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Spencer Hall
Alberta Electric System Operator
2500, 330 - 5th Ave SW
Calgary, AB T2P 0L4

Dear Mr. Hall

SUBJECT: Bulk and Regional Tariff Design Stakeholder Session

I write on behalf of the cities of Lethbridge and Red Deer, who wish to share their feedback on the presentation and materials from the AESO's November 5th session. Following that session, the AESO requested parties to respond to nine questions. The cities' response is provided below.

Question 1:

Please comment on Session 3 hosted on Nov. 5, 2020. Was the session valuable? Was there something the AESO could have done to make the session more helpful?

The cities consider the AESO's November 5th session to be useful for understanding the positions of various stakeholders.

Question 2:

Please complete Table 1: How Did Each Proposal Achieve the Rate Design Objectives for each of the proposals presented at Session 3.

How Did Each Proposal Achieve the Rate Design Objectives

Objective	Description	Example	Proposal 1 ADC, DUC and IPCAA	Proposal 2 Energy Storage Canada	Proposal 3 CWSAA, UCA, AML, and Conoco	Proposal 4 CCA	Proposal 5 CanREA	Proposal 6 RMP Energy Storage	Proposal 7 Suncor Energy Inc.
Reflect Cost Responsibility	Cost recovery is based on the benefit and value transmission customers receive from the existing grid			N/A			N/A	N/A	
Efficient Price Signals	Price signal to alter behavior to avoid future transmission build			N/A			N/A	N/A	
Minimal Disruption	Customers that have responded to the 12-CP price signal and invested to reduce transmission costs are minimally disrupted		N/A	N/A	Possible	Possible	N/A	N/A	N/A
Simplicity	Simplicity and clear price signals while achieving design objectives		N/A	N/A	Possible	Possible	N/A	N/A	N/A
Innovation and Flexibility	ISO tariff provides optionality for transmission customers to innovate while not pushing costs to other customers		N/A	N/A	Possible	Possible	N/A	N/A	N/A

*** Proposed rate design must fit within current legislation ***

Legend	Achieves objective	Potentially achieves objective with modification	Partially achieves objective	Potentially partially achieves objective with modification	Does not achieve objective

Discussion of Proposals 1 and 7

The cities note that proposals 1 and 7 do not provide any usable price signal to most Alberta electricity consumers. These proposals (proposal 1 is simply the status quo and current coincident peak charge) are premised on two conditions that are rarely met: (1) an end-use customer must correctly predict the hour in which the price signal applies, and (2) the wires tariff paid by the end-use customer must pass through this price signal. The AESO indicated in its September 24th presentation that very few end-use customers, all transmission-connected, have shown any response to the current price signal. As the cities have already noted in correspondence from April 9th, most end-use customers (ninety percent by AESO DTS revenue) do not have the opportunity to respond to the price signal. This is because distribution-connected end-use customers pay a distribution tariff that is calculated before the AESO’ price signal is known or disclosed. This is aside from the issue of whether it is even an appropriate signal, which is another matter that will be addressed below.

Therefore, proposals 1 and 7 do not meet a minimum requirement to address, let alone satisfy the “efficient price signal” objective or the “cost responsibility” objective, simply because all but a handful of end-use consumers do not receive any coherent price signal. Even for the small minority of end-use customers that do anticipate the hour to which the price signal is applied, prior committee work already concluded that transmission infrastructure costs are not driven by a single hour (for example, see the AESO’s “System Planning Report” to the Transmission Tariff Work Group, dated September 10, 2019). Narrowly directing cost recovery toward usage during a single hour on the system does not encourage either conservation or more efficient utilization of transmission infrastructure.

The cities also do not agree with the implicit policy position of Proposal 1 when it establishes a hierarchy of customers that should be protected from the rising cost of Alberta’s transmission network, giving highest priority to industry as long as it is transmission-connected. Being that the network is intended to benefit all customers, businesses and industries served at a distribution voltage should also be considered, as well as residential customers.

Relatedly, Proposal 7 may have material and unintended consequences for end-use customers. The cities understand that the proposal is based on marginal cost pricing with the remainder of embedded cost to be recovered on a per-customer basis. However, the marginal cost to provide peak hour capacity, even the long run marginal cost, is virtually zero. This is because the capacity requirement in the next-highest peak hour is virtually the same. This also means that additional transmission cost will be recovered on a per-substation basis and likely to have the unintended consequence of shifting the cost burden from urban to rural end-use customers. There are relatively fewer end-use customers at a rural substation because of a lower population density, which means fewer end-use customers (particularly rural residences, farms, and small commercial customers) will then pay a higher share of transmission cost. The cities consider this contrary to the policy of postage stamp ratemaking, albeit indirectly and not necessarily by intention of the proponent.

Discussion of Proposals 2, 5, and 6

The cities are unable to evaluate proposals 2, 5, and 6 because they are incomplete. These presentations appear to be premised on the notion that energy storage only makes the transmission system more efficient. The rationale for favourable pricing hinges on this critical assumption, but the assumption itself is not supported. In a completely different industry framework outside Alberta, this question might be easier to answer. In Alberta, however, energy storage might be operated by a party with a commercial business plan to take advantage of energy price arbitrage opportunities. In this scenario, and without an effective price signal, energy storage

is not internalizing its potential impact on the transmission system. Charging when the energy market price is low and discharging when the energy market price is high will not necessarily and, in all instances, correspond with making the transmission system more efficient. On the contrary, the cities suspect that energy market price does not always positively correlate with transmission system optimization; otherwise, the AESO would not need to procure ancillary services, for example. If this were the case, generators operating purely on energy market signals would already be acting to optimize transmission system.

The cities consider that this issue must ultimately be resolved with independent analysis from the AESO. From the stakeholder consultation to date, the cities are unsure if the AESO has resolved whether storage is a unique and useful means to optimize the transmission system, and if so, how optimization is best achieved. Once these questions are resolved, it becomes much easier to conceive of a pricing scheme that supports this objective. At this stage, it remains unclear whether there exists a simple and concise set of conditions under which energy storage benefits the transmission system and whether this can be converted to a feasible price signal. If the AESO believes that energy storage will benefit the transmission system, but the set of conditions are much more complex than a one-size-fits-all tariff can contemplate, then a different policy discussion should occur.

Discussion of Proposals 3 and 4

Proposals 3 and 4 are more feasible in concept and both would facilitate efficient utilization of transmission infrastructure. A demand charge based on a customer's own peak generally promotes better utilization and lower peaks. A customer who makes a concerted effort to improve its load factor should be rewarded with a lower bill, as these proposals would do. Most importantly, the demand charge begins to address the cities' concern (confirmed by committee work) that usage during a wide range of hours is what ultimately drives transmission cost. Avoiding consumption during the peak transmission hour has no effect on long term transmission costs because the next-highest hour is virtually the same. Indeed, from the two-year span of data provided by the AESO in October, one can see that the system's second highest peak of the month is still 99.6% as large as the highest peak. This is the same for each of the six regions, with the second highest peak no less than 99.4% of the highest peak. Moreover, the *fortieth* highest peak hour each month is still 97% as large and the *eightieth* highest peak hour is still 95% as large as the peak hour.

Of course, some off-peak hours are not as important and the cities expect that if a substation were to peak at 2 am, this would not have the same effect on transmission system design and cost as would peaking at 6 pm. Therefore, one

possible refinement to Proposals 3 and 4 is to calculate the billing determinant as the customer's peak demand during an on-peak period, such as (for the sake of an example) 3pm to midnight.

Ideally, it would be fairer to ratchet the demand billing determinant, which would mean a lower price per-unit, but also appropriately treat two otherwise identical customers the same when one peaks intermittently and the other peaks every period. However, we recognize that an un-ratcheted billing determinant might be more appropriate to mitigate rate impacts and therefore more appropriate for an interim solution.

Proposals 3 and 4 also have the capability of meeting the AESO's additional criteria of "Minimal Disruption" and "Simplicity." However, this all depends on the specific billing determinants, price associated with those billing determinants, and how the rate would be implemented (e.g. such as an interim phase-in period). The necessary first step is that the AESO must be willing to forecast system-total billing determinants for each scenario discussed so that one can calculate a price. Without a price, it is impossible to calculate a complete tariff schedule and meaningfully discuss rate impacts. Moreover, the analysis would also need to take into account that price responsive loads can also be responsive to a different price signal; thus rate impacts will be very much overstated if they do not also assume a change in behaviour.

The cities do note that Proposals 3 and 4 included some preliminary discussion of rate mitigation. The cities do not wish to rule out all options, but they are skeptical of a mitigation scheme that refunds back some amount based on previous bills. This would be a disincentive to adopt new behaviour, particularly when the issue here is that the customers most affected are already considered a price-responsive load. The objective needs to be about encouraging new behaviour and so the only practical mitigation measure may be to include a phase-in period for the new price. There can be many ways to implement this, but the general concept is to gradually reduce revenue collected on the old structure while gradually increase revenue collected on the new structure.

Finally, Proposals 3 and 4 have the potential to satisfy the AESO's remaining "Innovation and Flexibility" objective. The cities note that the AESO defines this as "optionality for transmission customers to innovate," which will be an elusive concept that means different things to different market participants. For industry and business, for whom electricity supply is an input cost, the consideration would probably be like any other input cost: stability and predictability will facilitate long term planning and allow the commercial venture to focus on its own primary functions.

It is possible for the AESO tariff to provide stability, but only if the tariff structure is sustainable. A tariff that creates an opportunity to avoid tariff charges without proportionally reducing transmission cost is not sustainable. The only way to credibly offer a sustainable price structure is to ensure the tariff reflects cost and encourages efficient use. When neither of these conditions are satisfied, eventually the tariff must change. The longer this is delayed, the larger the correction.

Question 3:

Which rate design option proposal, including the AESO's bookends A and B presented at Session 2, did you prefer? Why?

Consistent with the reasons discussed above, the cities consider all options that rely on usage during a system or regional peak (which is only known after-the-fact) to be impractical. This is because customers representing ninety percent of the revenue collected do not have the ability or opportunity to respond to such a price signal even if they were able to successfully anticipate the correct hour.

Between the two options, therefore, the cities prefer "Bookend A" because it is the only one with potential to satisfy all the AESO's criteria.

Question 4:

Does your preferred proposal meet all the rate design objectives?

If not, what trade-offs does your preferred proposal create between the rate design objectives?

Why are those trade-offs appropriate?

In response to questions 2 and 3 above, the cities have provided reasons for why at least three proposals have the *potential* to meet the AESO's rate design objectives. However, all three proposals are conceptual in nature and are not complete. The cities do expect there will need to be trade-offs, particularly between minimizing disruption and offering an efficient, simple structure on day-one. This will require additional analysis once the AESO is able to provide specific prices based on the selected billing determinants.

Questions 5 and 6:

Which stakeholders are best served (or least impacted) by your preferred proposal? Why?

a) Which stakeholders are most impacted by your preferred proposal? Why?

b) What mitigations, if any do you recommend for those who would be impacted by your preferred proposal?

At this stage, it cannot be known who is “best served” or “least impacted” because none of the proposals, except perhaps proposal 1 (status quo), are fully developed and have a price. The choice of billing determinants and how they are calculated will matter. For instance, when billing determinants are 20 percent higher for every customer, it just means that the price per unit must be 20 percent lower to raise the same amount of revenue.

Moreover, a load that is particularly adept at responding to the current price signal is not necessarily going to be worse off with a different tariff. If the new price signal is known in advance, for example, this would afford even more opportunity for a load that is used to making last-minute decisions based on predicting the system’s peak hour for the month. With a more stable and predictable input cost, one would be able to direct these acquired skills toward long run planning. This will open new opportunities to optimize shift or process scheduling, develop longer term business plans, and even make capital investments to shape load further. There is a fixed amount of transmission revenue to collect, so one only needs to be more responsive than the average customer to be comparatively unaffected or even better off with a new price structure.

The cities strongly suggest that the AESO first decide upon (at least as a straw-dog proposal) the correct answer for a sustainable and appropriate tariff on principles alone. From there, the AESO can calculate the associated billing determinants and price per-unit, which facilitate a complete discussion of who is impacted and whether mitigation measures should be applied.

Question 7:

a) How would energy storage resources be treated in your preferred proposal?

b) Does your preferred proposal include specific elements in relation to tariff treatment for energy storage? Why or why not?

The cities are unable to provide comment on this matter, pending clarification from the AESO as to whether storage is a unique and useful means to optimize the transmission system, and if so, how optimization is best achieved. Depending upon the AESO's technical needs and the technical qualities storage can offer, it may be that this issue should be addressed outside the tariff structure.

Question 8:

What are the challenges or unresolved questions with your preferred proposal?

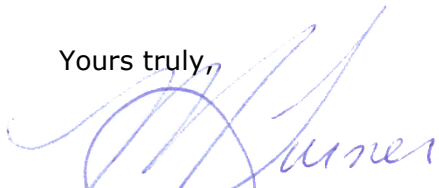
A common theme in response to the questions above is the challenge of providing detailed comment on proposals that are not complete and do not yet have a calculated per-unit price. Without this information, it is difficult to evaluate how price-responsive load would react or make any conclusions as to whether mitigation is even required. It is also difficult to fully evaluate the potential for additional end-use customers to become price responsive, should they have a new opportunity to respond to a price.

Question 9:

Additional comments

The cities undertook to provide fulsome responses to the above questions and have no additional comments. We trust that these comments will be received in the constructive spirit that they are intended. Should any of our comments require further clarification, please feel free to contact me at (403) 781-7691.

Yours truly,



Michael Turner
President

cc: Jim Jorgensen, City of Red Deer
Stew Purkis, City of Lethbridge