Participant-Related Costs for DFOs (Substation Fraction) and DFO Cost Flow-Through Technical Session 2B

May 28, 2020

Notice

In accordance with its mandate to operate in the public interest, the AESO will be audio recording this session and making the 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 Participant-Related Costs for DFOs (Substation Fraction) and DFO Cost Flow-Through Technical 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 or by telephone at 403-539-2528.

Welcome and Introductions

COVID-19 update

- 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 and follow the path Stakeholder engagement > Covid-19

Purpose of this session

- Purpose
  - Continue to build a common understanding of the purpose and application of participant-related costs for DFOs (substation fraction formula) and DFO cost flow-through;
  - Group discussion to evaluate proposals for participant-related costs for DFOs and DFO cost flow-through and determine if alignment on a joint proposal can be made or if multiple proposals will move forward .

Agenda

Time	Agenda Item	Presenter
8:00 – 8:15	Welcome, Introduction and Session Objectives	Stack'd / AESO
8:15 – 9:00	Where AESO is at • Statement of AESO's current thinking in response to the proposals • View of how the day will progress	AESO
9:00 – 10:15	Evaluative Discussion on Proposals	Moderated Discussion
10:15– 10:30	Break	
10:30 – 12:15	Evaluative Discussion on Proposals	Moderated Discussion
12:15 – 12:30	Session Close Out & Next Steps	Stack'd / AESO

Registration (as of May 25, 2020)

- Alberta Energy
- Alberta Utilities Commission (AUC)
- AltaLink Management Ltd.
- ATCO Electric
- BEAM
- Best Consulting Solutions Inc.
- Blake, Cassels & Graydon LLP
- BluEarth Renewables
- Boralex Inc.
- Canadian Solar
- Capital Power
- Capstone Infrastructure Corporation
- Carlotta Energy
- CCA
- Chymko Consulting Ltd.
- City of Lethbridge
- Customized Energy Solutions
- DCG Consortium
- Denis Forest Consulting Inc.
- DePal Consulting Limited
- ENMAX Power Corporation
- EPCOR Distribution and Transmission
- FortisAlberta Inc.
- Green Cat Renewables Canada Corpo
- Innogy Renewables Canada Inc. (DCG Consortium Member)
- Kalina Distributed Power
- Lionstooth Energy Inc.
- Longspur Developments
- NaturEner Energy Canada Inc.
- Peters Energy Solutions
- PGSC
- Power Advisory LLC
- Power Grid Specialists Corp.
- Saturn Power Inc.
- Signalta Resources Limited
- Solar Krafte
- Solas Energy Consulting Inc.
- Suncor Energy Inc.
- TC Energy
- TransAlta Corporation
- URICA
- Wolf Midstream

Overview of Engagement Process

AESO Stakeholder Engagement Framework

Overall approach

- The AESO intends to:
  - engage with stakeholders regarding the issues to be examined and the action items to be undertaken, as identified in the technical session(s); and
  - work towards the development of a joint proposal with distribution facility owners (DFOs) and distribution connected generation (DCGs) regarding a path forward based on the feedback gathered at the technical session(s).
- A joint proposal, if achieved, or individual proposals regarding the attribution and flow-through of transmission costs to DCGs would then be filed in the consolidated proceeding for consideration and determination by the Commission

Objectives of the overall engagement

- Objectives of the technical sessions(s) include facilitation of:
  i. a common understanding of the purpose and application of the substation fraction formula;
  ii. agreement on high-level principles applicable to the substation fraction formula including, for instance, cost certainty for DCGs, parity between transmission connected generation (TCGs) and DCGs regarding local interconnection costs, and certainty for DFOs regarding the flow-through of costs to be attributed to DCGs; and
  iii. a common understanding of the financial impacts associated with the substation fraction and any associated flow-through of local interconnection costs to different stakeholder groups, including DCGs, TCGs, DFOs, and ratepayer.

Alberta Utilities Commission (AUC) Participation in Working Sessions

Overview of process schedule

Session 1 *Feb. 27, 2020*	Session 2A *May 14, 2020*	Session 2B *May 28, 2020*	Session 3 *June 25, 2020*	Session 4 *If required*
Session objectives: • Clarify intent and understanding of participant-related costs for DFOs (Substation Fraction) and DFO cost flow-through • Review and collect input on high-level principles	**Session objectives:** • Review high-level principles • Summarize learnings from Feb 27 session • Presentations of stakeholder proposals for participant-related costs for DFOs (Substation Fraction) and DFO cost flow-through	**Session objectives:** • Summarize learnings from May 14 session • Group discussion on evaluation of proposals for participant-related costs for DFOs (Substation Fraction) and DFO cost flow-through	**Session objectives:** • Presentation and discussion of the AESO proposal details • Share process for preparation of report for the AUC	*Session objectives to be shared if additional session required* *This session would be held via webinar if required.*

Stakeholder participation

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

Using Zoom

- All attendees will join the webinar in listen-only mode and the host will have attendee cameras disabled and microphones muted
- When asking or typing in a question, please state your first and last name, the organization you work for, and what company you are directing your question to
- Two ways to ask questions during the Q&A portion if you are accessing the webinar using your computer or smartphone
  - If you would like to ask a question during the Q&A portion, click the icon to raise your hand 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 and then you can ask your question. Your name will appear on the screen but your camera will remain turned off.
  - You can also ask questions by typing them into the Q&A window. Click the “Q&A” button next to “Raise Hand.” You’re able to up-vote questions that have been already asked.

Using Zoom – where to access controls

- Using a 2-in-1/PC/MAC Computer
  - Hover your cursor over the bottom area of the Zoom app and the Controls will appear.
  - Click “Raise Hand” and the host will be notified that you would like to ask a question.
  - Click “Lower Hand” to lower it if needed.
  - You can also ask questions by tapping the “Q&A” button and typing them in. You’re able to up-vote questions that have been already asked.
- Using Smartphone
  - Tap “Raise Hand.” The host will be notified that you've raised your hand.
  - Tap “Lower Hand” to lower it if needed.
  - You can also ask questions by tapping the “Q&A” button and typing them in. You’re able to up-vote questions that have been already asked.

Using Zoom – where to access controls

- If you are accessing the webinar via conference call
  - If you would like to ask a question during the Q&A portion, on your phone's dial pad, hit *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 hitting *6 and then you can ask your question. Your number will appear on the screen.
- Phone controls for attendees
  - To raise your hand, on your phone's dial pad, hit *9. The host will be notified that you've raised your hand.
  - To toggle between mute and unmute, on your phone's dial pad, hit *6.

AESO's Current Thinking

AESO's current thinking

- At a high-level, the proposals that best address all five principles were those in which a determination of participant-related costs were structured to include both the incremental costs of connection facilities and a contribution towards existing facilities paid for by other customers. The three proposals structured as such were put forth by FortisAlberta, the DCG Consortium, and URICA Energy Management.
- The AESO will be supporting a methodology, and will file a proposal in a report to the AUC for DFO flow-through of participant-related costs that should include:
  1. the incremental costs of facilities required to interconnect; plus
  2. a contribution towards a share of the existing facilities that allow the DCG MWs to flow to and on the bulk and regional transmission system.

Substation fraction (or supply-related)

- The AESO supports a new ISO tariff provision that would not require a substation fraction calculation or an allocation between demand-related and supply-related amounts where the market participant is a DFO (not DFO T-connect or AESO T-connect), that is, Rate DTS substation fraction = 1
- Impacts

1. AESO investment calculation will not be adjusted with the addition of generation on the distribution system;
2. Monthly DFO Rate DTS POD charges will always be calculated based on a substation fraction = 1;
3. All participant-related costs will be allocated to DFO load with the introduction of a DCG contribution towards participant-related costs; and
4. If a DCG connection does trigger participant-related costs, the DFO must determine the appropriate incremental costs to DCG versus load plus DCG charge.

Substation fraction (or supply-related) (cont'd)

- Principles
  - Principle 3 is met where DCGs will have cost certainty at the time of final investment decision; and
  - Principle 4 is met so that the DFO will have a reasonable certainty for cost recovery through a combination of their DFO tariffs to load and a contribution from DCGs.
- Principles evaluation on current substation fraction methodology
  - Aligns with Principles 1 and 2 as transmission connected generators and load pay a (time-weighted) share for transmission facilities required to enable their connection to the regional and bulk system; and
  - Does not align with Principles 3 and 5 as the current methodology results in uncertainty regarding future costs.

Determining a $/MW charge for DCG

- The AESO supports a $/MW charge to reflect the benefit and use of transmission facilities originally paid for by load
- Impacts
  1. The $/MW charge should reflect the costs of connecting to the regional and bulk transmission system, including transformation facilities, and is balanced to reflect optimization of the existing distribution and transmission system;
  2. The charge should be transparent and available to DCG at the time of final investment decision; and
  3. The charge should be updated annually to align with costs of today and in the future.
- Principles
  - Principle 1 is met when there are effective price signals to ensure the optimal use of the existing distribution and transmission facilities; and
  - Principle 2 is met when DCGs pay an amount that reflects the reasonable cost of transformation for the MWs that flow on the transmission system.

Applicability of DCG charge

- The AESO supports the applicability of the DCG charge to correspond to the Rate STS, *Supply Transmission Service*, MWs
- Impacts
  1. Rate STS MWs calculated as per AUC Decision 22942-D02-2019 for the "expected maximum coincident sum of the flows at each feeder into the transmission system";
  2. DCG charge is applicable where generation connects to the distribution system and the supply-related amounts has been determined to be zero; and
  3. DCG charge not applicable to DFO T-connect or AESO T-connect.
- Principles
  - Principle 1 and 2 are met when DCGs pay an amount that reflects the reasonable cost of transformation for the MWs that flow on the transmission system.

Administration of DCG charge

- The AESO supports a straightforward and effective administration of the DCG charge. As well, the DCG charge should act as an offset to DFO contributions by that DFO's load.
- Impacts
  - The AESO's CCD for DFOs would determine:
    1. Supply-related amounts = zero;
    2. GUOC calculation for the Rate STS (currently approved ISO tariff) or MC (proposed ISO tariff); and
    3. Calculate the DCG charge to be collected by DCG directly to DFO.
- Principles
  - Principle 4 would be met as DFOs would be provided reasonable cost recovery; and
  - Principle 5 would be met as inclusion as part of the distribution charge the DCG pays would allow DCG to clearly and very early in their process understand the rate they would be charged.

Looking towards implementation

- The AESO will file a report in the R&V proceedings identifying a proposal summarized on prior slides. Following that, the AESO will file an application with the AUC to change provisions in the ISO tariff.
- Impacts
  1. With support from stakeholders, the AESO's application could request an interim decision from the AUC to issue DFO CCDs with supply-related amounts = zero; and
  2. Previously issued DFO CCDs for supply-related amounts greater than zero would be revised back to a certain date.
- Principles (with consideration that ultimately the AUC has authority)
  - Principle 3 would be met as soon as reasonably possible; and
  - Principle 5 would be met as current and future DCGs would have ease of understanding and implementation.

Evaluative Discussion

Today's discussion

- Today is about the opportunity to discuss as a group the proposals and AESO's current thinking
- The discussion will be moderated, and to facilitate the discussion the AESO has broken outstanding design details into the following five groupings
  1. Substation fraction = 1 for DFOs
  2. Determining the $/MW charge
  3. Determining the applicability of the DCG charge
  4. Determining the administration of the DCG charge
  5. Looking towards implementation
- The discussion will likely leave some unanswered questions that require more discussion

Proposal– two camps

- The proposals received fell into two camps based on what costs should be included in participant-related costs as they relate to DCGs:

  (1) costs should be limited to the incremental cost of only those facilities required to interconnect to the bulk and regional transmission system; or

  (2) costs should include the incremental costs of facilities required to interconnect plus a contribution towards a share of the existing facilities that are connected to the bulk and regional transmission system.

Evaluating incremental costs only

- Load customers are better off with costs in regulated utility rate base rather than through the energy market
  - Aligning with 2003 *Transmission Development Policy*
  - Pragmatic agreement by some DCG to pay an amount of the participant-related costs but only to achieve quicker resolution
  - Is there analysis to quantify the benefit to load for costs remaining in regulated utility rate base?
  - How does this proposal provide locational signals to generation?

Evaluating incremental costs only

- Grid and costs have significantly changed since 2003 TDP
  - 2020 AIES is significantly different from 2003 AIES of large generation moving to large load centers;
  - Current annual TFO wires costs are $1.8 billion compared to $340 million in 2003 charged to load; and
  - Efficient market outcomes (lowest cost to consumers) result from a FEOC market supported by unconstrained transmission access.
    - Premised on level playing field for generation competition
  - Current price signals may be incenting GFOs to avoid transmission connection alternatives when they may be technically superior to a distribution connection.

Evaluating incremental costs only

- Is there value in making a distinction between the defined, participant-related costs, as per the ISO tariff, and the costs of the bulk and regional transmission system?
- Could the cost of the administration of the DCG charge outweigh the benefit to load?

Outstanding design details
Substation fraction = 1 for DFOs

- **High priority – is there broad agreement for this concept?**
  - Is the concern for unbounded liabilities and cost certainty addressed by the AESO's current thinking to propose supply-related costs = 0 for DFOs?
  - Is creating a distinction between DFOs and other market participants fair?
    - Why only DFO?
    - How to treat Rate 65/Rate T31 DFO t-connect customers?

Outstanding design details
Substation fraction = 1 for DFOs (cont'd)

- **Medium priority**
  - How to treat costs if the connection of a DCG does result in additional transmission facilities; and
  - If Rate DTS substation fraction = 1 for all DFO substations, how do participant-related costs triggered by a DCG connection flow to the customer who causes the costs?

Outstanding design details
Determining $/MW charge

- **High priority – determine appropriate costs comparison**
  - What costs should be included to determine the DCG charge to reflect an appropriate share?

TRANSMISSION LINE
Material
Labour
Supply & Install
TOTAL TRANSMISSION LINE
SUBSTATION
Material
Labour
Supply & Install
TOTAL SUBSTATION
TELECOMMUNICATION
Material
Labour
Supply & Install
TOTAL TELECOMMUNCATIONS
OWNERS
Pre-SP Cost
Service Proposal
Facility Applications
Regulatory & Compliance
Land Rights - Easements
Land - Damage Claims
Land - Acquisitions
Land - Other
TOTAL OWNERS COST
DISTRIBUTED
Procurement Management
Project Management
Construction Management
Contingency
Escalation
TOTAL DISTRIBUTED
SALVAGE
Transmission Line Labour
Substation Labour
Telecom Labour
Land Remediation and Reclamation
TOTAL SALVAGE
OTHER COSTS
AFUDC (IDC)
E&S/Overhead
TOTAL OTHER
TOTAL PROJECT

Outstanding design details
Determining $/MW charge (cont'd)

- **Medium priority – can we find a locational optimization?**
  - Can optimization of existing distribution facilities be achieved by varying the DCG charge to reflect it's contribution to optimization of existing distribution facilities?
  - Can optimization be achieved with a POD-specific or a locational DCG charge?

Outstanding design details
Determining $/MW charge (cont'd)

- **Medium priority – timing of charge certainty**
  - What is the timing of the DCG charge that provides the DCG cost certainty?
    - Before the SASR application?
    - At the time of the SASR application?
    - At the time of the delivery of the interconnection quote package? When is this?
    - Some other point after the SASR application ?
    - When is there certainty of the actual costs caused by the DCG?
  - If the FortisAlberta calculation was adopted, when would this calculation be determined? Finalized?

Break

Outstanding design details
Applicability of DCG charge

- **High priority – is there broad agreement for this concept?**
  - Is the contribution determined based on Rate STS amounts or some other measure?
    - Should the charge calculation reflect “capability” or “usage”?
    - Rate STS amounts as determined in the proposed ISO tariff and discussed in Decision 22942-D02-2019 as part of their review of the adjusted metering practice proposal that that meters installed on distribution voltage feeder lines located within a substation as transmission facilities is compliant with the provisions in the EUA

Outstanding design details
Applicability of DCG charge(cont'd)

- **High priority – calculation detail**
  - Is their an efficiency/simplicity tradeoff off with "usage calculations"?
    - FortisAlberta has proposed a "ASIC" calculation involving magnitude of reverse power flow and utilization factor that would likely be different for every DFO substation.
    - How complicated could these calculations be? What tradeoff occurs in order to provide cost certainty to DCGs?

Outstanding design details
Applicability of DCG charge

- **Low priority – should there be a limit on DCG size?**
  - Is there value to the AIES and to load if DCG is limited to a maximum size?
    - Concerns if DCG is limited to the size of the feeder?

Outstanding design details
Administration of DCG charge

- **High priority – is there broad agreement for this concept?**
  - Should the charge exist in the ISO tariff?
  - Could the DCG charge collected be greater than the DFO contribution, i.e. create a non-alignment between who pays the amount and who received the “credit”
    - For participant-related costs, DFO load pays the contribution but all Rate DTS contributed to the local investment amounts
    - Issues with different DFOs having different charges?
  - How to ensure that the party who directly pays the cost receives the credit
    - If the ISO tariff collects the charge but sends to a particular DFO, does that definitively require a new DFO-specific rider? A POD-specific rider ?

Outstanding design details
Administration of DCG charge (cont'd)

- **Medium priority – align pricing signals**
  - Should the DCG charge be adjusted annually to reflect cost escalation/de-escalation?
  - If the DCG charge is a one-time amount, does that align with DFO costs recovery from load? Does that align with TCG interconnection cost recovery?

Outstanding design details
Looking towards implementation

- **High priority – efficient regulatory process**
  - If speed is the essence, what steps can be done as soon as possible that align with regulation and the ISO tariff?
  - If the AESO submits an application for interim-relief on the determination of supply-related costs for DFOs (i.e. supply-related = 0), will stakeholders support this interim relief?
    - How likely will the AUC support this relief if the DCG charge will take time to vet and approve?
  - Can DFOs support the process where past CCDs will be re-issued by the AESO and revised to determine supply-related costs = 0?
    - What steps would the DFO take, i.e. communication, invoices?

Outstanding design details
Looking towards implementation (cont'd)

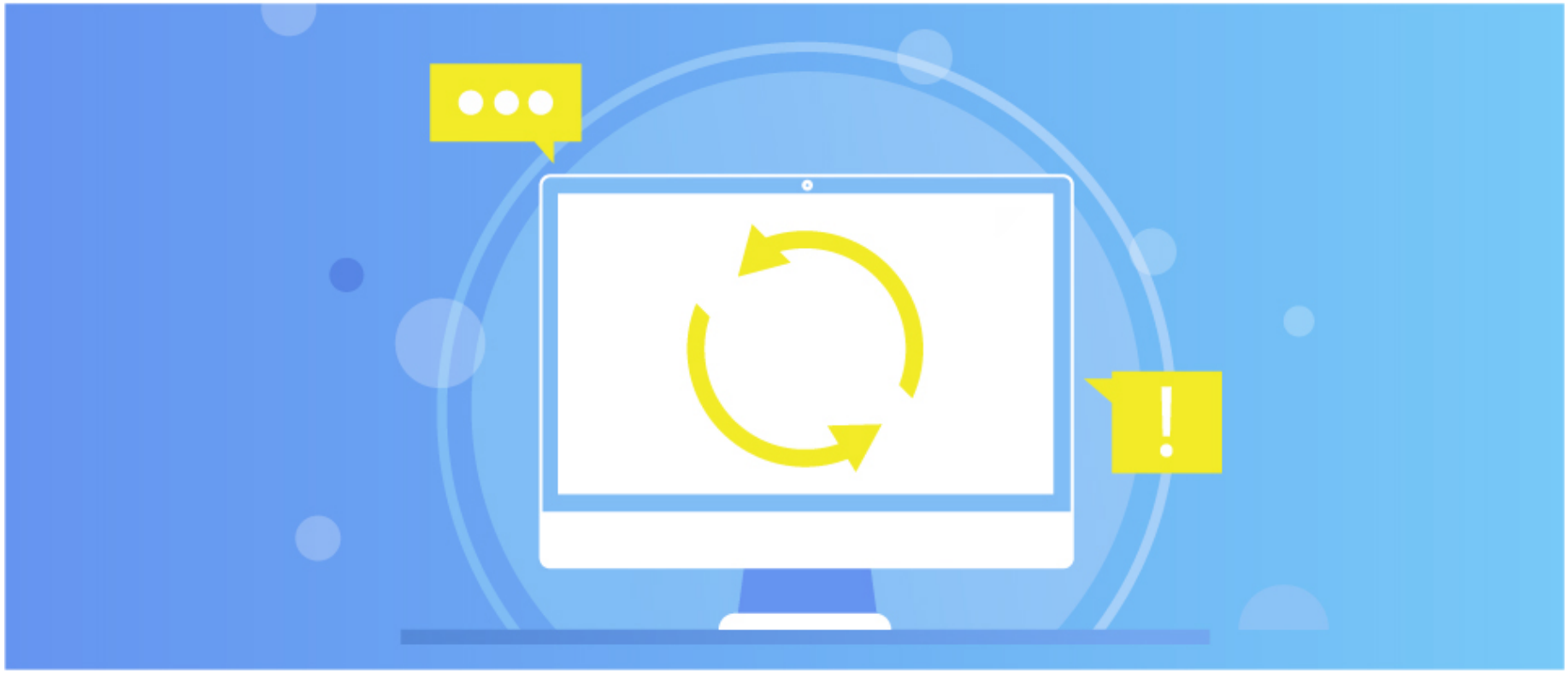
- The AESO will be filing a report at the conclusion of this stakeholder engagement that will include
  1. A summary and details of this stakeholder engagement process (including all proposals presented);
  2. The learnings from this stakeholder engagement process (see level-setting document);and
  3. The AESO's proposal for DFO flow-through of participant-related costs plus other determinations yet to be finalized (as presented and discussed in AESO's current thinking).

Session Close-out and Next Steps

Next Steps

- We value stakeholder feedback and we invite all stakeholders to provide their feedback on this session via the **Technical Session 2B Stakeholder Comment Matrix on or before June 11, 2020**. The matrix will be posted on May 28, 2020 on our website at www.aeso.ca.
- Determine outstanding questions that require further focused discussion and evaluation to resolve before bringing back to the larger stakeholder group to discuss during Technical Session 3
- Technical Session 3 will be hosted on **June 25,2020** from 8:00 a.m. to 12:30 p.m. The session will follow a similar format. A proposed agenda and registration details will be posted on our website next week.
- The purpose of Technical Session 3 is the following:
  - Presentation and discussion of the AESO proposal details
  - Share process for preparation of report for the AUC

Contact the AESO



- ***Twitter:*** *@theAESO*
- ***Email:*** *tariffdesign@aeso.ca*
- ***Website:*** *www.aeso.ca*
- Subscribe to our stakeholder newsletter

Thank you