

Bulk and Regional Tariff Design Stakeholder Engagement Session 5 hosted on March 25, 2021

I. Purpose and objectives of the session

The purpose of this session is to present and discuss the AESO's preferred rate design. The session objectives include:

- Present preferred rate design, including energy storage treatment, to stakeholders
- Present and discuss path to achieving minimal disruption
- Present bill impact summary and assumptions
- Provide Bill Impact Tool
- Begin to discuss implementation considerations

II. Session agenda

| Time | Agenda Item | Presenter |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 8:00 – 8:10 | Welcome, introduction, purpose, and session objectives | AESO / Stack'd |
| 8:10 – 8:30 | Opening Remarks <ul style="list-style-type: none"> • Case for change • Key highlights | AESO |
| 8:30 – 8:50 | What we heard <ul style="list-style-type: none"> • Cost Responsibility • Efficient Price Signals • Embedded and Marginal Approaches | AESO |
| 8:50 – 10:30 | Methodology and Analysis <ul style="list-style-type: none"> • Summary of rate design • Review and elimination of marginal approach • Improvement to embedded approach | AESO / NERA |
| 10:30 – 11:00 | Break | |
| 11:00 – 12:30 | What we heard, methodology and analysis <ul style="list-style-type: none"> • Q&A | AESO / NERA |
| 12:30 – 1:00 | Break | |
| 1:00 – 1:45 | Bill Impact Summary <ul style="list-style-type: none"> • Summary • Methodology and assumptions • Impacts • Bill Impact Tool • Q&A | AESO |

| Time | Agenda Item | Presenter |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1:45 – 2:15 | Path to Achieve Minimal Disruption <ul style="list-style-type: none"> • Targeted engagement • Mitigation proposal principles • Mitigation options assessment • Q&A | AESO |
| 2:15 – 2:30 | Break | |
| 2:30 – 3:30 | Energy storage tariff treatment <ul style="list-style-type: none"> • What we heard • Non-firm rate conclusions • Demand Opportunity Service (DOS) • Q&A | AESO |
| 3:30 – 3:50 | Implementation Considerations <ul style="list-style-type: none"> • Considerations • Flexibility • Q&A | AESO |
| 3:50 – 4:00 | Session close-out and next steps | AESO |

III. Attendees

| Company |
|------------------------------------------------------|
| 2332823 Alberta Ltd. |
| Acestes Power |
| Air Liquide |
| Alberta Direct Connect Consumers Association (“ADC”) |
| Alberta Electric System Operator (“AESO”) |
| Alberta Energy |
| Alberta Forest Products Association |
| Alberta Newsprint Company |
| Alberta Utilities Commission (“AUC”) |
| AltaLink Management Ltd. |
| AltaSteel Inc. |
| Arcus Power Corp. |
| ASCENT Energy Partners Ltd. |
| ATCO Electric Ltd. |
| BECL and Associates Ltd. |
| Best Consulting Solutions Inc. |

| Company |
|-------------------------------------------------------------|
| BluEarth Renewables Inc. |
| Boost Energy Ventures |
| Brubaker & Associates, Inc. on behalf of ADC |
| Canadian Renewable Energy Association (“CanREA”) |
| Capital Power |
| Cement Association of Canada |
| Cenovus Energy |
| Chapman Ventures Inc. |
| City of Cold Lake |
| City of Lethbridge |
| City of Medicine Hat |
| City of Red Deer |
| CNRL |
| Consumers Coalition of Alberta (“CCA”) |
| Customized Energy Solutions |
| DePal Consulting Limited |
| Dow Chemical Canada ULC |
| Dual Use Customers (“DUC”) |
| EDF Renewables |
| Elemental Energy Renewables Inc. |
| Enbridge Pipelines Inc. |
| Enel |
| Energy Storage Canada |
| ENMAX |
| EPCOR |
| ERCO Worldwide |
| FortisAlberta Inc. |
| Government of Alberta |
| Heartland Generation Ltd. |
| Imperial Oil |
| Independent Power Producers Society of Alberta (“IPPSA”) |
| Industrial Power Consumers Association of Alberta (“IPCAA”) |
| Inter Pipeline Ltd. |

| Company |
|-------------------------------------------------------|
| Invinity Energy Systems |
| Kalina Distributed Power Ltd. |
| Lafarge Canada Inc. |
| Lehigh Cement |
| Lionstooth Energy Inc. |
| Matt Ayres Consulting |
| Millar Western Forest Products |
| NERA Economic Consulting |
| NextEra Insights Inc. |
| Norton Rose Fulbright Canada LLP |
| NRGCS |
| Nutrien |
| Osler, Hoskin & Harcourt LLP |
| Perimeter Solar Inc. |
| Power Advisory LLC |
| Prairie Sky Strategy |
| RMP Energy Storage Inc. |
| Rodan Energy Solutions |
| Shell |
| Signalta Resources Limited |
| Solas Energy Consulting Inc. |
| Stantec |
| Suncor Energy Inc. |
| TC Energy |
| The Office of the Utilities Consumer Advocate (“UCA”) |
| TransAlta Corporation |
| Turning Point Generation |
| URICA Asset Optimization |
| VIDYA Knowledge Systems |
| Voltus Energy Canada Ltd. |
| West Fraser |
| Weyerhaeuser |
| Whitecourt Power |

| Company |
|--------------------------|
| Wolf Midstream Inc. |
| Stack'd Consulting, Inc. |
| Attendees by phone |
| 14033897720 |
| 14033901368 |
| 14033978785 |
| 14038284900 |
| 14039093203 |
| 14164183201 |

IV. Overall outcomes from the day

The main objective of the session was for the AESO to present its preferred rate design and to give stakeholders the opportunity to respond to the AESO's design. Participants engaged in meaningful discussion and overall, stakeholders agreed that this was a valuable session that allowed them to share their perspectives and feedback.

V. Session highlights

Captured below are the highlights of the questions and discussion on a topic-by-topic basis. For a detailed review of the session, please refer to the session recording, posted at www.aeso.ca.

Topic 1: Improvements to the embedded approach

i. Stakeholder commentary

- Clarifying comments:
 - *ADC*: The data on Slide 35 (Bulk transmission system use) may not be as accurate in the absence of the data of customers responding to 12-CP. The price signal caused a response on the system and, had the price signal not been there, the chart would have looked different.
 - *IPCAA*: Perhaps I am misunderstanding the graph on Slide 35, is it saying that the flows appear to be around 6,000 MW on a transmission system built for 15,000 MW?
 - *IPCAA*: Do other jurisdictions switch the classification / functionalization order? Which other jurisdictions in North America use energy as an allocator for bulk transmission?
- Discussion of 12-CP as compared to the improved embedded approach:
 - *AltaLink*: Are you taking into consideration the benefits in the cost causation study?
 - *AltaLink*: If you're looking at the planning, in the hours that line flows aren't correlated to the coincident peak, is the generation flowing to meet a local load? How does your analysis address the fact that the critical use of transmission is driven by specific local supply and load conditions not hourly energy?

- *TC Energy*: If 12-CP does not perfectly correspond to peak bulk line utilization, could you please explain why the solution is not to adjust 12-CP so that it better corresponds to peak utilization, but rather to shift such a large percentage of costs to energy?
- *ERCO Worldwide*: Rather than using energy as an allocator wouldn't it make more sense to expand the CP intervals instead? BC Hydro uses 30-minute demand peaks.

ii. AESO / NERA clarification

- Response to clarifying comments:
 - Need to keep in mind that the graph on Slide 35 is only showing the bulk line flows, it is not showing the entire system.
 - The key point is that even if there were higher levels of flows on transmission lines as a result of customers not responding, that wouldn't change the fact that there is still a great deal of highly utilized transmission lines at times that aren't coinciding with the 12-CP hours. The point here is not to show 12-CP doesn't matter; we're saying that even though 12-CP and peaks and demand remain important, there are other factors and that the design should reflect these other factors to best meet cost causation.
 - We are not seeking to emulate what other jurisdictions are doing, that is not the main objective. We are trying to come up with a proposed design that is appropriate and that reflects the features and context of the power system in Alberta.
- Response to questions regarding the improvements to the embedded approach:
 - The AESO recognizes that the transmission system needs to be built to meet peaks in demand. We also want to reflect that in order to meet demand at different times in the year, the AESO needs to plan a different set of transmission lines to meet different sources of peaks of demand. The positioning and nature of these lines needs to consider where the generation sources are. It is not just peaks in demand that are causing the AESO to have to plan additional lines, it also includes the need to relieve congestion and facilitate the flow of energy.

Topic 2: Methodology and analysis

i. Stakeholder commentary

- Clarifying questions:
 - *DePal Consulting*: Referencing Slide 39 (Minimum and actual system calculation), is what you're doing taking the peak load from each region? As we add more renewables in the system, the generation capacity will increase and there will be more and more costs. Will these costs be allocated to energy?
 - *NextEra*: Are you measuring the peak load and peak generation at the same time? And are the measurements on a gross or net basis?
 - *Capital Power*: Self-generating customers who are connected to the grid have access to the market as well so they have option to draw from their own supply or the market. Are the self-supply sites covering their fair share of costs?
 - *DePal Consulting*: Referencing slide 42 (Billing determinants to reflect cost causation), what does phasing in of the five-year trailing average mean?

- *ADC*: Don't see how the price signals result in lower transmission costs for consumers?
- *AUC*: Are there any other forums that are ongoing right now or is this the only venue by which stakeholder groups/customers are currently engaging?
- Many participants were concerned with the data and methodology of the AESO's analysis:
 - *DUC*: The *Electric Utilities Act* says you should not distinguish between geography, so why does the AESO have 42 areas?
 - *Alberta Newsprint*: these arbitrary 42 areas were not divided for this tariff's purposes and these areas are getting different treatment.
 - *Solas Energy*: Referencing Slide 35, the two years of data used are 2017-2018. Has the AESO looked at the utilization and power flows in 2019-2020 and what is more representative of how we go forward?
 - *Lafarge*: How did we land on the five-year lookback? A five-year lookback with so much change – is it still relevant to be looking back at it?
 - *ADC*: Every tariff design will result in consumer response. What has the AESO done to complete analysis what the potential unintended consequences of what this rate design are?
 - *ADC*: If we're making a major change to the tariff design, there needs to be better empirical evidence that the off-peak hours and incentives to using the system during off peak hours. Will the AESO be making a detailed cost analysis supporting the tariff design available for stakeholders for review?
- Some participants questioned the AESO's proposed rate design:
 - *Suncor*: Transmission is all about congestion elimination. Is the AESO suggesting that energy used in all hours regardless of congestion is relevant as a transmission cost or transmission build driver? Or are we looking at certain hours as still way more important than others? Should some energy attract higher rates than others?
 - *ASCENT*: Referencing Slide 39, it appears that the more aligned the locations of generation and load are, the less allocation will go to energy and the more to peak demand. Is this intentional to reflect the lower infrastructure needed when generation locates close to load?
 - *ASCENT*: If generation is free to locate where it chooses but load pays for the system, how do you propose to close the feedback loop so that interests are aligned to minimize system cost?
 - *AltaLink*: Concerned about the preferred design from economic efficiency perspective. Given the postage stamp rate structure, 12-CP signals may incent responses in certain regions that may result in an increase in the need and cost for new transmission.
 - *ADC*: If the AESO is assuming every hour contributes equally to congestion, are all hours created equal? Do we perceive a response away from the current optimization based on these incentives?
 - *Alberta Newsprint*: How do we justify the large increase from \$2 to \$10? Is this method robust enough or is it just what suits us on what we think at a high level?

- *Alberta Newsprint*: Most jurisdictions have moved to reduce their peak demand loads, but why is the AESO proposing the same charge during the day and night? All other provinces are incenting increasing nighttime load to decrease daytime peak load but here, the \$10 energy charge does the opposite.
- *ASCENT*: The rate design is sound, but we still don't have a mechanism with which to make decisions in the future to minimize system costs. If generation can locate anywhere at once, the costs to transport the energy is not being reflected on the generators. How do we close this feedback loop?
- Some participants were concerned with the risk of incentivized grid defection:
 - *CCA*: Concerned with price signals coming out of significant energy classification, especially for residential customers. What kind of signal would that give to self-generators in terms of load defection?
 - *CCA*: The energy charge is a blunt instrument and it's going to the wrong people. Generation is causing these costs, not load. Generators could be incented to be located in more favorable locations rather than the blunt price signal which will only incent more grid defection.
 - *ADC*: How does this design provide the incentive for colocation and the impact that can have on the future of the grid?

ii. AESO / NERA clarification

- Response to clarifying questions:
 - Referencing Slide 39, we're comparing peak demand and peak generation in 42 areas and using it as a proxy for the size of the transmission systems and we're adding those altogether. This calculation is based on energy not on capacity. It depends on which area it's going to locate in, it's difficult to say that more renewable capacity would necessarily change the allocation.
 - We are measuring the peak load and peak generation at different times on a net basis.
 - When we're thinking about a customer's self-supply, that has a role in the overall cost and a portion of that is appropriately reflected in the other charges that they pay. Some of the connection value to the grid is also assessed in the point-of-delivery (POD) costs and regional billing capacity-based costs.
 - "Phasing in": the AESO wants to allow these rates to take effect and be based on the signals in place at the time. This could motivate customers to make changes earlier in the five years.
 - Regarding how price signals result in lower transmission costs for consumers, this rate design better aligns with the cost causation principles, which should lead to a more effective outcome.
 - Regarding other forums for discussion, this is the only broad stakeholder engagement activities that we're running regarding the Bulk and Regional tariff design.
- Response to questions regarding methodology and analysis:

- In regard to the use of a specific line, we know that congestion will arise in specific times, but we're trying to abstract from any particular one set of conditions and think about it in a broader context.
- The methodology we've set out is reflecting the fact that in order to meet peak demand, a certain amount of transmission cost needs to be incurred. Beyond the systematic seasonal differences in demand and supply, we don't really see any clear evidence, nor are we likely to see systemic patterns, therefore we went with the flat charge.
- Regarding the 42 areas, this is a methodology in which we're using granular information about the transmission system to come up with something that applies across the province.
- Regarding the 2017-2018 data used for the chart in Slide 35, the flows across the transmission lines are high at times other than just the 12CP, which is the extent of the conclusion that we're drawing from this chart. Would not expect this overarching conclusion to change if we were to repeat the analysis with different years. We have shown that the tariff design that is proposed is designed to account for differing demand and supply patterns, the design intended to keep up with those changes.
- The rationale for the five-year period is that this better aligns with the process the AESO uses to plan the system. It is based on an average across a number of years because the average over time is more reflective of the information used in the course of the planning process.
- In terms of cost analysis, we have released information of cost and bill impact of the proposed tariff rate design. We've shared as much analysis today that stakeholders need to understand the design, can follow up with specific data requests at a later time.
- Response to questions regarding the AESO's proposed rate design:
 - Within the context we're operating in there's a certain framework for transmission planning and transmission cost recovery. This rate design methodology is designed to reflect how the transmission system is actually used to the extent we can. We're working within that framework to develop a methodology that reflects our specific context.
 - We're aggregating all this information from all areas to come up with a single calculation. No area is being treated differently. The costs are paid by load because they're the beneficiaries of transmission. The allocation of costs in the bulk and regional tariff is not able to send signals to generators to locate in certain areas in our framework.
 - Different areas feature differently in the calculation, but that allows us to capture that some parts of the transmission system are sized to support the flow of energy from them and some parts are sized to support load in those areas. It is necessary to ensure a cost reflective tariff that information about the size of different areas is included in the calculation to meet cost causation principles.
 - Regarding congestion – the occurrence of congestion is rare due to how the AESO manages the system. The allocation to energy is really capturing that there are parts of the transmission system that are planned and specified because it's unpredictable when congestion will take place (i.e., we can't predict when a windy day will take place).

- The allocation of energy is to cover the additional transmission costs that are unrelated to peak periods. We haven't seen any clear evidence of patterns of transmission utilization that the energy charge should be different at different times of day.
- The AESO wants to clarify that what over the course of this engagement started with establishing bookends that reflect a range of possibilities. We received a lot of feedback from stakeholders about the bookends and heard different proposals and throughout that time, we've been refining our thinking and analysis to come up with a methodology that's appropriate. We do recognize this will have an impact on customers and we think that that impact deserves more attention, and we have a process to achieve that.
- Response to stakeholder concern about the risk of grid defection:
 - When we look at the resulting charges, it's true that a portion of the costs are allocated to the energy component and that creates an opportunity for customers to respond to manage their costs. We're not at this point seeing an energy charge that's so significant that it would lead to grid defection from customers.

Topic 3: Bill impact summary

i. Stakeholder commentary

- Clarifying comments:
 - *IPCAA*: Fortis is preparing a calculator to help customers understand distribution rates, would ATCO do the same thing? Encourage the AESO to approach customers to develop these.
 - *ADC*: Slide 54 (Estimated average transmission cost impact by load factor, 2019) shows the cost impacts as a percentage of bill – why isn't this same slide shown as a dollar impact? Can the AESO comment on the dollar impact on the 80-100 per cent?
 - *CCA*: We are seeing more and more distributed energy being added to the system at the area level which could result in a higher energy allocation. The energy billing determinants could potentially go down as there is more distributed energy resources (DER) being added and net metered generation. Wondering if the AESO could provide a forecast of energy billing determinants for the next five years with the new energy charge and without the new energy charge?
 - *Solas Energy*: What sectors are being hit more on a dollar basis – can the AESO provide the dollar amount?
 - *UCA*: Will the AESO conduct a price response study and modify the bill impact analysis to reflect this dynamic?
 - *Solas Energy*: If the majority of PODs by total bill have a lower amount, how is AESO covering all of the cost? Is this mostly at the residential level?
 - *Weyerhaeuser*: Have you considered the Department of Energy review of the recommendation on the status of self-supply and export policy in your tariff considerations?
- Discussion of perceived “penalization” of high load factor customers:
 - *IPCAA*: Concerned that we're penalizing the folks who are using energy more efficiently.

- *DePal Consulting*: It's not surprising that not all load customers will benefit but seems strange that that's the outcome we want – to decrease the charges to low load customers to 20 per cent and increase them to high load factor customers. Why is this outcome acceptable to the AESO?
- *Alberta Newsprint*: The table on Slide 54 shows the opposite of if you use more, you have to pay less, this is not settling well.
- *EPCOR*: Was there any consideration to shift costs from the CP charge to the capacity charge rather than to an energy charge? That way high load factor customers may not be impacted as much.

ii. AESO clarification

- Response to clarifying comments:
 - Regarding Slide 54, the dollar values do matter, but because they tell a slightly more nuanced story, we didn't provide that dollar information to not confuse the story. An average is only going to tell you so much information – we're relying on the Bill Impact Tool to give the relevant dollar impact information.
 - The information the AESO has put together today is a starting point. Regarding how customers will respond to this in the future, the one thing to keep in mind is the size of the energy billing determinant in relation to other billing determinants is larger.
 - It's important to not lose sight of the fact that along with change in the rate design, we're also shifting and reducing the 12-CP charge. We can't just look at the change in the energy charge in isolation, we need to look at the full mix of the rate design.
 - Regarding the request for a price response study, the AESO is unlikely to perform this type of analysis.
 - In response to how the AESO is covering all costs if the majority of PODs have a lower amount: the AESO collects the entirety of the revenue requirement and the percentage changes are a function of the averaging and the data is presented as a percentage range.
- Response to perceived “penalization” of high load factor customers:
 - The AESO is thinking about this from the basis of the transmission system as a whole and developing rates that are more reflective of cost behavior drivers over the longer time. The resulting rates are expected to better reflect how the use of the system is related to cost. Customers are savvy and will respond to these changes. If you are connected to the grid, you are paying the fixed cost of connection and once you are using the grid, the appropriate allocation is to reflect how that use drives future transmission costs. We think we're achieving this through principles of cost causation and the outcomes are manageable and going to set us forward on the right path for the future.
 - The AESO has reviewed the impacts that result from this rate design, and looking across the whole range of impacts, we see it as being an acceptably sized impact.
 - The AESO has looked at several different alternatives within the current legislative framework and we are moving forward with the one we think is the most cost reflective.

Topic 4: Path to achieve minimal disruption

i. Stakeholder commentary

- Clarifying comments:
 - *Dow Chemical*: Is the transition measured in months, years, or decades?
 - *ADC*: Has the AESO done any research on the economic job impacts for those customers who will be largely impacted?
 - *Solas Consulting*: There is discussion about having one-on-one conversations with load to customize what their billings may be. Should this be transparent and consistent between loads? If you are deferring charges, who picks up the bill?
 - *IPCAA*: There is a concern here that we're talking a low end of a \$30M cost shift and \$8M of mitigation. We don't have information from the government, and we seem to be spending a lot of administrative dollars and mitigation dollars to get to a very small change in terms of mitigation. Is it worth it? There's a worry that we're not being fair to the customers who are being impacted the most here.

ii. AESO clarification

- Response to clarifying comments:
 - The transition measurement is something the AESO wants to explore with the impacted customers – it's an open discussion.
 - The AESO has not done any analysis on the economic or job impacts for high-impact customers.
 - The AESO is looking to get feedback from the broader group before we finalize the process to achieve minimal disruption.
 - The materials for conversation around the case for change were provided in December. It comes down to the fact that we do think it's important to get the right signals in place. If we wait and make the change later, that impact will be even bigger.

Topic 5: Energy Storage treatment

i. Stakeholder commentary

- Clarifying comments:
 - *Chapman Ventures*: Referencing Slide 72 (Rates that allow additional use of available capability), are there differing thoughts on treatment of market participation classification of hybrid renewables plus storage?
 - *RMP Energy Storage*: Storage is most likely going to look like a generation unit– still a competitive issue here that needs to be resolved. DOS right now you can only get for the 12 months you've applied – do we need to reapply every year? Other than price, the issue that we've had with DOS historically has been that we're building a 30+ year asset. How can you

- have the uncertainty on one of your largest cost on a year-to-year basis? Having to renew every 12 months adds additional uncertainty.
- *TransAlta*: There are situations when an energy storage asset is providing a service where they could be forced into an over-frequency event. In the case of an energy storage asset, they may need to actually consume off the grid which would be a very high cost. How might this be able to be modified?
 - *AUC*: Has DOS ever been curtailed?
 - *Heartland Generation*: We're discussing the energy storage rate as part of the B&R rate. Would it be easier to do it in a more targeted fashion (i.e., a separate forum)? If there isn't necessarily a discussed linkage, is the AESO contemplating a parallel process that can be discussed in a separate forum than the B&R?
 - *Solas Energy*: What happens in the future if there's additional load and less room on the additional line – is there any protection for the energy storage?
 - *Suncor*: The AESO doesn't want people to sign up for DOS if they would otherwise sign up for Demand Transmission Service (DTS). This perspective is unnecessarily and inappropriately restrictive. Just because it's economic to use rate DTS, doesn't mean it is desirable from a grid perspective or a societal perspective for someone to sign up for DTS.
 - Discussion of DOS modernization:
 - *Power Advisory*: Do you also think there are going to be changes to DOS as well as you modernize?
 - *Power Advisory*: You wouldn't see storage using only DOS, there would still be some DTS component of storage and DOS would sit on top?
 - *Solas Energy*: Investor confidence is low as they are seeing DOS as a very big risk. There is insufficient certainty of any investor in energy storage and there would need to be significant changes to include more certainty both for time frame for interrupt-ability as well as the term. When the AESO can choose to curtail you at any moment is not something that would make the project financeable – need a limitation or a curtailment on that in order for it to work.
 - *DePal Consulting*: I do think the DOS rate could work for storage. What needs to be modified is the take-per-pay charges – the variable energy charge is a good way to go. When designing this rate, how do we study it? Is it going to be curtailable? Good start but needs substantial redesign.
 - *Capital Power*: Has the AESO evaluated how their tariff proposal will impact overall DOS rates? Is there an estimate on what they may look like should the proposal be approved? With DOS modernization, are we at a blue-sky exercise of what DOS could look like in the future?
 - *RMP Energy Storage*: How does this then work through the interconnection process and determining capacity availability if it's under a modernized DOS rate?
 - *CCA*: Could you please explain how the criterion, that DOS must meet a temporary economic opportunity, is applied in practice?

ii. AESO clarification

- Response to clarifying comments:
 - The DOS rate itself would typically sit above the DTS rate and when this application is applied to the grid. One of the key components of DOS is that this is energy that would otherwise go unused under DTS.
 - In terms of re-application every year, the AESO wants to look at the criteria in the effort of modernizing DOS and making it a better and more usable rate for customers. We want to hear where the sticky points are with DOS from stakeholders to alleviate the uncertainty.
 - DOS has been curtailed historically.
 - In response to discussing energy storage as a separate topic from the Bulk and Regional Tariff Design: Because there's a tight component that DOS doesn't decrease demand on DTS, there's some desire to keep the topics together, but it is something to consider.
- Response to DOS commentary:
 - The AESO is not changing the spirit of DOS, but at the same time, a lot of the issues of DOS are around the eligibility of the mechanisms and processes that customers and the AESO needs to access that energy. The AESO wants to make it more effective.
 - More than likely, all storage facilities have some minimum charging capacity that we would need to meet, there would at least be some level of DTS.
 - There's nothing firm about DOS, if there's available capability and you pass the eligibility criteria, then DOS is provided as an opportunity service.
 - The AESO realizes that there is risk in an over-frequency event. That will be factored into our future design in one way or another, but that work is yet to be done.
 - There's a lot of history in DOS rates, but the AESO needs more feedback on how to calculate the DOS rates. The principles of DOS must stay the same. We don't want to re-envision DOS; we want to modernize and hone in on the eligibility question and the transactional components.
 - As an opportunity service, DOS can be curtailed in the short-term period. The question is, in the longer term, how frequently does this need to happen? Is it every 12 months?
 - The eligibility for DOS is a very case-by-case and it's based on each individual application to the AESO.

Topic 6: Implementation considerations

i. Stakeholder commentary

- Clarifying comments:
 - *NextEra Insights*: The AESO is moving from 15 minutes to hourly while we've seen a lot of jurisdictions moving to sub-hourly settlements (e.g. 10 minutes or 5 minutes). I would have thought the AESO would want to go in this direction. Has there been a study or discussion that we wouldn't have to switch back to 10 minutes or 5 minutes in the future?

- *Alberta Newsprint*: Is the highest meter demand hourly or 15 minutes?
- *AUC*: If the coincident peak is based on system demand, system demand isn't a normal report that can be pulled up. Does the AESO have any plans to make that data more available so people can do their own analysis and we can make these better distinctions?
- *ADC*: We would agree that the Payment in Lieu of Notice (PILON) should be implemented and not even wait for the tariff. There are many out there billing on contract capacity – we should let them know and get this right-sized as soon as possible.

ii. AESO clarification

- Response to clarifying comments:
 - In response to the change to hourly, what the AESO is really looking for is consistency – it's not a big cost change to be consistent today in the new tariff.
 - In response to the request for data, the meter volumes report is a bit closer to what stakeholders may be looking for. We agree the data should be out there to help people understand.