2022; others will require more than one year to be completed. The Proposal provides transparency as to which initiatives we will focus on in 2022.

The AESO's focus in 2022 will continue to be on cost management through optimization of the grid and enabling the transformation of the province's electricity system to facilitate business in Alberta while maintaining reliability. Our comprehensive understanding of electricity in Alberta, in-depth expertise, strong leadership and focus will be instrumental to our success.

For 2022, the business will be focused on the following initiatives:

- continue implementing the Government of Alberta Red Tape Reduction initiative;
- continue to modernize ISO tariff price signals and simplify the ISO tariff to be more accessible, clear and agile;
- continue to ensure coordination across the distribution and transmission system;
- continue to focus on optimizing the grid and minimize need or extend timing out for new infrastructure;
- complete the settlement audit;
- continue with market sustainability and evolution initiative to maintain the long-term sustainability and competitiveness of the energy-only market structure
- continue to advance the technology plan for integrating new electricity value chain technologies;
- ensuring processes are in place to support the resiliency of the Alberta grid; and
- reviewing the development and compliance monitoring, and audit processes for Alberta Reliability Standards (ARS) requirements.

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.

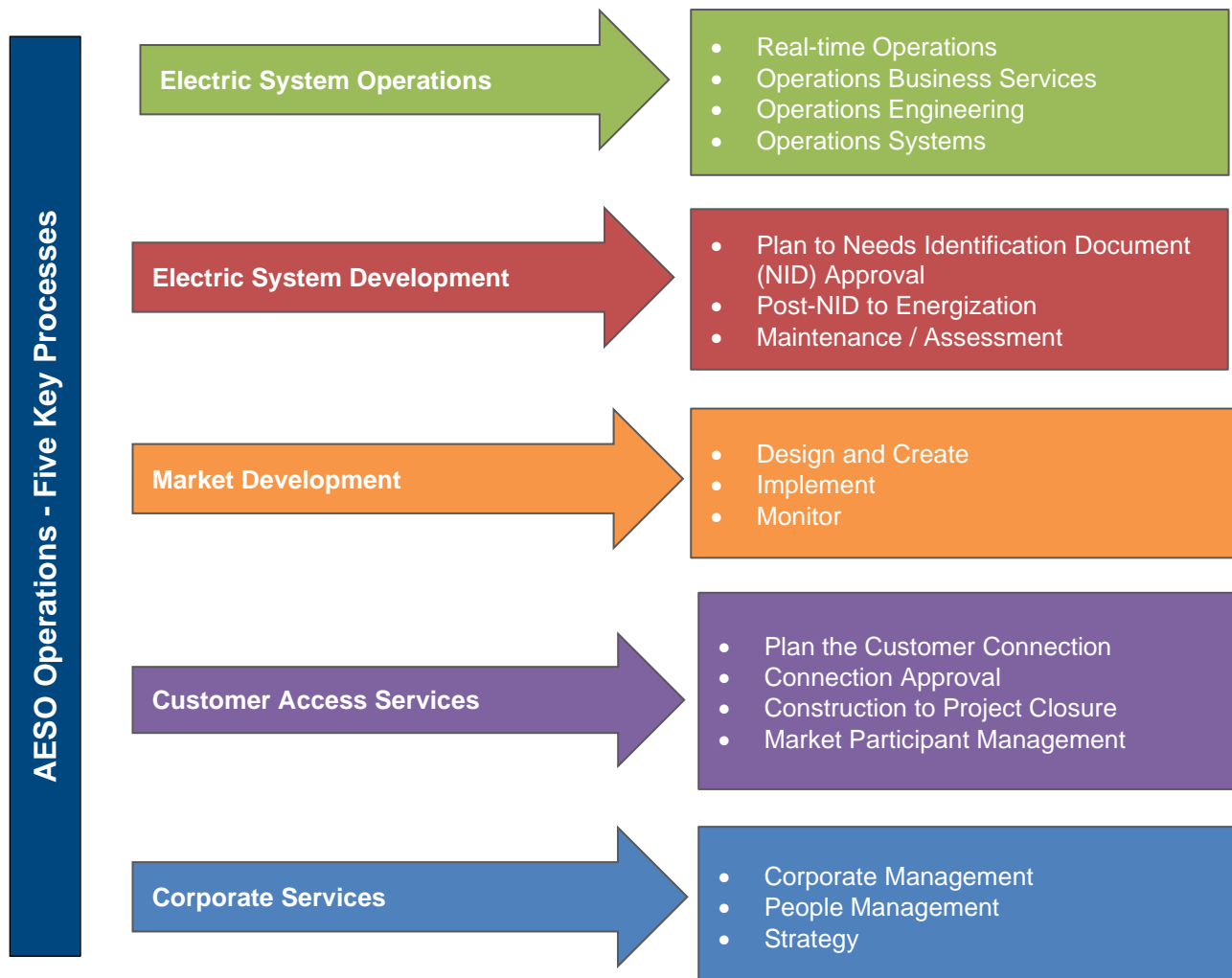
The AESO's proposed 2022 general and administrative budget is \$95.7 million, which is \$4.0 million (or 4 per cent) higher than the 2021 budget of \$91.7 million. The increase is primarily due to staff costs, as additional resourcing is required to advance strategic initiatives and manage increased connection activity, as well as increases in facility operating costs and insurance. These increases are offset by reductions in consulting and legal costs, as well as computer services, maintenance and telecommunications.

The 2022 proposed capital budget is \$25.3 million, which is consistent with the 2021 budget.

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 (ARS) 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 principal 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. Another function is 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.



## Business Initiatives

The following pages provide a brief update on the progress and plans for the business initiatives in 2022. These business initiatives tend to be multi-year in nature and continue to advance the AESO's strategic objectives.

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>General Tariff Application – Mandated, Top Priority Business Initiative – Complete 2021</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>In progress</li> </ul> <p><b>Anticipated completion 2021</b></p> <ul style="list-style-type: none"> <li>GTA will continue to be part of ongoing base business</li> </ul> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>Implement approved tariff provisions from 2018 GTA into connection process and AESO business</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>Tariff Modernization</li> <li>Technology Integration</li> <li>Distribution Coordination</li> </ul>	<p><b>Update</b></p> <p>On April 29, 2021, the Alberta Utilities Commission (AUC) issued Decision 26215-D01-2021 (as varied in Decision 26215-D02-2021 issued on June 3, 2021) approval of the compliance filing relating to substation fraction equal to one (SSF=1) and Adjusted Metering Practice (AMP)</p> <p>Revised ISO tariff took effect on July 1, 2021. Effective date for the commencement of ISO tariff billing applied to specific market participants will be subject to the AUC determinations on the AESO proposed AMP implementation plan</p> <p>Addressed the unlimited liability concern for distribution-connected generation (DCG) and an election period for transition to the new tariff, providing greater certainty to investors</p> <p><b>Next Steps 2021</b></p> <p>Develop an AMP implementation plan with revisions to the metering rule and file with AUC</p> <p>Engage stakeholders and file System Project Cost Criteria</p>	<p><b>2022 Base Business Activities Plan</b></p> <p>File the AMP implementation plan with revisions to the metering rule with the AUC by Jan. 1, 2022</p> <p>Implement the AMP as part of AESO business</p> <p>Continue to file tariff rate updates in advance to allow for timely implementation</p> <p>Continue to work with DFOs and TFOs to develop an AMP implementation plan that includes informed input on their implementation considerations to balance timeliness and cost</p> <p>To support regulatory efficiency, continue to simplify and streamline regulatory process for ISO tariff operations (e.g., reduced length of Deferral Account Reconciliation (DAR) application to support reduced approval timeline)</p> <p>Addressing the unlimited liability concerns for DCGs should have no significant impact on residential, farm and small business consumers' future utility bills. The participant-related cost of transmission expansions to serve DFO consumers' needs will continue to be recovered from consumers and any incremental participant-related transmission costs incurred to connect DCGs will be charged to the DCG at time of connection</p> <p>Engage with DFOs and industry stakeholders on the AESO's criteria for the initiation of system transmission projects, as directed by the AUC in Decision 22942-D02-2019 (in AESO's 2018 ISO tariff)</p>

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>Market Sustainability and Evolution – Business Initiative</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>• In progress</li> <li>• Merged Market Sustainability &amp; Evolution I &amp; II and OR Market Competitiveness Enhancement from 2021 BRP</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>• 2022 (dependent on findings)</li> <li>• Implementation will follow, if determined to be required</li> </ul> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>• To maintain the long-term sustainability and competitiveness of the energy-only market structure and to enable the integration of new technologies with a long-term view of potential market changes needed to facilitate continued resource adequacy and increased flexibility with an ever-increasing variable system</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>• Technology Integration</li> </ul>	<p><b>Update</b></p> <p>Based on results from conducted analyses, Ramp Table and Dispatch Tolerance are to be deferred</p> <p>Internal analysis of Operating Reserve (OR) Market Competitiveness underway</p> <p>Mothball Rule engagement progressing</p> <p><b>Next Steps 2021</b></p> <p>Continued stakeholder engagement on the proposed changes to ISO rule Section 306.7 Mothball Outage Reporting</p> <p>Initiate stakeholder engagement on any identified OR market design changes and corresponding ISO rule changes to enhance competition</p>	<p><b>2022 Plan and Milestones</b></p> <p>Complete stakeholder engagement on the proposed changes to ISO rule Section 306.7 Mothball Outage Reporting; progress proposed changes to ISO rule Section 306.7 Mothball Outage Reporting to AUC</p> <p>Initiate stakeholder engagement on any identified OR market design changes and corresponding ISO rule changes to enhance competition; progress to implementation as appropriate</p> <p>Release update to System Flexibility Assessment Report, based on 2021 Long-term Outlook (LTO) and scenarios</p> <p>Following updated analysis based on 2021 LTO and scenarios (long-term adequacy, revenue sufficiency, system flexibility assessment, etc.), identify any other required market initiatives to support long-term sustainability and competitiveness of the energy-only market, with a long-term view of potential market changes within the existing structure needed to facilitate continued resource adequacy and increased flexibility</p> <p>Identify other required market initiatives to support long-term sustainability and competitiveness of the energy-only market structure, with a long-term view of potential market changes needed to facilitate continued resource adequacy and increased flexibility with an increasingly variable system (e.g., price cap and floor review, new AS products, dispatch tolerance)</p>

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>Settlement Audit – Business Initiative</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>• In progress</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>• 2022</li> <li>• Settlement Audits will become part of ongoing base business, performed regularly with the frequency to be determined</li> </ul> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>• Perform an audit of the AESO’s financial settlement processes</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>• No interdependencies</li> </ul>	<p><b>Update</b></p> <p>Audit deferred to early 2022 due to COVID-19 and other priorities; however, readiness component is still in progress</p> <p><b>Next Steps for 2021</b></p> <p>In the replies to stakeholder comments from the Aug. 26, 2021 BRP Session 1, the AESO provided some additional information and a diagram that is a conceptual overview of the AESO’s settlement operations and the related control framework that will be considered in the Settlement Audit</p> <p>Complete readiness component of Settlement Audit</p>	<p><b>2022 Plan and Milestones</b></p> <p>Complete Settlement Audit</p> <p>Share a post-audit report with stakeholders upon request, subject to non-disclosure agreement</p> <p>Provide updates in the Quarterly Stakeholder Report published under the Quarterly Financial Reporting section on the Financial Reporting web page on <a href="http://aeso.ca">aeso.ca</a></p>

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>Red Tape Reduction – Mandated, Top Priority Business Initiative</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>• Mandated in 2020</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>• March 31, 2023</li> <li>• Red tape will become part of ongoing base business</li> </ul> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>• To be in compliance with the Government of Alberta’s Red Tape Reduction (RTR) Initiative, the AESO is committed to reducing regulatory requirements by one-third by March 31, 2023</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>• Tariff Modernization</li> <li>• Technology Integration</li> </ul>	<p><b>Update</b></p> <p>The workplan, prepared in 2020, outlines the sequence of documents to be reworked or removed to reduce regulatory requirements as per the Government of Alberta’s schedule</p> <p>The AESO has absorbed RTR-related activities into existing workplans, initiatives and internal processes where possible</p> <p>Implementation of the workplan has resulted in a reduction of requirements by 7,578 (25%) as of Q3 2021</p> <p>Estimated industry cost and time savings to date of \$350,000 and 2,200 hours, respectively</p> <p><b>Next Steps for 2021</b></p> <p>Continue to advance the workplan with a reduction in requirements via AESO initiated changes to non-authoritative documents in addition to changes that will need to be filed with the AUC for approval, specifically noting the following ISO rules which have 100+ requirements in terms of reductions</p> <ul style="list-style-type: none"> <li>• Section 201.6 Pricing</li> <li>• Section 202.6 Adequacy of Supply</li> </ul> <p>With respect to the status of the ISO Rule 202.6 – Adequacy of Supply, and ISO Rule 302.1 – Real Time Transmission Constraint Management consultations, stakeholder responses and subsequent filings for those rules are forthcoming in Q4</p>	<p><b>2022 Plan and Milestones</b></p> <p>Continue to advance the workplan, specifically noting the following ISO rules which have 100+ requirements in terms of reductions</p> <ul style="list-style-type: none"> <li>• Section 203.1 Offers and Bids for Energy</li> <li>• Section 304.9 Wind and Solar AGF Forecasting</li> <li>• Engineering Connection Assessment</li> </ul> <p>Drive to the 33% reduction in requirements as per the Government of Alberta’s RTR Initiative</p> <p>Explore other areas where market participants have concerns about regulatory burden, such as loss factors</p>

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>Optimizing the Grid – Top Priority Business Initiative</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>In progress</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>2023</li> <li>Optimizing the Grid will continue to be part of ongoing base business</li> </ul> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>Optimize use of existing grid and minimize need or extend timing out for new infrastructure while ensuring reliability and market access</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>Distribution Coordination</li> <li>Technology Integration</li> <li>Market Sustainability &amp; Evolution</li> </ul>	<p><b>Update</b></p> <p>Using congestion analysis to identify the timing of the planned transmission projects and maximize use of existing infrastructure</p> <p>Pursuing use of flow control devices and line rating upgrades as low-cost solutions to defer new infrastructure</p> <p>Developing the 2022 Long-term Transmission Plan (LTP) focused on risk-based scenarios and optimizing existing network</p> <p>Improving system frequency response following a disturbance</p> <p>Cost saving potential for deferring system projects such as PENV (Provost to Edgerton and Nilrem to Vermilion Transmission Development), CETO (Central East Transfer-out Transmission Development) and CRPC (Chapel Rock-to-Pincher Creek Transmission Development)</p> <p><b>Next Steps for 2021</b></p> <p>Seek enhanced flexibility to further optimize the network by engaging in the Department of Energy’s Bulk System Planning engagement</p> <p>Create methodology to develop substation level transmission capability maps</p> <p>Continue to develop the 2022 LTP to be published in early 2022</p>	<p><b>2022 Plan and Milestones</b></p> <p>Publish 2022 LTP and seek stakeholder feedback. The 2022 LTP will include an earlier stakeholder process for larger system NIDs, seeking feedback in Q1 2022 for improvements</p> <p>Update stakeholder engagement process on material system NIDs</p> <p>Publish first Transmission Capability Map at substation level, coordinated with DFO hosting capability. The Transmission Capability Mapping methodology and initial results at the substation level will be shared in Q1 2022, seeking improvements to next version</p> <p>Streamline connection process with measurable time and resource savings</p> <p>The AESO has started with DFO-related project improvements in the connection process in 2021 and will engage industry in 2022 for all connection types seeking red-tape reductions and address any level playing field concerns</p> <p>Seek flexibility in application of technology agnostic non-wires alternatives</p> <p>Assess dynamic line rating technologies in 2022 for implementation decision, if beneficial, starting in 2023</p> <p>Engage DER providers in future distribution coordination work</p> <p>Engage industry in a transmission utilization discussion, including potential suitable annual metrics to share with industry</p> <p>Our 2022 plans to optimize the network will be influenced by the Department of Energy’s decisions on the Bulk System Planning engagement and adjusted accordingly</p>

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>Tariff Modernization – Top Priority Business Initiative</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>In progress</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>2023</li> <li>Will be followed by the implementation of Tariff Modernization and any potential related Business Initiatives</li> </ul> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>Modernize ISO tariff price signals and simplify the ISO tariff to be more accessible, clear and agile</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>Red Tape Reduction</li> <li>Distribution Coordination</li> <li>Technology Integration</li> </ul>	<p><b>Update</b></p> <p>Stakeholder engagement continued on Bulk and Regional Tariff Design. To better address stakeholder feedback, respond to issues raised by AUC staff, and other considerations, the AESO filed a submission with the AUC to extend the filing date of the Bulk and Regional tariff from June 30, 2021 to Oct. 15, 2021, or within eight weeks of the AESO's last stakeholder session, whichever is later</p> <p>On June 1, 2021 the AUC issued an approval to the requested extension to October 15, 2021</p> <p>Bulk and Regional tariff application filed with the AUC Oct. 15, 2021, including Demand Opportunity Service (DOS) Modernization and a proposal for mitigating rate impacts for significantly impacted loads to support a minimally disruptive transition</p> <p><b>Next Steps for 2021</b></p> <p>AUC proceeding on Bulk and Regional tariff application including DOS modernization</p>	<p><b>2022 Plan and Milestones</b></p> <p>Continue with AUC proceeding on Bulk and Regional tariff application including DOS modernization</p> <p>Initiate consultation on changes to the Customer Contribution Policy</p> <p>Progress other identified tariff structure and process improvements</p> <p>Additional information on the intent and proposed continued process for <a href="#">Tariff Modernization</a> is also included on the AESO website</p> <p>Should Transmission Regulation changes result from the current government engagement, assess and initiate changes to the ISO tariff required to implement</p> <p><b>2023 Milestones</b></p> <p>AUC Decision and AESO compliance filing on Bulk and Regional tariff application including DOS modernization</p>



Business Initiative	Update & Next Steps 2021	Plan 2022
<b><i>Distribution Coordination – Top Priority Business Initiative</i></b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>In progress</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>2024</li> <li>Distribution Coordination will continue to be part of ongoing base business</li> </ul> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>Ensure coordination across the distribution and transmission system as the transformation evolves, focused on optimizing transmission system while ensuring reliability and market access</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>Technology Integration</li> <li>Optimizing the Grid</li> <li>Tariff Modernization</li> <li>General Tariff Application</li> <li>Market Sustainability &amp; Evolution</li> </ul>	<p><b>Update</b></p> <p>Published AESO's Decision-Making Framework for responding to DFO system access service request</p> <p>Launched DER locational static data portal</p> <p>Q1 published DER frequency and voltage ride-through performance requirements technical paper. Working with DFOs to adopt in DFO interconnection documents</p> <p>Realizing potential cost savings by deferring DFO projects through applying Decision-Making Framework</p> <p>Implementing DER technical interconnection requirements through existing DFO processes</p> <p><b>Next Steps for 2021</b></p> <p>Pursue connection process improvements for DFO reliability and capability projects</p> <p>Develop approach to coordinate DFO capability hosting maps with AESO transmission capability assessments</p> <p>Engage in policy/regulatory related initiatives to share the AESO's principles and perspectives as it relates to mandate implications</p> <p>Facilitate DER access to AESO electricity markets by updating any ISO rules (if needed) to remove unnecessary market access limitations</p>	<p><b>2022 Plan and Milestones</b></p> <p>Implement connection process improvements</p> <p>Implement any changes to facilitate market access for DER</p> <p>Assess/align on probabilistic planning as it applies to Transmission/Distribution planning coordination</p> <p>Explore how distributed resources may assist in optimizing the grid</p> <p>Implement necessary additional technical requirements for DER integration</p> <p>Engage industry in 2022 for all connection types seeking red-tape reductions and addressing any level playing field concerns</p> <p>Distribution coordination and DER roadmap-related AESO initiatives will continue to be available on our website under Grid-Related Initiatives and we will seek to improve coordination and stakeholder engagement on these related initiatives</p>

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>Technology Integration – Top Priority Business Initiative</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>• In progress</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>• 2024</li> <li>• Technology Integration will continue to be part of ongoing base business</li> </ul> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• Enable timely planned integration of new technologies onto the grid and into our markets</li> <li>• Enable proactive awareness of future new technologies and the potential impacts to reliability, markets and tariffs</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>• Tariff Modernization</li> <li>• Market Sustainability &amp; Evolution</li> <li>• Optimizing the Grid</li> <li>• Distribution Coordination</li> <li>• Red Tape Reduction</li> <li>• GTA</li> </ul>	<p><b>Update</b></p> <p>Drafting first AESO Technology Forward report</p> <p>Identifying Energy Storage (ES) rule changes and tariff treatment</p> <p>Scheduled the first Annual Industry Technology Summit for Q4</p> <p>Engaged in Department of Energy’s Energy Storage policy development</p> <p><b>Next Steps for 2021</b></p> <p>Launch the first Technology Summit and publish the AESO’s first Technology Forward report focused on the electricity value chain and future implications to the AESO mandate, seeking feedback for improvement and identification of “deeper dive” technologies to assess in 2022</p> <p>Incorporate ES treatment in ISO tariff filing</p> <p>Finalize ES rule changes needed and prepare for filing, including changes to implement Adjustment for Load on the Margin (ALM)</p>	<p><b>2022 Plan and Milestones</b></p> <p>Implement any ES-related policy changes</p> <p>Progress Energy Storage roadmap, including any AESO ES rule-related changes</p> <p>The Department of Energy’s ES stakeholder engagement may influence the ES roadmap priorities in 2022</p> <p>Publish supply technology research report</p> <p>Sustain Technology Integration processes within the AESO</p> <p>Continue implementation for ALM</p> <p>Progress DER roadmap, including the remaining technical review areas</p>

Business Initiative	Update & Next Steps 2021	Plan 2022
<b>Grid Resiliency – Top Priority Business Initiative – New for 2022</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>• New initiative for 2022</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>• 2022/2023</li> </ul> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• Enhance system frequency response</li> <li>• Ensure extreme event preparedness across gas/electric interdependencies</li> <li>• Identify additional reliability needs as supply transforms</li> <li>• Assess need for climate adaptation plans</li> <li>• Enhance cyber-security capabilities</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>• Market Sustainability &amp; Evolution</li> <li>• Technology Integration</li> </ul>	<p><b>Business Initiative Description</b></p> <p>The AESO recognizes that Alberta’s transmission system must be resilient and able to adapt to increasing levels of renewable generation, distributed resources, coal-to-gas conversions, electrification of the transportation system, climate change and cyber threats</p> <p>This initiative will focus on ensuring processes are in place to support the resiliency of the Alberta grid including:</p> <ul style="list-style-type: none"> <li>• Enhancing system frequency response</li> <li>• Ensuring extreme event preparedness across gas/electric interdependencies</li> <li>• Identifying additional reliability needs as supply transforms</li> <li>• Assessing need for climate adaptation plans</li> <li>• Enhancing cyber security capabilities</li> </ul>	<p><b>2022 Plan and Milestones</b></p> <p>2022 will focus on these initiatives, by priority:</p> <ul style="list-style-type: none"> <li>• Implement system frequency response improvements including necessary rule changes</li> <li>• Extreme event preparedness and gas/electric interdependency, including assessing NERC TPL related standards</li> <li>• Assess future reliability needs to ensure resilience as grid transforms towards decarbonization, followed in 2023+ with any needed market-based approaches on how to deliver those requirements</li> <li>• Enhance cyber security including assessing CIP 13 adoption in Alberta</li> <li>• Assess climate change implications on grid resilience including assessing need of NERC TPL-007-4 geomagnetic standard adoption in Alberta</li> </ul>

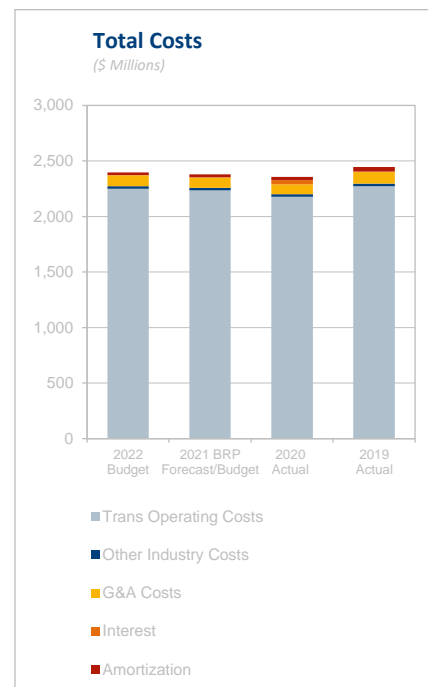
Business Initiative	Update & Next Steps 2021	Plan 2022
<b>ARS Development &amp; Monitoring – Business Initiative – New for 2022</b>		
<p><b>Initial proposal</b></p> <ul style="list-style-type: none"> <li>• New initiative for 2022 (Initiative added based on stakeholder feedback received during 2022 BRP consultation)</li> </ul> <p><b>Anticipated completion</b></p> <ul style="list-style-type: none"> <li>• 2023</li> <li>• Will become part of ongoing base business</li> </ul> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• Review the development and compliance monitoring and audit processes for ARS requirements</li> </ul> <p><b>Interdependencies</b></p> <ul style="list-style-type: none"> <li>• Grid Resiliency</li> <li>• Technology Integration</li> </ul>	<p><b>Business Initiative Description</b></p> <p>Review the development and compliance monitoring and audit processes for ARS requirements</p> <ul style="list-style-type: none"> <li>• Focus on driving efficiencies in the ARS program that will result in a reduction in regulatory burden for market participants</li> <li>• Consider a greater adoption of risk-based approaches across the ARS program</li> <li>• Maintain the safe, reliable, and economic operation of the Alberta Interconnected Electric System</li> <li>• Facilitate a common understanding of requirements and expectations among market participants</li> </ul> <p><b>Next Steps for 2021</b></p> <p>Solicit stakeholder feedback on the existing ARS program (Q4)</p>	<p><b>2022 Plan and Milestones</b></p> <p>Develop roadmap for the review of the ARS program (Q1 2022)</p> <p>Frame and set scope for activities to be undertaken in 2022 (Q1 2022)</p> <p>Establish a process to collaborate with stakeholders and keep them apprised of progress on a regular basis</p>

## Financial Highlights

As part of this 2022 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**
  - 2022 Forecast versus 2021 Projection (Forecast rationale and variance)
  - 2021 Projection versus 2021 Forecasts (Update to 2021 and variance explanation)
- **Section II – General and Administrative, Interest and Amortization and Depreciation Costs**
  - 2022 Budget versus 2021 Budget (Budget rationale and variance explanation)
  - 2021 Projection versus 2021 Budget (2021 variance explanation)
- **Section III – Capital Costs**
  - 2022 Budget versus 2021 Budget (Budget rationale and variance explanation)
  - 2021 Projection versus 2021 Budget (2021 variance explanation)
- **Section IV – Revenue**



Additional information is included in Appendices B through E.

(\$ million) ~ by production year

	2022 Forecast/ Budget	2021 Projection <sup>1</sup>	2021 Forecast/ Budget <sup>2</sup>	2020 Actual	2019 Actual
Transmission Operating Costs	2,250.1	2,226.6	2,236.5	2,177.9	2,272.5
Other Industry Costs	24.1	21.3	21.4	22.7	27.7
General and Administrative	95.7	93.0	91.7	88.3	104.4
Interest Costs <sup>3</sup>	2.8	46.3	3.5	37.8	5.4
Amortization	24.6	28.3	26.2	30.7	38.8
Capital Expenditures	25.3	23.9	25.3	23.2	40.3

*Differences are due to rounding*

<sup>1</sup> Amounts are the current projection for 2021 costs

<sup>2</sup> Amounts are from the 2021 BRP (budgets and forecasts currently AESO Board approved).

<sup>3</sup> 2020 Actual and 2021 Projection amounts include \$33.7 million and \$44.5 million, respectively, of interest costs related to Loss Factor resettlements, which were largely offset by interest revenues not presented here. Excluding these balances, 2020 Actual and 2021 Projection amounts are \$4.1 million and \$1.8 million, respectively.

## Section I – Transmission Operating and Other Industry Costs

### Transmission Operating Costs

The following table provides a summary of transmission operating costs.

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

	<b>2022 Forecast</b>	2021 Projection	2021 Forecast	2020 Actual	2019 Actual
Wires Costs	<b>1,896.7</b>	1,674.6	1,933.8	1,903.6	1,951.8
Transmission Line Losses	<b>143.3</b>	190.8	104.4	91.8	107.8
Operating Reserves	<b>169.3</b>	319.0	159.9	144.8	187.1
Other Ancillary Service Costs	<b>40.8</b>	42.2	38.4	37.7	25.8
<b>Transmission Operating Costs</b>	<b>2,250.1</b>	2,226.6	2,236.5	2,177.9	2,272.5

*Differences are due to rounding*

Additional information on the 2022 forecast methodology and descriptions of the cost categories is provided in Appendix A (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.

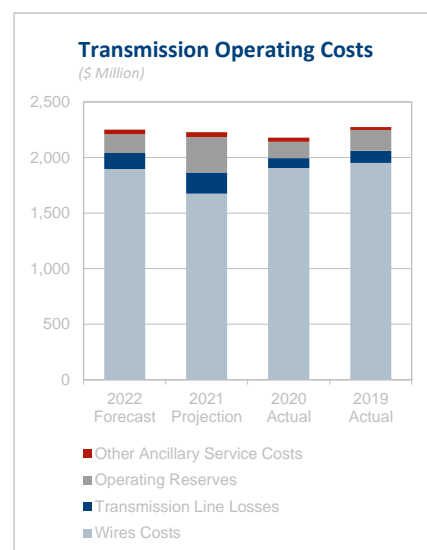
Wires costs include long-term contracts related to Invitation to Bid on Credit (IBOC) and Location Based Credit Standing Offer (LBC SO) programs, since these programs were initiated as incentives for generation to locate closer to major load centres and provide a non-wires solution to transmission wires issues in Alberta.

The 2022 forecast for wires costs is \$1,896.7 million, which is \$222.1 million or 13 per cent higher than the 2021 projection of \$1,674.6 million. The 2022 forecast is based on TFO tariffs (\$1,895.0 million) and the AESO's forecast for LBC SO costs (\$1.7 million).

The 2022 forecast is based on TFO tariffs approved or applied-for as of September with a majority of the forecast reflecting: i) filed 2022 tariffs; ii) filed 2022 negotiated settlements; or iii) AUC approvals for 2021 and 2022 tariffs.

The 2021 projection for wires costs is \$1,674.6 million, which is \$259.2 million or 13 per cent lower than the 2021 forecast of \$1,933.8 million based on the amounts paid primarily to the TFOs in accordance with their AUC-approved tariffs. The variance between the 2021 projection and the 2021 forecast is mainly attributable to the tariff refund from AltaLink Management Ltd. of approximately \$223.5 million (proceeding 26248).

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





## Transmission Line Losses

The 2022 forecast for transmission line losses is \$143.3 million, which is \$47.5 million or 25 per cent lower than the 2021 projected cost of \$190.8 million. This is primarily attributable to a decrease in the 2022 forecasted average pool price of \$74 per megawatt hour (MWh) which is 25 per cent lower than the 2021 projection of \$98 per MWh.

The 2022 transmission line losses volumes forecast is 1,900 gigawatt hours, which is 1 gigawatt hour or less than 1 per cent lower than the 2021 projection of 1,901 gigawatt hours. Losses volumes in 2022 are expected to be at similar level to the 2021 projected volumes.

Transmission line losses costs in the 2021 projection are \$190.8 million, which is \$86.4 million or 83 per cent higher than the 2021 forecast of \$104.4 million. The cost variance is mainly impacted by a higher 2021 projected average pool price of \$98 per MWh compared to \$54 per MWh used in the 2021 forecast.

The 2021 projected transmission line losses volumes are 1,901 gigawatt hours, which is 21 gigawatt hours or 1 per cent higher than the 2021 forecast of 1,880 gigawatt hours. The slight increase in volumes of losses can be partly attributed to the fact that generation in high loss factor regions has run at higher capacity factors.

## Operating Reserves

The 2022 forecast for operating reserves costs is \$169.3 million, which is \$149.7 million or 47 per cent lower than 2021 projected costs of \$319.0 million. The cost of operating reserves is impacted by actual volumes, hourly pool prices, and operating reserve prices.

Actual volumes forecasted for 2022 have been reduced through actions taken to improve efficiencies in the operating reserve market resulting in lower operating reserves costs. These actions were based on historical data analysis, system control requirements, and market participant behaviour in operating reserve markets and resulted in optimized procurement of active operating reserves through purchasing additional contingency reserves when import volumes were forecasted to be high and less when import volumes were forecasted to be low. A seasonal optimization component to the procurement of standby reserves was also implemented, all of which reduced the procurement forecast volume of standby supplemental reserves by 57 per cent; standby spinning reserves by 35 – 57 per cent, depending on the season; and standby regulating reserves by 12 – 50 per cent, depending on the season.

The average pool price used for the 2022 forecast is \$74 per MWh, which is 25 per cent lower than the 2021 projection of \$98 per MWh. The lower pool prices anticipated for 2022 can be mainly attributed to increased renewable generation entering commercial operations through 2022 combined with an assumption of normal weather.

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 premiums and discounts used in the 2022 forecast follow the established forecast methodology.

The 2022 operating reserves volumes forecast is 6.8 terawatt hours, which is 0.2 terawatt hours or 3 per cent lower than the 2021 projection of 7.0 terawatt hours. The 2022 forecast operating reserves volumes are lower than the 2021 projection due to the optimization of operating reserve procurement as noted above.

Operating reserve costs in the 2021 projection are \$319.0 million, which is \$159.1 million or 99 per cent higher than the 2021 forecast of \$159.9 million. The cost variance in 2021 is attributed to a higher 2021 projected average pool price of \$98 per MWh compared to \$54 per MWh used in the 2021 forecast. Actual pool prices are due to higher-than-expected demand driven by extreme cold and heat events in 2021, strong pricing in interconnected markets, higher than forecast natural gas prices, and the return of the Power Purchase Agreement (PPA) assets to the owners from the Balancing Pool at the end of 2020.

The 2021 projected operating reserves volumes is 7.0 terawatt hours, which is 0.2 terawatt hours or 3 per cent lower than the 2021 forecast of 7.2 terawatt hours due to the optimization of operating reserve procurement as noted above.

## 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

	2022 Forecast	2021 Projection	2021 Forecast	2020 Actual	2019 Actual
Load Shed Service for Imports	29.4	29.8	32.6	28.3	16.1
Contracted Transmission Must-run	-	-	-	3.0	3.0
Conscripted Transmission Must-run	5.0	5.0	0.4	0.7	0.3
Reliability Services	2.9	2.9	2.9	2.9	2.9
Poplar Hill	-	-	-	-	0.9
Black Start	2.5	2.5	2.4	2.3	2.3
Transmission Constraint Rebalancing	1.0	2.0	0.1	0.5	0.3
<b>Other Ancillary Service Costs</b>	<b>40.8</b>	<b>42.2</b>	<b>38.4</b>	<b>37.7</b>	<b>25.8</b>

*Differences are due to rounding*

The 2022 forecast for other ancillary services costs is \$40.8 million, which is \$1.4 million or 3 per cent lower than the 2021 projection of \$42.2 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 for 2022 are forecast to be \$29.4 million, which is \$0.4 million or 1 per cent lower than the 2021 projection of \$29.8 million. The 2021 forecast is based on the expected operations of the transmission system in 2022 and reflects contract pricing for LSSi services. The 2022 LSSi forecast considers historical availability levels and forecast import and arming volumes.

LSSi costs for 2021 are projected to be \$29.8 million, which is \$2.8 million or 9 per cent lower than 2021 forecast of \$32.6 million due to lower-than-expected availability volumes and arming payments. This is offset by payments for two trip events that were not included in the original forecast.

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. As of September 2020, the

TMR agreement has expired. The AESO does not currently have any contracts in place for TMR. Non-contracted generators may be dispatched to provide this service (referred to as conscripted TMR).

The 2022 forecast for conscripted TMR is \$5.0 million, which is consistent with the 2021 projection, as operational conditions are anticipated to be similar to those incurred in 2021.

Conscripted TMR costs for 2021 are projected to be \$5.0 million, which is \$4.6 million or 1,150 per cent higher than the 2021 forecast of \$0.4 million primarily due to unexpected load growth in a region, increased number of planned outages and transmission equipment constraints which required greater than anticipated conscription of TMR services.

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 2022 forecast of \$2.9 million is consistent with the 2021 projection and 2021 forecast, as these costs are based on an existing contract, with no new contracts planned for services in 2022.

The Poplar Hill generator provided voltage support (VARs) in addition to power (MW), to support 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 2022 forecast of \$2.5 million is consistent with the 2021 projection and 2021 forecast and reflects 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. The 2022 forecast of \$1.0 million is \$1.0 million or 50 per cent lower than the 2021 projected costs of \$2.0 million. Cost forecast for 2022 is mainly driven by curtailment around most severe single contingency.

Transmission constraint rebalancing costs for 2021 are projected to be \$2.0 million, which is \$1.9 million or 1,900 per cent higher than the 2021 forecast of \$0.1 million. The increase is driven primarily by abnormal situations requiring constrained down generation during islanded operations as well as constraints on generation due to transmission line upgrades and limits.

## Other Industry Costs

Other industry costs are those not under the direct control of the AESO or those that could not have been forecast prior to the budget year in which they arose. They include mandatory administration and membership fees, regulatory proceeding costs, other regulatory process costs, unforeseen litigation costs, and non-compliance penalties. Mandatory administration and membership fees relate to the annual administration fee for the AUC, the AESO's share of Western Electricity Coordinating Council (WECC), Northwest Power Pool (NWPP) and North America Electric Reliability Corporation (NERC) membership fees. Regulatory process costs are associated with the AESO's involvement in AUC proceedings and costs incurred to respond to specific agency-related directions or recommendations that are beyond the routine operations of the AESO. This does not include application preparation costs.

## Other Industry Costs (\$ million)

	2022 Forecast	2021 Projection	2021 Forecast	2020 Actual	2019 Actual
AUC Fees – Transmission	10.3	9.7	11.3	10.9	11.5
AUC Fees – Energy Market	7.8	7.3	6.6	7.2	7.9
WECC/NWPP/NERC Costs <sup>4</sup>	2.5	2.3	2.2	2.5	2.2
Regulatory Process Costs	3.5	2.0	1.3	2.1	6.1
<b>Other Industry Costs</b>	<b>24.1</b>	<b>21.3</b>	<b>21.4</b>	<b>22.7</b>	<b>27.7</b>

*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.

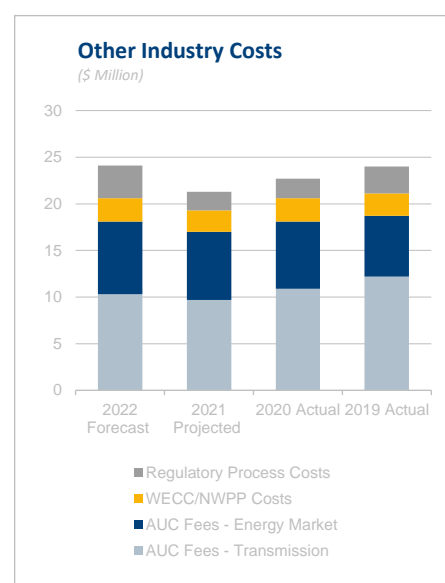
### WECC/NWPP/NERC Fees

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 2022 forecast and 2021 projection are consistent with prior year amounts, with slight variations resulting from foreign exchange rate fluctuations.



<sup>4</sup> Western Electricity Coordinating Council / Northwest Power Pool / North American Electric Reliability Corporation

## Regulatory Process Costs

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 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 2022 forecast for regulatory process costs is \$3.5 million, which is \$1.5 million higher than the 2021 projection of \$2.0 million and is primarily related to the Bulk and Regional tariff proceeding, other disputes that are expected to be heard before the AUC and the Courts, and ISO rules, tariff and system-related proceedings. The increase from 2021 is the result of the estimated higher number of complex regulatory proceedings and litigation matters.

The 2021 projection for regulatory process costs is \$2.0 million, which is \$0.7 million higher than the 2021 forecast of \$1.3 million. The increase is primarily related to unforeseen litigation proceedings, a higher-than-expected number of Review and Variances, appeal and AUC-initiated proceedings, and the payment of intervenor cost awards.

## Section II – General & Administrative, Interest and Amortization Costs

### 2022 Budgets

In the *2022 Business Plan and Budget Proposal* (Proposal), AESO Management continues to focus on the business initiatives in 2022 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 continues to play a leadership role in enabling the transformation of the province's electricity sector while ensuring reliable, affordable power is always available to Albertans. Our strategic focus areas position us to proactively manage the profound changes occurring today and those that we see on the horizon. Recent events in power systems across North America have also reinforced the critically important role of an Independent System Operator (ISO), therefore our attention to core business functions also remains paramount during this transformation.

The AESO will continue to focus on 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 Proposal, 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 E highlights the circumstances and processes that would be undertaken in these circumstances.

## General and Administrative Costs

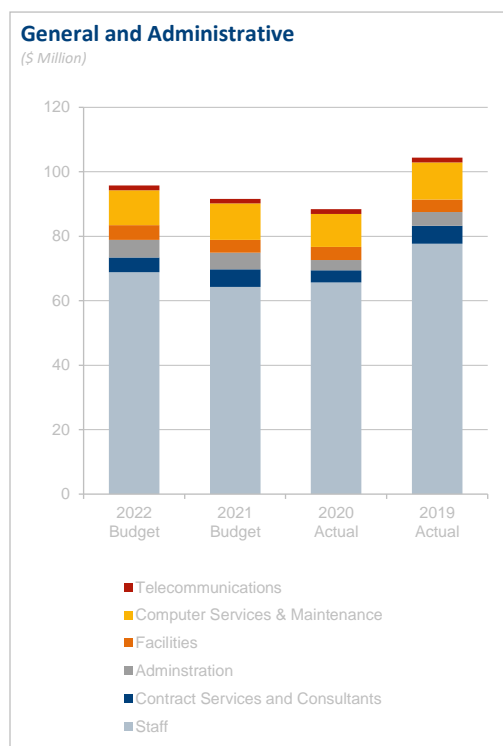
### General and Administrative Costs (\$ million)

	2022 Budget	2021 Projection	2021 Budget	2020 Actual	2019 Actual
Staff	68.9	68.6	64.3	65.7	77.7
Contract Services and Consultants	4.5	4.5	5.4	3.7	5.5
Administration	5.5	3.8	5.2	3.2	4.3
Facilities	4.5	4.2	4.0	4.1	3.9
Computer Services and Maintenance	10.9	10.5	11.3	10.2	11.5
Telecommunications	1.4	1.4	1.5	1.4	1.5
<b>General and Administrative Costs</b>	<b>95.7</b>	<b>93.0</b>	<b>91.7</b>	<b>88.3</b>	<b>104.4</b>

*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 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. In 2021, the AESO focused on cost management and market and regulatory stability. The AESO's 2022 proposed general and administrative budget is \$95.7 million, an increase of \$4.0 million or 4 per cent from the 2021 budget of \$91.7 million and reflects a focus on optimizing the grid, enabling transformation, and strengthening our core business through grid resiliency and market function.

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





Significant variances from the 2021 approved budget are as follows:

(\$ million)

<b>2021 Approved Budget</b>		<b>\$ 91.7</b>
Staff Costs	4.5	
Insurance	0.4	
Facility Operating Costs	0.5	
Consulting, Legal and Audit	(0.9)	
Computer Services, Maintenance & Telecommunications	(0.5)	<b>4.0</b>
<b>2022 Proposed Budget</b>		<b>\$ 95.7</b>

*Differences are due to rounding*

### Staff, Contract Services and Consultants

#### Staff Costs

The AESO maintains market-based compensation for staff which incorporates a benefits plan and a performance-based incentive.

The Reform of Agencies, Boards and Commissions Compensation Act (RABBCA) being enacted on the AESO effective July 1, 2022, will have an impact on the makeup of the overall staff costs. These impacts have been incorporated into the 2022 budget as noted below.

Budgeted staff costs for 2022 are \$68.9 million, which reflects staff resources required to advance strategic initiatives, particularly in grid optimization around congestion analysis where the long-term cost benefit to Albertans of pushing out transmission costs could generate significant cost savings. In addition, sustained and growing connection volumes have required additional resources.

<b>Staff, Contract Services and Consultants (\$ million)</b>	<b>2022 Budget</b>	2021 Projection	2021 Budget	2020 Actual	2019 Actual
Staff	<b>68.9</b>	68.6	64.3	65.7	77.7
Consulting	<b>3.4</b>	3.6	4.1	3.0	5.1
Legal	<b>1.0</b>	0.8	1.2	0.6	0.4
Audit	<b>0.1</b>	0.1	0.1	0.1	0.0
<b>Staff, Contract Services and Consultants</b>	<b>73.4</b>	73.1	69.7	69.4	83.2

*Differences are due to rounding*

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

**Base pay adjustments** – The AESO continues to review the general economic indicators and salary survey information to determine the impact on employee compensation. No base salary adjustment is proposed for 2022. There were no base salary pay adjustments in 2018 through 2021, although an amount of \$1.0 million for 2019 through 2021, was approved to adjust employee compensation for inversions, compressions and promotions. An amount of \$0.6 million has been reflected in the 2022 budget for this purpose.

In light of RABBCA, a comprehensive compensation assessment is underway for all AESO employees to determine the net impact on base pay in 2022. As of the time of the 2022 budget preparation, the impacts of this assessment are still unknown and therefore the 2022 base pay has been maintained at 2021 levels, except as noted above.

**Short-term (annual) incentive plan** – The AESO’s short-term incentive plan (STIP) is based on an assessment of corporate and individual performance, as aligned to corporate goals. With the enactment of RABBCA, effective July 1, 2022 the AESO’s STIP will be discontinued; however, it is anticipated that these costs will be incorporated into other aspects of the AESO’s total compensation package to keep employees market competitive, and as such the AESO has budgeted this cost to be consistent with prior years.

**Vacancy rate** – The AESO has included a 6 per cent vacancy rate for 2022, which is consistent with the AESO’s budgeted vacancy rate for 2021. The rate takes into consideration historical pre-pandemic averages, as well as anticipated trends for 2022.

**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”. While the enactment of RABBCA will result in changes to the various components of the AESO’s comprehensive benefit plan in 2022, the overall costs are expected to be relatively consistent with prior years and as such are budgeted at 21 per cent.

Actual staff costs for 2021 are projected to be \$68.6 million, which is \$4.3 million or 6 per cent higher than the 2021 budget due to a lower vacancy rate than anticipated and historically experienced. The AESO continues to make a concerted effort to reduce general and administrative costs wherever possible to offset this increase.

### Contract Services and Consultants

Contract services and consultants costs typically vary from year to year based on requirements to meet business initiatives.

Budgeted contract services and consultants costs for 2022 are \$4.5 million, which is consistent with the 2021 projection and \$0.9 million lower than the 2021 budgeted costs as a result of reduced requirements for ongoing business initiatives and continued efforts to develop and retain skillsets internally where practical to do so.

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

**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.

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

Actual contract services and consultants costs for 2021 are projected to be \$4.5 million, which is \$0.9 million or 16 per cent lower than the 2021 budget as a result of reduced requirements for current year initiatives, the impact of COVID-19 on the timing of work and continued efforts to develop and retain skillsets internally where practical to do so.

### Administration

#### Administration (\$ million)

	2022 Budget	2021 Projection	2021 Budget	2020 Actual	2019 Actual
Travel and Training	1.6	0.5	1.5	0.5	1.6
Insurance	1.5	1.2	1.1	0.7	0.5
AESO Board Fees	0.5	0.5	0.5	0.4	0.4
Other Administrative	1.9	1.6	2.1	1.6	1.8
<b>Administration</b>	<b>5.5</b>	<b>3.8</b>	<b>5.2</b>	<b>3.2</b>	<b>4.3</b>

*Differences are due to rounding*

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.

Administration costs for 2022 are budgeted to be \$5.5 million, which is \$0.3 million or 6 per cent higher than the 2021 budgeted costs of \$5.2 million. The increase is primarily associated with an increase in insurance premiums due to increasing pressure in the market.

**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 2022 have increased by \$0.1 million from 2021 due to anticipated training and market participant consultation costs related to various AESO initiatives.

**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 \$0.4 million increase is budgeted for 2022 due to market conditions impacting premiums.

**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. The budgeted costs in 2022 are consistent with 2021.

**Other Administrative Costs** – This category includes corporate subscriptions/memberships and professional membership fees, general office costs, printing and recruiting. The budgeted costs in 2022 have decreased by \$0.2 million from 2021 due primarily to reductions in anticipated corporate memberships and subscriptions, general office costs and corporate relations.

Projected administration costs for 2021 are \$3.8 million, which is \$1.4 million or 27 per cent lower than the 2021 budget of \$5.2 million due to the ongoing impacts of COVID-19. Lower than budgeted costs are anticipated related to training, travel, meals, office costs and other administrative costs.

### Facilities

#### Facilities (\$ million)

	<b>2022 Budget</b>	2021 Projection	2021 Budget	2020 Actual	2019 Actual
<b>Facilities</b>	<b>4.5</b>	4.2	4.0	4.1	3.9

*Differences are due to rounding*

Facilities costs are associated with rent and operating costs for the AESO's three office locations: i) the main offices in downtown Calgary which are leased through long-term lease arrangements; ii) the AESO Operations Complex (AOC), which includes the System Coordination Centre (SCC) and additional office space added in Q4 2019 as part of the AESO's SCC Expansion project, all of which is owned and operated by the AESO; and iii) additional space for the AESO's Back-Up Coordination Centre to accommodate redundant computer systems to support seamless operating performance in the event of a disruption to the operations at the SCC.

To accommodate staff and contract resources 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.

The completion of the AESO's SCC Expansion project in Q4 2019 resulted in a slight increase in facility operating costs in 2020 onwards.

The increase in 2022 budgeted costs is primarily due to higher operating costs anticipated at the AOC, based on market driven cost increases.

Projected facilities costs for 2021 are \$4.2 million, which is \$0.2 million or 5 per cent higher than the 2021 budget of \$4.0 million due to increased sanitation costs related to COVID-19 as well as market driven cost increases.

### Computer Services and Maintenance

#### Computer Services and Maintenance (\$ million)

	<b>2022 Budget</b>	2021 Projected	2021 Budget	2020 Actual	2019 Actual
<b>IT Maintenance and Services</b>	<b>10.9</b>	10.5	11.3	10.2	11.5

On an annual basis, the AESO invests in software applications and systems to support the business and IT infrastructure needs, which then require ongoing maintenance and licence agreements to support the

high availability requirements of these systems. The AESO operates with a managed services model<sup>5</sup> for IT infrastructure operating support (e.g., network, database and middleware platforms).

Budgeted costs for 2022 are \$10.9 million, which is lower than the 2021 budgeted costs 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 existing systems and new services, as well as the impact of inflation and contractual vendor increases.

Computer services and maintenance costs for 2021 are projected to be \$10.5 million, which is \$0.8 million or 7 per cent lower than the 2021 budget of \$11.3 million due to the same reasons noted above for the reduction in the 2022 budgeted costs.

### Telecommunications

#### Telecommunications (\$ million)

	<b>2022 Budget</b>	2021 Projection	2021 Budget	2020 Actual	2019 Actual
<b>Telecommunications</b>	<b>1.4</b>	1.4	1.5	1.4	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 2022 budgeted costs and 2021 projected costs are consistent with prior year amounts.

### Interest Costs and Amortization

#### Interest Costs and Amortization (\$ million)

	<b>2022 Budget</b>	2021 Projection	2021 Budget	2020 Actual	2019 Actual
Interest	<b>2.8</b>	46.3	3.5	37.8	5.4
Amortization of Intangible and Depreciation of Property, Plant and Equipment	<b>24.6</b>	28.3	26.2	30.7	38.8

*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.

<sup>5</sup> 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 facilitates resource efficiencies and improves reliability.

Budgeted costs for 2022 are \$2.8 million, which is \$0.7 million or 20 per cent lower than the 2021 budget of \$3.5 million, reflecting a reduction in anticipated borrowing requirements resulting from reduced working capital deficiencies and lower interest rates.

Interest costs for 2021 are projected to be \$46.3 million, of which \$44.5 million relates to Loss Factor resettlements, which are largely offset by interest revenues. Excluding this interest, 2021 projected costs are \$1.8 million, which is \$1.7 million or 49 per cent lower than the 2021 budgeted costs due to lower interest rates related to economic conditions and a working capital surplus driven primarily by reduced wires costs and increased revenues.

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

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

The 2022 budget is \$24.6 million, which is \$1.6 million or 6 per cent lower than the 2021 budget of \$26.2 million reflecting a lower depreciable asset base in 2022 as significant assets will reach the end of their useful lives.

Amortization and depreciation costs for 2021 are projected to be \$28.3 million, which is \$2.1 million or 8 per cent higher than the 2021 budgeted costs. This increase is due to a higher depreciable asset base than anticipated, resulting from variations in the timing of assets being completed and placed into service.

Additional information on the AESO's 2022 capital projects is provided in Appendix B (2022 Capital Projects).

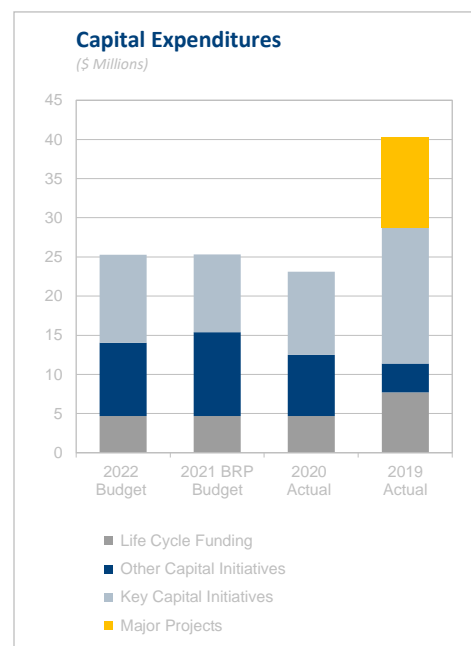
## Section III – Capital Costs

### 2022 Budget

A detailed review of the capital requirements for 2022 takes into consideration the progress that has been made on the inflight projects that are multi-year in nature, the new requirements for 2022 and the AESO's capacity to design and implement system solutions. Based on these findings, the proposed capital budget is \$25.3 million for 2022, which is consistent with the 2021 budget.

The variance between the 2021 projection and 2021 budget is a net decrease of \$1.4 million or 6 per cent from \$25.3 million to \$23.9 million. The decrease is mainly attributable to the impacts of COVID-19 on timing and completion of work and constraints on internal resources available to progress the work.

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 2022 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.

Additional information on the 2022 capital projects is provided in Appendix B (2021 Capital Projects).

### Capital Expenditures (\$ million)

	2022 Budget	2021 Projection	2021 Budget	2020 Actual	2019 Actual
Key Capital Initiatives	11.2	7.5	9.9	10.6	17.4
Other Capital Initiatives	9.3	12.2	10.7	7.8	3.7
Life Cycle Funding	4.7	4.1	4.7	4.7	7.7
Major Project	-	-	-	-	11.5
<b>Total Capital Spending</b>	<b>25.3</b>	<b>23.9</b>	<b>25.3</b>	<b>23.2</b>	<b>40.3</b>

*Differences are due to rounding*

### 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.

**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.

**Capital Expenditures (\$ million)**

	2022 Budget	2021 Projection	2021 Budget	2020 Actual	2019 Actual
<b>Key Capital Initiatives</b>	<b>11.2</b>	<b>7.5</b>	<b>9.9</b>	<b>10.6</b>	<b>17.4</b>
1. Business System Modernization	0.8	0.9	1.0	-	-
2. Cyber Security and Critical Infrastructure Protection	1.4	1.0	1.1	1.3	1.2
3. Optimizing the Grid	-	0.3	1.2	-	-
4. Technology Integration	0.4	-	0.4	-	-
5. Market Sustainment & Evolution	0.5	-	-	-	-
6. EMS Sustainment	8.2	5.2	6.3	5.0	5.3
7. Market Evolution – Other	-	-	-	0.2	1.7
8. Productivity Applications and Tools	-	-	-	3.2	-
9. Critical Systems External Interface Modernization	-	-	-	0.9	-
10. Capacity Market	-	-	-	-	9.1
<b>Other Capital Initiatives</b>	<b>9.3</b>	<b>12.2</b>	<b>10.7</b>	<b>7.8</b>	<b>3.7</b>
<b>Life Cycle Funding</b>	<b>4.7</b>	<b>4.1</b>	<b>4.7</b>	<b>4.7</b>	<b>7.7</b>
<b>Sub-total General Capital</b>	<b>25.3</b>	<b>23.9</b>	<b>25.3</b>	<b>23.2</b>	<b>28.9</b>
<b>Major – SCC <sup>6</sup></b>	-	-	-	-	<b>11.5</b>
<b>Total Capital</b>	<b>25.3</b>	<b>23.9</b>	<b>25.3</b>	<b>23.2</b>	<b>40.3</b>

*Differences are due to rounding*

<sup>6</sup> 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 D (Allocation of Costs).

### Transmission

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

### Energy Market

The AESO recovers the costs of operating the real-time energy market through an energy market trading charge on all megawatt hours traded. Based on the 2022 budget and a current trading volume forecast, an energy market trading charge of 26.5¢ per MWh traded is proposed to recover the AESO's budgeted costs for 2022. The trading charge for 2022 is lower than 2021, reflecting the refund of a projected overcollection in 2021 as well as reduced allocation of budgeted 2022 costs to the energy market.

The AESO costs are 23.0¢ per MWh traded, representing a decrease of 5.5¢ per MWh traded or 19 per cent from the 2021 rate of 28.5¢ 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)

	<b>2022</b>	2021	2020	2019	2018	2017
AESO Costs	<b>28.5</b>	34.3	40.0	46.8	30.4	30.2
Energy Market Shortfall / (Surplus)	<b>(3.5)</b>	1.5	8.9	4.0	(7.0)	-
AESO Component	<b>25.0</b>	35.8	48.9	50.8	23.4	30.2
AUC's Portion of Energy Market Administration Fee	<b>7.9</b>	6.6	8.3	6.5	6.5	6.0
Total Recoverable Amount	<b>32.9</b>	42.4	57.2	57.3	29.9	36.2

*Differences are due to rounding*

**Trading Charge** (¢ per MWh)

	<b>2022</b>	2021	2020	2019	2018	2017
AESO Costs	<b>23.0</b>	28.5	29.8	34.7	23.7	26.2
Energy Market Shortfall / (Surplus)	<b>(2.8)</b>	1.2	6.6	3.0	(5.5)	-
AESO Component	<b>20.2</b>	29.7	36.4	37.7	18.2	26.2
AUC's Portion of Energy Market Administration Fee	<b>6.3</b>	5.4	6.2	4.8	3.2	5.3
Total	<b>26.5</b>	35.1	42.6	42.5	21.4	31.5

*Differences are due to rounding*

## Renewables

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

## Load Settlement

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

## Appendix A: Transmission Operating Cost Definitions

### 2022 Pool Price Forecast Methodology

Consistent with previous BRPs, the AESO used EDC Associates' hourly pool price forecast for 2022. The hourly pool prices were taken from the seed that had an average annual price closest to the EDC summary annual price. The hourly pool price forecast is used as an input to calculate the ancillary services and transmission line losses costs.

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

- The impacts of carbon pricing
- Pricing impacts associated with mothballs, retirements, and conversions of coal assets
- Outages of generation units or transmission assets
- Natural gas prices, and
- Renewables additions

The 2022 average pool price is forecast to be \$74 per MWh compared to the 2021 projected average pool price of \$98 per MWh, a decrease of 25 per cent. The lower pool prices anticipated for 2022 can be mainly attributed to increased renewable generation entering commercial operations through 2022 combined with an assumption of normal weather.

### 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) able 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 statistical models that use variables such as economic inputs, weather, and seasonal effects to forecast hourly losses volumes.

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

## Ancillary Services

Ancillary services are procured by the AESO to ensure reliability of the system and include operating reserves and services with generation capacity and load reduction capabilities. Ancillary services are procured through various methods including a daily competitive exchange for operating reserves and competitive processes that result in contracts for other types of ancillary services.

## Operating Reserves

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

### Categories of Operating Reserves

#### Active operating reserves:

- Required to automatically balance small changes in supply and demand
- Required to maintain system reliability during unplanned events such as the loss of a generator, loss of a transmission line, or a sudden increase in demand
- Alberta Reliability Standards (ARS) define the minimum levels that must be procured
- Costs are the product of volumes procured multiplied by operating reserve price, which is indexed to the hourly pool price
- Represents approximately 95 per cent of total operating reserves costs
- Costs are impacted by pool price fluctuations, supply of offered reserves and market participant offer behavior

#### Standby operating reserves:

- Provide additional reserves when the active operating reserves are insufficient to ensure system reliability
- Pricing includes two components: i) an option premium, paid for the capability to activate the standby reserves; and ii) an activation price, paid only if the standby reserves are activated to provide energy
- Represents approximately 5 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 Alberta Interconnected Electric System (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 black-out, Black Start services are used to re-energize the transmission system and provide start-up power to generators who cannot self-start. Black Start providers are required in specific areas of the AIES to ensure the entire system has adequate start-up power.

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 TMR agreement with Poplar Hill was terminated on July 29, 2019. During the term of the agreement, the generator provided voltage support (VAr) in addition to power (MW), to support transmission system reliability in the province.

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

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. Transmission constraint rebalancing came into effect on November 26, 2015.



## Appendix B: 2022 Capital Projects

The following tables provide information on the AESO’s current capital plan for 2022. 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		
<b>Business System Modernization</b>	<b>Description</b>	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
	<b>2022 Plan</b>	Continued implementation and expansion 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
<b>Cyber Security and Critical Infrastructure Protection (CIP)</b>	<b>Description</b>	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
	<b>2022 Plan</b>	Implementation of various cyber security and CIP-related projects
<b>EMS Sustainment</b>	<b>Description</b>	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
	<b>2022 Plan</b>	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
<b>Market Sustainability and Evolution</b>	<b>Description</b>	Implement system changes required to maintain the long-term sustainability and competitiveness of the energy-only market structure
	<b>2022 Plan</b>	Includes the system changes required to implement the Adjustment for Load on the Margin (ALM)

Key Capital Initiatives		
<b>Technology Integration</b>	<b>Description</b>	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
	<b>2022 Plan</b>	Includes projects related to energy storage long-term solution implementation and distributed energy resource (DER) integration
<b>Key Initiatives</b>	<b>2022 Budget</b>	<b>\$11.2 million</b>

### **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.

<b>Other Capital Initiatives</b>	<b>Description</b>	<b>2022 Budget</b>
<b>Business Technology Solutions</b>	Implementation of technology solutions to improve operating effectiveness, efficiency and controls – includes records management, personal productivity tools, forecasting software, ERP enhancements and governance risk and compliance tool	5.1
<b>Reliability - Other</b>	Upgrades to existing SCC, Back-Up Coordination Centre and control room systems and technologies	2.1
<b>System Enhancement Program</b>	Ongoing high priority minor enhancements to production applications	1.1
<b>Facilities</b>	Facilities refurbishments, end-of-life and security-related capital. Also includes workspace costs, office furniture purchases, replacements and other leasehold improvements	1.0
<b>Other Capital Initiatives</b>		<b>9.3</b>

*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	2022 Budget
<b>Server Upgrade</b>	Retire and replace corporate server hardware/software based on a pre-determined corporate retirement plan.	0.4
<b>Enterprise Services - PI Server Upgrade</b>	Upgrade the PI Server's Windows operating system (OS) and application components that reach end-of-life at the beginning of 2023 to operate a reliable PI system on a modern OS platform.	0.6
<b>Network Upgrade</b>	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	0.5
<b>Storage Upgrade</b>	Implement selected storage infrastructure upgrades to address existing end-of-life cycle considerations	0.9
<b>Application Life Cycle Management</b>	Maintenance of life cycle needs of application components for all corporate and critical applications	0.4
<b>Non-Project Capital</b>	Identification and procurement of IT non-discretionary components required for the delivery of IT services	0.4
<b>Critical Systems Modernization</b>	Upgrade or replace the application server and applications utilized in multiple business areas	1.5
<b>Life Cycle Initiatives</b>		<b>4.7</b>

*Differences are due to rounding*

## Appendix C: Major Projects

No major projects are budgeted or planned for 2022.

## Appendix D: Allocation of Costs

Beginning in 2021, management reviews allocation percentages on an ongoing basis and adjusts accordingly throughout the year. Prior to 2021, allocation percentages were reviewed twice a year, when the annual budget was prepared and at year-end when the allocations were finalized based on actual activities and costs for each department.

<b>Cost Type</b>	<b>Allocation Methodology</b>
<b>Direct Operating</b>	Individual department input/analysis for current year work focus
<b>Shared Services – Corporate Services<sup>7</sup></b>	Individual department input/analysis for current year work focus, as well as allocation of direct operating group costs
<b>Shared Services – Information Technology</b>	Activity-based analysis on system and resource costs
<b>Shared Services – Office Leases</b>	Based on AESO staff count
<b>Capital</b>	Assigned on a project-by-project basis
<b>Other Industry Costs – Fees and Memberships</b>	Based on related function
<b>Other Industry Costs – Regulatory Process Costs</b>	Individual review/assessment for each proceeding

<sup>7</sup> Corporate Services includes departments such as: Accounting, Settlement and Credit, People & Culture, Corporate Communications, Legal, etc.

## Appendix E: 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 may request approval from the AESO Board and subsequently issue a stakeholder communication
If the forecast is <u>above</u> the previously approved budgeted amount and the amount is in excess of a 'manageable variance'	Management will review the new funding requirements with stakeholders, followed by a request for approval from the AESO Board
<p>A '<b>manageable variance</b>' is a forecast to actual variance that would be:</p> <ul style="list-style-type: none"> <li>• Less than 10 per cent of budgeted general and administrative expenditures</li> <li>• Less than 20 per cent of budgeted capital</li> </ul>	

## Stakeholder Participation and Comments and AESO Replies

Throughout the current year Budget Review Process (BRP), the AESO held sessions with stakeholders to discuss proposed business initiatives, preliminary forecasts and budget 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.

Stakeholders	2021 Stakeholder Participation					
	May 17	Aug. 26		Sept. 29		Nov. 17
	Request for Feedback	Engagement Session 1		Engagement Session 2		AESO Board Meeting
	Process Materials	Initial Proposed Business Initiatives		Proposed Business Initiatives & Preliminary Forecasts & Budget		Stakeholder Presentations
	Email	Session	Comment Matrix	Session	Comment Matrix	Meeting
Alberta Direct Connect Consumers Association (ADC)		X	X	X	X	X
Alberta Newsprint				X		
AltaLink Management	X	X	X	X	X	
ATCO Electric		X				
Best Consulting Solutions Inc.		X		X		
Canadian Renewable Energy Association (CanREA)			X	X		X
Capital Power Corporation		X	X	X	X	X
Chymko Consulting Ltd.				X		
Customized Energy Solutions				X		
DePal Consulting Limited				X		

Stakeholders	2021 Stakeholder Participation					
	May 17	Aug. 26		Sept. 29		Nov. 17
	Request for Feedback	Engagement Session 1		Engagement Session 2		AESO Board Meeting
	Process Materials	Initial Proposed Business Initiatives		Proposed Business Initiatives & Preliminary Forecasts & Budget		Stakeholder Presentations
	Email	Session	Comment Matrix	Session	Comment Matrix	Meeting
ENMAX Corporation		X	X	X	X	
EPCOR Distribution and Transmission Inc.		X	X	X	X	
Greengate Power Corporation			X	X		
Heartland Generation Ltd.	X	X	X	X	X	
IBI Group				X		
Imperial Oil				X		
Independent Power Producers Society of Alberta (IPPSA)		X	X	X	X	X
Industrial Power Consumers Association of Alberta (IPCAA)	X	X	X	X	X	X
Lionstooth Energy		X	X	X		X
Member of the Public				X		
Palezieux Regulatory Solutions Inc.				X		
Stantec Consulting				X		
Suncor Energy Inc.		X		X		
The Office of The Utilities Consumer Advocate		X	X	X		
TransAlta Corporation	X	X	X	X	X	
URICA Asset Optimization				X		



The following table identifies the key BRP dates in 2021.

Key BRP Dates	Purpose
May 17, 2021	<b>Request for feedback</b>   An email was sent to stakeholders who participated in the 2021 BRP requesting feedback on the 2021 BRP and the proposed 2022 BRP process materials, including process overview, terms of reference, and engagement schedule.
June 15, 2021	<b>Notice to stakeholders</b>   A notice was published in the AESO Stakeholder Newsletter and the Business Planning web page on aeso.ca and process materials posted regarding the initiation of the BRP (i.e., stakeholder consultation process).
Aug. 26, 2021	<b>Stakeholder Engagement Session 1</b>   Stakeholder engagement session to discuss and seek input on the initial proposed list of business initiatives proposed for 2022 and status updates and proposed plans for current multi-year business initiatives.
Sept. 29, 2021	<b>Stakeholder Engagement Session 2</b>   Stakeholder engagement session to discuss and seek input on proposed business initiatives for 2022 and the preliminary 2022 forecasts and budget (i.e., transmission line losses and ancillary services costs forecasts for 2022 and the preliminary own costs budgets (general and administrative, interest, depreciation and amortization, other industry and capital) proposed for 2022).
Nov. 17, 2021	<b>AESO Board Meeting</b>   Interested stakeholder present to the AESO Board.

Following stakeholder sessions, we asked stakeholders for their comments. Stakeholder comments and AESO responses to those comments are enclosed.

# Stakeholder Comments and AESO Replies

2022 Budget Review Process (BRP) Stakeholder Engagement Session 1 – Aug. 26, 2021



The AESO invited all interested stakeholders to provide their comments on the 2022 BRP Stakeholder Engagement Session 1 and the business initiatives presented at the virtual session hosted on Aug. 26, 2021. The AESO values stakeholder feedback and we thank you for sharing your perspectives with us. View all stakeholder comments received and the AESO replies below.

1. Please comment on 2022 BRP Session 1 hosted on August 26, 2021. Was the session valuable? Was there something the AESO could have done to make the session more helpful?	
<b>Alberta Direct Connect (ADC)</b>	The ADC found the session valuable and appreciates the opportunity to participate in the process. The ADC found value in having the AESO executive participate.
<b>Altalink Management Ltd (Altalink)</b>	<p>This session was valuable as it allowed stakeholders the opportunity to understand the AESO's 2022 business initiatives and to be able to ask clarifying questions.</p> <p>AltaLink appreciates the opportunity to provide comments to the AESO on its 2022 business initiatives and looks forward to providing further input during the AESO's 2022 Budget Review Process.</p> <p>AltaLink believes there are two critical areas requiring focused attention:</p> <ol style="list-style-type: none"><li>1. Affordability – Customers need a grid which is affordable now and into the future. This requires the industry to strive for greater efficiency and to ensure all users pay their fair share.</li><li>2. Reliability/Resiliency – Changes in generation, climate, etc. have been and are expected to continue to make it more difficult to provide the reliability customers require. Large scale outages, like what was experienced in Texas, highlight the impact that failures have on customers.</li></ol>
<b>Canadian Renewable Energy Association (CanREA)</b>	The session provided a valuable update on the work that the AESO is doing to date. We very much appreciate, as well, the opportunity to access the session recording, so that it is possible to hear the updates at a later time.
<b>Capital Power (Capital Power)</b>	Capital Power appreciates the AESO's efforts in organizing the BRP session as well as having the materials posted ahead of time. Session 1 was valuable in establishing a broad understanding of the AESO's key business initiatives by allowing participants to seek clarification or make suggestion for improvement.
<b>ENMAX Corporation (ENMAX)</b>	N/A

1. Please comment on 2022 BRP Session 1 hosted on August 26, 2021. Was the session valuable? Was there something the AESO could have done to make the session more helpful?	
<b>EPCOR Distribution &amp; Transmission Inc (EPCOR)</b>	Yes, the session was valuable in that it provided some insight into the AESO's focus areas for the balance of 2021 and 2022. To make the session more valuable in the future, we would prefer to see the presentation material made available at least one week in advance.
<b>Greengate Power Corporation (Greengate)</b>	Yes, it was valuable and Greengate appreciate the ability to comment. It was an important session because it is one of the few AESO sessions in which the AESO openly discusses its strategic plan and priorities.
<b>Heartland Generation Ltd. (Heartland)</b>	N/A
<b>Industrial Power Consumers Association of Alberta (IPCAA)</b>	IPCAA thanks the AESO for hosting the session and sending senior management to provide information to stakeholders. IPCAA is concerned that this BRP does not provide a value-added proposition. The AESO has stated that its priorities include: "Cost management across the industry value chain." However, IPCAA sees no recognition by the AESO that the existing transmission system, with respect to the actual load, is over-built. New renewable generators are planning to build in locations where future transmission upgrades will be required. The AESO provides no guidance or planning on how to incent new generation to connect to the existing transmission system, to keep costs affordable for Alberta consumers.
<b>Independent Power Producers Society of Alberta (IPPSA)</b>	IPPSA appreciates the participation of the AESO's senior leadership in the BRP process. Their participation provided stakeholders with an improved understanding of the AESO's many initiatives. We hope this will continue throughout this process and in future processes.
<b>Lionstooth Energy Inc. (Lionstooth)</b>	N/A
<b>TransAlta Corporation (TransAlta)</b>	<b>The session was valuable.</b> The session provided an overview of the status of multi-year initiatives and added milestones that allow stakeholders to assess the AESO's performance and overall achievements with respect to its budget and previously approved business initiatives.

**1. Please comment on 2022 BRP Session 1 hosted on August 26, 2021. Was the session valuable? Was there something the AESO could have done to make the session more helpful?**

As stated in previous years comments, greater transparency should be provided into multi-year initiatives and the internal resource allocations and cost associated with AESO activities. We note the AESO classified most of the initiatives as top priority and included information on interdependencies between initiatives, but did not provide details about how these interdependencies translate into cost savings.

**The Office of the Utilities Consumer Advocate (UCA)**

N/A

**AESO Response**

- The AESO acknowledges and appreciates stakeholders' comments in this section.
- The AESO published the materials (presentation) five business days in advance of the session to the AESO website on the [Business Planning](#) web page.
- One of the AESO's key business initiatives is Optimizing the Grid, which seeks to utilize the existing system before building new infrastructure.
- The AESO plans to provide certain cost information by business initiative in relation to the budgeted consulting, legal and capital costs that are expected to be incurred in relation to each business initiative in 2022. Estimating the cost of resources is complex for multiple reasons. First, the AESO assesses its staff requirements holistically. Staff will be required to deliver on both base load work and business initiatives in 2022. Third party consultants and legal services are utilized when the work is deemed to require specialized knowledge or skills and when the work may exceed the capacity of internal resources. Second, staff utilization is always evaluated with a specific focus on creating efficiencies through cross collaboration and understanding interdependencies. In addition, work related to initiatives must be carefully managed and prioritized to remain within budgeted expectations. This critical need to remain agile may result in some initiatives advancing faster than others. As a result, staff focus may be shifted between initiatives based on needs and timing. Finally, initiatives identified may not have each stage planned in detail at the time of the BRP process.
- Regarding the interdependencies between the various business initiatives the AESO does coordinate to reduce unnecessary or duplicative initiatives and gain efficiency. However, the AESO does not calculate the additional cost that would have been created if it did not coordinate in this way.

2. General Tariff Application	
(i) What are your views on the proposed next steps for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>ADC</b>	<p>i. The ADC supports the completion of the initiative.</p> <p>ii. The AESO needs to also file a 2022 tariff update in Q4 2021 to minimize future Rider C and deferral accounts.</p>
<b>Altalink</b>	AltaLink has no comments on this business initiative, at this time.
<b>CanREA</b>	We agree that a plan for AMP implementation is a priority as it is currently causing investor uncertainty.
<b>Capital Power</b>	Capital Power understands that the GTA objective will be coming to a close with upcoming changes to the Adjusted Metering Practice (AMP). As this happens Capital Power agrees that the GTA will continue as base business and further tariff changes are captured under the tariff modernization objective.
<b>ENMAX</b>	<p>Given that this initiative still requires more work to be done on the AMP implementation plan in 2022, ENMAX does not agree that this initiative can be deemed “complete”.</p> <p>Greater clarity on the AESO’s AMP implementation plan will be required. Enough time should be provided following the AESO’s AMP to ensure DFO’s are able to identify and make any necessary metering infrastructure upgrades.</p>
<b>EPCOR</b>	Next steps appear reasonable and EPCOR agrees that this should be a top priority.
<b>Greengate</b>	N/A
<b>Heartland</b>	No comments given this work is completed.
<b>IPCAA</b>	<p>(i) IPCAA is pleased that one issue impacting the AESO Tariff, the Distribution Connected Generation (DCG) credit issue, has hopefully been resolved. With the AUC Decision 26215-D01-2021, the AESO should implement the sub-station fraction and Adjusted Metering Practice as soon as possible for a 2022 implementation.</p> <p>(ii) IPCAA has provided views on the priority level of this initiative in several consultations. Obviously, the AESO will need to have rates set going forward; however, a Tariff overhaul is premature. Please see the response outlined in #7.</p>
<b>IPPSA</b>	<p>We recognize that the tariff is a high priority for the AESO in the near term and that there remains more work to be done. We also expect that any changes to the Transmission Regulation this fall may beget the need for further tariff revisions in 2022. Given the topics raised by the DOE in its recent consultation, there may be a need for the AESO to engage its market groups in consulting with stakeholders on the implementation of any substantive changes emanating from changes to the regulation. Topics for discussion within the DOE consultation included. ‘congestion-free transmission’, ‘non-wires alternatives’ and losses, etc. This may be a significant piece of work for the AESO in 2022+.</p>

2. General Tariff Application	
(i) What are your views on the proposed next steps for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>Lionstooth</b>	<p>Lionstooth, and others, expended significant time and effort over the past few years, engaging with the AESO on matters related to the GTA, specific to DCG, including SSF and AMP. These engagements, proceedings, and processes were neither efficient, nor effective.</p> <p>There must be a measured and thoughtful pace to change, supported by quantitative analysis to justify the need for change. Only when there is general agreement in the need for change, should we proceed to next steps, including development of alternative mechanisms. All engagements require quantitative studies to understand usage, costs, cost avoidance, and allocation methods, and impact analysis to better understand outcomes and prevent unintended consequences. It is, in fact laughable, that stakeholders, both load and generators, have to continue to request quantitative studies and evidence, such as a cost-of-service study. Recent AESO engagements have skipped important elements of the above, and have ignored stakeholder feedback. The fact that almost every major decision or initiative finds itself in front of the Alberta Court of Appeals, signals that efforts to increase regulatory efficiency and reduce red tape are failing, while investment goes elsewhere, and the only new jobs being created are for lawyers. Lionstooth awaits the AESO's AMP implementation plan, with the hope that stakeholder requests for quantitative evidence, and measured and thoughtful change will be included.</p> <p>Priority Ranking: 3<sup>rd</sup></p>
<b>TransAlta</b>	<p><b>The General Tariff Application (GTA) is a top priority business initiative.</b></p> <p>The AESO's role is central in reducing regulatory lag and providing certainty with respect to its general tariff application. TransAlta notes that the final 2018 ISO tariff was finally approved in early 2021, which is problematic as it contributes to regulatory uncertainty. The current tariff was subject to numerous review &amp; variance and compliance filings, together with stakeholder consultations on the substation fraction methodology (SFF) and the adjusted metering practice (AMP), all of which delayed its approval and implementation. The AMP implementation plan is the logical next step followed by approval of metering rules by the AUC.</p>
<b>UCA</b>	<p>The UCA would like to better understand how the addressing of the unlimited liability concern for DCGs impacts residential, farm and small business consumer's future utility bills? Is there greater cost certainty for them going forward?</p> <p>The UCA would also like to better understand the scope of the System Project Cost Criteria stakeholder consultations scheduled to begin in 2021. Are there preliminary cost estimates for the implementation of the new metering rule and its projected impact on ratepayers?</p>

## 2. General Tariff Application

- (i) What are your views on the proposed next steps for this business initiative?
- (ii) What are your views on the priority level of this business initiative?

### AESO Response

- The AESO acknowledges and appreciates stakeholders' comments in response to the information shared with respect to GTA
- The AESO acknowledges the need for ongoing tariff filings as part of our base business and plans to file a 2022 tariff update and the AMP implementation plan along with related authoritative document amendments in Q4 2021. The AESO will consult with stakeholders prior to filing.
- The AESO acknowledges that clarity on the AESO's AMP implementation plan will be required and agrees that sufficient time should be provided to ensure DFOs are able to identify and make any necessary metering infrastructure upgrades.
- Comments regarding future tariff design changes and implications of potential future Transmission Regulation changes will be addressed under the Tariff Modernization Initiative, below, as they don't impact the 2018 General Tariff Application.
- The AESO agrees that there must be a measured and thoughtful approach to change and the pace of change, supported by quantitative analysis where practical. The AESO also recognizes that unanimous support of change initiatives is often difficult, particularly when dealing with cost allocation, and thus may result in contested regulatory proceedings.
- The AESO intends to take a more modular approach to tariff filings going forward, with the objective of increasing regulatory efficiency and reducing regulatory lag and uncertainty.
- Addressing the unlimited liability concerns for DCGs should have no significant impact on residential, farm and small business consumer's future utility bills. The participant-related cost of transmission expansions to serve DFO consumer's needs will continue to be recovered from consumers and any incremental participant-related transmission costs incurred to connect DCGs will be charged to the DCG at time of connection. The AESO intends to engage with DFOs and industry stakeholders on the AESO's criteria for the initiation of system transmission projects, as directed by the AUC in Decision 22942-D02-2019 (in AESO's 2018 ISO tariff):
  - "to work with DFOs to develop an objective set of criteria for the initiation of system transmission projects reflecting the Commission's findings in [the] decision"; and
  - "to report on the status of such discussions, including a discussion of any criteria the AESO would propose for determining "grey area" system projects at the time of its next comprehensive GTA".



3. Market Sustainability and Evolution	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>ADC</b>	<p>i. The plan on this item speaks to the importance of resource adequacy and flexibility. The parties subject to the AESO’s targeted mitigation for the proposed tariff asked the AESO to consider how their flexibility and interruptibility could be valued as part of the tariff. The AESO refused to consider this request. ADC encourages the AESO to work with the flexible loads to develop products that value their characteristics and help keep them as customers of the transmission system.</p> <p>ii. High Priority for OR Competitiveness review.</p>
<b>Altalink</b>	<p>Altalink supports this business initiative with the following recommendation to be included within the business plan:</p> <p><u>Reliability/Resiliency</u> Altalink recommends that the AESO write a whitepaper on the potential impact of decarbonization on Alberta’s electricity market design. This would inform government and stakeholders if the current energy only construct can be sustained over the longer term. If it can’t, then, identify the signposts when a structural change is required and identify potential alternate structures which may be better suited to this future.</p> <p><u>Priority Assessment</u> Altalink views this business initiative as a medium priority.</p>
<b>CanREA</b>	<p>Any market initiatives must be taken only with the utmost caution at this time. While long-term sustainability is understandably a concern for the AESO, the allusion to another review of price caps and price floors, the second in less than 24 months is cause for some concern. The mention of this review suggests that there may not be short term sustainability in the market, if we are to review these rules so soon after deciding not to move forward with changes. We note, as well, that the AESO did not provide sufficient rationale for the review when it was done in 2019, and emphasize that we do not understand what has changed about the system to require such a discussion again now.</p>
<b>Capital Power</b>	<p>Having the AESO provide insights on forthcoming market initiatives is insightful and appreciated. The AESO has identified next year (2022) to complete this work, Capital Power would suggest that that the AESO should plan for continuing efforts after this time as there are significant matters that require meaningful consultation in their proposed plan. Capital Power appreciates the AESO’s continued monitoring of long-term market sustainability, and encourages the AESO to solicit stakeholder feedback early in the assessment process (e.g. development of assumptions, methodology, etc..) to ensure that the results are aligned with existing business environment and future expectations.</p> <p>With respect to individual initiative listed:</p> <ul style="list-style-type: none"> <li>• <u>Mothball</u>: Capital Power supports continued stakeholder engagement on Mothball Rule but would appreciate AESO responses to stakeholder comments that were submitted in June included as part of the paper the AESO indicated it would assess options for addressing the issues relating to transmission access, maximum duration, and subsequent mothball outage.</li> <li>• <u>OR Market</u>: Prior to progressing changes to implement OR market competitiveness recommendation, market participants should be consulted, the next steps section is unclear if/when that will occur as part of that initiative. Capital Power would expect that the AESO would follow a reasonable practice of identifying issues, soliciting, feedback, and making a recommendation prior to making rule changes.</li> </ul>

3. Market Sustainability and Evolution	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	<p>In addition to the competitiveness review, Capital Power supports the AESO's assessment of potentially new AS products that will facilitate reliable grid operations as the grid becomes more flexible. Capital Power believes that the AESO needs to move quickly on this as currently there are already emerging issues (such as an increase in the use of underfrequency load shed service, and limitations for the most severe single contingency when the province is islanded) that are impacting the market. Given that the transition that is occurring on the grid is highly likely to outpace the AESO's most aggressive scenarios in their long-term outlook Capital Power suggests that this is one of the highest priority issues and is concerned that if not progressed quickly, the AESO may find itself in a situation where it has to forgo market-based approaches to resolve issues such as frequency response and reactive power.</p>
<b>ENMAX</b>	<p>Initiatives that are contemplated under market sustainability and evolution should be closely aligned with initiatives that are interdependent and timelines should be adjusted as needed. A clear cost-benefit analysis should be conducted to determine whether an initiative should move forward or not.</p> <p>ENMAX will continue to take part in discussions on the mothball rule and will be a participant in the AESO's OR market review. Our view continues to be that any changes contemplated to the mothball rule should not compromise market transparency and stability. With respect to the OR market, a level playing field should be maintained, and all assets should continue to be subject to the same technical requirements and obligations.</p>
<b>EPCOR</b>	No comments
<b>Greengate</b>	<p>(i) Greengate is generally supportive of AESO efforts to explore new needs in the OR market given the changing parameters of the system. However, this should be an exploratory process that does not result in undermining investor certainty.</p> <p>While we support the Operating Reserve market review the mention of the price cap and floor review does not appear to be a long-term sustainability item, considering it was reviewed in the last 24 months. Greengate would need further clarification on what has changed in this space in order to support effort on the price cap and floor review initiative.</p>
<b>Heartland</b>	<p>Given that Alberta is outpacing every province in Canada for supply additions of renewable electricity projects, particularly wind and solar, the next step in market sustainability and evolution should be determining how will our market continue to provide reliable energy to customers? In other words, with the proposed influx of renewable generation what changes need to be made to the market to accommodate these intermittent generators? The market evolution must be tied to reliability.</p> <p>The currently proposed initiatives such as the Mothball Rule and OR market design appear unnecessary at this time. In Heartland Generation's view the current OR market design and the Mothball Rule function adequately and will continue to do so in the future. The current initiatives are low priority.</p>

3. Market Sustainability and Evolution	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>IPCAA</b>	<p>(i) IPCAA is concerned that the AESO views Market Sustainability and Evolution as an ongoing process subject to change. Investors require certainty. The AESO reviewing market elements such as the price cap and floor in 2022, both elements that were just confirmed by the AESO, does not provide certainty. In making market-facing decisions, the AESO should confirm that any changes will result in market certainty on those items for a specified time period. Constantly reviewing the market structure does not provide investor certainty.</p> <p>(ii) Since there are no units currently mothballed and the AESO’s proposed rule does not include any economic analysis regarding the necessity to return a mothballed generator (relying solely on a company’s initial analysis instead), IPCAA does not see the mothball rule as an immediate priority</p>
<b>IPPSA</b>	<p>IPPSA believes that the objective for this initiative is reasonable:  <i>(Objective • To maintain the long-term sustainability and competitiveness of the energy-only market structure and to enable the integration of new technologies with a long-term view of potential market changes needed to facilitate continued resource adequacy and increased flexibility with an ever increasing variable system.)</i></p> <p>IPPSA believes that the language pertaining to the AESO’s OR review requires greater clarity. (That language currently states, <i>“Initiate stakeholder engagement on any identified OR market design changes and corresponding ISO rule changes to enhance competition.”</i>) Specifically,</p> <ul style="list-style-type: none"> <li>▪ The AESO should first articulate – with evidence – the problem that it seeks to solve and engage stakeholders in the development of that problem statement.</li> <li>▪ The AESO should commit to a framework for evaluating alternative designs against criteria such as ‘consistency with market/FEOC principles’, ‘effectiveness’, ‘efficiency’, ‘cost/benefit analysis’, ‘administrative complexity’, ‘transition mechanisms’, etc.</li> <li>▪ Terms such as “enhance competition” should be defined.</li> <li>▪ IPPSA also requests that the AESO focus on removing barriers to competition and ensuring a level playing field rather than designing products that appeal to few technologies.</li> </ul> <p>Similar to the OR language above, IPPSA would recommend greater clarity around the final Market Initiative Commitment. (That language currently states, <i>“Identify other required market initiatives to support long-term sustainability and competitiveness of the energy-only market structure, with a long-term view of potential market changes needed to facilitate continued resource adequacy and increased flexibility with an increasingly variable system (e.g., price cap and floor review, new AS products, dispatch tolerance.)</i></p> <ul style="list-style-type: none"> <li>▪ As above, this initiative would benefit by an articulation – with evidence – of the problem that the AESO seeks to solve. We would also request that market participants be consulted on the development of that problem statement.</li> </ul>

<b>3. Market Sustainability and Evolution</b> <b>(i) What are your views on the proposed next steps and milestones for this business initiative?</b> <b>(ii) What are your views on the priority level of this business initiative?</b>	
	<ul style="list-style-type: none"> <li>▪ To this end, we would support an updated Revenue Sufficiency Study in 2022. Such a study should be a first step in assessing whether there is a market problem.</li> </ul>
<b>Lionstooth</b>	<p>Any market sustainability and evolution initiatives must include consideration of the entire integrated electric system, starting with the Dx system where the load and generation growth is occurring.</p> <p>Priority Ranking: 8th</p>
<b>TransAlta</b>	<p><b>TransAlta welcomes the decision to merge business initiatives related to Market Sustainability and Evolution and OR Market Competitiveness Enhancement, which presumably will reduce the AESO’s own costs by being more efficient.</b></p> <p>TransAlta recommends cancelling the activities related to Ramp Table and Dispatch Tolerance instead of just deferring them. With respect to the Mothball Rule, the AESO should wait until stakeholders can read the report in September 2021 before committing to further consultation or any rule change in 2022.</p> <p>TransAlta considers the review of the OR market design initiative should be limited to consider the integration of new technologies like energy storage to enhance the competition in the OR market.</p> <p>TransAlta notes the interdependency with the Technology Integration business initiative and recommends merging the two.</p>
<b>UCA</b>	N/A

### AESO Response

- The AESO acknowledges and appreciates stakeholders’ comments in response to the information shared with respect to market sustainability and evolution.
- The AESO views ensuring sustainability of the market structure and stability/certainty for market participants and investors as significant variables to manage and assess in the upcoming year(s). The intent is that known issues can be addressed sufficiently in advance, so that the market can adjust to the changing needs of the system through time.
- The AESO will take a thoughtful and measured pace, ensuring that we engage with stakeholders effectively at key times during the process to ensure a robust assessment is conducted. The AESO will also ensure that any proposed design changes/shifts are supported by robust quantitative and/or qualitative rationale.
- The AESO acknowledges the interdependences across initiatives, and the need to advance them in a coordinated fashion.
- OR Market Review: The AESO is currently in the process of finalizing the internal OR analysis on competitiveness and plans to engage with stakeholders once that assessment has been completed. The AESO will ensure stakeholders are engaged in each step of the process, including discussion/presentation of issues observed, weighing those issues against key economic principles,

### 3. Market Sustainability and Evolution

- (i) What are your views on the proposed next steps and milestones for this business initiative?
- (ii) What are your views on the priority level of this business initiative?

alternatives/design options identification and any final recommendations. The focus of the review is identifying specific adjustments to current design in order to enhance competition in the OR Market.

- **Mothball Consultation:** The AESO has reviewed and will take into consideration comments received from stakeholders as we finalize the Mothball options assessment. The AESO has undertaken the review of the mothball rule at this time to meet various key objectives, including:
  - To ensure the mothball outage rule supports the long-term sustainability of the market
  - To ensure consistency/alignment across rules for physically removing capacity from the market
  - To address concerns that have arisen since implementation and evaluation of the originally expedited rules
  - To meet our original commitment to conduct a comprehensive evaluation of the expedited rule package – which were originally introduced as an interim measure

### 4. Settlement Audit

- (i) What are your views on the proposed next steps and milestones for this business initiative?
- (ii) What are your views on the priority level of this business initiative?

<b>ADC</b>	<p>i. ADC recommends the AESO share the terms of reference for the settlement audit with interested parties to ensure it covers the priority areas and elements.</p> <p>ii. ADC agrees that this should be an ongoing initiative.</p>
<b>Altalink</b>	AltaLink has no comments on this business initiative.
<b>CanREA</b>	N/A
<b>Capital Power</b>	<p>Capital Power is supportive of the AESO completing its settlement audit. Given no such audit has previously been undertaken, Capital Power recommends that any report post-audit be published publicly and that the AESO provide next steps/actions it intends in response to recommendations that may result.</p> <p>In terms of priority, Capital Power does not have any comments at this time.</p>
<b>ENMAX</b>	No comment at this time
<b>EPCOR</b>	No comments

4. Settlement Audit	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>Greengate</b>	N/A
<b>Heartland</b>	Heartland Generation has no comments at this time
<b>IPCAA</b>	<p>(i) As part of the 2021 AESO BRP, IPCAA congratulated the AESO Board for undertaking its first settlement audit. As part of the presentation, IPCAA requested that the AESO consult with stakeholders on the terms of reference (TOR) for the audit. That has not been done, which is very concerning. At the August 26th BRP meeting, the AESO indicated they would not provide the TOR nor an opportunity for ratepayers to meet with the auditors.</p> <p>A settlement audit is long overdue and has been requested by IPCAA and other ratepayer groups for years. It is entirely appropriate for stakeholders to provide comments on the TOR for the initial audit as well as for the AESO to provide an opportunity for stakeholders to discuss their settlement concerns with the auditor. Ratepayers pay over \$4B annually in settlement and wish to ensure that an audit of the settlement system goes from the meter read to the closure of the billing statement. The AESO has stated that stakeholders can read the TOR in the final audit report – this is not helpful since it will be too late for any valuable input.</p> <p>(ii) This business initiative is a clear priority for ratepayers. Our concerns are both with the lack of stakeholder input and the lack of progress on the audit itself.</p>
<b>IPPSA</b>	IPPSA has no specific comment on this initiative at this time.
<b>Lionstooth</b>	Priority Ranking: 9th
<b>TransAlta</b>	<p><b>The AESO did not provide any real update, next steps or milestones on this business initiative other than simply stating that the audit by a third party will continue in 2022.</b></p> <p>The audit should be a top priority as it is the only external review ever conducted of the AESO’s settlement mechanism and could provide insights into issues and improvements that the AESO implement to its settlement processes. Market participants need assurance that the settlement system and processes are robust, accurate and reliable.</p> <p>The fact that the AESO has committed to completing the audit in 2022 is a step forward. We recommend that the nature and scope of the audit should be made public, and updates should be posted periodically to allow stakeholders to follow the audit.</p>
<b>UCA</b>	N/A

#### 4. Settlement Audit

- (i) What are your views on the proposed next steps and milestones for this business initiative?
- (ii) What are your views on the priority level of this business initiative?

#### AESO Response

- The AESO acknowledges and appreciates stakeholders' comments in response to the information shared with respect to Settlement Audit.
- The Settlement Audit is considered an audit over of internal controls related to the AESO's settlement system. The AESO has selected an independent external service auditor to conduct the Settlement Audit in accordance with the Canadian Standard on Assurance Engagements (CSAE), which addresses audit engagements undertaken by a service auditor to report on controls at organizations that provide services to user entities when those controls are likely to be relevant to user entities' internal control over financial reporting. One of the objectives of the service auditor is to obtain reasonable assurance about whether, in all material respects, based on suitable criteria, management's description of the service organization's system fairly presents the system that was designed and implemented throughout the specified period.

The AESO must manage resources and costs to align with budgeted expectations and is therefore taking a staged approach. It will consider stakeholder feedback after this report is issued to refine the scope, as appropriate, for future Settlement Audits. Initially the scope of the Settlement Audit will include the two largest financial impact areas: Energy Market Settlement and Transmission Settlement. Additional systems were added during the design assessment to ensure a thorough scope and audit of related controls. This includes the pool price/dispatch tool ("DT"), import-export ("OATI"), ETS customer setup and related aspects of the ERP system, which was implemented during 2021. Ancillary Services and Renewables Energy Settlement are not included in this initial report given consideration of resource, budget, and timing limitations.

The diagram below provides a conceptual overview of the AESO's settlement operations and the related control framework as it pertains to the initial Settlement Audit.

- The AESO intends to share a post-audit report to stakeholders upon request and subject to non- disclosure agreement.
- The AESO will provide updates on the progress of the audit within the quarterly stakeholder report published to the AESO website.



**4. Settlement Audit**  
 (i) What are your views on the proposed next steps and milestones for this business initiative?  
 (ii) What are your views on the priority level of this business initiative?





5. Red Tape Reduction	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>ADC</b>	<p>i. ADC recommends that the AESO also review the Alberta Reliability Standards to focus on the areas that actually contribute to the reliability of the Alberta grid using a risk based approach. Many standards that apply to loads with on-site generation that rarely export electricity to the grid should be reviewed in the context of risk they present to the system.</p> <p>ii. ADC also questions why the deferral account reconciliation goes back so far. The most recent application reconciles balances back to 2012.</p>
<b>Altalink</b>	<p>Altalink supports this business initiative with the following recommendation to be included within the business plan:</p> <p><u>Affordability</u>            AltaLink recommends the AESO explore, with market participants and the MSA, where there are opportunities to reduce regulatory burden in both the Alberta Reliability Standards (ARS) requirements and the compliance process while continuing to focus on the intent of ARS which ensures the safe, reliable and economic operation of the AIES. AltaLink submits that the ARS and the ISO associated Compliance Process presents a valuable opportunity to reduce regulatory burden. AltaLink views the ARS as an important part of operating its transmission system safely, reliably, and economically however notes, from its experience, that ARS are quite onerous and administratively burdensome particularly the Critical Infrastructure Protection and Protection and Control Standards. AltaLink submits that there are likely two primary areas for the opportunity to reduce regulatory burden: (1) with the ARS requirements including how to demonstrate compliance and the time intervals required; and (2) the Compliance Monitoring Process and in particular the audit cycles and audit approach.</p> <p><u>Priority Assessment</u>            AltaLink views this initiative as a medium priority.</p>
<b>CanREA</b>	N/A
<b>Capital Power</b>	<p>Capital Power supports red tape reduction wherever possible. However, in undertaking such changes, it should not override or undermine the original intent of the rule, process, or framework. Further, while making changes to reduce red-tape, Capital Power suggests that the AESO also be open to making improvements in a coordinated fashion. Capital Power's experience with the two engagements that the AESO highlighted illustrate this, specifically:</p> <ul style="list-style-type: none"> <li>• ISO Rule Section 202.6 – <i>Adequacy of Supply</i> attempted to remove several items in the rule that would have run contrary to the originating policy behind its creation and related AUC findings in support of the rule's underlying construct.</li> <li>• ISO Rule 201.6 – <i>Pricing</i> saw the AESO receive several comments that it would be useful for the AESO to address deficiencies in the TMR reference price formula. While the AESO replied that this was out of scope, Capital Power would suggest that the AESO develop a process to address the concerned identified in that consultation.</li> </ul> <p>Capital Power would also appreciate an update on the red-tape reduction consultation on <i>Adequacy of Supply</i> (last correspondence: stakeholder comments published Jan. 26<sup>th</sup>, 2021) and TCM Update (last correspondence: stakeholder</p>

5. Red Tape Reduction	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	<p>comments published Feb. 23<sup>rd</sup>, 2021), both of which the AESO requested feedback at the start of the year on but has yet to follow up to address stakeholder feedback.</p> <p>Overall, Capital Power is supportive of this as a priority recognizing that this part of a broader Government priority. Having more visibility to the workplan will assist Capital Power in ensuring resources are allocated to provide meaningful input into the effort.</p>
<b>ENMAX</b>	<p>ENMAX appreciates the AESO's ongoing efforts to reduce red tape and identify opportunities to reduce costs for customers. As consultations progress on certain rules, there may be instances where reducing red tape may inadvertently result in unnecessary requirements or additional costs to the market. In such cases, red tape reduction should not be pursued.</p> <p>The AESO noted that it would be willing to provide stakeholders with a detailed breakdown of the math and details associated with the estimated industry cost and time savings (ex. there was reference to being 22% complete vs. the 30% target). ENMAX would be interested in seeing these details including a plan on what the remaining 8% will consist of. Will this information be published on the AESO website or circulated to interested stakeholders?</p>
<b>EPCOR</b>	<p>EPCOR is supportive of the AESO's efforts in this area. EPCOR also looks forward to the working with the AESO through the Distribution Coordination Business Initiative to find ways to streamline the connection process for DFOs.</p> <p>Next steps appear reasonable and EPCOR agrees that this should be a top priority.</p>
<b>Greengate</b>	<p>(i) The Red Tape reduction efforts does not include loss factors, a significant form of regulatory burden and red tape. Loss factors are material inputs to project feasibility and revenue certainty for developers but are delivered to projects too late in development process to affect optimizing project location. The loss factor methodology is overly complex, impossible to replicate, results in large variability for smaller generation units, and is subject to regular errors. A new methodology and process should be developed to offer simpler, earlier, and effective signals to developers.</p> <p>(ii) Red Tape Reduction should continue to be a top priority.</p>
<b>Heartland</b>	<p>Stakeholders should be surveyed on how best to reduce red tape perhaps through a governance committee. It is important that red tape reduction efforts reduce the overall regulatory burden and do not shift the burden from agencies to market participants.</p> <p>This initiative should be low priority.</p>
<b>IPCAA</b>	<p>(i) IPCAA's members welcome a reduction in red tape for Alberta electricity consumers. While the AESO has claimed 6,820 hours of reduction requirements, they have not translated that into reduced AESO FTEs. Is there a reduction in the 2022 AESO Budget associated with a reduction in FTEs due to ted tape reduction?</p> <p>(ii) With regard to priority level, one of the largest areas of "burden" for industry relates to ARS compliance programs. Many of our members face a significant burden in Alberta that they do not face with similar operations in other jurisdictions. A safe and</p>

5. Red Tape Reduction	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	reliable electricity system is vital for Alberta industries and we want to focus on areas that actually contribute to the safety and reliability of the system. In reviewing compliance programs, IPCAA would like to see a common-sense, risk-based approach to the ARS compliance programs that market participants face. For example, prioritizing vegetation management for a site with no vegetation is not a good use of compliance time or resources.
<b>IPPSA</b>	IPPSA supports AESO initiatives that reduce the administrative burden on stakeholders and that lower its own costs and its trading charge.
<b>Lionstooth</b>	<p>A measured and thoughtful pace to change, support by quantitative analysis, prior to enacting change, would significantly improve regulatory efficiency and reduce red tape.</p> <p>Ignored stakeholder feedback and proceeding without a measured and thoughtful pace to change, places the onus on Alberta's entrepreneurs to prevent uncertainty, significantly increasing red tape and resulting in lengthy, litigious regulatory proceedings and processes.</p> <p>Every hour spent advocating for a measured and thoughtful pace to change is an hour developers are not advancing both load and generation projects. Every premature decision and initiatives forcing unnecessary change, terrifies investors and signals that Alberta is not open for business.</p> <p>Priority Ranking: 4th</p>
<b>TransAlta</b>	<p><b>TransAlta fully supports the red tape reduction initiative but would like to understand the efficiency gains and cost savings for both the AESO and market participants coming from this initiative.</b></p> <p>The regulatory requirements in the electricity industry are significant and create an overly complex and administratively burdensome framework. This initiative should create true efficiency improvements (e.g. simplifying processes, reducing the administrative forms, paperwork, and eliminating and reducing the bureaucratic silos within the AESO). Even though we recognize that this initiative is related to the government's Red Tape Reduction (RTR) initiative, we are concerned with the higher number of AESO staff committed to RTR initiatives and the fact that this is taking time and resources that could otherwise be put into more important initiatives which are related to the AESO's mandate. So far, the AESO has introduced minor changes to documents and ISO rules, all of which have little to no impact in terms of reducing regulatory burden for industry, and on the contrary, have entailed more internal resources devoted to meeting the RTR targets agreed with the government without any meaningful achievements for market participants.</p> <p>TransAlta would like to better understand how the AESO established the number of requirements reduced and the cost savings presented in Session 1. The AESO stated it will provide a mapping showing specific cost savings for both the AESO and industry coming from its red tape reduction actions. It would be helpful for stakeholders to have this information available before Session 2.</p>

**5. Red Tape Reduction**

**(i) What are your views on the proposed next steps and milestones for this business initiative?**

**(ii) What are your views on the priority level of this business initiative?**

**UCA**

The UCA is interested in better understanding the details surrounding the estimated \$350k and 2,200 hours of industry cost savings the AESO has estimated as part of its Red Tape Reduction work to date. Specifically, have these “industry savings” been effective at making it easier for businesses and other end-use customers to operate in the province, and if so how?

This business initiative has and will always continue to be a priority for the UCA as we strive to make it easier for small businesses to efficiently and effectively operate in the province and not have utility costs serve as a barrier to profitability.

**AESO Response**

- Stakeholders’ views regarding the Red Tape Reduction (RTR) program and regulatory burden are acknowledged. While there appear to be a range of perspectives on the priority of RTR work, the AESO intends to continue to drive to the 33% reduction in requirements as per the Government of Alberta’s RTR program. In addition, and notwithstanding the discrete requirements of the RTR program, the AESO is open to exploring other areas where market participants have concerns about regulatory burden, such as loss factors and ARS compliance monitoring as noted above.
- The AESO has absorbed RTR-related activities into existing workplans, initiatives and internal processes where possible.
- The AESO understands the challenges associated with resourcing and makes reasonable efforts to give as much notice as possible to stakeholders of upcoming initiatives and requests/opportunities for feedback to assist stakeholders in their planning.
- The changes made to date pursuant to the RTR initiative at the AESO are estimated to result in cost savings of \$350,000, the majority of which will relate to avoided external process costs, capital costs and labour costs. Process cost savings include those related to the enablement of electronic funds transfers for settlement and are estimated to be approximately \$45,000. The AESO’s estimate of these savings was premised on historical transaction volumes and the per-transaction costs borne by each of the AESO and pool participants. With respect to avoided capital and labour costs, the RTR changes made this year are estimated to result in the following significant savings throughout 2022:
  - (i) \$200,000 in savings realized through approved waivers and variances under ISO rule 304.9, Wind and Solar Aggregated Generating Facility Forecasting, related to requirements and associated costs for meteorological equipment;
  - (ii) \$30,000-40,000 in savings to be realized through changes to ISO rule 502.8, SCADA Technical and Operating Requirements, whereby SCADA connections have been streamlined;
  - (iii) \$45,000-50,000 in savings as a result of changes to the AESO Measurement System Standard which will reduce the number of required site trips; and
  - (iv) \$30,000-40,000 in savings due to the simplification of the refund methodology included in ISO rule 505.2, Performance Criteria for Refund of Generating Unit Owner’s Contribution.

<b>5. Red Tape Reduction</b>
<p>(i) What are your views on the proposed next steps and milestones for this business initiative?</p> <p>(ii) What are your views on the priority level of this business initiative?</p>
<p>The above estimates have been calculated based on historical project costs, activity frequency, and labour market rate data available to the AESO. The AESO would like to make a correction to the slide presented in August; namely that the \$350K in cost savings is inclusive of the 2200 hours in time savings.</p> <ul style="list-style-type: none"> <li>With respect to the status of the ISO Rule 202.6 – Adequacy of Supply, and ISO Rule 302.1 – Real Time Transmission Constraint Management consultations, stakeholder responses and subsequent filings for those rules are forthcoming in Q4.</li> </ul>

<b>6. Optimizing the Grid</b>	
<p>(i) What are your views on the proposed next steps and milestones for this business initiative?</p> <p>(ii) What are your views on the priority level of this business initiative?</p>	
<b>ADC</b>	<p>i. The ADC is supportive of publishing capability maps and implementing optimization opportunities. The ADC finds it curious that the AESO is seeking flexibility to further optimize the network by engaging in the DOE Bulk System Planning engagement but is not seeking flexibility from this engagement in the Tariff Modernization initiative. Especially considering the engagement considers the question of how transmission costs are allocated and if it is appropriate to continue allocating 100% of costs to load (excluding losses). Why is it just this initiative that specifically references the DOE Bulk System Planning Engagement?</p>
<b>Altalink</b>	<p>Altalink supports this business initiative with the following recommendations to be included within the business plan:</p> <p><u>Affordability</u></p> <p>Concerning the AESO’s work in creating a Transmission Capability Map, AltaLink recommends that the AESO work with DFOs to establish standards/guidelines for ensuring generation of specific types/sizes is integrated at the most appropriate level considering long-term power system operation and not what may be the lowest cost for the market participant or provide the fastest connection time.</p> <p>Altalink recommends that congestion on interties be reported on and addressed as intertie congestion increases electricity costs to customers.</p> <p>Altalink also suggests that the AESO conduct additional work and consult with stakeholders on locational incentives, congestion assessments and decision processes.</p> <p><u>Reliability/Resiliency</u></p> <p>Altalink recommends that the AESO revisit generator connection requirements more broadly. This review should be done to ensure a level playing field for all generators and all generators meet the requirements of Alberta’s unique grid. This would allow the AESO to implement requirements that will ensure the grid’s dynamic response remains acceptable.</p>

<b>6. Optimizing the Grid</b> <b>(i) What are your views on the proposed next steps and milestones for this business initiative?</b> <b>(ii) What are your views on the priority level of this business initiative?</b>	
	<p><u>Priority Assessment</u></p> <p>AltaLink views this business initiative as a high priority as optimizing the grid initiatives, including AltaLink's recommendations will defer and/or decrease future transmission costs for customers.</p>
<b>CanREA</b>	<p>We would be eager to participate in any discussion of grid optimization, especially any initiative that would re-commit the AESO to investment in the PENV, CETO and CRPC project. We are pleased to see that DFO planning coordination is a part of this conversation about AESO priorities, and we would be eager to provide feedback to the AESO regarding the role that DERs can play in grid optimization.</p> <p>We also note the absence of any reference to decarbonization in this work plan. This is disappointing as grid decarbonization will have a more significant impact on the grid in coming years, as governments, customers, and society in general work towards net-zero outcomes. These net zero outcomes, which in Alberta will be supported by corporate PPAs signed with renewable energy facilities, will be driven by market forces. Any conversation about the optimized grid of the future must include a serious consideration of grid decarbonization. As a result, we recommend that the AESO begin consideration of a decarbonization analysis either prior to beginning this grid optimization conversation, or as a key part of the work.</p>
<b>Capital Power</b>	<p>Capital Power is supportive of the AESO's efforts to optimize the grid and would encourage the AESO to engage stakeholders early in the development process of its intended improvements. As there are several interdependences and stakeholders are likely to have more current information on the state of technology development.</p> <p>The AESO's decision to develop substation level capability maps aligns with providing further information for developers to decide on siting locations that was discussed as part of the Department of Energy's recent Bulk and Regional Planning consultation. Additionally, Capital Power supports the AESO providing further transparency of transmission system operations at a granular level (e.g. hourly and across the various cut-planes). This would be helpful to better understand system utilization and inform/optimize market participant activities (e.g. development, outage timing, etc.).</p> <p>Capital Power is also supportive of streamlining of the connection process. The current process has been set up in a way where inconsistencies can develop (particularly for distributed generation connection projects) that results in lower quality information being made available to the AESO and the market. Capital Power recommends that the AESO's priorities here include reviewing critical information used in and produced by the queue. One issue, for example, that requires review is the in-service date (ISD) information. These are often rough approximations and as they are used by other AESO assessments (e.g., NIDs, LTO, LTA, LTP, etc.), when erroneous, any error perpetuates across multiple aspects of the market and can lead to less-than-optimal decisions. Inconsistent ISD information resulted this year in issues with loss-factor determination, resulting in a need to re-calculate annual losses mid-year. Capital Power recognizes that there will be errors as ISDs are constantly being updated, however, significant room for improvement exists and should be explored.</p> <p>During Session 1 of the BRP engagement, the AESO noted that it is exploring power control tools as a solution ahead of infrastructure. Capital Power supports this to the extent such tools do not distort the market. Things like modular power flow</p>

6. Optimizing the Grid	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	controls (e.g., mini HVDC) to direct flows on the system may enhancements over existing technology (e.g., phase shifters). However, this could affect the flows on the grid and the resulting line losses and reflected in market participants' loss factors. This should be avoided or minimized to greatest extent possible.
<b>ENMAX</b>	Outcomes from the Department of Energy's Transmission Policy engagement will have a direct impact on this initiative and the scope and timing should be adjusted accordingly.
<b>EPCOR</b>	Next steps appear reasonable and EPCOR agrees that this should be a top priority.
<b>Greengate</b>	<p>(i) Greengate is seeking further information from the AESO on this initiative. What type of "flexibility" is being sought by the AESO? What specific forms of flexibility were mentioned in comments from the AESO in the recent government consultations around the transmission regulation?</p> <p>One missing item in this priority area is for the AESO to address a lack of transparency in its planning process. Forecasting available capacity can be difficult in a dynamic market, so the AESO should communicate all its assumptions when it informs stakeholders of available transmission capacities throughout the system. Additionally, when the AESO makes changes to its planning processes, or the assumptions underlining its planning forecasts, they should be communicated at the time or even before the changes become effective. Stakeholders can otherwise be using outdated data with unknown assumptions for far too long.</p> <p>Greengate is also supportive of the maps for substation level capabilities.</p> <p>(ii) This area should be a priority only to such a point where the AESO does not unduly create barriers to investment in the market. If the AESO introduces flexibility that undermines investor certainty by creating congestion on the there may be unintended consequences in reduced investor certainty and lack of development.</p>
<b>Heartland</b>	<p>Given that transmission policy in Alberta has led to a transmission buildout that has outpaced demand growth, the next step should be more competitive procurement of wires and the use of non-wires alternatives wherever possible. Heartland Generation understands that the AESO's ability to use non-wires alternatives is defined in the Transmission Regulation. If the AESO believes that its ability to employ non-wires alternatives is currently limited by the legislative framework, then the focus should be on engaging with the Department of Energy to alleviate these constraints by amending the regulation.</p> <p>High. Reducing costs for consumers should always be a key focus and is critical for attracting new loads.</p>
<b>IPCAA</b>	(i) IPCAA submits that publishing a transmission capability map, including utilization of existing transmission elements is overdue. Ratepayers have been asking for this information for years. This type of map will help new generators to site where transmission already exists, rather than where it could be.



6. Optimizing the Grid	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	<p>IPCAA welcomes the AESO’s review of dynamic line ratings as an option to increase thermal line ratings. IPCAA initially approached the AESO Board in 2015 suggesting that work be undertaken on dynamic line ratings. This is a priority and a possible cost savings opportunity for ratepayers.</p> <p>(ii) IPCAA submits that a transmission capability map and a review of dynamic line ratings are clear priorities for consumers.</p>
<b>IPPSA</b>	<p>IPPSA supports this initiative as a priority for the AESO. IPPSA is directionally supportive of the AESO’s adoption of more probabilistic approaches to transmission planning and the deployment of software to optimize the grid. Grid optimization is also tied to the connection queue and the need for participants to gain improved certainty on when they will connect and when others will be able connect.</p> <p>IPPSA also appreciates some of the principles articulated by the AESO when it comes to non-wires solutions in the optimization of the grid. To the point, solutions to wires matters (e.g. contracted storage) should minimize disruptions to the wholesale market.</p>
<b>Lionstooth</b>	<p>Any efforts to optimize the grid, must include improvements to integrated system planning, taking into consideration energy flows on the Dx system, and protecting customers from growth in assets and infrastructure that no longer serve customer needs.</p> <p>There was much discussion during the DOE Bulk System Planning engagement on locational and operational signals for generators. Even the most perfect signal will not be effective if the AESO fails to properly incorporate generation’s response into integrated system planning. Consider the DCG tariff credit, which was acting as a strong locational and operational signal, which DCG were responding to. The AESO failed to incorporate DCG into system planning, or provide DCG with a series of technical requirements that would allow for DCG who met those requirements to be included in system planning. If properly incorporated into system planning by the AESO, DCG would allow for the ability to defer or avoid future wires build, and the resulting cost, causing savings that would flow to load. The same can be said for NWS. In order for NWS to be effective, the AESO will have to properly incorporate NWS into integrated system planning, in order for future wires growth to be avoided and deferred.</p> <p>Priority Ranking: Tied 1st</p>
<b>TransAlta</b>	<p><b>TransAlta continues to advocate for improvements to the AESO’s planning approach including consideration of non-wires solutions and technologies that optimize the use of the existing transmission system.</b></p> <p>TransAlta welcomes the updates provided on the use of congestion analysis to identify the timing of the planned transmission projects and maximize use of existing infrastructure. The recent approval by the AUC of the CETO project is a good example of this new approach, but we cautioned the AESO about the decision to defer much needed transmission upgrades to accommodate new renewable energy developments such as CETO and PENV.</p> <p>TransAlta expects that, as part of the current pilot, the AESO will continue working on the development of rules that will enable fast frequency response as an ancillary service.</p>



**6. Optimizing the Grid**  
**(i) What are your views on the proposed next steps and milestones for this business initiative?**  
**(ii) What are your views on the priority level of this business initiative?**

TransAlta notes the relevance of the Alberta Energy Bulk System Planning engagement and possible changes to the Transmission Regulation that could impact AESO’s business initiatives. Finally, we welcome the publication in 2022 of the first Transmission Capability Map at substation level, coordinated with DFO hosting capability. We also encourage the AESO to making further progresses on implementing dynamic line ratings including its efforts to assessing methodologies.

**UCA**

The UCA generally supports many initiatives under grid optimization, particularly the initiation of stakeholder engagement on material system NIDs and the development of transmission capability mapping at the substation level. However, the UCA stills maintains, as it always has, that all proposed costs related to new transmission projects in NIDs be transparent with benefits to consumers clearly articulated and rationalized.

In general, the UCA supports the AESO’s desire to maximize the use of existing infrastructure. However, it appears that such an approach is difficult considering existing policy around congestion, line losses and GUOC may not, under the current methodology, be sending the intended price signals one would hope in order to maximize use of existing infrastructure. Spending too much time addressing issues that may not have a sizable cost impact for ratepayers under the existing regulatory framework may not be the best use of the AESO’s time nor ratepayer dollars until a policy/legislative framework that is in support of it is developed.

**AESO Response**

- The AESO appreciates all the feedback on optimizing the grid. Our 2022 plans to optimize the network will be influenced by the Department of Energy’s decisions on the Bulk System Planning engagement and adjusted accordingly. The AESO is seeking flexibility in the application of technology agnostic non-wires alternatives. Dynamic line rating technologies will be assessed in 2022 to support an implementation decision in 2023. In 2022, we will engage industry to improve our connection process for all connection types, distribution and transmission connected. Investor confidence and FEOC remain foundational principles as the AESO seeks to optimize the grid. The Transmission Capability Mapping methodology and initial results at the substation level will be shared in Q1 2022, seeking improvements to next version. The 2022 LTP will include an earlier stakeholder process for larger system NIDs, seeking feedback in Q1 2022 for improvements. The AESO will engage DER providers in future distribution coordination work. In 2022, the AESO will engage industry in a transmission utilization discussion including potential suitable annual metrics to share with industry.

7. Tariff Modernization	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>ADC</b>	<p>i. Considering the material impact of the AESO proposed tariff to high load factor energy intensive and trade exposed customers, the ADC is concerned about the lack of a comprehensive study supporting the AESO proposal. The ADC members are among the parties most materially impacted by the proposal and are facing DTS cost increases as high as 40%. The AESO's mitigation approach demonstrated an clear lack of care, concern, creativity or value towards several members, and the offer of run to failure solutions as the best alternative was frankly disappointing. The ADC supports the review and modernization of DOS. Overall, the ADC recommends the AESO put the tariff modernization on hold until the Government completes their review on the Bulk System Planning (T-Reg) and Self-Supply and Export.</p> <p>ii. The ADC views that it should be a key priority of the AESO Board to ensure the tariff proposal does not jeopardize Alberta industries.</p>
<b>Altalink</b>	<p>AltaLink supports this business initiative with the following recommendation to be included within the business plan:</p> <p><u>Affordability</u></p> <p>AltaLink recommends that the AESO work with stakeholders to develop a process to monitor, report and track transmission bypass costs which will show if this issue is continuing to grow and thereby increasing the overall cost of transmission for customers. This monitoring, reporting and tracking should continue with each AESO approved transmission tariff.</p> <p><u>Priority Assessment</u></p> <p>AltaLink views this business initiative as a high priority as cost shifting increases the overall cost of transmission for customers.</p>
<b>CanREA</b>	<p>CanREA has been eagerly participating in the tariff modernization process, specifically with a view to implementation of a modernized DOS that would support the deployment of energy storage in Alberta. While we have seen progress on this file, the current lengthy timelines for submission to and approval by the AUC means that Alberta will continue to be an uneconomic location for storage investments until these processes come to a conclusion. It is requested that these modernization initiatives take a higher priority in the AESO's work plans.</p>
<b>Capital Power</b>	<p>Capital Power believes that the AESO has clearly articulated its requirements for filing its proposal on its proposed Bulk and Regional tariff changes and is reasonable in its assessment that the regulatory process will be involved and could take the bulk of, or even entirety of the next year. As a significant, generational type change Capital Power sees this as a high priority issue for the AESO and market participants.</p> <p>Capital Power expects that the consultations on subsequent tariff modernization topics will occur in due course after the current priority (forthcoming AUC filing).</p>
<b>ENMAX</b>	<p>As the AESO moves forward with its tariff modernization efforts, any mitigation actions taken to reduce impacts to customers facing a large rate increase should not significantly shift costs on to other participants.</p>

7. Tariff Modernization	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	DOS continues to be an area that industry requires further clarity on, such as the implementation timeline, how the market rules would work, and how this aligns with other AESO initiatives such as the energy storage roadmap. ENMAX is of the view that introducing a new purpose-built rate for all types and sizes of storage is a better option compared to retrofitting the existing DOS mechanism (which may be a barrier for smaller energy storage participants).
<b>EPCOR</b>	Next steps appear reasonable and EPCOR agrees that this should be a top priority.
<b>Greengate</b>	(i) Greengate is supportive of providing updates to the DOS rate. (ii) Greengate is supportive of prioritizing DOS modernization in such a way that can support energy storage.
<b>Heartland</b>	Further consultation on rate XOS and XOM needs to be completed given that the changes to rate DTS fundamentally change the formula calculation for rate XOS/XOM. The consequences of these changes to rate XOS/XOM did not form part of the initial consultation.  Parties have placed a lot of effort on the ISO Tariff however, without losing this work the ISO Tariff could be delayed if required to focus on more pressing items like reliability. A major change to the ISO Tariff is likely best left until after further certainty is gained on the Transmission Regulation (which is set to expire) and after the effects of COVID-19 on load growth are known.
<b>IPCAA</b>	(i) IPCAA continues to stress that tariff modernization should be put on hold until the many other elements have been settled, including: <ul style="list-style-type: none"> <li>• The Transmission Regulation;</li> <li>• Self-Supply and Export;</li> <li>• Alignment of transmission and distribution rate design so that all customers see the same price signals.</li> </ul> IPCAA recommends that precedents be established prior to overhauling the AESO Tariff rate design. Continually re-visiting the tariff as these elements are settled is not good for investor confidence. (ii) IPCAA submits that tariff modernization is an expensive proposition for all Alberta ratepayers. IPCAA believes it should not be a priority until the other elements stated above are settled.
<b>IPPSA</b>	As mentioned above, the AESO may need to consult with stakeholders – and with the involvement of its markets group – on revisions to its tariff that may emanate from changes to the Transmission Regulation this fall. Given how interrelated Alberta's market design and transmission policy design are, any significant changes to the principles contained in the Transmission Regulation may represent significant work for the AESO and stakeholders into 2022 and beyond.

7. Tariff Modernization	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>Lionstoath</b>	<p>The AESO is proceeding with changes to B&amp;R tariff design, regardless of the feedback from stakeholders, some of whom have repeatedly requested further quantitative analysis to justify the need for change, including a cost-of-service study, and have argued that change should not be pursued in today's economic environment.</p> <p>As outlined above, there must be a measured and thoughtful pace to change, supported by quantitative analysis to justify the need for change, quantitative studies to understand usage, costs, cost avoidance, and allocation methods, and impact analysis to better understand outcomes and prevent unintended consequences.</p> <p>Priority Ranking: 7th</p>
<b>TransAlta</b>	<p><b>Tariff Modernization is a key priority that provides greater certainty about tariff price signals for the future, contemplates changes in load behavior, and supports the development and integration of new technologies.</b></p> <p>To be efficient, TransAlta recommends the AESO to consider all the information gathered during a very long and extensive bulk &amp; regional tariff design consultation. A considerable amount of analysis has been done so far, and the AESO's efforts should focus on putting together a reasonable application that addresses all outstanding issues and questions.</p> <p>In addition, TransAlta is concerned with the impacts the proposed tariff and recommends the AESO to consider, in addition to the Demand Opportunity Service (DOS) Modernization and a targeted mitigation approach, other impacted sectors such as exports, to support a minimally disruptive transition.</p>
<b>UCA</b>	<p>In general, the UCA is supportive of this business initiative and the proposed Bulk and Regional Tariff Design. With regards to DOS, the UCA would like to see more technical evidence and support for the use of a DOS Rate, and specifically how the use of such a rate will not result in DTS cannibalization (i.e. the loss of DTS revenues) and the consequent cross-subsidization of tariff costs onto residential, farm, and small business customers.</p>

### AESO Response

- The AESO acknowledges and appreciates stakeholders' comments in response to the information shared with respect to Tariff Modernization
- Some stakeholders expressed concerns/comments that the AESO should place the tariff work on hold until the Bulk System Planning (T-Reg) and Self-Supply and Export reviews has been completed by the government. The current ISO tariff as designed does not meet the present or future needs of the electricity system. Fifty percent of total transmission costs are recovered via the peak rate charge (12-CP) and since its introduction, the peak rate has increased substantially with significant new investments in the grid to support economic growth and integrate new resources. Substantial peak rate increase has resulted in a current and growing risk of cost avoidance at peak hours by customers who can change when they consume power. The result is shifting some costs to others – primarily residential, farm

**7. Tariff Modernization**

**(i) What are your views on the proposed next steps and milestones for this business initiative?**

**(ii) What are your views on the priority level of this business initiative?**

and small business (commercial and small industrial). This shifting of costs will continue to increase if we maintain the status quo. The peak charge as designed today is no longer an efficient pricing signal and current rate design does not reflect the changes occurring in the landscape of Alberta’s electricity system as new technologies are leading to transmission reinforcement to integrate new resources and changing the ability for customers to respond to price signals. In the current tariff design this problem will never self-correct; a change to the rate design is needed to address. The AESO believes its preferred rate design is robust and able to adapt to most policy changes, however any Transmission Regulation changes resulting from the Government’s review of the Bulk System Planning and Self-Supply and Export will be immediately assessed for any required changes in the tariff to implement.

- Some stakeholders expressed concerns/comments over the lack of comprehensive quantitative analysis provided on the Bulk and Regional preferred rate design. The AESO has strived to ensure that our proposed preferred rate design changes have been supported by robust quantitative and/or qualitative rationale. We have shared an incredible amount of detailed analysis and design contemplation as we have gone through this engagement and responded to an extensive amount of stakeholder questions and will continue to do so as we further consult on the rate sheets and as we move into the proceeding. Materials can be found on the [Bulk and Regional Tariff Design](#) webpage.
- DOS modernization comments were largely supportive, including feedback that DOS modernization workplans and clarity on implementation should take on a higher priority. Other feedback requested additional technical evidence on how the use of this modernized rate will not result in DTS cannibalization and further cross-subsidization of tariff costs. The AESO has considered similar feedback in the Bulk & Regional engagement process.
- XOS and XOM Export rates: Some stakeholders expressed concerns on the impacts to the export rates that they should receive further consultation and receive similar minimally disruptive transition treatment to the new rate. The AESO acknowledges that similar to the Demand Opportunity Service (DOS) rate, the AESO is neither reviewing nor conducting additional consultation on the XOS/XOM rate methodology as part of the Bulk & Regional rate design consultation. Instead, any changes to the rate components that make up the XOS/XOM rate will flow through in the previous approved methodology.

**8. Distribution Coordination**

**(i) What are your views on the proposed next steps and milestones for this business initiative?**

**(ii) What are your views on the priority level of this business initiative?**

<b>ADC</b>	ADC supports this initiative. ADC also encourages the AESO to examine POD’s where they have contract capacities higher than peak load to ensure TFO’s/DFO’s are not planning for load that doesn’t exist.
<b>Altalink</b>	AltaLink supports this business initiative with the following recommendation to be included within the business plan:

8. Distribution Coordination	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	<p><u>Affordability</u></p> <p>See AltaLink’s comments in the Optimizing the Grid initiative concerning the standards/guidelines to ensure generators connect at the most appropriate voltage level. AltaLink recommends the AESO establish a mechanism which ensures AESO requirements that are critical for reliable operation of the AIES can be passed through to DERs connected on the distribution system. AltaLink believes this should be implemented using ISO Authoritative Documents.</p> <p><u>Priority Assessment</u></p> <p>AltaLink views this initiative as a high priority.</p>
<b>CanREA</b>	We are pleased to see that DFO planning coordination is a part of this conversation about AESO priorities, and we would be eager to provide feedback to the AESO regarding the role that DERs can play in grid optimization.
<b>Capital Power</b>	<p>Capital Power is supportive of the AESO continuing to improve its coordination for development on the distribution system. There are several seams issues that impact the level playing-field between transmission connected generation and distributed connected generation that can be solved through this effort. Capital Power’s comments making improvements to the interconnection process are particularly important for distribution connected generation development.</p> <p>Capital Power believes that this effort should continue to be a priority for the AESO.</p>
<b>ENMAX</b>	<p>ENMAX remains committed to collaborating with the AESO on this initiative. As we have communicated to the AESO through a number of different forums, since adoption rates and impacts of DERs are anticipated to remain manageable for the foreseeable future, it is ENMAX’s view that this initiative should not introduce any unnecessary requirements unless there is a clearly demonstrated need for it. EPC will continue to utilize existing processes to manage DER interconnections.</p> <p>The AESO appears to have numerous processes in which it engages with stakeholders on distribution coordination (technical working groups, formal and informal consultations, etc.). While the level of engagement is appreciated, the approach does not appear to be overly consistent or transparent. It would be helpful if the AESO established a clear process on who and how they engage with stakeholders on this topic. This will allow ENMAX to better organize its time and resources.</p> <p>With respect to “mandate implications”, it is ENMAX’s view that this is within the purview of the Government of Alberta to determine whether existing roles and responsibilities should evolve as DERs continue to be integrated in Alberta.</p>
<b>EPCOR</b>	<p>Next steps appear reasonable and EPCOR agrees that this should be a top priority.</p> <p>EPCOR also looks forward to the working with the AESO through the Distribution Coordination Business Initiative to find ways to streamline the connection process for DFOs</p>

8. Distribution Coordination	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>Greengate</b>	<p>(i) Greengate is supportive of the maps developments.</p> <p>Regarding the item “Pursue connection process improvements for DFO reliability and capability projects”. Greengate would support AESO efforts overall to reduce the complexity and red tape in the connection process.</p> <p>Regarding the item “Engage in policy/regulatory related initiatives to share the AESO’s principles and perspectives as it relates to mandate implications”, Greengate is again seeking further information. Does this item involve AESO interpretation of regulation? What areas of planning will this affect? This item appears to cover a broad range of topics and could have wide-ranging effects on stakeholders.</p> <p>(ii) Without further clarification, Greengate cannot support this area as a top-level priority.</p>
<b>Heartland</b>	<p>The Government should legislate who should own energy storage.</p> <p>Medium priority given the reliability concerns associated with the alignment of the distribution and transmission systems.</p>
<b>IPCAA</b>	<p>i) IPCAA has advocated for Distribution Coordination for quite some time.</p> <p>In AUC Proceeding 21973-D01-2017, the AESO argued as follows:</p> <ul style="list-style-type: none"> <li>• The AESO submitted that in order to discharge its statutory duties in respect of a system access service request, it must provide the service within a reasonable timeframe as long as the market participant has met all of the AESO’s connection process requirements.</li> <li>• The AESO argued that it was inappropriate for it to second-guess the distribution facility owner’s planning decisions and forecasts.</li> </ul> <p>IPCAA welcomes that fact that the AESO has revised its opinion and statutory obligations.</p> <p>(ii) IPCAA submits that this business initiative is a priority for ratepayers. Any AESO Business initiative that may reduce or control costs is welcome.</p>
<b>IPPSA</b>	<p>IPPSA supports a number of the initiatives described including improving the connection process and creating system capability maps to aid in siting.</p>
<b>Lionstooth</b>	<p>Without reiterating much of our comments above, integrated system planning, taking into consideration energy flows on the Dx system, should be, along with Optimizing the Grid, the top priority for the AESO.</p> <p>Priority Ranking: Tied 1st</p>



**8. Distribution Coordination**  
**(i) What are your views on the proposed next steps and milestones for this business initiative?**  
**(ii) What are your views on the priority level of this business initiative?**

<b>TransAlta</b>	<p><b>Work on Tx/Dx coordinated planning is a priority, particularly availability of transmission and distribution capability information.</b></p> <p>TransAlta believes the AESO should continue to play a leading and active role in coordination and planning activities. The focus should be on implementing connection process improvements, including probabilistic planning as it applies to Transmission/Distribution planning coordination.</p> <p>TransAlta welcomes the coordination of DFO capability hosting maps with AESO transmission capability assessments. With respect to consideration of small DER participation in the energy and ancillary services market, we recommend that this initiative be lowered in priority as we have concerns with respect to unintended consequences and that the benefits do not outweigh costs.</p>
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<b>UCA</b>	N/A
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**AESO Response**

- The AESO appreciates all the feedback. The AESO has prioritized 2021 transmission/distribution coordination work to focus on our decision-making framework for Distribution Facility Owner (DFO) driven transmission projects, developing a methodology to provide substation level generation integration capability coordinated with DFO feeder hosting capability, implementing DER static data collection and DER technical interconnection requirements. The AESO has begun work on DFO related connection process improvements and scoping probabilistic planning engagement for 2022. With the DER static data portal now in place, DER can be more effectively incorporated into planning processes.

**9. Technology Integration**  
**(i) What are your views on the proposed next steps and milestones for this business initiative?**  
**(ii) What are your views on the priority level of this business initiative?**

<b>ADC</b>	ADC supports this initiative.
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<b>Altalink</b>	<p>AltaLink supports this business initiative with the following recommendation to be included within the business plan:</p> <p><u>Affordability</u></p>
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9. Technology Integration	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
	<p>As part of Energy Storage policy implementation, AltaLink recommends that the AESO consult with stakeholders regarding the process/approach for evaluating energy storage as a transmission solution versus a non-wires solution and the criteria for determining the option that will be in the best interest of customers.</p> <p><u>Priority Assessment</u></p> <p>AltaLink views this business initiative as a medium priority.</p>
<b>CanREA</b>	<p>Currently, the lack of energy storage related market and tariff rules has resulting in significant risk to energy storage investments in Alberta. Finalizing DOS modernization and storage-related policy and market rules are of utmost importance to the energy storage sector. The AESO is encouraged to prioritize this work so that these exciting energy storage projects may begin to be captured</p>
<b>Capital Power</b>	<p>Capital Power believes that it is useful for the AESO to monitor technology trends, but also reminds the AESO that technology neutrality is an important principle in Alberta’s market design. That said, given that the energy transition is likely to result in new and more novel configurations of assets, the AESO must have a keen understanding of how this could result in the need for tariff and rule changes so that innovative investments are not impeded.</p> <p>Capital Power looks forward to better understanding how the AESO will be addressing this going forward.</p>
<b>ENMAX</b>	<p>The AESO’s plan to publish a “Technology Forward” report should not introduce significant changes to the existing framework but rather, could help inform the industry of opportunities and challenges ahead. Similar to the comment made above regarding mandate implications, any evolution of existing roles and responsibilities should not be assumed prior to further clarity being provided by the Government of Alberta.</p> <p>ENMAX will be an active participant in the AESO’s upcoming consultations regarding energy storage rule development.</p>
<b>EPCOR</b>	<p>Next steps appear reasonable and EPCOR agrees that this should be a top priority.</p> <p>EPCOR suggests that the AESO Technology Forward report include analysis of the potential impact of the electric vehicle penetration on the Alberta transmission system.</p>
<b>Greengate</b>	<p>(i) Greengate is seeking information on ES. Can the AESO share its comments it made to the government in the recent transmission regulation consultations about ES?</p> <p>(ii) Greengate is supportive of prioritizing the process of incorporating ES in Alberta.</p>
<b>Heartland</b>	<p>The AESO should be technology neutral in the products and services it offers. Fast frequency response and other products should be open to any load that can offer this service.</p> <p>Technology integration should be medium to low priority.</p>

9. Technology Integration	
(i) What are your views on the proposed next steps and milestones for this business initiative?	
(ii) What are your views on the priority level of this business initiative?	
<b>IPCAA</b>	<p>(i) IPCAA welcomes updates to rules that will incent investment in new technologies, such as energy storage, and enhance competition.</p> <p>(ii) IPCAA believes that technology integration is of great concern to enhance competitiveness and should be a high priority for 2022.</p> <p>Adjustment for Load on the Margin (ALM) is of little-to-no use to ratepayers and appears to provide little benefit. As such, it is should not be a high priority. A continued expenditure of resources on ALM, as opposed to other issues in the market, is not appropriate.</p>
<b>IPPSA</b>	<p>Within this priority, we would encourage the AESO to articulate its FEOC-related principles towards new technology. For example, new technologies in the supply or consumption of electricity should be added to the market without any unfair advantages. The AESO should take great care to ensure it is not favouring one technology over another or one competitor over another. To the point, DER and grid connected generation should compete on a level playing field against each other. Demand response technology and supply technology should also compete on a level playing field against each other.</p>
<b>Lionstooth</b>	<p>In addition to initiatives to enable the integration of new technologies, the AESO should ensure they are enabling the integration of existing technologies (i.e., DCG). The initiative appears to focus on ES, however, there are other NWS, that are not ES based, that could result in a similar outcome. The AESO should not limit their focus to only ES.</p> <p>Technology integration will only be successful if the AESO incorporates these new and existing technologies into integrated system planning, allowing for the ability to defer or avoid future wires growth, protecting customers from growth in assets and infrastructure that no longer serve customer needs.</p> <p>Priority Ranking: 5th</p>
<b>TransAlta</b>	<p><b>TransAlta fully supports the technology integration initiative.</b></p> <p>Energy Storage (ES) and Distributed Energy Resources (DER) are technologies already on the system and we need to advance in providing certainty on the market, tariff and system framework to allow these resources to fully participate and contribute to the Alberta Interconnected Electric System.</p> <p>It is important to develop and implement Energy Storage rule changes and a clear tariff treatment. The implementation of Adjustment for Load on the Margin (ALM) should not be a priority at this time. Finally, TransAlta welcomes the first AESO Technology Forward report and first Annual Industry Technology Summit for Q4 2021.</p>
<b>UCA</b>	N/A

**9. Technology Integration**

**(i) What are your views on the proposed next steps and milestones for this business initiative?**

**(ii) What are your views on the priority level of this business initiative?**

**AESO Response**

- The AESO appreciates all the feedback. The AESO will continue to progress, as needed, the Energy Storage (ES) and Distributed Energy Resources (DER) roadmaps to enable integration. The Department of Energy’s ES stakeholder engagement may influence the ES roadmap priorities in 2022. The AESO’s first Technology Forward and Technology Summit in Q4 2021 is intended to initiate industry dialogue on technology awareness, emerging technologies, technology pace and maturity, potential implications to the industry and more specifically, AESO mandate areas such as reliability, markets, and tariffs seeking industry perspectives on these matters in order to align and adjust priorities accordingly.

**10. Proposed: Grid Resiliency**

**(i) What are your views on this initial proposed 2022 business initiative that the AESO has recommended to advance, and its proposed plans and milestones?**

**(ii) What are your views on the priority level of this business initiative?**

<b>ADC</b>	<p>i. ADC supports this initiative and submits that the energy intensive and price responsive loads can be a key tool of grid resiliency. The ADC would like to work with the AESO in a collaborative way to see how the AESO could value the flexibility of the 400 MW of price responsive load.</p> <p>ii. The ADC supports this as a priority.</p>
<b>Altalink</b>	<p>AltaLink supports this business initiative with the following recommendations to be included within the business plan:</p> <p><u>Reliability/Resiliency</u></p> <p>AltaLink recommends the AESO examine the role of interties to Alberta energy security and grid resiliency as part of this initiative. Lack of intertie capacity proved to be a critical shortcoming in Texas. As Available Transfer Capacity on Alberta’s interties becomes severely constrained during Energy Alerts, Alberta appears to have very similar severe limitations.</p> <p>AltaLink recommends the AESO initiate the steps needed to implement the 2015 version of NERC Transmission Planning Standard TPL-001-4. This revision, which is in effect in every jurisdiction in North America except Alberta, includes very specific requirements for planning for many of the extreme conditions such as loss of gas supply, extreme weather, etc. that has been identified as being part of this initiative. Rather than invent an Alberta solution, AltaLink recommends following the framework that is being followed elsewhere.</p> <p>AltaLink also recommends the AESO initiate the steps needed to implement NERC Transmission Planning Standard TPL-007-4 (Transmission System Planned Performance for Geomagnetic Disturbance Events). This reliability standard was adopted in</p>

<b>10.</b>	<b>Proposed: Grid Resiliency</b> <b>(i) What are your views on this initial proposed 2022 business initiative that the AESO has recommended to advance, and its proposed plans and milestones?</b> <b>(ii) What are your views on the priority level of this business initiative?</b>
	<p>October 2020 throughout Canada and the US. AltaLink believes Alberta is currently the only jurisdiction that has not adopted this standard – which, at a minimum, requires planning authorities to study if Geomagnetic Disturbances are a concern for their jurisdiction. If they are, then, it requires mitigations be planned. (Note: AltaLink believes that WECC studies previously revealed Alberta may be a jurisdiction at greatest risk for these disturbances which can have devastating consequences on power systems. i.e. GMD has caused complete blackouts – including in Quebec. NERC considers GMD as high of a risk as Cyber Attacks.)</p> <p><u>Priority Assessment</u>  AltaLink views this as a high priority.</p>
<b>CanREA</b>	Any initiatives relating to grid resiliency must be informed by a formal conversation regarding grid decarbonization, as outlined in our response to question 11, below.
<b>Capital Power</b>	<p>Capital Power supports the AESO’s proposal to make grid resiliency a top priority. Similar to prior comments, Capital Power believes that market participants must be involved from early stages in understanding the issues, evaluating the options, and developing a market-based approach going forward to ensure that the grid is resilient to the transformational changes that are happening with the supply mix, and how power plants are operating.</p> <p>Capital Power notes that the AESO has indicated that it will enhance cyber-security capabilities through a “risk-based approach.” Capital Power supports this approach as it would allow the agencies involved in monitoring and enforcement as well as market participants to redirect their efforts to those issues that pose a serious or substantial risk to the reliability of the Alberta grid and/or those issues that have the potential to impact FEOC.</p> <p>Capital Power encourages the AESO to broaden the use of a risk-based approach to its compliance monitoring &amp; enforcement program to include other ISO rules and Alberta Reliability Standards, not only cyber-risk and CIP-013, which would reduce regulatory burden for all parties involved, and would focus on mitigating higher risk issues in an effective manner.</p>
<b>ENMAX</b>	<p>ENMAX is supportive of this initiative. Further analysis should be conducted first to determine what (if any) new measures should be pursued.</p> <p>Consideration should also be given to any federal and provincial climate plans and related developments.</p>
<b>EPCOR</b>	Next steps appear reasonable and EPCOR agrees that this should be a top priority for 2022.
<b>Greengate</b>	<p>(i) N/A</p> <p>(ii) Greengate is generally supportive of this priority.</p>

10. Proposed: Grid Resiliency	
(i) What are your views on this initial proposed 2022 business initiative that the AESO has recommended to advance, and its proposed plans and milestones?	
(ii) What are your views on the priority level of this business initiative?	
<b>Heartland</b>	Heartland Generation believes that the principle risk our market faces is reliability for two reasons; (1) the dispatchable fleet is almost wholly dependent on the natural gas system; and (2) the quantity of intermittent resources forecasted to be coming online. Highest priority.
<b>IPCAA</b>	(i) Cyber-Security is a clear concern for Albertans. It would be useful for the AESO to determine if there is a threshold capacity (MW) above which we need to be concerned but below which can allow industries to reduce the cyber-security compliance burden. Again, this is an example of undertaking a risk-based analysis to determine acceptable threshold levels. (ii) IPCAA submits that the AESO should begin by establishing a task force including ratepayers, to understand if Alberta has Grid Resiliency concerns and if so, what they are, rather than simply setting priorities for 2022.
<b>IPPSA</b>	The AESO may wish to initiate this item after the proposed review of the Government of Alberta's TIER regulation. We understand this review is to take place in 2022. Or at least the AESO should ensure that the work it is doing is flexible enough to adapt to any changes. The design of TIER – and the rate of the carbon price – are fundamental drivers for investment decisions in both the types and volumes of future renewable and future thermal supply.
<b>Lionstooth</b>	Grid Resiliency should be a business initiative for the AESO in 2022, with its scope expanded to include consideration for how DCG, and NWS that extend beyond ES, can further support the overall grid. Priority Ranking: 6th
<b>TransAlta</b>	<b>TransAlta considers grid resiliency a key initiative.</b> TransAlta considers resiliency of the grid fundamental, particularly with more variable and intermittent resources in the electricity supply mix. Therefore, enhancing system frequency response, and ensuring we are prepared for extreme events, including gas/electric interdependencies and cyber-security events, should be a top priority. TransAlta agrees the AESO should focus on the identification of new reliability needs and products. The AESO should continue to perform technical reliability needs assessment for high renewable penetrations, and assess climate change implications on our grid infrastructure.
<b>UCA</b>	With respect to this initiative, the UCA would like to better understand why interties were not identified as part of its proposed review and study of grid resiliency.

**10. Proposed: Grid Resiliency**

**(i) What are your views on this initial proposed 2022 business initiative that the AESO has recommended to advance, and its proposed plans and milestones?**

**(ii) What are your views on the priority level of this business initiative?**

**AESO Response**

- The AESO appreciates all the feedback and are generally aligned with the priorities shared.
- In 2022 the AESO will focus on these initiatives, by priority:
  - Frequency response capability
  - Extreme event preparedness and gas/electric interdependency, including assessing North American Electric Reliability Corporation Transmission System Planning Performance Requirements (NERC TPL) related standards.
  - Future reliability needs to ensure resilience as grid transforms towards decarbonization followed in 2023+ on any needed market-based approaches on how to deliver those requirements
  - Cyber-security enhancements including assessing Critical Infrastructure Protection (CIP) 13 adoption in Alberta.
  - Assessing climate change implications on grid resilience including assessing need of NERC TPL-007-4 geomagnetic standard adoption in Alberta.

**11. Do you believe there may be business initiatives the AESO should be advancing which have not already been captured? If so, what would these be?**

<b>ADC</b>	ADC submits that a key initiative should be affordability of Alberta’s electricity system. This should include prioritizing the use of the existing transmission system, and designing tariffs that encourage grid use, not grid defection.
<b>Altalink</b>	AltaLink does not believe there are other business initiatives to be advanced at this time.
<b>CanREA</b>	It is recommended that the AESO begin to advance a decarbonization initiative, which would influence and impact the other business initiatives currently active in the province. Grid decarbonization will have a more significant impact on the grid in coming years, as governments, customers and society in general work towards net-zero outcomes. These net zero outcomes, which in Alberta will be supported by corporate PPAs signed with renewable energy facilities, will be the result of market forces. Any conversation about grid modernization must include a serious consideration of grid decarbonization.
<b>Capital Power</b>	As a follow-up to the 2021 BRP the AESO commented that they will be exploring the complexity and capability of providing loss factor estimates earlier in the connection process. While this would be a benefit to developers, Capital Power would comment that the Department of Energy’s recent Bulk and Regional Planning Consultation covered losses as a potential for red-tape

11. Do you believe there may be business initiatives the AESO should be advancing which have not already been captured? If so, what would these be?	
	reduction. As such, Capital Power would suggest that the AESO limit expending resources on enhancements until clear policy direction on losses is obtained.
<b>ENMAX</b>	As with previous years, ENMAX appreciates the AESO's efforts to reduce its own costs and prioritize its initiatives based on the cost and benefit of each initiative.
<b>EPCOR</b>	See comments related to electric vehicle impact in response to question 9.
<b>Greengate</b>	Please see Greengate's previous comments on loss factors and transparency in the AESO's planning process and in changes to its planning process.
<b>Heartland</b>	
<b>IPCAA</b>	IPCAA submits that the critical issue for the affordability of Alberta's electricity system going forward is utilizing the existing transmission system, rather than building new transmission. The AESO should have a business initiative dedicated to expanding the utilization of the existing system.
<b>IPPSA</b>	N/A
<b>Lionstooth</b>	N/A
<b>TransAlta</b>	TransAlta does not recommend adding any additional business initiatives in 2022. We recommend that the AESO further rationalize and reduce the number and scope of the business initiatives proposed by the AESO.
<b>UCA</b>	N/A

#### AESO Response

- The AESO acknowledges and appreciates stakeholders' comments with respect to business initiatives the AESO should be advancing which have not already been captured.
- The AESO will await the Department of Energy's policy direction on losses prior to proceeding with new work in this area. One of the AESO's key business initiatives is Optimizing the Grid which seeks to utilize the existing system before building new infrastructure. The AESO's 2021 Long-term Outlook includes a Clean-Tech scenario that progresses towards a decarbonizing grid. The Clean-Tech scenario will be assessed within the 2022 Long-term Plan for potential transmission development implications.
- The focus of grid optimization is on delivering value, which includes managing future costs. Tariffs should send efficient price signals to support that optimization.

12.	Additional comments
<b>ADC</b>	The ADC appreciates the opportunity to provide input into the AESO BRP.
<b>Altalink</b>	AltaLink has no other comments at this time.
<b>CanREA</b>	N/A
<b>Capital Power</b>	Capital Power does not have any further comments at this time
<b>ENMAX</b>	N/A
<b>EPCOR</b>	N/A
<b>Greengate</b>	N/A
<b>Heartland</b>	<p>Each key business initiative should come with an estimated budget detailing any external resources to be used. This information would help market participants weigh in on how these resources should be prioritized.</p> <p>Further to Heartland Generation’s comments in the AESO’s past BRP, Heartland Generation continues to advocate for the formation of a stakeholder committee to aid the AESO in developing its market initiatives and provide governance. This stakeholder committee would balance the AESO’s market priorities with those of industry and provide the AESO with indispensable input regarding the timing of market-related initiatives. Further, a market participant committee is consistent with the AESO’s stakeholder engagement framework.</p>
<b>IPCAA</b>	Thank you for the opportunity to participate in the consultation. We would be happy to respond to any comments in this matrix.
<b>IPPSA</b>	<p>We look forward to the next meeting of the BRP. For that meeting, we would recommend that the AESO explain how it will prioritize these various initiatives and how it will resource them.</p> <p>Stakeholders will be better equipped to comment on the AESO’s priorities when we see how many resources are proposed to be allocated to each. We hope that the AESO will allow its priorities to be informed by that future stakeholder input.</p>
<b>Lionstooth</b>	N/A
<b>TransAlta</b>	We note the interdependencies between many business initiatives such as the GTA and Tariff Modernization, or Optimizing the Grid, Distribution Coordination, Technology Integration, and Market Sustainability & Evolution, and recommend the AESO integrate them to gain efficiency and reduce unnecessary or duplicative initiatives.
<b>UCA</b>	N/A



**12. Additional comments****AESO Response**

- The AESO acknowledges and appreciates stakeholders' comments in this section.
- As noted in section 1, The AESO plans to provide certain cost information by business initiative in relation to the budgeted consulting, legal and capital costs that are expected to be incurred in relation to each business initiative in 2022. Estimating the cost of resources is complex for multiple reasons. First, the AESO assesses its staff requirements holistically. Staff will be required to deliver on both base load work and business initiatives in 2022. Third party consultants and legal services are utilized when the work is deemed to require specialized knowledge or skills and when the work may exceed the capacity of internal resources. Second, staff utilization is always evaluated with a specific focus on creating efficiencies through cross collaboration and understanding interdependencies. In addition, work related to initiatives must be carefully managed and prioritized to remain within budgeted expectations. This critical need to remain agile may result in some initiatives advancing faster than others. As a result, staff focus may be shifted between initiatives based on needs and timing. Finally, initiatives identified may not have each stage planned in detail at the time of the BRP process.
- The AESO values stakeholder input as it develops initiatives and sets priorities. To this end, the AESO has established two forums for engaging with senior leaders in electricity on strategic long-term priorities for our industry. A cross-section of electricity industry representatives from private sector, associations and agencies have been invited to participate in either the CEO Industry Roundtable or the Industry Associations and Agencies Roundtable. Both roundtables are designed to support and align with the objectives and principles established in our [Stakeholder Engagement Framework](#). This includes publishing all roundtable documentation (terms of reference, agendas, presentations, and other potential collateral) on our website. Under Alberta's legislative framework, it would be inappropriate for a stakeholder committee to provide governance as occurs in other jurisdictions with different regulatory frameworks.
- Regarding the interdependencies between the various business initiatives the AESO does coordinate to reduce unnecessary or duplicative initiatives and gain efficiency.

# Stakeholder Comments and AESO Replies

2022 Budget Review Process (BRP) Stakeholder Engagement Session 2 – Sept. 29, 2021



The AESO invited all interested stakeholders to provide their comments on the 2022 BRP Stakeholder Engagement Session 2, the business initiatives and the 2022 preliminary forecasts and budgets presented at the virtual session hosted on Sept. 29, 2021. The AESO values stakeholder feedback and we thank you for sharing your perspectives with us. View all stakeholder comments received and the AESO replies below.

1. Please comment on the 2022 BRP Session 2 hosted on Sept. 29, 2021. Was the session valuable? Was there something the AESO could have done to make the session more helpful?	
<b>Alberta Direct Connect (ADC)</b>	<p>The ADC found the session valuable and appreciates the opportunity to participate.</p> <p>The Government is currently contemplating changes to the transmission regulation which will impact a number of AESO initiatives. The plan needs to have enough flexibility to consider any changes. Further, the ADC recommends the AESO examine affordability and industry competitiveness as a component of the business initiatives. The AESO should be knowledgeable on the impact electricity costs and tariff design have on jobs, growth, and the economy.</p>
<b>AltaLink Management Ltd. (AltaLink)</b>	<p>The second session was valuable as it allowed stakeholders the opportunity to ask clarifying questions and/or provide further comments. AltaLink appreciated the opportunity to provide further comments and ask questions at the September 29<sup>th</sup> session.</p>
<b>Capital Power Corporation (Capital Power)</b>	<p>Capital Power appreciates the AESO efforts in having its senior leadership available at the session to respond to stakeholder questions and encourages this practice to continue. The materials made available by the AESO to review ahead of the sessions were also helpful in preparing for and to facilitate more focused discussion about the AESO's planned initiatives, forecast and proposed 2022 budget. Going forward, Capital Power believes that less time in the session can be spent on the overview of the content of these materials and more time should be allocated on exploratory discussion (e.g., questions and answers).</p> <p>While the information provided in the materials ahead of time were useful in understanding the business initiatives themselves, clarity regarding their level of priority and AESO resource allocation for each (i.e., staffing, capital spend, etc.) could be improved.</p> <p>The materials provided to date indicate three levels of priority– i) Mandated; ii) Top Priority; and iii) Normal Course Initiatives. For example, the General Tariff Application and Red Tape Reduction initiatives were identified as “Mandated” Top Priorities (Session 2 slides 17 &amp; 21) suggesting these items take precedence over the remaining initiatives. The Market Sustainability/Evolution and Settlement Audit initiatives had neither the “Mandated” nor “Top Priority” labels (Session 2 slides 18 &amp; 19) implying these were the lowest priority initiatives of the nine identified. The remaining initiatives were designated as “Top Priority” (Session 2 slides 22-26). The materials provided no additional information on the relative order of priority for the initiatives other than the aforementioned nomenclature used in the headings to describe each item. Going forward, the AESO's view on this would be helpful to stakeholders in better understanding what initiatives are driving resource and budgetary needs.</p>

1. Please comment on the 2022 BRP Session 2 hosted on Sept. 29, 2021. Was the session valuable? Was there something the AESO could have done to make the session more helpful?	
	The AESO also did not provide any indication of the resources it expects to allocate to each initiative creating a disconnect with how AESO Own Costs were derived. Capital Power recommends that these details be provided in the BRP materials for stakeholders to review.
<b>ENMAX Corporation (ENMAX)</b>	ENMAX would not only like to see more detail provided about how many internal AESO resources are allocated to each of the Business Initiatives (measured in FTE equivalents or person-hours), but also have them separated out by year so it is clear what is being allocated on an annual basis for each of the initiatives that span multiple years.
<b>EPCOR Distribution &amp; Transmission Inc. (EPCOR)</b>	Yes, the session was valuable. See comments below re: Red Tape Reduction.
<b>Heartland Generation Ltd. (Heartland)</b>	Yes, the session was useful. In the future, Heartland Generation suggests that the AESO indicate how many resources (staff and spend) it plans to put towards each initiative. This ranking information would put stakeholders in a better position to provide input on the AESO's BRP. The AESO should also provide a relative ranking for each of the initiatives presented.
<b>Independent Power Producers Society of Alberta (IPPSA)</b>	<p>Yes, the session was useful. In the future, we would suggest that the AESO provide a breakdown of its Own Costs per Business Initiative. This would help stakeholders appreciate the AESO's relative ranking of these Initiatives. That ranking would better inform stakeholders' input into the AESO's BRP and help stakeholders to align their own resources to engage with the AESO in pursuing common goals in the year ahead.</p> <p>Where possible, we'd also ask that the AESO create succinct 'problem statements' to help stakeholders understand what it's initiatives are intended to resolve. These would be one or two sentences that state the problem and - ideally - whose progress can be measured. We'd imagine that the AESO intuitively knows what the problem statements are (give that its initiatives have made it to the plan and that some have resources and budgets attached). So the request is to convey those concerns succinctly. E.G. What problem is the Mothball rule/OR review/Settlement Audit/Distribution Coordination intended to resolve? Stakeholders could use the BRP process to comment on the problem statements. This would help the AESO and its stakeholders get on the same page and collaboratively define the issues we want to work towards.</p> <p>The AESO's Own Costs are increasing. However, the BRP material does not connect the AESO's Own Costs to the nine Business Initiative that are driving these costs. In the future, we recommend that the AESO provide a breakdown of its Own Costs per Business Initiative.</p>
<b>Industrial Power Consumers Association of</b>	The session was valuable. IPCAA appreciates the AESO executive team attending and presenting on their respective areas. Obviously, this would be easier in person than on MS Teams. In terms of online platforms, AESO sessions are easier to participate in on Zoom.

1. Please comment on the 2022 BRP Session 2 hosted on Sept. 29, 2021. Was the session valuable? Was there something the AESO could have done to make the session more helpful?	
<b>Alberta (IPCAA)</b>	<p>As stated in previous BRP stakeholder engagements, 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> <p>The AESO has a full plate of initiatives in listed here, without fully contemplating possible Transmission Regulation changes that could require additional efforts.</p> <p>See previous comments on lack of prioritization on Cost Management.</p>
<b>TransAlta Corporation (TransAlta)</b>	<p><b><i>The AESO should provide budgeted resourcing and costs associated with each initiative</i></b></p> <p>The session was valuable as it provided clarity about the scope and prioritization of the proposed business initiatives. In the next stage of this work, the AESO should provide more detailed information regarding the interdependencies between initiatives, as well as identification of the multi-year plans, for the initiatives highlighted in the presentation. More specifically, the Market Sustainability and Evolution, Optimizing the Grid, Tariff Modernization, Technology Integration and Grid Resiliency initiatives. The AESO should also provide more information regarding the cost and resourcing for each initiative. Stakeholders require transparent information to understand and assess how the proposed activities will drive the AESO's resource needs and associated costs so that we can meaningfully comment on the prioritization of those activities to maximize efficiency and value.</p>
<p><b>AESO Response</b></p> <ul style="list-style-type: none"> <li>• The AESO acknowledges and appreciates stakeholders' comments in this section.</li> <li>• The AESO is committed to managing cost and ensuring our transmission system delivers value to Albertans. Key to this commitment is our strategic focus on optimizing the use of our existing grid while minimizing or deferring the need for new infrastructure where appropriate. The AESO has strived to ensure that our proposed preferred rate design changes have been supported by robust quantitative and/or qualitative rationale. We have shared an incredible amount of detailed analysis and design contemplation as we have gone through this engagement and responded to an extensive amount of stakeholder questions. The AESO filed its Bulk &amp; Regional Rate design application with the AUC on Oct. 15, 2021, including the mitigation proposal and DOS modernization proposal. A number of comments provided here relate to that application and are best addressed through that proceeding. Materials can be found on the <a href="#">Bulk and Regional Tariff Design</a> webpage.</li> <li>• The AESO provides certain cost information by business initiative in relation to the budgeted consulting, legal and capital costs that are expected to be incurred in relation to each business initiative in 2022. As noted previously, estimating the cost of resources is complex for multiple reasons. First, the AESO assesses its staff requirements holistically. Staff will be required to deliver on both base load work and business initiatives in 2022. Third party consultants and legal services are utilized when the work is deemed to require specialized knowledge or skills and when the work may exceed the capacity of internal resources. Second, staff utilization is always evaluated with a specific focus on creating efficiencies through cross collaboration and understanding interdependencies. In addition, work related to initiatives must be carefully managed and prioritized to remain within budgeted expectations. This critical need to remain agile may result</li> </ul>	

**1. Please comment on the 2022 BRP Session 2 hosted on Sept. 29, 2021. Was the session valuable? Was there something the AESO could have done to make the session more helpful?**

in some initiatives advancing faster than others. As a result, staff focus may be shifted between initiatives based on needs and timing. Finally, initiatives identified may not have each stage planned in detail at the time of the BRP process. Similar to the following comment, the AESO does not see value in estimating resource time to be spent on initiatives as it does not impact the initiatives to be undertaken. All initiatives are considered necessary to deliver on our mandate.

- In regard to the prioritization of business initiatives, the AESO undergoes a significant review of its strategy each year, contemplating economic, environmental and political shifts that impact Albertans and the electric industry. Above all, the AESO works to ensure we are continually planning for and delivering on our mandate. The business initiatives identified are those that the AESO feels are necessary to this achieve this end and are therefore all of importance. An exercise to prioritize does not provide value given all the work is considered necessary to deliver on our mandate. Prioritization occurs at the delivery level in that we work diligently to contain costs and allocate limited resources across the initiatives, while being agile to changing conditions. Timing and approach may be modified, but not the initiatives to be undertaken.
- We acknowledge IPSSA's recommendation for "problem statements" to be provided in the future and will take this into consideration for the following year. We also note the comment regarding cost management as a stand-alone initiative. It is clearly a key focus and goal for our entire organization to manage transmission costs, and our grid optimization is directly connected to helping to achieve that goal. All VPs are dedicated to achieving cost reductions within the sphere of influence of their accountabilities and prioritizing our resources towards that goal. As such, we do not see it to be beneficial to have just one VP dedicated to this objective. As it relates to distribution costs, the AESO is focused on ensuring coordinated planning with DFOs and ensuring any transmission needed for DFO requirements is strongly supported. The AESO does not have the mandate to manage DFO distribution costs generally, the DFOs and the AUC have that mandate.

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (i) General Tariff Application	
<b>ADC</b>	The AESO needs to provide a timely 2022 tariff update. Considering that the AltaLink rate relief expires, consumers will be looking at a material increase of over \$200M in 2022 based on the AESO forecast of wires costs.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	N/A
<b>IPCAA</b>	N/A
<b>TransAlta</b>	No additional comments.
<b>AESO Response</b>	
<ul style="list-style-type: none"> <li>Noted. The AESO plans to file the 2022 tariff update by the end of November 2021.</li> </ul>	

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (ii) Market Sustainability and Evolution	
<b>ADC</b>	The AESO continues to talk about need for resource adequacy and flexibility, but has not set any priorities to work with flexible load so that they can continue to be a more effective grid resource. The preferred tariff will effectively put these loads at risk and potentially remove 400 MW of flexible load resources from the mix.
<b>AltaLink</b>	No further comments.
<b>CanREA</b>	N/A
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	While we appreciate that the projects contemplated for the markets division are classified as 'narrow in scope', it is not clear that are the initiatives should be pursued given other priorities. For example, Heartland reiterates that it is unclear why an OR market review is needed at this time. Simply put, what significant issues warrant an investigation and how does the AESO define what it means by making the OR market 'more competitive'?
<b>IPPSA</b>	Of the AESO's 2022 work, we think the AESO's market monitoring studies - with a focus on flexibility and revenue sufficiency - will be of acute interest to industry given the dramatic changes expected in Alberta's dispatchable supply and intermittent supply over the near-term. The nature of Alberta's power supply will be impacted by future carbon prices that are intended to rapidly accelerate decarbonization. Stakeholders will want to be involved in these studies every step of the way given how they may inform the market's future.  We appreciate Ms. Keating Erickson's comments during the latest BRP webinar that the other items contemplated for the market's area were really 'narrow in scope'. This commitment recognizes industry's need for policy stability and recognizes the need for the AESO to prioritize other matters. (e.g. response to T-reg changes, Grid Optimization). We also appreciate the AESO's commitment that it will not proceed with change without consultation.  Additionally, we do appreciate Ms. Keating Erickson's comments that the focus on the OR review will be on removing barriers to entry. We look forward to working with the AESO on the scope of that review and to define terms such as 'improving competition.' The OR review should proceed with a clear – and narrow - objective in mind.  As noted in our response to question 1, above, some of the market initiatives may benefit with a clear problem statement, defining what the initiative is intended to resolve.
<b>IPCAA</b>	The AESO states: "Following updated analysis based on 2021 LTO and scenarios (long-term adequacy, revenue sufficiency, system flexibility assessment, etc.), identify any other required market initiatives to support long-term sustainability and



<p>2.</p>	<p><b>Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative?</b></p> <p><b>(ii) Market Sustainability and Evolution</b></p>
	<p>competitiveness of the energy-only market, with a long-term view of potential market changes within the existing structure needed to facilitate continued resource adequacy and increased flexibility.” Does this include re-examining the price floor in light of the high penetration of renewable projects that is expected?</p>
<p><b>TransAlta</b></p>	<p><b><i>New technology and future reliability requirements should be the focus of market sustainability and evolution</i></b></p> <p>TransAlta recommends that the AESO focus its efforts on identifying and planning for the reliability needs associated with high renewable penetration that we expect in Alberta. The AESO should approach this issue by identifying the reliability needs and exploring the right market-based approaches to meet those needs. TransAlta supports the initiatives that continue the development of market rules that contemplate new technology and more specifically energy storage.</p> <p>TransAlta disagrees that the operating reserves initiative, which is currently scoped to pursue changes to enable Distributed Energy Resources (DER) resources participation, should be pursued at all. We raised several significant concerns in our October 30, 2020 and March 17, 2021 submissions made in the consultation on DER Market Participation Options that remain unaddressed (and appear to have been ignored in the prioritization reflected in this BRP), including asymmetrical obligations (must offer) for large and small providers, the lack of any details of practices or system changes that will ensure that small and large provider are directed to provide operating reserves in the same manner and the lack of cost information that demonstrates that individual DER participation is cheaper than an aggregation approach. TransAlta recommends that the focus of any operating reserves initiative be tied back to the planning for future reliability needs. This is the model being used in most markets that are facing similar issues with system inertia that Alberta has experienced recently and we expect it will become a bigger concern as the supply mix rapidly changes.</p>
<p><b>AESO Response</b></p> <ul style="list-style-type: none"> <li>• The AESO appreciates the feedback received on market evolution and sustainability.</li> <li>• With respect to the OR market competitiveness enhancements, the AESO plans to hold a stakeholder session in late November where more information will be shared regarding what is in scope, and out of scope for the review. At this session, stakeholders will gain a deeper understanding of the issues and opportunities the AESO has noted in the OR market, and have an opportunity to discuss, gain further clarity and provide feedback on what the AESO should further consider in its review.</li> <li>• We appreciate the comments from stakeholders around AESO’s market monitoring studies and will ensure we engage with stakeholders at key points throughout the process. As to whether the AESO plans to re-examine the price floor at some point in the near future, the AESO monitors the pricing framework periodically, and may again review this framework in the future if warranted.</li> </ul>	



2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (iii) Settlement Audit	
<b>ADC</b>	No comment
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	N/A
<b>IPCAA</b>	IPCAA continues to support a complete, independent, end-to-end settlement audit and welcomes the AESO's commitment to such an audit. IPCAA is disappointed that prior to undertaking the audit, the AESO did not request stakeholder input on the Terms of Reference. In addition, ISOs in other jurisdictions do not require stakeholders to sign NDAs to see the audit reports. Can the AESO come up with a way of making the report public, while satisfying confidentiality concerns? Perhaps look to other jurisdictions for guidance.
<b>TransAlta</b>	No additional comments.
<b>AESO Response</b>	
<ul style="list-style-type: none"> <li>The AESO appreciates your thoughts. Confidentiality is considered important as the report speaks to critical systems of the AESO and we are always diligent in our efforts to mitigate against potential cyber-related crime. The AESO will consider the option of redacting information to satisfy confidentiality concerns.</li> </ul>	

<b>2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative?</b> <b>(iv) Red Tape Reduction</b>	
<b>ADC</b>	The ADC supports continued review of AESO Rules and reliability standards to eliminate any that don't have a direct and material impact to grid operations and reliability.
<b>AltaLink</b>	<p>AltaLink supports this business initiative with the following recommendation to be included within the business plan:</p> <p>AltaLink commends the AESO on its commitment to review the development and associated compliance monitoring for Alberta Reliability Standards (ARS) requirements. AltaLink believes there are numerous opportunities to reduce the burden on all market participants through a comprehensive review of the standard development process through to the monitoring and audit process that will maintain or improve the safe, reliable, and economic operation of the Alberta Interconnected Electric System. The timing is ideal for this review as the first Critical Infrastructure Protection and Protection and Control (CIP) Standards tri-annual audit cycle has closed. Moving forward where all market participants have a common understanding of requirements and expectations with enough advanced notice to obtain the necessary resources to comply will reduce the regulatory burden. The focus should be on reducing costs and regulatory burden while improving security and reliability.</p> <p>AltaLink also supports any other comments provided by stakeholders on this initiative that will assist in creating a path forward to address ARS compliance concerns.</p>
<b>Capital Power</b>	In response to stakeholder comments, the AESO noted that it was open to exploring market participant concerns regarding regulatory burden in areas such as ARS compliance monitoring. Capital Power appreciates the AESO's willingness to consider these concerns and reiterates its previous comments seeking the broadened usage of a risk-based approach to the AESO's compliance monitoring & enforcement program. Capital Power also encourages the AESO to host an ARS specific stakeholder engagement in (or around) Q1 2022 where industry and the AESO can collaborate to enhance the existing ARS program including a review of the standards and, the self-certification and audit processes. To these ends, sessions should occur on a regular basis (e.g., biannually) and include the solicitation of stakeholder feedback and reports outlining the results of these discussions.
<b>ENMAX</b>	<p>The AESO stated in Session #1 that they would be willing to share the quantitative methodology used to calculate their red tape reduction work to date. ENMAX would like to see this detail as well as a clear plan on how the AESO is planning to meet the remaining percentage of reductions in order to meet their goal. If this information will not be shared broadly, please email <a href="mailto:cmccleave@enmax.com">cmccleave@enmax.com</a> to discuss how we can obtain this information.</p> <p>In ENMAX's view, an important consideration is how a proposed change directly translates into cost savings not just for industry, but the AESO as well. As such, the cost benefits should be clearly outlined and provided through the Budget Review Process or similar forum.</p> <p>Currently, it remains unclear how the efficiencies being achieved through the Red Tape Reduction initiative correlate with AESO cost reductions.</p>

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (iv) Red Tape Reduction	
	In addition to the comments above, ENMAX requests the AESO to host a Q1 2022 ARS specific stakeholder consultation session where industry can collaborate with the intent of enhancing the ARS program, including Standards, Self-Certification and Auditing. These sessions should take place twice a year and include a matrix for participants to document their suggestions, findings and feedback. This would help identify which areas could benefit from red tape reduction efforts. ENMAX has several ARS related topics already identified that it is prepared to discuss in more detail.
<b>EPCOR</b>	EDTI views the current ARS programs in Alberta as an important component to maintaining a safe and reliable system and believes there are opportunities to streamline and enhance the current ARS program.  EDTI believes there is value in bringing together the AESO, MSA and market participants to review Alberta’s approach to Alberta Reliability Standard drafting, stakeholder consultation, implementation and compliance, to ensure that there is an appropriate balance of compliance efforts and costs while ensuring the secure and reliable operation of the bulk electric system.
<b>Heartland</b>	Heartland Generation appreciates that Red Tape Reduction is government mandated. However, some of the objectives such as looking at line losses appear to use man-hours that may not be warranted at this time given the AESO’s other priorities.
<b>IPPSA</b>	With regard to reliability standards, IPPSA recommends that the AESO adopt a ‘risk-based’ approach to compliance monitoring and enforcement. This would see the AESO focus its resources in proportion to the standard’s impact on system reliability.
<b>IPCAA</b>	While IPCAA would agree that Red Tape Reduction is important, we emphasize that it should not simply be undertaken as a method to reduce transparency.  Under “How we plan to proceed” the AESO states: “The AESO is open to exploring other areas where market participants have concerns about regulatory burden, such as loss factors and ARS compliance monitoring.” With respect, being “open to exploring areas” is not a concrete plan for proceeding. IPCAA members have expressed concerns with regard to ARS compliance monitoring and would appreciate more of a process for addressing these than the AESO being open to a discussion.
<b>TransAlta</b>	<b><i>Red Tape Reduction should translate into reduced costs and increased efficiency for both the AESO and market participants and the BRP should clearly specify these savings</i></b>  TransAlta appreciates the AESO’s decision to include a potential review of the loss factors calculation process and the ARS compliance monitoring if the focus is truly on rationalizing the regulatory requirements to reduce the regulatory burden on market participants, rather than just relieve the AESO of regulatory requirements.  To the extent that the red tape reductions are related to AESO requirements, we would like to be provided with more transparency into how those reduced requirements translate into cost reductions and efficiencies for the AESO. Our expectation is that reductions that are pursued under this initiative will not contribute to more AESO costs, require additional

## 2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative?

### (iv) Red Tape Reduction

AESO resources to realize the red tape reduction initiative or push requirements from the AESO to the market participants (leading to greater burden).

Additionally, TransAlta would like to understand how the ~ \$350,000 in estimated savings mentioned in the AESO presentation (slide 21), as well as other savings in hiring external resources, are reflected in the budget

### AESO Response

- As it relates to the ARS program, the AESO has added a business initiative specific to this work in order to make clear the AESO's willingness to explore the application of risk-based approaches to the development, monitoring and audit of ARS. The AESO plans to engage industry in Q4 2021 in order to invite feedback from stakeholders that will assist the AESO in its determination of the scope and prioritization of work to be undertaken in 2022. For additional information, please see the **2022 Business Plan and Budget Proposal** document, specifically Section 4 for details pertaining to our Business Initiatives, available on the AESO's website.
- In response to the RTR comments, the AESO would note that the Government of Alberta has established guidelines to standardize how the program is being implemented across Alberta. The AESO follows those guidelines when determining the number of regulatory requirements in its current documents and when calculating reductions.
- The AESO generally agrees that the work done pursuant to the Government of Alberta's RTR initiative should result in an overall reduction in costs and/or resources for industry and not simply shift the burden of requirements to other market participants or agencies. However, reviews conducted as part of red tape work may reveal opportunities to align accountabilities more properly across industry. If so, the AESO will include a consideration of those opportunities in addition to its considerations of costs.
- The changes made to date pursuant to the RTR initiative at the AESO are estimated to result in cost savings of \$350,000, the majority of which will relate to avoided external process costs, capital costs and labour costs. Process cost savings include those related to the enablement of electronic funds transfers for settlement and are estimated to be approximately \$45,000. The AESO's estimate of these savings was premised on historical transaction volumes and the per-transaction costs borne by each of the AESO and pool participants. With respect to avoided capital and labour costs, the RTR changes made this year are estimated to result in the following significant savings throughout 2022:
  - (i) \$200,000 in savings realized through approved waivers and variances under ISO rule 304.9, Wind and Solar Aggregated Generating Facility Forecasting, related to requirements and associated costs for meteorological equipment;
  - (ii) \$30,000-40,000 in savings to be realized through changes to ISO rule 502.8, SCADA Technical and Operating Requirements, whereby SCADA connections have been streamlined;

**2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative?**

**(iv) Red Tape Reduction**

- (iii) \$45,000-50,000 in savings as a result of changes to the AESO Measurement System Standard which will reduce the number of required site trips; and
- (iv) \$30,000-40,000 in savings due to the simplification of the refund methodology included in ISO rule 505.2, Performance Criteria for Refund of Generating Unit Owner's Contribution.

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (v) Optimizing the Grid	
<b>ADC</b>	The ADC supports efforts to optimize the grid, especially with the objective of utilizing existing assets as a priority and minimizing future transmission build.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	<p>Within this Initiative, we recommend that the AESO prioritize non-wires solutions such as the provision of connection maps, probabilistic planning, and dynamic line ratings as it seeks to optimize the grid. These are all very good ideas.</p> <p>We reiterate our previous comments that the AESO's solutions to grid optimization need to avoid disrupting the wholesale market. The greatest risk for disruption comes with any decision by the AESO to contract/dispatch a non-wires asset (e.g. supply, demand response, storage). As such, the ideas to optimize the grid noted above should be explored and exhausted first.</p>
<b>IPCAA</b>	<p>IPCAA submits that the AESO should publish a comprehensive and consistently updated map detailing connection options and transmission capacity available. This will enable better, more transparent decision-making, particularly for renewables. Does the AESO's current "Transmission Capability Mapping" satisfy stakeholders, particularly renewable energy developers? This is vital to prioritizing the utilization of the existing transmission system.</p>
<b>TransAlta</b>	<p><b><i>Transmission capability mapping, dynamic line ratings and developing a framework for non-wires alternatives should be key priorities</i></b></p> <p>TransAlta looks forward to the release in Q4 of 2021 of the methodology and approach to transmission capability mapping and welcomes the additional information regarding the scope and timelines.</p> <p>TransAlta supports the launch of a cross functional team to develop a business case to assess possible implementation of dynamic line ratings in Alberta.</p> <p>TransAlta also supports the AESO's proposed development of an enhanced framework for consideration of non-wires alternatives. However, it will be important for the AESO to share specific details on this initiative and the assessed prioritization to allow market participants the opportunity to provide comments and feedback.</p>

**2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative?**  
**(v) Optimizing the Grid**

**AESO Response**

- The AESO appreciates the support for the focus areas we are pursuing to optimize the grid. We will engage with stakeholders on all three of these focus areas (transmission capability mapping, dynamic line ratings, non-wires solutions) as we progress them forward. We look forward to stakeholders' insights and feedback on these focus areas through these engagements. The first engagement will be on Transmission Capability Mapping which will be scheduled for Nov. 23, 2021.



2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (vi) Tariff Modernization	
<b>ADC</b>	Transmission costs are the key concern of ADC members. Members sacrifice many hours of production to manage transmission costs by responding to high prices and the CPD. The AESO proposed tariff will force many members off the grid or out of the province. Decisions to halt capital expenditure in Alberta have already been made as result of the unsuccessful tariff mitigation process. Considering the other priorities, the ADC submits there must be a better tariff alternative for the high load factor and flexible loads. It's not too late for the AESO to pause, examine any changes to the transmission regulation and self-supply and export rules, and work with impacted loads to value their flexibility and keep their businesses contributing to the transmission revenue requirement.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	<p>We recommend that the AESO prioritize Demand Opportunity Service modernization as a key step in the removal of barriers to energy storage.</p> <p>We also caution that should the forthcoming transmission regulation include significant changes, the AESO may need to reshuffle a number of its 2022 priorities. As the AESO is aware, that regulation contains incredibly complex matters including losses, unconstrained transmission planning, congestion management, GUOC, non-wires alternatives, among others. Changes to any of these matters would require significant and broad consultations with stakeholders.</p>
<b>IPCAA</b>	<p>As stated on many occasions, IPCAA would prefer not to have two major tariff overhauls in short order. We need to provide consumers with clarity and certainty. IPCAA is very concerned that the AESO's plan to "modernize" the tariff prior to possible implementation of T-Reg changes will result in multiple tariff "modernizations".</p> <p>With regard to possible government T-Reg changes, the AESO states: "Should Transmission Regulation changes result from the current government engagement, [the AESO will] assess and initiate changes to the ISO tariff required to implement." There is always an option to leave the tariff as is until the results of the DOE consultation are known.</p> <p>In addition to possible T-Reg changes, there are other potential changes that will also impact the tariff including: government policy with regard to self-supply and export; and ensuring alignment between transmission-level (ISO Tariff) and distribution rates, which is currently being discussed by the AUC. We will likely never have 100% policy certainty; however, we currently have major issues under discussion. It is prudent to leave the tariff as is until these key items are settled.</p>

<b>2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative?</b> <b>(vi) Tariff Modernization</b>	
<b>TransAlta</b>	<p><b><i>The AESO should address questions and concerns about bulk and regional tariff design in the stakeholder process rather than in the regulatory proceeding to reduce costs</i></b></p> <p>To improve regulatory efficiency and reduce the high costs of contested regulatory proceeding, we recommend that the AESO refocus its efforts on addressing all questions and outstanding issues raised thus far in the stakeholder sessions, including the information requests posted by staff of the Alberta Utilities Commission. TransAlta discourages the AESO from taking the approach of using the regulatory proceeding as the first place that it attempts to respond to these issues because it will result in a prolonged proceeding that ultimately drives AESO and market participant costs higher.</p> <p>With respect to the proposed bulk and regional tariff, TransAlta also asks the AESO to consider the negative impacts of its preferred rate design on exporters and present mitigation proposals accordingly. TransAlta notes that the AESO only appears to be considering applying rate shock mitigation to demand transmission service customers, which is unfair and unequitable to export customers that will be impacted by rates that will double under the AESO's proposal.</p> <p>TransAlta also recommends that the AESO review its approach to with respect to DOS and contemplate creating an interruptible rate in order to truly modernize its tariff.</p>
<p><b>AESO Response</b></p> <ul style="list-style-type: none"> <li>• The AESO appreciates all stakeholder feedback regarding tariff modernization.</li> <li>• The AESO filed its Bulk &amp; Regional Rate design application with AUC on Oct. 15, 2021, including the mitigation proposal and DOS modernization proposal. A number of comments provided here relate to that application and are best addressed through that proceeding.</li> <li>• AESO will monitor any future policy changes closely and address priorities and any design changes as needed. The new modular application approach to the ISO Tariff will enable Tariff modernization activities to progress in a dynamic, adaptive manner.</li> </ul>	

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (vii) Distribution Coordination	
<b>ADC</b>	ADC supports this effort
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	In addition to the previous comments submitted to the AESO, ENMAX reiterates that while the AESO appears to have numerous processes in which it engages with stakeholders on distribution, it would be extremely helpful if the AESO established a clear and consistent process on who and how they engage with stakeholders on this topic.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	N/A
<b>IPCAA</b>	IPCAA supports efforts will ultimately reduce the overall distribution and transmission costs. IPCAA is concerned that distribution utilities are not incented to participate in these efforts.  IPCAA supports the “focus on probabilistic planning, connection process improvements, and exploring how distributed resources may assist in optimizing the grid.”
<b>TransAlta</b>	<b><i>Ensuring consistency in planning, coordinating information, applying the same standards on distribution connected generation should be key priorities</i></b>  TransAlta supports better coordination between DFOs, TFOs and the AESO, particularly the coordination of hosting capacity mapping with the AESO’s transmission capability mapping. TransAlta also supports the work the AESO is doing to ensure that distribution connected generators meet the same requirements as transmission connected generators under the generation standards. This is not only needed to ensure reliability but also to maintain a level playing field.
<b>AESO Response</b>	
<ul style="list-style-type: none"> <li>The AESO appreciates the feedback on this focus area and will work to improve the coordination between DFOs, TFOs and the AESO.</li> </ul>	

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (viii) Technology Integration	
<b>ADC</b>	No comment
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	<p>In the AESO’s response, it indicated that the AESO’s first Technology Forward and Technology Summit in Q4 2021 is intended, among other things, to initiate dialogue on evolving technologies including potential implications to the industry and more specially the AESO’s mandate.</p> <p>We look forward to learning more about the opportunities and challenges that lie ahead as new technologies emerge, however, as noted by ENMAX in its previous comments to the AESO, mandate implications should not be assumed as this topic is within the purview of the Government of Alberta to consult and provide further direction on.</p>
<b>EPCOR</b>	N/A
<b>Heartland</b>	Heartland Generation reiterates our previous comments that the AESO should consider its treatment of any new technology through the lens of FEOC.
<b>IPPSA</b>	<p>Within this Initiative, we recommend that the AESO prioritize DOS methodology as a means to remove a barrier to entry for technologies like storage.</p> <p>With regard to integrating any new supply or demand technologies, we reiterate our previous comments that the AESO should focus on removing barriers to entry and should not favour any one technology over another, or one competitor over another. To the point, DER and grid connected generation should compete on a level playing field against each other. Demand response technology and supply technology should also compete on a level playing field against each other.</p>
<b>IPCAA</b>	<p>It would be useful to understand how the AESO is coordinating with other entities in the Alberta innovation eco-system. These entities should be invited to participate in the “Technology Summit” and provide input going forward.</p> <p>As stated previously over the past decade, 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.</p>
<b>TransAlta</b>	TransAlta looks forward to the Technology Forward Report and the summit the AESO plans to host in Q4 2021. The pace of new technology integration is increasing and the need for this forum has increased. TransAlta recommends that the focus should be on contemplating new technology integration and updating the market rules to provide clarity on how these technologies can participate in the market.

**2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative?  
(viii) Technology Integration**

**AESO Response**

- The AESO appreciates the feedback on this focus area. We look forward to engaging industry on technology impacting the electricity value chain during our Technology Summit on Dec. 1, 2021. As this will be our first Technology Forward and Summit, we look forward to industry feedback on how we can improve this engagement, the content of our Technology Forward, and the priority of technology integration to pursue. The AESO remains technology agnostic and considers FEOC a key principle to guide the effective integration of new technologies.

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (ix) Proposed: Grid Resiliency	
<b>ADC</b>	No comment
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	<p>Capital Power supports this proposed initiative and submits that this should take priority over others such as Technology Integration which has the same “Top Priority” designation. Within the Grid Resiliency business initiative, five items were listed as issues the AESO would pursue as part of its plan to proceed. Unless the Most Severe Single Contingency (“MSSC”) is included in the scope of “frequency response capability,” Capital Power believes that it should be added as its own item and afforded the same high level of priority.</p> <p>The existing MSSC threshold was last broadly discussed in 2015 when the AESO issued an information document for stakeholder consideration. At that time, the AESO had recognized that there was a growing interest in connecting larger generators (some greater in size than the MSSC) but concluded that no changes were necessary. The AESO also noted that it “...has not placed any size restrictions on new generator proponents.”<sup>1</sup></p> <p>The AESO is now re-engaging stakeholders regarding MSSC with a session scheduled for early November 2021. Capital Power supports the review of MSSC given that the AESO recently decreased the MSSC threshold during islanded conditions in response to system events observed over the past year and to mitigate impacts from similar conditions going forward (ID #2011-001R). Though unclear how long such measures will be in place, Capital Power views that it is critical that it be temporary in nature while the AESO works to increase the system’s capabilities to manage under-frequency issues through improved frequency response. Capital Power appreciates the current reliability environment that the AESO faces, but also believes that the AESO must make reasonable efforts to provide system access on a non-discriminatory basis and work to facilitate (not encumber) competition and enhance (not reduce) the potential for efficiency gains. As such, Capital Power believes that the AESO should prioritize this issue due to its impact on reliability, the operations of existing and future supply resources, and the functioning of the wholesale market.</p>
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	<p>We appreciate that the AESO has delineated the priorities it will pursue within this Business Initiative. That adds important clarity for stakeholders.</p> <p>We note that this is a ‘proposed’ initiative. Can the AESO confirm whether its Own Costs budget includes the staff and capital cost investments required to implement this initiative? Or will the AESO’s Own Costs be adjusted after its approved?</p>

2. Do you have any additional comments on the 2021 multi-year business initiatives and the proposed 2022 business initiative? (ix) Proposed: Grid Resiliency	
IPCAA	N/A
TransAlta	<p><b><i>Planning for future reliability and resiliency needs is a critical, top priority initiative</i></b></p> <p>TransAlta agrees that this is a top priority initiative and supports its prioritization over all other initiatives. This is a new initiative and should be pursued by the AESO with a clear problem statement, scope, deliverables and timing. More specifically, the AESO has listed a large number of different sub-initiatives under this category that it intends to focus on in 2022. The list is quite broad in scope and there is a concern that it can become unwieldy and lead to poor execution unless it is well planned. TransAlta suggests that a roadmap may be appropriate as this appears to be multi-year initiative and a roadmap clearly identify how the sub-initiatives are planned to be staged and progressed in an efficient, coordinated and effective manner.</p>
<p><b>AESO Response</b></p> <ul style="list-style-type: none"> <li>The AESO appreciates the feedback on this focus area. Grid Resiliency is part of our core business and the specific initiatives we will pursue to enhance grid resilience will also be part of our core business. Various existing resources will be prioritized through the year to focus on these initiatives as needed based on the topics and progress them forward. The AESO can confirm the Most Severe Single Contingency (MSSC) topic is one of these initiative areas. The AESO will consider developing a plan to assist industry with understanding the work associated with enhancing grid resiliency in Alberta.</li> </ul>	



3. Do you have any comments on the 2022 Preliminary Forecasts and Budgets components? (i) Load Outlook	
<b>ADC</b>	The ADC has suggested in the past that affordability of grid power will continue to impact DTS load growth. The current tariff design, while difficult on the industrial processes has at least kept high load factor and price responsive loads connected to the grid. The AESO should endeavor to study the impact on DTS load growth of their proposed tariff. This should include load that leaves the grid to self-supply, leaves the grid for more cost competitive provinces, or doesn't locate in Alberta due to affordability of electricity. The review should also include second order impacts on sectors which rely on energy intensive products such as compressed gasses, or pulping which takes the wood waste from numerous Alberta sawmills.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	N/A
<b>IPCAA</b>	The AESO continues to focus on AIL and points out load growth. IPCAA reminds the AESO that it is the DTS load that pays the vast majority of electricity costs. The forecasted 2022 DTS load has yet to reach 2018 levels. The AESO has indicated that they no longer forecast DTS peak demand, which is confusing because it is an input used to forecast rates. The AESO should focus on DTS (primary) demand, as other jurisdictions do.
<b>TransAlta</b>	No additional comments.
<b>AESO Response</b>	
<ul style="list-style-type: none"> <li>The AESO has shared the analysis and information it has developed and relied upon to support its Bulk &amp; Regional application throughout the Bulk &amp; Regional stakeholder engagement process.</li> <li>The AESO appreciates the feedback on DTS load. As part of the 2022 BRP, the AESO has developed load outlooks for different load measures including AIL, net-to-grid load, system load, and DTS load. The AESO continues to evaluate and update its load forecasting models to include up-to-date information and emerging load drivers. For the 2022 BRP, additional variables are included in the DTS load forecast model to capture the growth in load served by distributed generation, which has an offsetting effect on DTS load. The AESO has also included DTS load forecasts in the 2021 LTO.</li> </ul>	

3. Do you have any comments on the 2022 Preliminary Forecasts and Budgets components? (ii) Ancillary Services Costs	
<b>ADC</b>	No comment.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	The costs information was useful.
<b>IPPSA</b>	Related to the AESO's OR market review, we'd ask that the AESO define what it means by making the OR market 'more competitive.' We assume the AESO does not have a cost target in mind. Please confirm. (To the point, when reviewing recent history, AS costs appear to reflect a normal range and/or market fundamentals.) As noted before, the OR market initiative may benefit with a clear problem statement.
<b>IPCAA</b>	Recent announcements regarding the retirements of KH1 and SD4 will clearly impact pool price forecasts. Does the AESO feel the impact is sufficient that the pool price forecast should be updated instead of using a forecast published on August 16th?
<b>TransAlta</b>	No additional comments.
<b>AESO Response</b>	
<ul style="list-style-type: none"> <li>As indicated in responses to feedback in the 2021 BRP process, 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 released in 2020. The scope of and decision to proceed on any particular changes will be determined via a stakeholder engagement process.</li> <li>The AESO does not intend to update its price forecast from the August version. Forward prices have increased recently, driven in part by increased natural gas prices, higher prices in interconnected markets and the announced retirements of KH1 and SD4 thermal units. Prior to TransAlta's announcement for the retirement of KH1 and SD4, both units had been announced to be operating only on natural gas starting January 1, 2022 at respective outputs of 70 and 113 MW. Consequently, the announced retirement referenced in the comment has a lesser impact on the forward curve than the full capacity of the assets as reduced production was already factored in. Forward market prices and forecasts will continue to evolve with market expectations as we get closer to 2022. Regardless of forecast timing, the AESO anticipates some deviation between forecast and actual prices and that existing deferral and settlement processes will capture differences between expected and actual costs.</li> </ul>	

3. Do you have any comments on the 2022 Preliminary Forecasts and Budgets components? (iii) Transmission Line Losses Costs	
<b>ADC</b>	The AESO claimed that the HVDC lines would contribute to reduced losses in the province. It would be beneficial for participants to understand the losses costs savings achieved from these assets.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	N/A
<b>IPCAA</b>	See comments on pool price above.
<b>TransAlta</b>	No additional comments.
<b>AESO Response</b>	
<ul style="list-style-type: none"> <li>The AESO will provide a high-level estimate of the loss cost savings associated with the HVDC (high voltage direct current) lines.</li> </ul>	

3. Do you have any comments on the 2022 Preliminary Forecasts and Budgets components? (iv) General and Administrative Budget	
<b>ADC</b>	No comment.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	As noted above, Capital Power recommends that the AESO provide stakeholders with details related to resources dedicated to each of the nine business initiatives so stakeholders can clearly see the importance and priority associated with them.
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	Generally, the trend of the AESO increasing its own costs is concerning. We believe that the AESO's growth is out of step with other governmental agencies and the economic realities that the Province has faced since COVID-19. We appreciate the thoughtful and forthcoming information provided and appreciate that hiring in some areas of the AESO is required. However, to keep costs in check, less important initiatives should be abandoned to free up additional resources. Stakeholders should be consulted on which initiatives should move forward in a given year.
<b>IPPSA</b>	As mentioned before, we would recommend that the AESO provide a breakdown of its Own Costs per Business Initiative. This would help stakeholders appreciate the AESO's relative ranking of these Initiatives. That ranking would better inform stakeholders' input into the AESO's BRP and help stakeholders align their own resources to engage with the AESO in pursuing common goals in the year ahead.
<b>IPCAA</b>	As we will present to the AESO Board again this year, the Alberta ISO continues to be one of the most expensive ISOs in North America.
<b>TransAlta</b>	<p><b><i>More detail is needed about the proposed increase in G&amp;A costs</i></b></p> <p>TransAlta would like to better understand the reasons behind the proposed increase of General and Administrative (G&amp;A) costs.</p> <ul style="list-style-type: none"> <li>• The AESO stated that this is due to increases in facility operating costs and insurance costs, and staff resources required to advance strategic initiatives. The AESO should specify the drivers of these costs and explain whether these cost increases are forming an increasing cost trend.</li> <li>• The AESO also stated that forecasted G&amp;A costs for 2021 are higher than budgeted expectations due to lower vacancy rates than historical as well as the impacts of COVID- 19 on the timing and completion of work and administrative costs given a remote work environment. The AESO should provide the head count increase that occurred associated with this higher-than-budget expectation.</li> </ul>

**3. Do you have any comments on the 2022 Preliminary Forecasts and Budgets components?  
(iv) General and Administrative Budget**

TransAlta would like to better understand these trends because our expectation is that factors that may have driven costs higher in 2021 should not prevail in 2022. TransAlta expected to see a decrease in G&A costs relative to 2021 costs rather than the increase that has been proposed by the AESO.

Additionally, TransAlta does not see the need for more staff to advance the AESO's proposed initiatives. TransAlta asks the AESO for more transparency and details about the staff assigned so that stakeholders can better understand how each initiative drives resource needs. Identifying interdependencies between business initiatives could create efficiencies such as using the same staff and resources for similar or related activities. It also assists in identifying opportunities to adjust priorities and staging work to eliminate the need for more staff.

**AESO Response**

- Please refer to responses under item 1 about providing resources, costs and prioritization for initiatives. It is also important to note that AESO employees are not retained strictly for initiatives and perform integral functions across the organization. The decision to advance certain initiatives is based on the need to deliver on our mandate and not optional in the view of the AESO.
- In response to the reason for specific costs:
  - Insurance premiums increased primarily due to the market for General and Professional Liability, which has seen significant impacts due to a claim made by another Canadian independent system operator as well as due to the recent, multiple claims being laid against the Electric Reliability Council of Texas ("ERCOT"). The AESO's historical provider of General and Professional Liability insurance was no longer willing to provide coverage and the AESO struggled to obtain coverage at high cost. The AESO experienced increases of 37% in premiums and our broker expects continued pressure in the upcoming renewal year.
  - Facility costs are due to resumed janitorial and facility costs that were reduced during COVID, increased sanitation costs, as well as the impact of property taxes and operating cost increases that are passed through on office space leases, which are not controllable costs of the AESO.
  - The increase in staff costs, as noted, is to support grid optimization around congestion analysis where the long-term cost benefit to Albertans of pushing out transmission costs could generate significant cost savings. Additional pressure was created through sustained and growing connection volumes. There is also the impact of turnover, wherein replacement positions are at a higher market cost given the duration of the current salary freeze. The vacancy rate assumption that was budgeted for 2020 is a \$3 million dollar reduction in staff costs. If the vacancy rate is not achieved, this becomes a significant variance. The cuts taken at the end of 2019 continue to be challenging in some areas of the organization and therefore the AESO has had less flexibility in taking time to fill vacant positions. It is quite possible that vacancy has also been impacted by COVID and general economic uncertainty. Finally, on occasion contracted positions are converted to employees. Consulting costs budgeted for 2022 are less than those budgeted in 2021.

3. Do you have any comments on the 2022 Preliminary Forecasts and Budgets components? (v) Capital Budget	
<b>ADC</b>	No comment.
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	N/A
<b>ENMAX</b>	No further comments at this time.
<b>EPCOR</b>	N/A
<b>Heartland</b>	N/A
<b>IPPSA</b>	N/A
<b>IPCAA</b>	N/A
<b>TransAlta</b>	No additional comments.
<b>AESO Response</b>	
<ul style="list-style-type: none"> <li>N/A</li> </ul>	

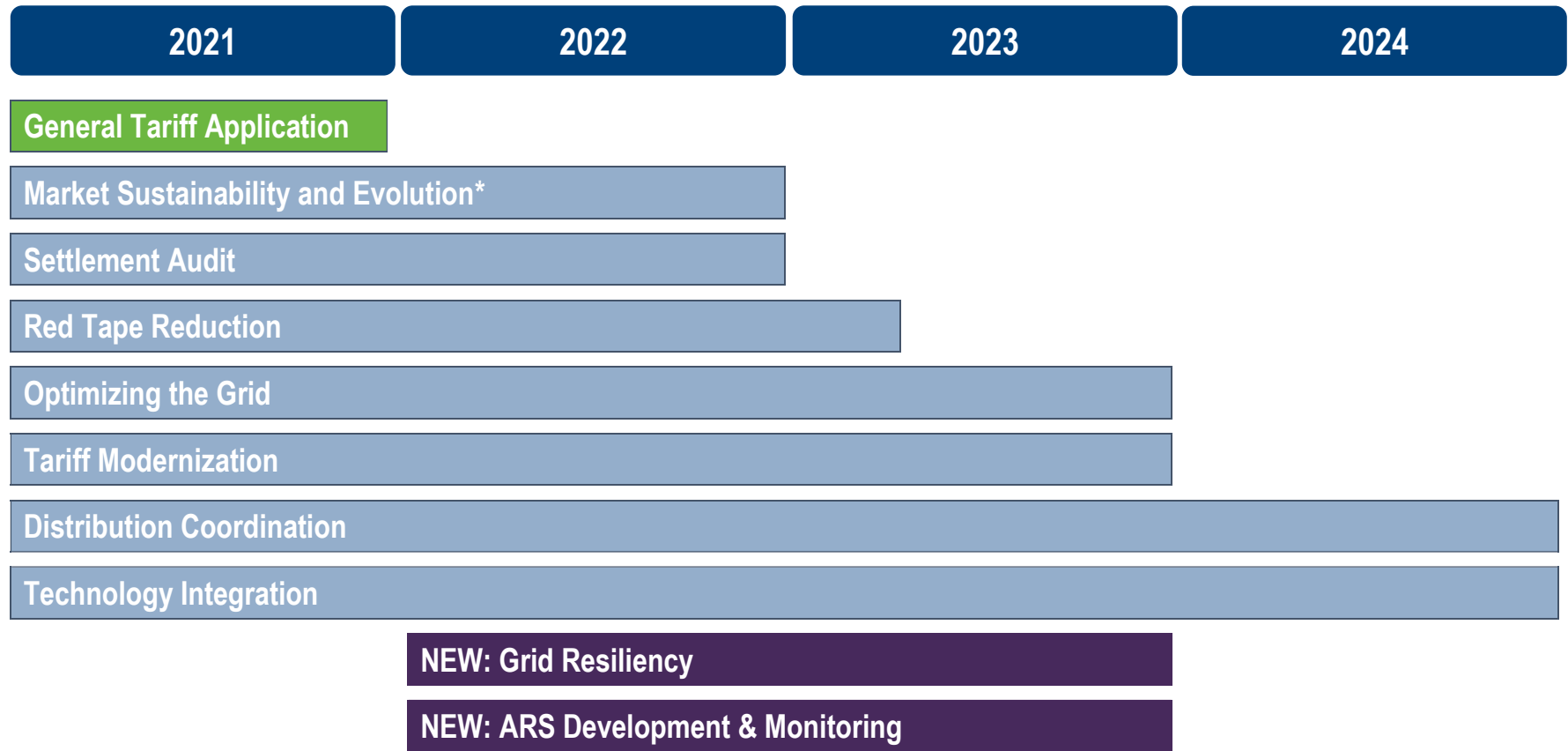
4. Additional comments	
<b>ADC</b>	<p>Transmission costs are a key concern of ADC members. The AESO should be working with TFO's to reduce the existing revenue requirement. The AESO should provide transparency with respect to the utilization of transmission assets, in particular the CTI projects.</p> <p>The ADC appreciates the opportunity to comment and looks forward to meeting with the AESO Board.</p>
<b>AltaLink</b>	No further comments.
<b>Capital Power</b>	Capital Power has no further comments at time.
<b>ENMAX</b>	None.
<b>EPCOR</b>	N/A
<b>Heartland</b>	Heartland Generation appreciates the AESO's efforts to restore its trading charge to historic levels. However, given that the decrease is in part from over-collection, Heartland Generation is concerned that this level of trading charge will not be maintained in the future. Every effort should be made to ensure that the trading charge does not increase.
<b>IPPSA</b>	<p>We appreciate that the trading charge has shrunk to more normal levels and we reiterate our request that the AESO keep its costs down and its priorities tightly focused.</p> <p>Thank you for the opportunity to participate in this process.</p>
<b>IPCAA</b>	<p>Transmission Wires Costs are not included in this list, unlike previous years. IPCAA members are very concerned with the current level of wires costs in Alberta – see comments above regarding Cost Management as a priority item. 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> <p>Thank you for the opportunity to provide input into this process.</p>
<b>TransAlta</b>	<p><b><i>The timing and priority of initiatives should be coordinated with the timing of potential changes in legislation and/or regulation</i></b></p> <p>As the AESO is aware, the Government may be proposing legislative and regulatory changes that could impact several of these initiatives. For example, the Government may propose changes to the prescribed line loss methodology in the <i>Transmission Regulation</i> and that could impact the current approach to calculating line losses. These considerations should be taken into account in the timing and prioritization of the AESO's work.</p>

**4. Additional comments****AESO Response**

- With respect to the trading charge, 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). The AESO recovers the costs of operating the real-time energy market through an energy market trading charge on all megawatt hours traded. The AESO trading charge will vary depending on the initiatives being progressed and the actual cost allocation of the specific services. It will also vary with forecasted load. The AESO diligently works to manage costs in all service areas while still delivering on its mandate.
- The AESO will engage industry in the discussion on transmission utilization during the Transmission Capability Mapping session. Aligning on appropriate transmission utilization metrics and what those metrics actually mean from a power system utilization perspective is an important first step as these metrics can then be calculated and provided to industry through a repeatable process in 2022. The AESO will await the Government's legislative changes, if any, for line loss methodology, prior to engaging resources in implementation of any such policy changes. The AESO continues to focus on cost management through our Grid Optimization initiative and will continue to coordinate with TFOs where opportunistic to do so for new infrastructure, respecting the accountability and obligations of the TFOs.



## Overview of business initiatives



<b>Legend:</b>	Complete	Existing Multi-Year Initiative	NEW Initiative
	*Merged Market Sustainability and Evolution I & II and Operating Reserve (OR) Market Competitiveness Enhancement Initiatives from 2021 BRP		