

Energy Storage Engagement and Progress Update

May 5, 2022

The background of the slide is a blue-tinted image of two hands shaking in a firm grip. The hands are positioned in the center-left of the frame. The background also features a faint, geometric network of lines and dots, suggesting a digital or interconnected theme. The overall color palette is monochromatic, dominated by various shades of blue.

OUR ENGAGEMENT PRINCIPLES

Inclusive and Accessible

Strategic and Coordinated

Transparent and Timely

Customized and Meaningful

Energy Storage Roadmap Update

- Provide a quarterly progress update on energy storage activities:
 - Share progress update on the Energy Storage Roadmap integration activities since the January 2022 update;
 - Provide an update on activities planned for Q2 and Q3 2022;
 - Provide an update on interrelated initiatives; and
 - Provide an opportunity for stakeholders to submit questions on the update information provided.

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What's New Since January?

- There are four ES-connected projects to the AIES
- There are 32 projects currently on the connection list; below are those with an in-service date of 2022:
 - ATCO Mercer Hill DER Battery
 - ATCO Sturgeon DER Battery
 - BowArk Drywood Battery
 - EDTI DG Solar
 - Fortis Alberta Killarney Lake DER Solar + Storage
 - Fortis Nilrem DER Battery
 - Fortis Alberta Metiskow DER Solar + Storage
 - Fortis Hughenden DER Battery
 - TCE Saddlebrook Solar + Storage

- Activities completed since the last update:
 - Functional testing by the service providers is complete and approved by the AESO
 - Term commenced in March 2022 for the two service providers
- Next steps:
 - Evaluate constraints, performance and barriers to inform the future design of FFR services
 - Communicate technical and market learnings from the pilot
- Further information on the FFR Pilot is available on the AESO's website: <https://www.aeso.ca/market/ancillary-services/fast-frequency-response/>
- Questions can be directed to EnergyStorage@aeso.ca

- The ESILF is planned to continue during 2022 with a session in each half of the year
- Session for the first half was planned for March 31; it is now postponed until late May or early June
- The topic will be “Energy Storage Grid Services: bridging the gap between traditional and renewable sources”
- As was done previously, the presentations and summary of the workshop will be posted after the session on www.aeso.ca
- To review past ESILF sessions materials, please visit <https://www.aeso.ca/grid/grid-related-initiatives/energy-storage/energy-storage-industry-learnings-forum/>

Looking Ahead

Cross-Functional Internal Work Continuing Through 2022

- Initiation phase for ES long-term implementation started; high-level activities for Q1 and Q2 in 2022 include:
 - Create project governance and communication plans
 - Build project team, structure and strategy
 - Determine scope for systems, tools and process changes
- Energy Storage Next Steps letter regarding the ISO rule amendments was posted on April 26; further information on this process can be found on the AESO website:

<https://www.aeso.ca/stakeholder-engagement/rules-standards-and-tariff/energy-storage-rule-amendments/>

12-Month Rolling Timeline

Classification	ES Roadmap Integration Activities	2021 Q4			2022 Q1			2022 Q2			2022 Q3		
		O	N	D	J	F	M	A	M	J	J	A	S
Education and Awareness	ES Progress Updates – UPDATED Share progress on the Energy Storage (ES) Roadmap integration activities, interrelated initiatives and provide a forum to address stakeholder questions.				E				E			E	
	ES Industry Learnings Forum (ESILF) – UPDATED Organize forum to provide expertise and key learnings to the AESO on targeted matters related to the integration of energy storage in Alberta.		E							E			
Phase 2 Long-term Implementation	ISO Tariff Design Work in concert with ISO tariff design to ensure ES is considered.	The AESO filed its Bulk and Regional Rate Design and Modernized DOS Rate application with the Alberta Utilities Commission (AUC) on October 15, 2021. Please refer to AUC Proceeding 26911.											
	Forecasting, Planning and Market Reports* Develop and implement forecasting and planning models to support Long-term Outlook (LTO) and Long-term Transmission Plan (LTP).	<p style="text-align: center;">I, E (only pertaining to AESO internal changes)</p> <p style="text-align: center;"><i>*These work streams provided input on potential ISO rule changes to enable storage and will continue to provide support to the single ISO rule changes process as required.</i></p>											
	Configuration, Qualification and Connection Requirements* Develop appropriate functional specification documents; identify market participation options, permissible configurations, and metering requirements for ES.												
	Market Participation* Evaluate long-term options for energy storage participation in the Energy and Ancillary Service markets.												
	Operations* Perform technical studies for the review of the operating parameters and requirements for the different types and configurations of ES; identify the impact to the connection processes and system applications to enable full range of ES operation.												
ISO Rule Changes Based on the work performed by the different cross-functional teams, the AESO will conduct a single consultation process under AUC rule 017 to develop and file the proposed	Progress and information will be provided as part of the Energy Storage Rule Amendments process												

E – Engagement: inform and/or discuss topics with Stakeholders

A – Analysis: internal work phase for the AESO where an activity is researched, performed analytics, studies, etc.

C – Conception: after analysis, AESO will conduct an options analysis and may develop recommendations on the matter.

D – Development: AESO shares recommendations and works with stakeholders to create proposed ISO rules or changes to existing ISO rules.

I – Implementation: includes changes to IT, business processes and training to integrate ES.

- Continue with ISO rules development
- Continue with the internal work for ES long-term implementation
- ESILF Workshop 5 to be held in late May or early June
- Next progress update session will be provided in Q3 of this year

Interrelated Initiatives Update

- The AESO filed its Bulk and Regional Rate Design and Modernized DOS Rate Design Application with the Alberta Utilities Commission on October 15, 2021; the application can be found here:
<https://www.aeso.ca/rules-standards-and-tariff/tariff/current-applications/>
- This application sets forth the AESO's position regarding energy storage and the modernization of Rate DOS. For more information regarding this application, please refer to Alberta Utilities Commission Proceeding 26911.

Questions?

- If you have questions related to this update, please email EnergyStorage@aeso.ca with the subject *ES Q1 Update* by May 20, 2022



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Thank You