Bulk and Regional Tariff Design Stakeholder Engagement Session 3 hosted on Nov. 5, 2020

I. Purpose and objectives of the session

The purpose of this session is for stakeholders to propose rate design option alternatives. The session objectives include:

- Stakeholders to present and discuss alternative rate design options, including energy storage options and implications.
- Understand which rate design options stakeholders support and why.

II.Session agenda

Time	Agenda Item	Presenter
9:00 – 9:15	Welcome, introduction, purpose and session objectives	AESO
9:15 – 9:45	Overview of engagement schedule and feedback from sessions • Revised engagement schedule • Session 2 feedback • Technical Information Session feedback • Approach for the day	AESO
9:45 – 10:45	**Proposal 1** – Joint presentation by Alberta Direct Connect Consumers Association (ADC), Dual Use Customers (DUC) and Industrial Power Consumers Association of Alberta (IPCAA) • Presentation followed by discussion and Q&A	Colette Chekerda – ADC Dale Hildebrand – DUC Vittoria Bellissimo – IPCAA (supported by Richard Penn – IPCAA)
10:45 – 11:15	**Proposal 2** – Energy Storage Canada (ESC) supported by Power Advisory LLC (PA) • Presentation followed by discussion and Q&A	Justin W. Rangooni – ESC Travis Lusney – PA
11:15 – 11:45	Break	
11:45 – 12:45	**Proposal 7** – Suncor Energy Inc. • Presentation followed by discussion and Q&A	Alexandra Dunlop – Suncor Horst Klinkenborg – Suncor
12:45 – 1:15	**Proposal 5** – Canadian Renewable Energy Association (CanREA) supported by Solas Energy Consulting (SEC) • Presentation followed by discussion and Q&A	Paula McGarrigle – SEC (supported by Nicholas Gall – CanREA Evan Wilson – CanREA)
1:15 – 1:45	Break	

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1:45 – 2:15	**Proposal 6** – RMP Energy Storage • Presentation followed by discussion and Q&A	Robert Stewart – RMP (supported by Jan van Egteren – RMP)
2:15 – 3:15	**Proposal 4** – Consumers Coalition of Alberta (CCA) **Proposal 3** – Joint presentation by Canada West Ski Areas Association (CWSAA), Utilities Consumer Advocate (UCA), AltaLink Management Limited (AML) and Conoco • Presentations followed by discussion and Q&A	Proposal 4 Raj Retnanandan – CCA Proposal 3 Rick Cowburn – CWSAA (supported by Richard Stout – UCA Hao Liu and Rob Senko – AML Ed de Palezieux – Conoco)
3:15 – 3:30	Session Close-out and Next Steps	AESO

III. Attendees

Company
Alberta Direct Connect Consumers Association (“ADC”)
Alberta Electric System Operator (“AESO”)
Alberta Forest Products Association
Alberta Newsprint Company (“ANC”)
Alberta Utilities Commission (“AUC” or “Commission”)
AltaLink Management Ltd.
Arcus Power
ATCO Electric Ltd.
BECL and Associates Ltd.
Best Consulting Solutions Inc.
BluEarth Renewables Inc.
Boost Energy Ventures
Brubaker & Associates, Inc. on behalf of ADC
Bullfrog Power
Canada West Ski Areas Association
Canadian Renewable Energy Association (“CanREA”)
Capital Power
Cement Association of Canada
Cenovus Energy

Company
Chapman Ventures Inc.
City of Lethbridge
City of Medicine Hat
Consumers Coalition of Alberta (“CCA”)
DePal Consulting Limited
Dizrupt Energy
Dow Chemical Canada ULC
Dual Use Customers (“DUC”)
EDF Renewables
Enbridge
Energy Storage Canada
ENMAX Corporation
EPCOR
FortisAlberta Inc.
Guidehouse
Heartland Generation Ltd.
Imperial Oil
Independent Power Producers Society of Alberta (“IPPSA”)
Industrial Power Consumers Association of Alberta (“IPCAA”)
Kanin Energy
Lionstooth Energy
Millar Western Forest Products
NextEra Insights
Nutrien
Palezient Regulatory Solutions Inc.
Peters Energy Solutions inc.
Power Advisory LLC (“PA”)
Power Grid Specialists Corp
RMP Energy Storage
Rodan Energy Solutions
Signalta Resources Limited
Solas Energy Consulting Inc.
Suncor Energy Inc.

Company
The City of Red Deer
The Office of the Utilities Consumer Advocate (“UCA”)
Turning Point Generation
University of Calgary
URICA Asset Optimization
West Fraser
Wolf Midstream Inc.
Stack’d Consulting, Inc.
Attendees by phone
M. Huyn
B. Krawchyshyn
P. Toy
14033702882
14033897720
14033901368
14036137624
14036896377
14038134573
14038318413
13617399738

IV. Overall outcomes from the day

The main objective of the session was to give stakeholders the opportunity to propose rate design option alternatives. Participants engaged in meaningful discussion and overall, stakeholders agreed that this was a valuable session that allowed them to share their perspectives and concerns.

V. Session highlights

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

Topic 1: Overview of engagement schedule and feedback from sessions

i. Some participants expressed concern regarding the revised schedule:

- The filing has already been delayed by a couple of years.

- Feasibility of an earlier implementation in 2021 rather than 2023 if historical time for review by the Commission is not representative of the current time needed.

ii. AESO Clarification

- The AESO is focused on moving forward in a timely manner, however, there was feedback from comment matrices and the technical session that there was a need to extend the date for Session 3 and a general theme that the AESO is moving too quickly.
- The AESO is committed to a progressing the application filing, while recognizing that additional time taken right now could be helpful for the back end of the filing process.
- The AESO is assuming that the proceeding will take approximately one year and plans to have the rates come into effect in 2023.

Proposal 1: Joint presentation by Alberta Direct Connect Consumers Association (ADC), Dual Use Customers (DUC) and Industrial Power Consumers Association of Alberta (IPCAA)

i. The recommendations made in this proposal centered on maintaining the status quo:

- The 12-CP methodology for bulk system cost recovery continues to be appropriate for Alberta.
- The tariff changes are premature and there are concerns that a major tariff overhaul now will be followed by another overhaul once other priorities are resolved (e.g. *Transmission Regulation* ("T-Reg")).

ii. Stakeholder commentary

- Some participants disagreed with maintaining the 12-CP method:
    - *UCA:* A price responsive load needs to be producing some savings. How do you know this price signal has been efficient/effective, how can you measure what has actually been saved on the transmission system?
    - *ENMAX:* 12-CP is a generation signal and not a transmission signal. There's very poor correlation between power flow on most transmission lines and system peak demand and this correlation is only going to get worse. 12-CP is not going to be a valid price signal in the future.
    - *AltaLink:* This is a transmission issue. The 12-CP may not be sending the right signals in today's operations.
    - *AESO:* Looking at historical response to price signals is not informative for the future. Can you clarify whether more data is useful and whether this data can help model the future?
- Some participants agreed with the proposal's concern that the tariff redesign is premature:
    - *Lionstooth Energy:* It's not just that now isn't the time (because of the current economy). We're missing an underlying issue with respect to planning. We're rushing to build solutions, but we're not planning how load or distributed generation would respond to these solutions. We're planning tariff redesigns without the underlying studies that should be done to justify the changes.

- *Power Advisory LLC (PA):* One hundred percent agree that now is not the time. There are too many balls in the air. Would be really beneficial to nail down some of the balls in the air before getting into the tariff design.

iii. Presenter clarification

- Response to 12-CP price signaling:
  - All sections are interconnected: more load = more generation = more transmission.
  - If we don't have extra load, we don't need extra generation or extra transmission.
  - The burden of proof around whether 12-CP is successful or not is on other people to show why it's not working. To date, we have not seen any evidence that proves 12-CP is not working. There have been other factors that have influenced the 12-CP price signal to be insufficient at times but throwing it out now when it could be a significant benefit in the future is not beneficial.
  - More data is important because you can get a range of responses from only a few years that are hard to reconcile. If we could have way more years of regional data, that would provide more value to customers to determine a trend.
- Response to timing of tariff redesign:
  - One of the good reasons not to redesign is because the T-Reg issue hasn't been solved yet. Two redesigns would only increase the instability of the market.
  - Planning is an issue and if there is no understanding of historical data, the same mistakes are likely to occur.

Proposal 2: Energy Storage Canada (ESC) supported by Power Advisory LLC (PA)

i. The recommendations made in this proposal centered on the treatment of energy storage as a supply source:

- Energy storage should pay Independent System Operator/transmission facility owner (ISO/TFO) admin fees based on the services being used.
- Energy storage should pay, and be paid, based on wholesale electricity prices (i.e., AESO pool price).
- Energy storage should not pay transmission system costs.

ii. Stakeholder commentary

- Some participants disagreed with the treatment of energy storage as a supply source:
  - *ENMAX:* Energy storage is acting as a load and acting as a generator so should be treated as such.
  - *Suncor*: This proposal makes the assumption that storage will buy low, sell high, and follow the flow of the system based on capacity. This is questionable because peak pricing happens year-round at the weirdest times. Are you really talking about storage's role as a transmission service or a market participant?

- Some participants disagreed with the exemption of energy storage from transmission system costs:
    - *ENMAX:* We have a mandate under the Alberta structure for fair, efficient and openly competitive market. Under the fundamental principles of the *Electric Utilities Act*, investments are to be made on their economic merits and there should not be any favorable treatment for one technology over another.
- Some participants supported the exemption of energy storage from transmission system costs:
    - *Peters Energy Solutions:* The main difference is that storage isn't doing any other business with electricity. For most loads, electricity is a utility. Storage should fit into the service category and get priced differently because it only exists to help.
    - *CCA:* Going forward, could storage play a role in reducing the amount of transmission build on the bulk and regional systems? Would storage be able to provide alternative solutions and help reduce stress on the system?
    - *ADC:* There are three types of customers: those that have no ability to change their load, those that are interruptible, and those on standby that only use the system when their own supply is not available. The rate should not be the same for all customers because they all reflect different reliability needs from the system.
- Clarifying technical questions:
    - *AESO:* What do you consider an administration cost?

iii. Presenter clarification

- Response to disagreement on differential treatment of energy storage:
    - Tariff treatment already has uniqueness built into it. Energy storage is not really a load nor a generator, it's something unique on the side. Its impact on the system is an efficiency gain.
    - In the AESO's long-term options for energy storage, there has been discussion on having energy storage operate as a bid-for-consumption model.
- Response to discussion on exemption from transmission system costs:
    - The objective of storage is to relieve constraint. Need to consider what fair costs are to be applied to storage an intermediate customer.
- Response to technical questions:
    - In terms of alternative solutions, a non-wires alternative is an expanding option.
    - Recognize that while energy storage is an efficiency tool, there is a flat cost for the system. This flat cost is the administration cost, and this includes the costs of the staff and tools that the AESO uses to operate the grid on a daily basis.

Proposal 7: Suncor Energy Inc.

i. The recommendations made in this proposal centered on billing determinants:

- The goal is to estimate the marginal transmission cost impact as accurately as possible.

- However, because of the mismatch between average cost and marginal cost, collected charges will not result in total costs recovered.
- The remaining amount is independent of customer attributes or behaviour, therefore recovery must occur on a per customer connection basis.

ii. Stakeholder commentary

- Some participants challenged the perceived 'simplicity' of this proposal and its inputs:
    - *NextEra:* The increase in demand is not the primary driver of the increase in cost; the regional network cost is a function of many factors.
    - *Stack'd:* How is this proposal different from the current design?
    - *PA:* Are there simplicity issues here?
    - *AltaLink:* If generation were to play a bigger role, the effectiveness of this proposal would surely decrease.
- Some participants expressed concerns over whether the data available is enough to feasibly model this approach:
    - *ENMAX:* Really need hard data from the AESO on individual facilities and interregional flows to determine the boundary effects.
    - *PA:* New complexities that we're adding is extra data that the AESO needs to make public about regional inflows and regional peak demands. Under this proposal, we have no visibility to how the charges will shake out and it is difficult to determine if this will cause astronomic rate shock. Without that missing information, it is very difficult to assess this proposal against the AESO's 'minimal disruption' objective.
    - *AESO:* It is a challenge to model this proposal because the AESO does not currently measure inflows for billing.
    - *AESO:* If the inflow is not an available data point, then is allocating out bulk regional cost on system peak more preferable than regional peak?
- Clarifying technical questions:
    - *AESO:* Help us understand whether the marginal measurement accounts for how much reduction in load will save future generation costs. How would we assess this?
    - *Alberta Newsprint:* The connection charge is not a fixed number but rather the leftover of the average cost allocation and the overall charge. Would it be wise to consider that there be some limit on the number if it gets too large?
    - *AESO:* Is the marginal cost something you envision that will be spread across the entire province based on analysis of the different regions?
    - *DePal Consulting:* Distinction of three different types of customers: firm load, backup supply, and price/CP responsive. What would be the impact of this proposal on those three groups and would this impact vary by region?

iii. Presenter clarification

- Response to commentary regarding the proposal and the inputs:

- There are other cost drivers, but this proposal is only interested in those that are tied to customer attributes and customer behaviour. The focus is on the billing in which customer behaviours/attributes impact the transmission cost.
- This approach of starting with average cost and working towards marginal cost prevents a bit of the shock and meets the AESO's objective of minimal disruption.
- There is nothing complicated with this design as compared to the past tariff design. Not putting in anything inefficient if it is not necessary.

- Response to request for additional data:
  - If this proposal cannot be implemented or the data is unattainable, the 12-CP bulk method then becomes the better design. The regional peak that the AESO proposed does not address the interregional need for transmission. Status quo is second best option.
  - If we cannot do system inflows, system peak is the right way to look at things. If we keep monthly assessment, should be 12-CP. Annual assessment, could be 1-CP. The measurement should be one hour per whichever period is decided upon.
- Response to technical questions:
  - We have to live within the current constraints. There may be different ways to create further efficiencies, but this proposal is the best we can do within the tariff – identify the cost driver, send the most efficient signal, and cover the rest on a connection basis.
  - The connection charge is not a number that changes by month. The AESO predicts it by year, so there is not much volatility. There cannot be a limit on this number, since this is the leftover bucket, whatever amount is left over needs to be paid regardless.
  - The marginal cost rate must be the same across all regions, an Alberta average marginal cost.
  - If the right billing determinants are set, then it should not matter what kind of load customers are because it is their consumption patterns that will drive their costs. Therefore, the costs are customer behaviour dependent.

Proposal 5: Canadian Renewable Energy Association (CanREA) supported by Solas Energy Consulting (SEC)

i. The recommendations made in this proposal centered on solving the 'double-double' issue:

- The "double-double" issue. Charging Demand Transmission Service (DTS) and Rate Supply Transmission Service (STS) on energy storage doubles up the charges on this electricity.
- Energy storage fits best with the EUA definition of "substation". Energy storage receives an asset ID to participate in the market (i.e., Energy market and the Ancillary Services market).
- Energy storage administration fee (rather than DTS/STS) is most appropriate.

ii. Stakeholder commentary

- Some participants expressed different opinions with the classification of energy storage as a substation:
    - *ENMAX:* Having a difficult time with the classification of energy storage as a substation. Does this proposal apply to hydrogen storage, compressed air storage, water storage, etc.?
    - *ENMAX:* When considering this from a cost causation perspective, going into and out of energy storage causes constraint on the system. Anyone who is building energy storage is choosing to do so to make a profit, operating in a competitive market where it is appropriate that people compete based on the actual cost.
- Some participants disagreed with the characterization of a 'double-double' charge:
    - *Suncor:* Strong disagreement with the description of the double-charge issue. Whenever energy storage is in the mix, there are two separate uses of the transmission system. Given that it takes double use of the transmission system, it is being assessed for injecting and withdrawing power form the grid. It's about the customer using the system twice and in both directions.
    - *ENMAX:* If I am a natural gas generator, I pay a transportation charge on the source of my energy and then I turn that natural gas into electricity then send it to a consumer, which also incurs a transportation cost. There are two transportation costs for this generator and do not see any difference between this example and an electricity charge. The double-charging issue is not relevant.
    - *Peters Energy Solutions:* We are trying to force fit new technology into a script that was written for old technology. There are a lot of services that are unique to energy storage, but the current market and tariff designs don't have a way to compensate them for the efficiencies they create. If energy storage can get paid for the efficiencies it creates, they would be happy to pay for the costs they create for the grid.

iii. Presenter clarification

- Response to substation classification:
    - Energy storage is doing no work; they act solely as temporary storage. Storage is not a load nor a generator. The electricity sector only exists because we have customers and if we double charge them, it is not appropriate.
    - The classification comes down to whether or not work is being done. If there is work done, you are a consumer, if not, you are not a consumer.
- Response to push back on the double-charge issue:
    - To treat storage like a load or generator and have them pay twice the STS and twice the DTS is not fair.

Proposal 6: RMP Energy Storage

i. The recommendations made in this proposal centered on treating energy storage as a peaking generator:

- Energy storage to pay STS only.
- If energy storage is not treated as generation, then due to nature of its operation an interruptible rate is the most appropriate.

ii. Stakeholder commentary

- There was some concern with using an interruptible rate:
    - *ENMAX:* To clarify, any load anywhere on the transmission system that would agree to be interrupted would not have to pay a transmission charge?
    - *AESO:* How do you distinguish between a station load and a DTS load? Are there limitations on types of interruption or is it truly unlimited?
    - *AESO:* There is a risk that by creating an interruptible rate, there will be an impact on the market. How would the rules for operating differ so that the interruption of the specific participants wouldn't have an impact on the market overall?
- Other energy storage presenters' input:
    - *Solas Energy:* Any options provided by the AESO are uneconomic. The double-double issue still exists in this proposal. Need to look at energy storage from a different view away from looking at it as a load or a generator.
    - *PA:* The interruptible tariff is an option if framed the right way. The concern is that the interruptible rate will get layered with a whole bunch or costs that aren't appropriate. Not necessarily uneconomic but depends on price trends and access to other services. Of the options presented by the AESO, the interruptible is the most workable.

iii. Presenter clarification

- Response to discussion on interruptible rates:
    - Transmission costs – as long as energy storage is able to be interrupted by dispatch, it should not add additional costs to the system, only utilizing the current system, and therefore should not be paying more than the opportunity cost.
    - If the transmission has been built out and is not constrained, having some sort of opportunity rate for any entity that is willing to be curtailed will enable participation of more people on the grid at that time and greater competition in the market.
    - In terms of limitations on the types of interruption, there definitely needs to be rules. That is a discussion that will need to be had.

Proposal 4: Consumers Coalition of Alberta (CCA)

i. The recommendations made in this proposal centered on a network on un-ratcheted non-coincident peak (NCP) and customer charge:

- Monthly un-ratcheted customer NCP demand charge.
- Base a fixed charge on the difference between total bulk and regional costs net of recoveries via demand charge.
- Overall recommendation is that the AESO take the ideas presented today and come forward with a bulk and regional tariff design that will achieve the AESO's rate design objectives.

ii. Stakeholder commentary

- There was discussion around cost causation and the NCP model:
    - *Suncor*: What does a change in NCP do to future transmission costs? Not seeing if one customer reduces NCP during the middle of the night, how that has any impact at all or any benefit in regard to transmission costs. Why is NCP a cost-causation driver for transmission cost?
    - *IPCAA:* How do you get cost causation from NCP? Shouldn't we be encouraging consumption in the off-peak hours to increase utilization?
    - *AESO:* What is the best way to estimate long run incremental cost?

iii. Presenter clarification

- Response to NCP discussion:
    - Changes in load flows cannot be by a one-hour CP system, NCP is the best one can do to capture the cost through the load side of the equation. The best way to recover the costs of building the transmission system is through monthly NCP as opposed to single CP.
    - The evidence is that system stress occurs in all hours, not necessarily in the one-hour peak that is currently used. If system peak can occur in any hour, NCP is likely a better reflection of future cost causation.
    - All hours contribute to cost causation because the transmission system is planned on load flows and these load flows change as the stress hours also change. If you want to reduce load during an off-peak hour, the pool price is significantly lower, so you are incented to use the system during those hours.
    - In terms of estimating long run incremental cost, it is best to use the most recent transmission build with the planned load additions at the time to calculate the long run incremental cost.

Proposal 3: Joint presentation by Canada West Ski Areas Association (CWSAA), Utilities Consumer Advocate (UCA), AltaLink Management Limited (AML) and Conoco

i. The recommendations made in this proposal centered minimal change to the current rate design:

- Bulk charge – change from 12-CP to gross un-ratcheted NCP.
- Regional charge – continuation of current billing capacity design.
- Energy charge under both bulk and regional remains unchanged (same classification percentage).

ii. Stakeholder commentary

- Some participants expressed concern about the affordability of this proposal for customers:
    - *ADC:* If the proposal is to protect all customers from transmission rate increase, why bother? We are going through all the effort of creating a new rate design, but what is the point when we clearly have a design that works already.
    - *ADC*: The transmission system and the cost is an unaffordable system for most industries in Alberta. We can change the tariff but at the end of the day, if companies are not able to be competitive in Alberta and we don't attract new loads, we're going to lose members of our industry that are providing jobs and paying taxes. We all collectively must rethink the purpose of what we're doing. Wherever we land on this, need to keep front of mind the economic impacts of these challenges.
    - *Suncor:* Not understanding why this proposal replaces 12-CP with a charge that has absolutely no logical connection to transmission cost. This proposal puts everything on a billing determinant that has no logical impact on transmission cost. Why would we put all the charges on a billing determinant that has no benefits; is this not a waste?
- There was discussion about the irrelevance of cost causation in today's market in Alberta:
    - *ENMAX:* There are real challenges with cost causation and future build. Decisions were made in the past and the consequences have come to fruition. The problem is we have a regulatory framework that limits our ability to adhere to cost causation.
    - *Solas Energy:* Customers are always going to be looking for cleaner and cheaper energy sources. We have overbuilt transmission; DCG and energy efficiency is the new direction we need to go. Need to look at the bigger picture rather than how to share past costs.
    - *ENMAX:* Now is not the time for major changes. We really are no longer in a cost causation or long run marginal cost world; 99 per cent of costs in transmission we're going to see in the future are already sunk.

iii. Presenter clarification

- Response to customer affordability concerns:
    - Having more customers become dependent on 12-CP means that it is acting essentially as a subsidy. It is uneconomical to create any more dependencies. 12-CP is not something that will save any costs having customers avoid one hour a month.

- The goal is to design a rate that benefits Alberta as a whole. We empathize that the current rate design makes it difficult to introduce change for customers. The big problem we're facing is the high cost of transmission and we collectively must think about what is fair for the future. As more people react to the price signal, it is better to get in front of it than wait.

- Response to cost causation discussion:
  - Missing a piece of discussion – what really are the drivers of transmission? The circulation of AESO's old work may be helpful.
  - There is no cost causation left in Alberta. This is an allocation, not a cost minimization exercise – it's too late for that. Using NCP seems a reasonable allocator as it is one that already exists.