



**Market Tools User Group
Stakeholder Engagement Session
AESO Data Strategy Update**

March 30, 2022

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. 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 input for the Market Tools User Group Sessions. 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.

- Two ways to ask questions if you are accessing the webinar using your computer or smartphone
 - Click “Raise Hand” icon and the host will be notified that you would like to ask a question. The host will unmute your microphone, you in turn will need to unmute your microphone and then you can ask your question.
 - When asking a question, please state the “organization you work for and your first and last name”
 - You can also ask questions by using the chat function and typing them in. Please add “question and the organization you work for” at the start of your chat, for example: “Question ABC company: what does FEOC stand for?”

Time	Agenda Item	Presenter
9:00	Welcome and introductions	Steven Everett
9:05	AESO Data Strategy Overview	
9:20	Application Programming Interfaces	
9:30	External Data Portal	
9:40	Metadata & Documentation	
9:50	Reducing Barriers to AESO Data Access	
10:00	Questions and Conversation	
10:20	Grid Tools User Group Upcoming Info	Mark Roberts
10:25	Session close-out and next steps	Steven Everett

- Purpose
 - The purpose of the virtual session is to engage stakeholders in a discussion of their current and future data needs and to offer insight into the AESO's current focus on data and the methods of data access. This discussion will aid prioritization of
 - AESO data made available publicly
 - Initiatives to expand external data access (e.g., Application Programming Interfaces, Portals)
 - How to share AESO data
 - The development of metadata

- Voltex Solutions Inc.
- Market Surveillance Administrator
- Voltus, Inc.
- TransAlta
- Lionstooth Energy Inc.
- NorthPoint Energy
- Capital Power Corporation
- Burgess & Associates

OUR ENGAGEMENT PRINCIPLES

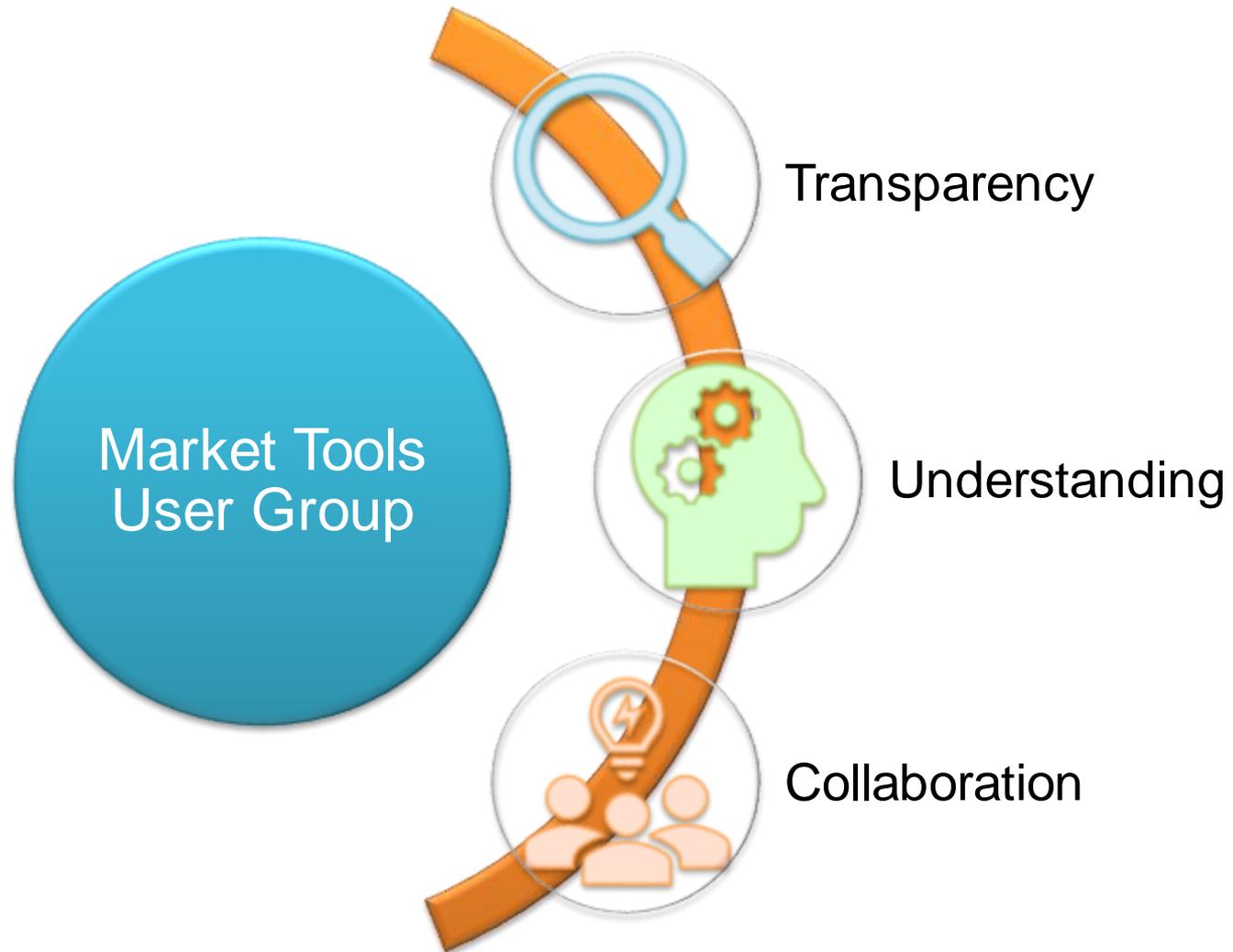
Inclusive and Accessible

Strategic and Coordinated

Transparent and Timely

Customized and Meaningful

- The participation of everyone here is critical to the engagement process. To ensure everyone has the opportunity to participate, we ask you to:
 - Listen to understand others' perspectives
 - Disagree respectfully
 - Balance airtime fairly
 - Keep an open mind



AESO Data Strategy

Advancement in digital and data technology is one of the drivers of the global electricity transformation. As part of our leadership role in enabling this transformation, we will enhance the accessibility and use of data for AESO and stakeholder decision-making and prepare for increased application and pace of digitalization within our industry.

FOUNDATIONAL ACTIVITIES

- 1 Establish common enterprise methods, practices and procedures to identify, store, manage, process, secure, share and govern data in a repeatable way.
- 2 Develop analytical processes that support agile and quality decision making for internal and external customers while building capability within the AESO to meaningfully incorporate those processes.
- 3 Provide leading-edge tools to efficiently and effectively do the job, including digital workplace, business system and process modernization.

OUTCOMES

- We are a data hub for industry and facilitate industry innovation and consumer optionality to enhance efficiency and enable new business models.
- We can adapt business tools and processes in conjunction with the changes that result from the transformation.

Find the AESO's 2022 Strategic Plan here:

<https://www.aeso.ca/aeso/about-the-aeso/2022-strategic-plan/>

AESO Data Strategy Vision & Principles



VISION

Develop and implement a Corporate Data Strategy composed of two key elements; a Data Management Strategy and a Data Analytics Strategy, that will position the AESO to seamlessly collect, analyze and disseminate relevant data to help make informed decisions and facilitate the transformation of the electricity industry in Alberta

GUIDING PRINCIPLES

Value-focused:

Consider and create value for parties who have an interest in Alberta's electricity industry

AESO is an industry data hub: Play a central role in the industry in facilitating access to and use of data

Efficient Approach:

Leverage existing technology and best practices to advance data and analytics

AESO-wide inclusiveness: Build and integrate strategies across all business units

OBJECTIVES

Establish a Data Management Strategy

Establish common enterprise methods, practices and processes to identify, store, manage, process, secure, share and govern data in a repeatable way

Develop a Data Analytics Strategy

Develop analytical processes that support agile and quality decision making for internal and external customers while building capability within the AESO to meaningfully incorporate data analytics into business processes.

STRATEGIC ACTIONS

- Identify and address data-related issues within the organization
- Promote and advance data analytics capabilities and best practices
- Improve external access to quality AESO data

- The AESO will make as much of its current and normally-acquired data accessible as possible
 - No change to AESO's mandate
 - Apply principles of open data (Complete, Primary, Timely, Accessible, Machine processable, Non-discriminatory, Non-proprietary, and License-free)
 - Data hub will include new means to retrieve AESO data including APIs, external data portal, and Analytics dashboards
 - Improvements to metadata & documentation and data quality
 - Reduce the impact of barriers like AESO Rule Section 103.1 *Confidentiality* where possible while respecting CIP requirements and commercially sensitive data concerns
 - <https://www.aeso.ca/rules-standards-and-tariff/iso-rules/section-103-1-confidentiality/>

Application Programming Interfaces

- Background

- In 2020, the AESO updated the ATC and Intertie Capability Public Reports. As part of this update, APIs were developed to streamline data flows to the new interface and to reduce webpage scraping
- Initial APIs included Intertie Capability data and Interchange Outage data
- Find intertie APIs here: <http://api.aeso.ca/web/api/>



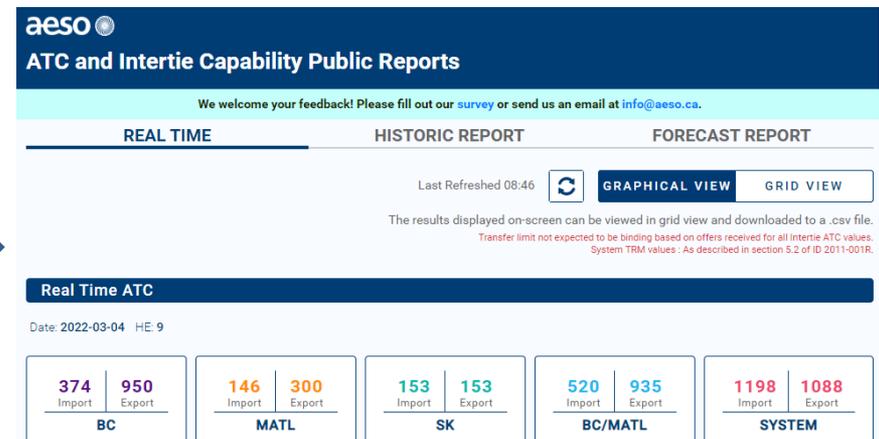
ATC Public Reports

The data reported here are the Available Transfer Capability (ATC) limits for the AB-MT, AB-BC and AB-SK intertie lines, and reflect conditions on the Alberta electric grid, as well as conditions in which Alberta's Transmission Reliability Margin (TRM) is increased on British Columbia or Saskatchewan or Montana intertie lines. Interested parties should reference the AESO's [Long Range Significant Transmission Outages](#) and [Approved Outages](#).

Using this query, Alberta ATC data can be obtained for historical dates starting Nov 22, 1999, and for forecasted dates up to thirteen months into the future. The results can be displayed on-screen or downloaded to a .csv file.

Available ATC Reports:

- [Historical Intertie Capability Report](#)
- [Real-time ATC Allocation Report](#)
- [Forward Looking Intertie Capability Report](#)

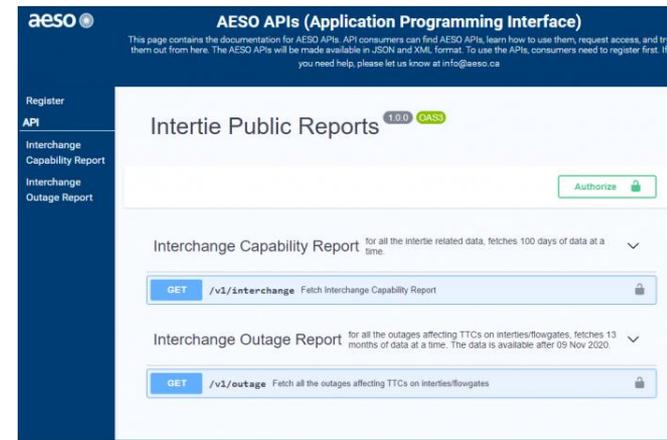


The screenshot shows the AESO website interface for ATC and Intertie Capability Public Reports. It features a navigation bar with 'REAL TIME', 'HISTORIC REPORT', and 'FORECAST REPORT' tabs. Below the navigation, there are buttons for 'GRAPHICAL VIEW' and 'GRID VIEW'. The main content area displays 'Real Time ATC' data for various intertie lines and the system total. The data is presented in a table format with import and export values.

Region	Import	Export
BC	374	950
MATL	146	300
SK	153	153
BC/MATL	520	935
SYSTEM	1198	1088

Application Programming Interfaces (APIs)

- Additional APIs have been created to further facilitate access to AESO data and to reduce ETS webpage scraping
 - Currently available:
 - Energy Merit Order Report data
 - Operating Reserve Offer Control Report data
 - Actual Forecast Report data
 - System Marginal Price (SMP)
 - (Hourly) Pool Price
- Additional APIs are being developed:
 - 2022 Q2:
 - Current Supply Demand (will be multiple APIs)
 - Metered Volumes Report (will be multiple APIs)
 - 2022 Q3-Q4:
 - Generation Outages (currently 3 reports in ETS)
 - 24-Month Supply & Demand Forecast and History
 - Transmission Outages (currently 2 reports in ETS)
 - Future
 - System Load (not in ETS)
 - Historical Current Supply & Demand (CSD) page data
 - What else would be helpful?

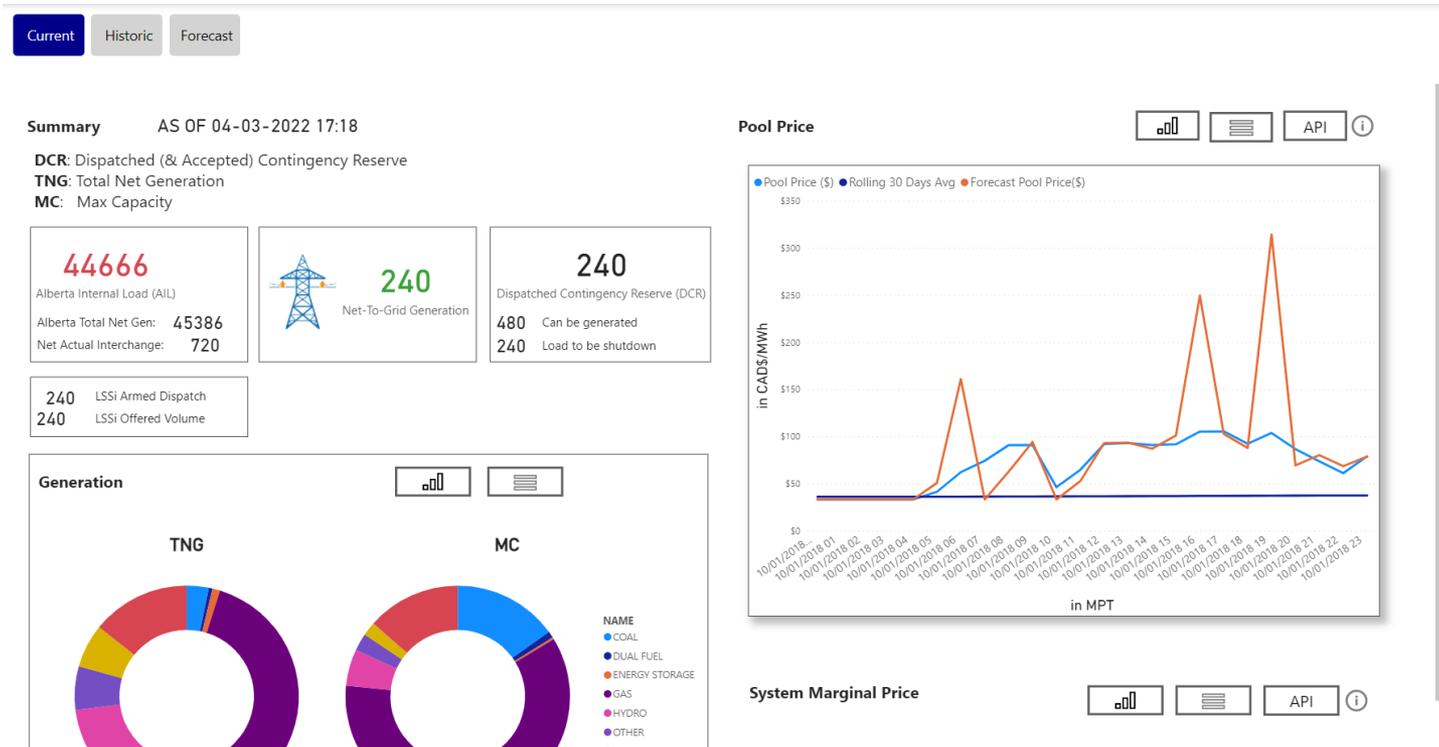


Find the AESO's API page here:
<https://www.aeso.ca/market/market-updates/2021/aeso-application-programming-interface-api/>

External Data Portal

- The AESO has been advancing an Enterprise Portal Program to facilitate the bidirectional flow of information and data between AESO and market participants. Existing portals:
 - Distribution-connected Energy Resources (DERs)
 - Freedom of Information & Privacy (FOIP)
 - Alberta Reliability Standards (ARS) Compliance
 - <https://aeso-portal.powerappsportals.com/>
- The AESO is developing a data-focused portal intended to provide an alternate means to access and retrieve AESO data
- The External Data Portal will
 - Use the same APIs for a consistent source of truth
 - Provide a visual dashboard of the same data
 - Provide alternate means to retrieve the data (e.g. csv files)
- Potential in the long run to replace the data reporting function of ETS

- (Very!) preliminary draft mock-up
- Questions for stakeholders
 - What value can AESO-provided visualizations bring to your processes?
 - What should be visualized?



Metadata & Documentation

- Metadata is structured information used to organize, manage describe, or retrieve data
- Metadata is important to understand data and derive value from it
- The AESO is undertaking a project to enhance the metadata provided with datasets made publicly-available through ETS as well as clean up ETS reports
 - Some ETS reports are no longer updated or are redundant
- Project will begin with ETS datasets being provided through APIs

Metadata ETS Example

- Actual Forecast
 -  button provides some information but there is opportunity to provide more
 - What metadata or information about AESO data would be helpful?

Reports Version: 11.7.0.80

Select Report: --- Actual Forecast Format: html Begin Date: 03/17/2022 End Date: 03/18/2022 OK

[Current](#) [Historical](#)

Actual / Forecast

March 17, 2022.

Date (HE)	Forecast Pool Price	Actual Posted Pool Price	Forecast AIL	Actual AIL	Forecast AIL & Actual AIL Difference
03/17/2022 01	43.43	46.40	9,498	9,505	-7
03/17/2022 02	48.58	44.99	9,432	9,408	24
03/17/2022 03	44.97	48.34	9,359	9,363	-4
03/17/2022 04	49.34	61.04	9,356	9,359	-3
03/17/2022 05	47.88	48.83	9,382	9,433	-51
03/17/2022 06	45.30	48.60	9,608	9,621	-13
03/17/2022 07	68.86	71.22	9,934	9,967	-33
03/17/2022 08	92.63	165.47	10,310	10,314	-4
03/17/2022 09	84.10	73.95	10,381	10,373	8
03/17/2022 10	66.89	68.34	10,380	10,317	63
03/17/2022 11	68.84	64.37	10,290	10,286	4
03/17/2022 12	64.23	63.95	10,289	10,265	24
03/17/2022 13	58.36	58.45	10,228	10,201	27
03/17/2022 14	58.36	57.10	10,184	10,148	36
03/17/2022 15	41.74	48.50	10,129	10,126	3
03/17/2022 16	63.91	62.82	10,093	10,154	-61
03/17/2022 17	58.36	64.40	10,154	10,196	-42
03/17/2022 18	66.32	65.73	10,199	10,188	11
03/17/2022 19	48.56	58.17	10,080	10,085	-5
03/17/2022 20	68.40	63.20	10,107	10,086	21
03/17/2022 21	81.64	67.21	10,222	10,201	21
03/17/2022 22	68.06	61.81	10,080	10,041	39
03/17/2022 23	47.12	46.83	9,805	9,754	51
03/17/2022 24	38.57	37.99	9,518	9,552	-34

Reports Vers

Select Report: --- Actual Forecast Format: html Begin Date: 03/17/2022 End Date: 03/18/2022 OK

[Current](#) [Historical](#)

Actual Forecast Report Help Back

General

This public report provides information on the Forecast and Actual Pool Price two hours ahead of the current hour, Actual Pool Prices for the current day and up to the current hour, Forecast AIL for the current day, actual Alberta Internal Load and the Forecast AIL & Actual AIL Difference

This report does not contain reconciled data and is provided for information purposes only.

Definition of Column Content

Column 1 - Date and Hour Ending (HE)
Column 2 - Forecast Pool Price
Column 3 - Actual Posted Price
Column 4 - Forecast Alberta Internal Load (AIL)
Column 5 - Actual Alberta Internal Load (AIL)
Column 6 - Forecast AIL & Actual AIL Difference

Notes:

- This report is based on unreconciled data. Any changes to Actual Posted Pool Price will be communicated to each participant.
- A "-" in a column indicates that the value is not yet available.

Available Formats

HTML, CSV

Timing of Updates

This report is updated on demand and change of data.

Removing Barriers to AESO Data Access

- AESO is assessing the impacts of the proactive release of certain data sets currently not in public domain
- The goal is to increase transparency and be able to provide more useful data to industry & stakeholders
- Criteria
 - Security, impacts to stakeholders including commercially sensitive information concerns, requirements to release or withhold data, etc.
 - Consideration of AESO Rules Section 103.1 *Confidentiality*

Requirements

Confidential Records

2(1) Any record that the **ISO** receives from a **market participant** which:

- (a) is not in the public domain; or
- (b) in the opinion of the **ISO** is commercially sensitive;

must be treated by the **ISO** as confidential, unless it is a record which fits into one of the exception categories set out in subsection 2(6).

Feedback & Discussion

- Questions & conversation
- Key questions
 - What data would stakeholders like the AESO to provide?
 - Through the APIs & External Data Portal
 - How would stakeholders like to access AESO data?
 - What additional information (e.g. metadata) would stakeholders like with AESO data?
 - How would you like the AESO to engage stakeholders on its external data provision?
 - Would an industry working group be helpful?
 - Surveys?
 - Email to send suggestions?
 - Other?

Session close-out and next steps

- News and upcoming events
 - May engagement
 - September Market Tools User Group session

- We want to thank you for attending the Market Tools User Group session on External Data Access and we would appreciate your feedback on the session
- Launch poll
 - The purpose of the session was clear
 - The information was presented in a clear manner
 - The presentation content was clear and informative
 - I found this session valuable

- We invite all interested stakeholders to provide their detailed input on this session via the questions set out in the **Stakeholder Comment Matrix AESO External Data Stakeholder Session on or before April 15**. The comment matrix is available on our website at www.aeso.ca
 - Path:
- AESO will review stakeholder comment matrix feedback and strive to align its data provision efforts with that feedback
- Stay tuned to the AESO website and newsletter for future information on the AESO's external data provision

Questions?



- **Twitter:** @theAESO
- **Email:** manalysis@aeso.ca for data questions or info@aeso.ca for general inquiries
- **Website:** www.aeso.ca
- Subscribe to our stakeholder newsletter

Thank you