

# Load Shed Service for imports Procurement Competition Information Session

September 23, 2020

## Presenters

- Ryan Ferguson, Director, Commercial
- Scott Fleming, Manager, Procurement
- Dan McKeown, Senior Analyst, Procurement

## SMEs

- Eric Macdonald, Senior Advisor, Commercial
- Biju Gopi, Manager, Operations Engineering & Market Support

In accordance with its mandate to operate in the public interest, the AESO will be audio recording this session and making the session recording available to the general public at [www.aeso.ca](http://www.aeso.ca). The accessibility of these discussions is important to ensure the openness and transparency of this AESO process, and to facilitate the participation of stakeholders. Participation in this session is completely voluntary and subject to the terms of this notice.

The collection of personal information by the AESO for this session will be used for the purpose of capturing stakeholder engagement for the LSSi procurement information session. This information is collected in accordance with Section 33(c) of the *Freedom of Information and Protection of Privacy Act*. If you have any questions or concerns regarding how your information will be handled, please contact the Director, Information and Governance Services at 2500, 330 – 5th Avenue S.W., Calgary, Alberta, T2P 0L4, by telephone at 403-539-2528, or by email at [privacy@aesocanada.com](mailto:privacy@aesocanada.com).

- The AESO's top priorities are the health and well-being of our employees and stakeholders and continuing to meet the electricity needs of all Albertans
- All business meetings with external stakeholders will be via phone or webinar indefinitely (this includes stakeholder engagement sessions)
- Based on stakeholder feedback, the AESO's own security assessment and the use of Zoom for governments, post-secondary institutions and other companies, the AESO has decided for now to continue using Zoom for our stakeholder engagements until such time that face-to-face engagements are allowed
- The AESO will continue to monitor developments and provide updates to our stakeholders as necessary
- For additional information, please visit the AESO website at [www.aeso.ca](http://www.aeso.ca) and follow the path Stakeholder Engagement > COVID-19

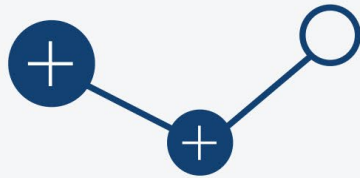
- All attendees join the webinar in listen-only mode and the host will have attendee cameras disabled and microphones muted
- Questions can be submitted at any time but questions will be addressed **at the end** of the presentation
- When typing in a question, please start the question by typing in
  - The organization you work for and your first and last name
- To ask questions, if you are accessing the webinar using your computer or smartphone, please do the following:
  - **Computer**
    - Hover your cursor over the bottom area of the Zoom app and the Controls will appear, use the in meeting Q&A chat window and type in your question
  - **Smartphone**
    - Tap the “Q&A” button and type in your question
  - **Telephone Conference Call**
    - (see subsequent slide)

- If you are accessing the webinar via telephone conference call and have a question during the Q&A portion
  - In your phone's dial pad, press \*9 and the host will see that you have raised your hand
  - The host will unmute your microphone, you in turn will need to unmute your microphone by pressing \*6 and then you can ask your question. Your number will appear on the screen
  - To re-mute, on your phone's dial pad, pressing \*6

- Purpose
  - Share information regarding the Load Shed Service for imports (LSSi) procurement competition
  - Provide an overview of LSSi
- In Scope
  - Information regarding the current LSSi procurement competition
  - Clarification regarding provision of LSSi for the upcoming service period

- Introductions, housekeeping items and Zoom instructions
- Information session overview
- AESO overview and AESO procurement
- Load Shed Service for Imports (LSSi)
  - Competition stages and timeline
- LSSi overview
- LSSi competition
  - Key commercial terms
  - LSSi eligibility and technical requirements
  - Proposed changes from 2018 Import Load Shed Agreement (ILSA)
- Next steps and RFP considerations
- Q & A

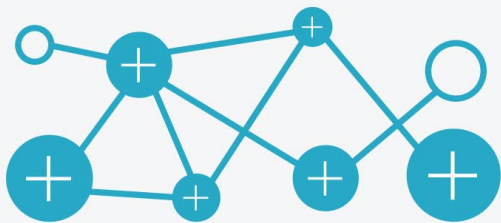




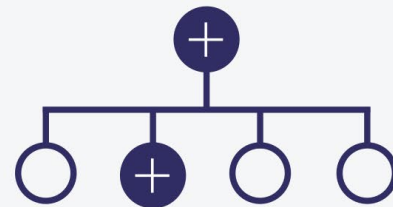
Connect  
**CUSTOMERS**



**PLAN**  
transmission



Operate the  
**GRID**



Plan and Operate the  
**MARKET**

- Ancillary services provide supplementary sources of supply to help maintain grid stability
  - They are essential for providing Albertans with safe, secure and reliable electricity
- The AESO, as the independent system operator, procures the following ancillary services on behalf of all users:
  - Load Shed Service for imports (LSSi)
  - Operating Reserves
  - Transmission Must-Run (TMR)
  - Black Start services

- The competitive process to procure LSSi will consist of two stages:
  - This REOI stage will aid in gathering stakeholder feedback and determining next steps for the AESO in the procurement of LSSi
  - An RFP stage where interested parties will submit proposals
- The successful bidders, selected through a transparent evaluation process during the RFP, will enter into an Import Load Shed Agreement (ILSA) with the AESO

# LSSi Competition Timeline





## Request for expressions of interest

FOR THE **LOAD SHED SERVICE FOR IMPORTS** COMPETITION



- Request for Expressions of Interest (REOI) stage
  - The REOI is non-binding and not a prerequisite for participation in the RFP stage
  - The AESO is providing information during the REOI stage
  - The AESO is requesting parties to express interest and provide feedback and facility information
  - Forms deadline is Oct. 7, 2020 at 3:30 p.m. MDT
    - REOI document and fillable forms are available on the AESO's LSSi webpage at
      - <https://www.aeso.ca/market/ancillary-services/load-shed-service-for-imports/>
    - Submission is to [LSSi@aeso.ca](mailto:LSSi@aeso.ca) via email (further instructions in the REOI)

## Expression of Interest (EOI) Form Load Shed Service for Imports (LSSi)



Please complete and submit this *EOI Form* as soon as possible, and no later than **October 7, 2020 at 3:30 p.m. MDT**. The *EOI Form* should be submitted electronically via e-mail to [LSSi@aeso.ca](mailto:LSSi@aeso.ca) with the subject line containing "EOI Form - LSSi" followed by the interested party's name. No other documents, including supporting information, will be accepted. Please note this is an Expression of Interest only, not a Request for Proposals submission. The information provided through the *EOI Form* will not be used to supplement any potential RFP proposal submission during the RFP stage of the LSSi Competition.

Interested party name (full legal name): Click or tap here to enter text.

Contact name and title: Click or tap here to enter text.

Contact phone: Click or tap here to enter text.

Contact email: Click or tap here to enter text.

Mailing address: Click or tap here to enter text.

### SECTION 1: EXPRESSION OF INTEREST

1. Describe your level of interest in participating in the LSSi competition.  High  Medium  Low
2. Does your company have previous experience as an LSSi service provider?  Yes  No
3. Does your facility or facilities that you are proposing have experience providing LSSi?  Yes  No
4. Please indicate why you are interested in providing LSSi:

Click or tap here to enter text.

5. Does your facility or facilities require capital upgrades to provide LSSi?  Yes  No
6. Is your proposed facility currently in service?  Yes  No

If no, please state your anticipated in-service date.

Click or tap to enter a date.

- LSSi is a transmission system reliability product
  - LSSi enables import transfer capability without compromising system reliability
    - LSSi mitigates the sudden frequency deviations associated with the inerties tripping when importing
    - LSSi is provided by facilities with load that agree to be tripped following a sudden frequency drop
    - Load shedding allows for arrest of frequency decay and preserves the stability of the Alberta Interconnected Electric System



# LSSi Overview – How does it work?

## Availability

- Service provider submits LSSi availability offers to the AESO System Controller (SC) via SCADA

Availability  
*(when offered)*

## Determine Arming Need

- AESO SC determines the need for LSSi Arming based on import levels and Alberta Internal Load (AIL) using the published Arming Table(s).

## Arming

- If Arming is required, the AESO SC sends an Arming dispatch to the service provider.
- The service provider sends an arming response back to the AESO SC via SCADA and arms the facility relays.
- If the arming service is no longer required or the service provider changes their hourly offers to 0 the AESO SC will issue a disarm dispatch to the service provider.
- The service provider will provide a disarm response via SCADA and will disarm the LSSi facility relays.

Arming  
*(when necessary)*

## Trip

- When a frequency of 59.5 Hz is detected and the armed load experiences an underfrequency condition, the full armed load trips within 0.2 seconds; or,
- When the AESO sends a SCADA Trip Signal, the armed volume trips within 10 minutes.

Trip  
*(when occurs)*

# LSSi Key Commercial Terms - Payment Mechanism and Pricing

- The LSSi payment mechanism is comprised of three components:
  1. Availability payment:
    - An hourly based payment which is paid in accordance with service provider's offer(s) to provide LSSi arming service when required
      - Availability payment = availability price \* volume available (MW) in that hour
      - Availability price is fixed for all providers at \$6.00/MW
  2. Arming payment:
    - An hourly based payment which is paid when the service provider's facility is armed and actively monitoring system frequency for response
      - Arming payment = arming price (\$/MW) \* volume armed (MW) in that hour
      - Arming is based on arming price merit order from lowest to highest
      - Arming price is bid in the RFP proposal
  3. Trip payment:
    - An event based payment which is paid when a trip event occurs
      - Trip Payment = trip price \* volume tripped (MW)
      - Trip price is fixed at \$1,000.00 per MW

# LSSi Key Commercial Terms - Compliance

- The Lower Tolerance Limit remains at 95%
- Settlement calculation of LSSi payments are subject to a monthly compliance assessment
  - Review and assess non-compliance events
  - Where non-compliance events are identified, hourly payments (or the applicable portion) are clawed back through the settlement process
  - Compliance assessments are conducted based on the full set of SCADA data provided to the AESO
    - Including actual load volumes and arming response signals
  - Cumulative events of Failure to Supply will result in the application of the Payment Adjustment Mechanism (PAM) factors being applied to monthly payments
    - Failure to Supply events caused by an approved Forced Outage will be excluded from the PAM assessment

- A draft of the LSSi Eligibility Requirements are included as an appendix to the REOI. In summary:
  - The facility providing LSSi must be located in the Alberta balancing authority area and connected to the Alberta Interconnected Electric System
    - This includes load facilities and facilities with load and behind the fence equipment, that can meet the LSSi requirements
  - The load may be an aggregation of several individual loads from various facilities throughout Alberta
  - The load must be able to provide a minimum of 5.0 MW of LSSi
  - Loads that are part of the Under Frequency Load Shedding (UFLS) program are eligible to provide LSSi except for the time-delayed blocks D1, D2 and D3

- Under Frequency Trip timing technical requirement
  - Disconnection from the facility connected to the System within zero point two (0.2) seconds (12 cycles) of the frequency reaching 59.50 Hz (+/- 0.02 Hz)
- Under-frequency relay scheme shall be developed using digital under-frequency relay(s) measuring frequency at the load facility
- Load must be able to remain off the grid for up to 60 minutes following a Trip
- Requirements for measurement and provision of data are:
  - Trip data recording is required at each isolation device
  - For facilities with behind the fence equipment, the Trip event record must be assessed at each isolation device and the Point of Delivery
  - Trip data is due within 5 business days of a Trip event

- All LSSi service providers will be required to complete testing to the LSSi Requirements and provide a certification report
  - Certification report deadline October 1, 2021
  - Includes testing of trip functionality
    - Note: simulated trip; test does not require the actual trip of a facility's load
- Annual requirement for an APEGA engineer certification report confirming the following:
  - LSSi facilities remain compliant with LSSi Requirements
    - This excludes the requirement to test trip functionality
  - No material change has occurred to the LSSi facilities
- Consult the ILSA Key Provisions and LSSi Eligibility and Requirements for further detail

# Summarized Proposed Changes from 2018 ILSA Commercial Terms

- The following highlights select proposed changes from the 2018 ILSA:
  - This is not a complete or exhaustive list of all of the changes. The ILSA Key Provisions and the LSSi Eligibility and Requirements included in the REOI provides further information

## Commercial terms

### Removed:

Availability Factor, the upper tolerance limit and the timing threshold from the Forced Outage definition

Set the Availability Price

### Revised:

Definition of Failure to Supply, the Performance Adjustment Mechanism table and the minimum offer requirement

### Added:

Partial arming payments following a Forced Outage and when a Service Provider is re-dispatched, and AESO termination for change in law

# Summarized Proposed Changes from 2018 LSSi Eligibility and Requirements

- The following highlights select proposed changes from the 2018 LSSi Eligibility and Technical Requirements:
  - This is not a complete or exhaustive list of all of the changes. The ILSA Key Provisions and the LSSi Eligibility and Requirements included in the REOI provides further information

## LSSi eligibility and requirements

Minimum participation size set at 5.0 MW

Trip definition clarification (no anticipated change to the technical requirements of a trip)

### **Added:**

Requirement for SCADA time synchronization to a GPS clock, and two additional SCADA points: a forced outage notification, and a confirmation of offered volume

### **Revised:**

Offer timing revised to 25 minutes prior to the start of the hour (i.e., XX:35), testing and certification requirements, data measurement and data provision requirements



- REOI stage:
  - REOI Document, information session presentation and recording, and any competition updates will be posted on the LSSi procurement website:
    - <https://www.aeso.ca/market/ancillary-services/load-shed-service-for-imports/>
  - Email [LSSi@aeso.ca](mailto:LSSi@aeso.ca) to submit questions and submit the REOI forms
- RFP stage:
  - RFP to launch Oct. 28, 2020 with proposals due on Dec. 10, 2020
  - RFP stage will utilize a Bonfire site, and following the REOI stage:
    - The registration process will open, and
    - The Bonfire access agreement, along with further information will be posted on the LSSi procurement website
  - To obtain access to the Bonfire site, participants will need to do the following:
    - Complete the registration process
    - Execute an agreement for access
  - Access to the Bonfire site is necessary to receive the RFP documents and participate in the RFP

- Adhere to timelines
- Pay attention to detail
  - Adhere to timelines
  - Sign forms where requested
  - Note all requirements
  - Provide complete information in the manner instructed
- Seek clarification during the process
  - General inquiries until open of the RFP stage through [LSSi@aeso.ca](mailto:LSSi@aeso.ca)
  - The communications protocol for the RFP stage will be detailed in the RFP document
  - During the RFP stage, inquiries should be submitted through the Bonfire site

- Please submit your questions using Zoom
- Interested parties that have feedback regarding the LSSi competition or on the Import Load Shed Agreement Key Provisions use the REOI forms, as applicable
  - Fillable forms available on the AESO's [LSSi Procurement webpage](#)
- We will answer as many questions time permits during this information session
  - Any we cannot answer today, we will answer following the information session
  - Questions and answers will be posted on the AESO's website
- When typing in a question, please state
  - The organization you work for and your first and last name

## Question & Answer Period

Thank you