

## Introduction

This plan provides an updated overview of the market-related initiatives that the AESO intends to progress in 2021 and the first half of 2022 in alignment with the [AESO 2021 Business Plan and Budget Proposal](#). The purpose for this plan is to provide stakeholders with a consolidated view of the AESO's market-related initiative activities for their information and planning purposes. This plan covers only market-related initiatives and does not include other AESO initiatives such as those related to the ISO tariff, technical rules and non-market aspects of the [Distributed Energy Resources \(DER\) Roadmap](#) and the [Energy Storage Roadmap](#) integration activities.

Currently, the electricity system is undergoing significant changes driven by the integration of an increased number of DER, new technologies such as energy storage and coal-to-gas conversions, as well as increased amounts of variable generation. As such, the AESO has determined it will progress these market-related initiatives as they are important to the long-term sustainability of the energy-only market structure, to maintaining system reliability, and in ensuring the AESO is facilitating a fair, efficient and openly competitive (FEOC) market for an evolving electrical system while also providing certainty and stability to the market structure.

As a result of the significant impacts from the COVID-19 pandemic, the AESO recognizes the increased vigilance that is required to balance the need for evolution and change with the need for stability and certainty in the market. The AESO is committed to supporting Alberta's economic recovery, with additional focus on cost management across the industry value chain, facilitating business in Alberta, and creating a simpler and more agile approach to our own business processes while also ensuring sustainability of the market in the long-term. Consequently, the evaluation of the initiatives may result in some of them being deferred or advanced at a slower pace than previously identified or removed from the list. These decisions will be communicated as part of the engagement regarding each initiative, as well as through updates to this Market-Related Initiatives plan.

For each initiative, the AESO plans to engage stakeholders during the design process in alignment with the AESO [Stakeholder Engagement Framework](#). The plan below outlines the timing for the market-related initiatives including market design phases and anticipated stakeholder engagement, recognizing timelines may change as initiatives progress and more information becomes available. Additional information including detailed timelines and engagement opportunities will be communicated as each initiative progresses.

The AESO continues to work cross-functionally across the organization to ensure all AESO initiatives which are connected or interrelated remain coordinated at a corporate level. Further, while the listed market-related initiatives will be the focus of the market design efforts in the near term, ongoing market monitoring and analysis will continue internally. Unanticipated findings or learnings could impact the Market-Related Initiatives plan resulting in changes to this schedule or the initiatives themselves. The AESO will endeavor to keep stakeholders informed of any such changes.

From time to time, there may be other minor change proposals being put forth as result of on-going market operations review which are not included in this plan. Stakeholders will be notified, and stakeholder engagement will be conducted in alignment with the AESO Stakeholder Engagement Framework.

## Market Design Process

The following provides a description of the typical market design process phases:

### ***Analysis (A)***

In the Analysis phase the AESO identifies market issues resulting from stakeholder feedback, market participant proposal, AESO identified issue, government policy, Market Surveillance Administrator (MSA) originated work or investigation, or market design review. The Analysis phase is an internal work phase for the AESO. There may be initiatives that the AESO has not yet progressed internally to the point of determining the requirement for stakeholder input. Such initiatives may not appear on the plan and may be added once initial analysis has been completed or an engagement decision has been reached. While in this phase the AESO will research and define the issue, analyze other markets, perform analytics, and/or seek out external expert opinions to ultimately decide on whether to move forward to the next phase.

### ***Conception (C)***

During the Conception phase the AESO will identify the issue and may conduct an options analysis. Input for the options analysis may be gathered through stakeholder engagement and/or third-party studies. From that effort the AESO may develop recommendations, a draft market design, and/or determine the stakeholder engagement approach.

### ***Development (D)***

During the Development phase the AESO works with stakeholders to formalize the issues, review any recommendations, develop requirements, and develop the proposed ISO rules.

### ***Regulatory (R)***

The Regulatory phase begins with the filing of an application for approval of a proposed ISO rule with the Commission, and typically concludes with the issuance of a Commission decision on the application but may extend beyond a Commission decision if compliance filings or review and variance applications need to be addressed.

### ***Implementation (I)***

The Implementation phase includes changes to information technology, business processes, and training.

\*Of note, for all phases other than the Implementation phase, the AESO may terminate the progression of the initiative based on market developments, stakeholder input, a Commission decision, or its own determination that there is little value for the initiative to continue. The approaches taken and extent of activity for each phase will be uniquely dependent on the market-related initiative.

## 2021- Q2 2022 Market-Related Initiatives Schedule

Classification	Market-Related Initiatives	Q1 2021			Q2 2021			Q3 2021			Q4 2021			Q1 2022			Q2 2022		
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Technology Integration	<b>Distributed Energy Resources (DER) Markets Participation</b> Review of DER participation in the energy and ancillary services (AS) markets considering must offer, must comply (MOMC), minimum asset size and aggregation	C	C	C	Any recommended ISO rule changes will be developed as part of the Energy Storage Long-Term Market Participation initiative and/or the OR Review initiative														
	<b>Energy Storage Long-Term Markets Participation</b> Further integrate energy storage in the energy market and AS market through required Authoritative Documents (AD) revisions	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	R	R	R
System Reliability	<b>Mothball Rule Review</b> Conduct a review of Section 306.7 of the ISO rules, <i>Mothball Outage Reporting</i>	D	D	D	D	D	D	D	D	D	R	R	R	I	I	I	I	I	I
Market Efficiency	<b>Adjustment to Load on the Margin</b> Investigate the value for implementing adjustment to load on the margin for sink assets	C	C	C	Any recommended ISO rule changes will be developed as part of the Energy Storage Long-Term Market Participation initiative														
	<b>Operating Reserve (OR) Review</b> Review competitiveness in the operating reserve market with a focus on regulating reserve	A	A	A	A	A	A	A	C	C	C	C	C	D	D	D	D	D	D

**Legend:** Analysis (A), Conception (C), Development (D), Regulatory (R), Implementation (I)

**Note:** The AESO will typically conduct stakeholder engagement during the Conception and the Development phases of all initiatives. Stakeholder engagement may include a range of approaches from “inform” to “collaborate” depending on the topic and issue being considered and the outcomes being sought. Stakeholder engagement sessions will generally not be held during the months of July, August or December.

## Market-Related Initiatives Updates

### [Distributed Energy Resources \(DER\) Markets Participation](#)

As noted in the [Distributed Energy Resources \(DER\) Roadmap](#), the electric industry is in the early stages of transformational change. Technology advancements, new business models, increased digitization, and changing consumer preferences will begin to have a profound impact on the way electricity is produced, consumed and exchanged. Growing volumes of DERs connecting to the distribution systems is one of those advancements. DER growth and its integration with the AIES will drive significant changes for the AESO, distribution facility owners (“DFOs”), industry participants and consumers in Alberta.

The DER Markets Participation initiative is part of the Distributed Energy Resources (DER) Roadmap and is designed to facilitate DER integration and access to AESO electricity markets by removing unnecessary market limitations while ensuring a FEOC market. The AESO intends to review and update any ISO rule changes (if recommended) to foster investor understanding of market expectations to aid them when making future decisions.

On Oct 14, 2020, the AESO held a stakeholder session to identify issues and explore options for small DER market participation, between 1-5 MW in size, in the energy and operating reserve markets. The AESO sought and received stakeholder feedback regarding the market participation thresholds and aggregation. The feedback was reviewed and helped inform the [Small DER Market Participation Draft Recommendation](#) issued on Feb. 17, 2021. Stakeholders' comments were received March 17, 2021.

Following the review of stakeholder feedback on the draft recommendation, the AESO will conduct stakeholder consultation as the proposed ISO rule changes are being developed. Given the scope of recommended changes, the development and filing of the proposed ISO rule changes with the AUC will be conducted as part of the Energy Storage Long-Term Markets Participation initiative and the OR Review initiative.

### [Energy Storage Long-Term Markets Participation](#)

The long-term energy storage initiative builds upon the work completed for [short-term storage integration](#) and is part of the [Energy Storage Roadmap](#).

The long-term implementation of energy storage integration is expected to include revisions and development of AESO Authoritative Documents and associated stakeholder engagements, as well as long-term AESO grid and market systems changes for integrating energy storage. On Oct. 1, 2020, the AESO released its [Energy Storage Long-term Markets Participation Options Paper](#), which provided potential high-level market design options. The AESO held a stakeholder engagement session to discuss the options and requested written feedback on that paper. The feedback was reviewed and helped inform the [Long-term Energy Storage Market Participation Draft Recommendation](#), released on February 17, 2021. The AESO requested written comments by March 31, 2021. The AESO has initiated stakeholder consultation for the proposed ISO rule changes with the expectation of proposed changes being filed with the Alberta Utilities Commission (AUC) in late 2021 or early 2022.

### [Dispatch Tolerance](#)

It has been identified that the dispatch tolerance requirements under the current Section 203.4 *Delivery Requirements for Energy* may not be sufficient to ensure future dispatch response will be adequate as net demand variability increases with the increasing development of intermittent generation technologies.

Following the release of the [2020 System Flexibility Assessment](#), the AESO conducted further analysis to investigate whether additional dispatch response certainty is required for system controllers to effectively manage the system and determined that changes to dispatch tolerance are not required for the near future. As a result, this initiative has been deferred, and removed from this 2021-2022 Market-Related Initiatives Plan.

The AESO will continue to monitor system flexibility needs and will initiate necessary changes when needed and will engage stakeholders when those needs arise.

### **Ramp Table Submissions**

At the present time, real-time supply forecasts are calculated using a single ramp rate for assets. However, an asset's ramp rate is not always a simple linear function and a single value does not accurately reflect different operating states of an asset. This initiative was to provide for the submission of ramping information in a manner that allows operators to describe how their asset's ramp rate changes at various levels of output and as ramp rates change through differing operating configurations.

The ramp table submissions solution will improve system operator analysis and responsiveness by providing more accurate ramp rate information for assets participating in the market. The AESO is of the view that having the ability to rely on more accurate ramp characteristics will allow the system controller to dispatch with more certainty and accuracy.

Similar to the dispatch tolerance initiative, the AESO conducted analysis on the need for this change following the release of the [2020 System Flexibility Assessment](#) and determined that the need for this change is not required for the near future. As a result, this initiative has been deferred, and removed from this 2021-2022 Market-Related Initiatives Plan.

The AESO will continue to monitor system flexibility needs and may initiate necessary changes if needed and will engage stakeholders when those needs arise.

### **Mothball Rule Review**

In June 2016 the AESO filed Section 306.7 *Mothball Outage Reporting* ("mothball rule") with the AUC on an expedited basis. Following the expedited filing, the AESO committed to a comprehensive review of the mothball outage reporting requirements and held stakeholder consultation sessions throughout 2016 and 2017. The review of mothball outage requirements was put on hold during the capacity market consultation. The AESO has re-initiated its review of the mothball rule to meet its commitment to stakeholders and address issues that have been identified through observation of the mothball rule in practice since its implementation in 2016. This will include a review of concerns regarding enforceability of the economic test, barriers to entry and inefficient transmission access, consistency across ISO rules related to the physical removal of capacity from the market, and market transparency. The outcomes from the mothball outage review will support long term stability, investor confidence, and the FEOC operation of Alberta's market as the industry transitions off coal. The AESO has proceeded directly to the development phase rather than starting in the conception phase of our engagement process.

A *Letter of Notice for Development of Proposed Amendments to Section 306.7 of the ISO Rules, Mothball Outage Reporting* was posted on Oct 14, 2020, laying out the background, issues, purpose and objectives of the initiative, and the proposed consultation and timeline. On Dec. 1, 2020, a stakeholder session was conducted outlining the AESO's proposed scope for the initiative. Stakeholder feedback was received at the session as well as in the form of written comments. On Dec. 16, 2020, the AESO posted a *Letter of Notice for Additional Feedback from Stakeholder Consultation Session* and written comments received were posted on Jan. 20, 2021.

Over the course of Q1 and Q2 2021, the AESO plans to continue the development efforts along with stakeholders.

### **Sub-hourly Settlement / Adjustment to Load on the Margin (ALM)**

The intended outcome of this initiative was to make an informed decision on whether shortening the settlement interval from one hour to sub-hourly (15 minutes) would improve price fidelity and incent flexibility, and to identify implementation considerations and costs and benefits. The AESO conducted detailed analysis and conceptual design option analysis which were shared with stakeholders in stakeholder engagement activities over Q3 and Q4 of 2020. Sub-hourly settlement continues to be of importance as it is expected to help incent efficient energy supply and consumption flexibility and improve price fidelity. However, the AESO has concluded that sub-hourly settlement will not be pursued at this time but rather recommends that adjustment to load on the margin (ALM) should be further explored. ALM may provide value for sink assets, comparable to payment to suppliers on the margin for source assets. It would allow for dynamic benefits of sub-hourly settlement to be realized with much lower implementation costs and would incent sink assets (load and energy storage) to bid into the market.

Stakeholder engagement on the design of ALM will begin in Q2 of this year and identified ISO rule changes will be conducted as part of the Energy Storage Long-Term Markets Participation initiative given the synergies with the AESO's optional full range energy storage participation recommendation.

### **Operating Reserve (OR) Review**

This initiative will review competitiveness in the operating reserve market. Potential changes will be identified that could enhance competition in the OR market including changes to the design of the market, methods to improve OR market participation, and a review of technical and operating requirements.

The AESO plans to complete its internal analysis work by mid-2021. During the remainder of 2021 the AESO plans to engage stakeholders in identifying the issues, conducting options analysis and developing a recommendation, if required.