

October 6, 2022

To: The Market Surveillance Administrator, market participants and other interested parties
("Stakeholders")

Re: **Stakeholder Comments on Letter of Notice for Additional Feedback from Stakeholder Consultation Session 3 on the Operating Reserve Market Review ("Operating Reserve Market Review")**

The Alberta Electric System Operator ("AESO") received comments from Stakeholders in response to its September 12, 2022 *Letter of Notice for Additional Feedback from Stakeholder Consultation Session 3 on the Operating Reserve Market Review*. These comments have been posted on the AESO website.

Comments were received from the following Stakeholders:

1. Capital Power;
2. ENMAX Corporation;
3. Greengate Power Corporation;
4. Heartland Generation Ltd.;
5. Industrial Power Consumers Association of Alberta (IPCAA);
6. Suncor Energy Marketing Inc.;
7. TransAlta Corporation;
8. TransCanada Energy Ltd.;
9. URICA Asset Optimization; and
10. Voltus Energy Canada

Thank you to all Stakeholders who participated in this part of the Operating Reserve Market Review process. The AESO will take all comments received into consideration during the development of the Operating Reserve Market Review.

If you have any questions, please submit them to rules_comments@aeso.ca.

Sincerely,

Jackie Gow

Legal Manager, ISO Rules and Alberta Reliability Standards
Legal and Regulatory Affairs
rules_comments@aeso.ca

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: Capital Power</p> <p>Date: 2022/10/03</p>	<p>Contact: Megan Gill</p> <p>Phone: 403.827.3566</p> <p>Email: mgill@capitalpower.com</p>
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Instructions:

1. Please fill out the section above as indicated.
2. Add your feedback to the following comment matrix.
3. Email your completed comment matrix to rules_comments@aeso.ca.

The AESO appreciates stakeholders' ongoing participation and feedback in this initiative. Information from the slide decks presented during the three Stakeholder sessions is available on aeso.ca and may be helpful in responding to the questions below. Additionally, the AESO posted a supplementary document on the proposed alternatives for standby reserve pricing.

In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p><u>More transparency is needed</u></p> <p>Capital Power appreciates that the AESO has conducted analysis of cycling costs to determine the proposed bid prices, however it would be helpful to have more visibility into the modelling to better understand the assumptions and inputs before providing feedback on the bid prices that result from the analysis.</p> <p><u>Capital Power is unclear how the AESO will account for changes to cost recovery inputs</u></p> <p>Capital Power is unclear if, how and when the AESO plans to revisit and revise the bid prices once they are set to account for changes to cost recovery factors. A regular review of the bid prices will be important for stakeholders to considering the carbon price and gas price assumptions used by the AESO are going to change over time. The AESO should establish criteria and frequency for reviewing and revising the bid price and allow for stakeholder input</p>

	Questions	Stakeholder Comments
		<p>as part of the process.</p> <p>Capital Power would also like to understand how the AESO has accounted for its proposed change from block procurement to hourly procurement. If the AESO moves to hourly procurement, the ability for market participants to recover costs will change and the AESO should adjust the bid prices accordingly.</p>
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>Capital Power does not have any comments at this time.</p>
3	<p>Offer transparency</p> <p><u>Tie-break for equal priced marginal offers</u></p> <p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	<p>Capital Power does not have any comments at this time.</p>
4	<p>Minimum qualification & offer size</p> <p><u>Directive tolerance</u></p>	<p>Capital Power does not have any comments at this time.</p>

	Questions	Stakeholder Comments
	Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?	
5	<p>Hourly procurement</p> <p><u>Maximized participation</u></p> <p>With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p><u>Block procurement will maximize participation</u></p> <p>Hourly procurement is not expected to increase Capital Power’s participation. It is expected that Capital Power’s participation would be maximized under block procurement. Furthermore, a move to hourly procurement would be more administratively burdensome and would change market participant’s ability to recover costs, resulting in higher prices for consumers.</p> <p>Capital Power is further concerned that the AESO has not commented on the potential operational challenges with moving to hourly procurement. There has been no discussion on how it would be implemented given that there is time needed to get into position for the top of the hour and the fact that providers could differ greatly from hour to hour.</p>
6	<p>Hourly procurement</p> <p><u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p><u>Longer than 10 minutes is needed for hourly procurement</u></p> <p>Yes, if hourly procurement were pursued, Capital Power would need longer than 10 minutes to effectively participate. We would prefer at least 15 minutes as additional time is needed when offering a 4 to 5 day (holiday) package.</p>
7	<p>Standby reserve pricing</p> <p><u>Option 1 – Single-part offers with only an activation price</u></p> <p>Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	<p><u>A single-part offer will not account for full scope of risks and costs to OR providers</u></p> <p>Capital Power would like to reiterate its comments from Session 2. Capital Power strongly opposes Option 1 and 2 as both prices are required to account for the full scope of potential risks and costs as an OR provider. Removal of the premium would fail to reward prospective OR providers for having flexible capacity that can be</p>

	Questions	Stakeholder Comments
		made available should active volumes be insufficient.
8	<p>Standby reserve pricing <u>Option 2 – Single-part offers with only a premium price</u> Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document? If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	<p><u>A single-part offer will not account for full scope of risks and costs to OR providers</u> Capital Power strongly opposes this option. See comments above.</p>
9	<p>Standby reserve pricing <u>Option 3 – Two-part offers with an indexed activation price</u> Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	<p><u>Capital Power is supportive of this alternative</u> Capital Power prefers this option over options 1 and 2, however it is not clear the value of moving to this option compared to maintaining the status quo.</p>
10	<p>Standby reserve pricing <u>Preferred option</u> Do you prefer one of the proposed options for standby pricing?</p>	<p><u>Status quo should be maintained</u> Capital Power submits that no changes to the current standby pricing & procurement approach should be made. From the three options, Capital Power prefers option 3 as there is significant risk to market participants with moving to a single-part offer. Capital Power remains concerned that these alternatives, particularly in conjunction with any of the changes proposed above, will add unnecessary complexity and harm competition without any commensurate benefit to system reliability, the OR market and consumers.</p>
11	<p>Standby reserve pricing <u>Offer caps</u> Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price? Do you have any feedback on the proposal to retain the current</p>	<p><u>More transparency is needed, as well as a process to review regularly and account for changes to cost recovery inputs</u> Capital Power does not oppose the general idea of applying the same offer caps for regulating reserves and contingency reserves to the activation price, however, our comments regarding the recommended price as stated above (see response #1) apply here as well.</p>

	Questions	Stakeholder Comments
	\$99/MWh offer cap for the premium price?	
	<p>Other comments</p>	<p><u>Capital Power has concerns about the AESO’s consultation and governance process</u></p> <p>Capital Power appreciates the opportunity to provide feedback and supports any changes that are necessary to maintain efficiency and competitiveness in the OR market. However, we remain concerned that the scope of this engagement does not address the larger issues (i.e. the need to evaluate ancillary service products, including OR, to ensure reliability is provided through the grid transformation through market based means) and is instead focused on changes that are not required at this time.</p> <p>From the outset, many stakeholders (including Capital Power) have questioned whether this OR review is appropriate right now when there are larger issues that need to be addressed, including the need for new/modified ancillary service products. Capital Power is concerned that the AESO has continued to pursue this initiative instead of focusing its time and resources on more important and forward-looking initiatives. In Capital Power’s view, it would be more efficient and effective for the AESO to spend time and resources (and engage market participants time and resources) on a more comprehensive review of ancillary services, including the OR market, with consideration of the interrelated activities underway.</p> <p>Capital Power notes that in this round of stakeholder consultation, several items were marked as a “Final Decision”. We also understand from the stakeholder session (Session 3) that some decisions have been made unilaterally without any oversight from the AUC or the AESO Board. This is concerning from a governance perspective, considering many of the requirements / terms that are being decided upon at the management level – without consensus from stakeholders – are not inconsequential for OR providers. Capital Power would like to better understand the AESO’s decision making and governance process as it relates to this initiative and other initiatives that have significant impact for market participants.</p>

	Questions	Stakeholder Comments
		<p><u>The AESO should focus on higher priority issues, or if pursued, significantly more detail is required for some of the proposed changes</u></p> <p>As commented in response to questions 1 and 5 above, Capital Power is concerned with the lack of transparency to the analysis that the AESO has performed to support its position, and what appears to be solely a focus on the mechanics of the OR market procurement mechanism without regard to how it may function operationally. Should the AESO continue to pursue these changes, Capital Power would expect the AESO to further consult on these changes with more discussion on the supporting analyses for the bid prices, clarity with respect to how the AESO would revisit these prices, and an understanding on how hourly procurement may alter operations. That said, Capital Power at this time strongly encourages the AESO to focus its efforts on more pressing matters as the AESO itself acknowledged that the market is functioning.</p>

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: ENMAX Corporation</p> <p>Date: 2022/10/04</p>	<p>Contact: Randy Stubbings</p> <p>Phone:</p> <p>Email: RStubbings@enmax.com</p>
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In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

	Questions	Stakeholder Comments
	<p>General Comment</p>	<p>ENMAX submits—as it has previously submitted—that the AESO’s case for changing the OR market now is not compelling. While ENMAX appreciates the AESO’s commitment to ensuring that the OR market is fair, efficient, and openly competitive, as it is, there is no shortage of offers or participants in the AS market. Further, ENMAX expects the MSA to continue its oversight and reporting on market shares of offer control and any use of market power to ensure the market is operating in a FEOC manner.</p> <p>That said, ENMAX believes that more extensive changes to the OR market may be required in the future as the supply mix changes and the volume of highly variable, low-capacity-factor wind and solar generation increases. As such, there is some risk that changes made now may be in the “opposite direction” from what will later become necessary.</p> <p>ENMAX has reviewed and is generally in agreement with the London Economics report, titled <i>Independent evaluation of</i></p>

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		<p><i>proposed changes to Alberta’s operating reserve market format and information release policies</i>, that was submitted on behalf of TransAlta. In particular, ENMAX supports the report’s conclusion that the proposed changes are unlikely to materially improve the OR market’s efficiency, price fidelity, or ability to attract new entrants. In ENMAX’s view, that market is already functioning well and is not having trouble attracting new entrants. One need only glance at the CSD page to see that energy storages resources have become frequent providers of contingency reserves.</p>
1	<p>Equilibrium pricing & AESO bid price <u>AESO bid prices</u> Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>ENMAX has not performed any detailed analyses related to this question and therefore has no comment on the specific values chosen by the AESO. However, given the relatively higher value of spinning reserve than supplemental reserve, the AESO might consider setting a higher bid price for the former than for the latter (e.g., \$100/MWh for spinning reserve and \$50/MWh for supplemental reserve).</p>
2	<p>Offer transparency <u>Inflexible blocks</u> Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>ENMAX does not believe the market will be harmed by using inflexible blocks. Our view is that, if a negative effect is observed, it should be relatively simple to reverse the change.</p>
3	<p>Offer transparency <u>Tie-break for equal priced marginal offers</u> The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer. In cases when the even or proportional division is not possible using</p>	<p>As noted in its previous comments, ENMAX does not believe that transparency under the current market design is a problem. ENMAX agrees with London Economics’ conclusion that a sealed-bid auction will not provide any benefit to the OR market and may in fact be harmful. If it wishes to proceed with a sealed-bid approach, the AESO owes it to stakeholders to provide a robust rebuttal to the London Economics paper.</p> <p>Regarding the tie-breaking procedure, an equal division of the required volume is not always possible. To use the AESO’s example of 20 MW and 80 MW offers, if 50 MW were required the equal split would be at 25 MW, which is obviously more than the 20</p>

	Questions	Stakeholder Comments
	<p>whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	<p>MW offer can provide. While the rule could be modified to allocate equal blocks only up to the smaller offer’s limit, in this case leading to allocations of 20 MW and 30 MW, that adds another level of complexity to the allocation rule. The fairness of using the entire smaller offer but only 3/8ths of the larger one is questionable. For both reasons, proportional allocation makes more sense than equal allocation.</p> <p>Regarding non-integer megawatts, there are several possible solutions. If, in the 20/80 MW example, 32 MW were required, the proportional split would initially be 6.4 MW and 25.6 MW. The rule could be any of: (i) allocate partial megawatts to the larger block, giving 6 and 26; (ii) allocate partial megawatts to the smaller block, giving 7 and 25; (iii) allocate partial megawatts to the block with the earlier submission time; or (iv) allocate partial megawatts to the block chosen at random with an equal probability for each block. Given the AESO’s concern about offer latency, it would make sense to use the submission time to allocate partial megawatts.</p>
4	<p>Minimum qualification & offer size <u>Directive tolerance</u> Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>First and foremost, directive tolerances must be set in a manner that is fair to all participants, regardless of size. They must also be set such that the compliance burden (which may be technology-dependent) is reasonable, that compliance can be monitored with available data, that enforcement of noncompliance is possible, and that there is a legitimate requirement for reliable system operations.</p>
5	<p>Hourly procurement <u>Maximized participation</u> With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p>ENMAX’s participation would be maximized with hourly procurement. Hourly OR offers can be better coordinated with hourly energy market offers. Market conditions at the start of a block period can differ materially from those at the end.</p>

	Questions	Stakeholder Comments
6	<p>Hourly procurement <u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p>10-minutes would suffice from an ENMAX perspective.</p>
7	<p>Standby reserve pricing <u>Option 1 – Single-part offers with only an activation price</u></p> <p>Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	<p>The existing pricing mechanism for standby reserves is not particularly complicated, and since it is based on the expected value of the cost of calling on each provider, it best reflects the characteristics of the standby product (that being a call option on reserves). ENMAX sees no compelling reason to change the existing pricing mechanism. Any market participant that is sophisticated enough to offer standby reserves is fully capable of submitting and managing two-part offers.</p> <p>If the AESO is convinced that a change is necessary, ENMAX would support a premium-only offer for SR/SUP and an activation-only offer for RR.</p>
8	<p>Standby reserve pricing <u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	<p>Please see ENMAX’s response to Question 7.</p> <p>Since there is no cost consequence of choosing differently from among premium-only offers, they could be dispatched in either submission-time order (again, in recognition of the AESO’s concern about offer latency) or random order.</p>
9	<p>Standby reserve pricing <u>Option 3 – Two-part offers with an indexed activation price</u></p> <p>Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	<p>Please see ENMAX’s response to Question 7.</p> <p>As noted above, two-part offers best reflect the characteristics of standby reserves; as such, ENMAX supports the continued use of two-part offers.</p> <p>The blended price as presently calculated is the expected value of</p>

	Questions	Stakeholder Comments
		the cost of reserves from each provider. If the prices are indexed to the pool price, that calculation will likely have to be modified to include the AESO’s estimate of the relevant pool price.
10	<p>Standby reserve pricing</p> <p><u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	Please see the response to Question 7.
11	<p>Standby reserve pricing</p> <p><u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	Please see the response to Question 1.

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: Greengate power Corporation</p> <p>Date: 2022/10/04</p>	<p>Contact: Scott Perry</p> <p>Phone: 403 930 1300</p> <p>Email: scott@greengatepower.com</p>
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In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>It is unclear what process the AESO will follow if the bid price limits are reached often. Will new limits be set, and if so, how? It is also unclear how changing the pricing method will achieve the AESO’s goals for this initiative. How will this change in pricing going to attract new entrants?</p>
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>We do not share this concern.</p>
3	<p>Offer transparency</p> <p><u>Tie-break for equal priced marginal offers</u></p>	<p>Greengate supports the volume being split equally instead of favoring the timing of the submission.</p>

	Questions	Stakeholder Comments
	<p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	
4	<p>Minimum qualification & offer size</p> <p><u>Directive tolerance</u></p> <p>Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>As specified in the Watt-ex contract, some past and current market participants can offer greater than the 80 MW limit maximum. If the AESO wants to create a more competitive market, it should address this imbalance by setting equal limits for all assets.</p> <p>Furthermore, it is unclear how the market participants who can exceed the limit are not at risk of causing reliability issues, if new entrants who exceed the limit would as well.</p> <p>To deal with the impact on fairness and competition, the AESO should consider constraining all units, including existing units, to the 80 MW limit thus making the limit 4 MW (5% of 80MW).</p> <p>The Watt-ex contract is the only source of information that makes this potential market inequity clear, and the AESO should offer this context going forward in consultation in its public messaging.</p>
5	<p>Hourly procurement</p> <p><u>Maximized participation</u></p>	<p>Greengate favors moving to hourly procurement. This will enable more choices for supply and greater competition. It would allow more flexible choice between products on an hourly basis and</p>

	Questions	Stakeholder Comments
	With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?	allow for a better shaped buying profile, saving ratepayers cost.
6	<p>Hourly procurement</p> <p><u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	Ten minutes should be adequate.
7	<p>Standby reserve pricing</p> <p><u>Option 1 – Single-part offers with only an activation price</u></p> <p>Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	This option is not attractive to providers since it provides similar payout as the energy market.
8	<p>Standby reserve pricing</p> <p><u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	This would have a similar payout as option 3 and more attractive than option 1. It is not clear what the best way to determine the order in which standby providers would receive a dispatch.
9	<p>Standby reserve pricing</p> <p><u>Option 3 – Two-part offers with an indexed activation price</u></p> <p>Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	The two-part offer method clarifies the dispatch and is preferred by Greengate.

	Questions	Stakeholder Comments
10	<p>Standby reserve pricing</p> <p><u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	<p>Greengate prefers option 3.</p>
11	<p>Standby reserve pricing</p> <p><u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	<p>Greengate can support the offer caps as presented.</p>

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: Heartland Generation Ltd. (“Heartland Generation”)</p> <p>Date: [2022/10/04]</p>	<p>Contact: Kurtis Glasier</p> <p>Phone: (587) 228-9617</p> <p>Email: Kurtis.Glasier@heartlandgeneration.com</p>
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1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>Heartland Generation is supportive of removing equilibrium pricing and to set the uniform price at the marginal offer price.</p> <p>The draft recommendation of what the specific AESO bid prices requires further consultation. Heartland Generation would like to understand the steps the AESO would take if an auction the bid price (now an effective cap) was too low, such that insufficient reserves were procured to fulfill the WECC reliability requirements. Would this situation require an increased reliance on out-of-market contracting for reserves, as the AESO must procure a certain level of reserves? It would therefore be reasonable to set bid prices that are sufficiently high and unlikely to bind to ensure that the reserve procurement thresholds in reliability standards are met.</p> <p>Further, Heartland Generation requests information or clarity on a potential price floor for the offer prices. It is currently understood that the price floor for the equilibrium price would be at -\$480/MWh (when accounting for an AESO bid price of -\$999.99/MWh). The AESO should clarify if the intent is to</p>

	Questions	Stakeholder Comments
		<p>implement a marginal offer price floor as well.</p> <p>The AESO has expressed resistance to conducting a Value of Lost Load (VOLL) study, explaining it would be too volatile and costly to undertake. There are multiple initiatives that would be informed by an updated VOLL study. Especially as the value of reliability and ancillary services are pivotal considerations while Alberta undergoes an energy transition. A VOLL study may help the AESO determine if the price cap is too low, and/or if the price cap should level, accounting for operating reserves, should change over time to reflect inflation or market conditions.</p>
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>Heartland Generation has concerns over the move to a sealed-bid auction and is still awaiting the additional process that the AESO has indicated it will provide. However, as this process has not yet been set, high-level comments are included below. It is insufficient to rely on an MSA report regarding the energy market when recommending a drastic market design change to the Operating Reserves (“OR”) market.</p> <p>TransAlta has provided an independent expert report on the impact of a sealed bid auction in the OR market. Heartland Generation has reviewed this report and is supportive of many of its conclusions.</p> <p>Previously, the AESO asked participants what information they would require if the OR market was to shift to a sealed-bid auction. Multiple participants, including Heartland Generation, stated that they would need to see the clearing volumes, prices, and some way to gauge the supply curve headed into the subsequent auctions in order to effectively form bids. An indication of market liquidity becomes even more important as the operating reserve markets are voluntary; whereby removing transparency is likely to result in less efficient outcomes. Heartland Generation could understand a compromise whereby bids are masked as they are submitted, removing the risk of signaling, but that the offer curve is still published after the auction but before the subsequent auctions.</p> <p>The AESO has proffered that the OR offer disclosure should be aligned with the FEOC Regulation stipulation for the energy offer disclosure: offer price, volume, and offer control party with a 60-day lag. This is unwarranted as the FEOC Regulation only specifies the energy market offer information. In general, competition is aided by open information as it removes asymmetry in</p>

	Questions	Stakeholder Comments
		<p>information between competitors. Specifically, small competitors will be encouraged to participate when the cost of information discovery is decreased through transparent and open publication. The status quo needs to be open and transparent information, and then only information that has been explicitly determined as harmful should be made confidential, as detailed in the FEOC Regulation. The AESO is attempting to reverse the onus and have market information be deemed confidential until participants can justify why it should be made public. It is also worth noting that the 60-day lagged information has not previously been consulted on, as it was an absent feature during previous sessions. It is inappropriate and contrary to effective stakeholder engagement for the AESO to characterize this as a “Final Decision”.</p> <p>Heartland Generation has more specific comments/feedbacks regarding the sealed-bid auction format and the potential harm but will wait until the further process that the AESO has stated will occur. Alternatively, Heartland Generation would be in favor of the AESO ceasing further consultation on the sealed-bid auction and withdrawing its recommendation from consideration.</p>
3	<p>Offer transparency <u>Tie-break for equal priced marginal offers</u></p> <p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives</p>	<p>Heartland Generation is strongly opposed with moving to a sealed-bid auction; however, if a sealed-bid auction is implemented, then the AESO should leverage the experience in clearing same-priced blocks found in the energy market. The AESO could borrow the language from equal priced blocks in the energy market to determine how to clear equally-priced bids in the OR market. Participants in the OR markets are likely familiar with these processes as most are also participants in the energy market.</p>

	Questions	Stakeholder Comments
	to this proposal?	
4	<p>Minimum qualification & offer size</p> <p><u>Directive tolerance</u></p> <p>Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>Heartland Generation still has concerns surrounding the lowering of minimum qualification size to 1 MW. Specifically, the AESO has not provenly addressed the issue of size bias whereby larger assets disproportionately receive more directives. This relationship was showcased by the MSA in its quarterly report and brought to the attention of the AESO in multiple stakeholder sessions. The AESO has proposed a priority directives tool, that is planned to be in service sometime in October 2022. It is only prudent to have the tool in service and for the AESO’s directive history with the tool in place to be tested before there are further changes made to qualification size.</p> <p>Stakeholders have multiple concerns and outstanding questions about lowering the minimum qualification size: directive bias, how the “time elapsed since last directive” is measured, process and governance surrounding System Controller discretion to override priority tool, and compliance issues for much smaller assets.</p> <p>The AESO, given the outstanding concerns and untested solutions proposed, should delay the lowering of the minimum qualification size until more data on the potential problems are published. This would include not making changes to the minimum qualification size and directive tolerance until the RFI process and recommendations for frequency response have concluded.</p> <p>During the AESO’s Distributed Energy Resources Markets Participation consultation the recommendation was to maintain the 5 MW minimum SCADA data trigger for resources in the energy market. The AESO even cited that “increased Small DER penetration on the AIES has the potential to impact both system reliability and the FEOC operation of the market.”¹ Further, the AESO justified not lowering the minimum size threshold by stating “efficiency benefits from direct participation of Small DERs in the energy market is not expected to outweigh the cost of participant rule compliance and AESO implementation for Small DERs.”² The AESO has not provided substantial evidence that this would not also be the case when proposing to lower the minimum qualification size in the OR market. In fact, the AESO has not shared</p>

¹ AESO Presentation: Distributed Energy Resources Engagement and Progress Update, presented on February 23, 2021, slide 45.

² Ibid, slide 51.

	Questions	Stakeholder Comments
		<p>any details on the compliance, implementation costs, or reliability risks associated with lowering the minimum qualification size in the OR market.</p> <p>Further, these changes will create a disconnect between requirements to participate in the energy market versus the OR market. This could imply a sense of gaming as voluntary participation in the OR market (a last defense against negative reliability outcomes) will come without any implied participation in the energy market where all available capability must be offered.</p>
5	<p>Hourly procurement <u>Maximized participation</u></p> <p>With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p>Further analysis would need to be provided regarding hourly procurement in order to be comfortable in supporting hourly procurement. Block procurement makes more sense when maintaining the day-ahead auction. Currently, a move to hourly procurement seems to unnecessarily complicate the market auctions and would potentially lead to further changes (like increasing the resource requirements for participation in OR markets as bids/auctions would require more planning and time, especially for weekend/holiday procurements).</p> <p>It is recommended that block procurements are maintained, especially considering the other proposed amendments that are being contemplated in this consultation (e.g., qualification size and compliance, standby reserves bidding, sealed-bid auctions). Changing multiple pieces of the OR market, which all have interactions with each other, is bound to lead to unintended consequences. Heartland Generation, in general, recommends incremental amendments that are evidence-based and have considered overall implementation.</p>
6	<p>Hourly procurement <u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p>See previous reply to Question 5.</p>

	Questions	Stakeholder Comments
7	<p>Standby reserve pricing <u>Option 1 – Single-part offers with only an activation price</u> Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	<p>This option does not seem tenable. It does not seem efficient or consistent with a fair market to not pay reserve providers for being in reserve. Contracted reserve providers would only receive payment when activated, even though a characteristic of the service being provided is to sit on standby while awaiting dispatch/directive.</p>
8	<p>Standby reserve pricing <u>Option 2 – Single-part offers with only a premium price</u> Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document? If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	<p>This option is not supported, as it creates uncertainty in the dispatch queue for standby providers. Without an activation price to show a clear order of dispatch/directive and associated cost, it could create a system with limited oversight whereby dispatches may rely more on discretion or arbitrariness. There is value to both the offering assets and the dispatch/directives to having participants indicate both an activation price and premium price in the auction.</p>
9	<p>Standby reserve pricing <u>Option 3 – Two-part offers with an indexed activation price</u> Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	<p>Of the three options presented, this one more closely resembles the current standby pricing model. The cost or efficiency benefits of Option 3 have not been shown, and the changes to pricing may introduce further complication and complexity.</p>
10	<p>Standby reserve pricing <u>Preferred option</u> Do you prefer one of the proposed options for standby pricing?</p>	<p>Heartland Generation’s preference is to maintain the status-quo and stop further changes to the standby markets. The concern is that the changes to standby reserve pricing have not been demonstrated to have an observed benefit and are simply “change for change’s sake”. If forced to choose between the options presented, which Heartland Generation reiterates that it is opposed to these changes, then Option 3 would be preferred. Option 3 at least partially mitigates the downfalls of the other two options by maintaining a blended price and clear dispatch queue.</p> <p>Further, Heartland Generation is concerned about some of the concurrent changes being contemplated in the OR market review. For example, if hourly procurement replaces block procurement, then Option 3 would imply standby reserve pricing would now face 24 different price indices and further complexity/uncertainty when offering. The AESO should minimize changes to</p>

	Questions	Stakeholder Comments
		<p>the OR markets, especially when considering interactions between related proposed amendments could lead to unintentional consequences.</p>
11	<p>Standby reserve pricing <u>Offer caps</u> Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price? Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	<p>Heartland Generation does not have further comments at this time (see response to Question 1 regarding the offer caps).</p>
12	<p>Other Do you have any additional questions/concerns regarding the Operating Reserve Market Review?</p>	<p>Heartland Generation is concerned about the level and quality of stakeholder engagement the OR Market Review contains. Stakeholders are providing pages of concerns about key proposed amendments, the topics of sealed-bid auctions and minimum qualification size being principal among them. TransAlta even included an independent expert report on sealed-bid auctions because of the AESO’s general disregard for stakeholder concerns prior to this. However, the AESO seems determined to make changes to the OR markets without quantitative evidence and with only their own logic as justification; this is all while claiming that the OR markets are working well and that these “minor changes” only serve to improve efficiency. Heartland Generation and other stakeholders, shown in their comment matrices, contend that many of these changes are not minor and will be disruptive to the function and efficiency of the market. It is disappointing that the AESO continues to propose and even finalize recommendations despite and in direct opposition to the specific concerns demonstrated by stakeholders. This is inefficient stakeholder engagement that could ultimately lead to costly and protracted regulatory processes in front of the AUC.</p> <p>There are distinct concerns over the governance process for any of the changes that do not require amendments to ISO Rules. As these changes would not require AUC oversight, it is unclear whether they would require AESO Board approval or if the AESO employees could make unilateral decisions. The AESO should provide a breakdown by individual amendment that will detail whether the ultimate decision will be made by AESO staff,</p>

	Questions	Stakeholder Comments
		AESO board, or the AUC.

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: Industrial Power Consumers Association of Alberta (IPCAA)</p> <p>Date: 2022/10/04</p>	<p>Contact: Richard Penn</p> <p>Phone: 403-903-7693</p> <p>Email: richard.penn@ipcaa.ca</p>
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Instructions:

1. Please fill out the section above as indicated.
2. Add your feedback to the following comment matrix.
3. Email your completed comment matrix to rules_comments@aeso.ca.

The AESO appreciates stakeholders' ongoing participation and feedback in this initiative. Information from the slide decks presented during the three Stakeholder sessions is available on aeso.ca and may be helpful in responding to the questions below. Additionally, the AESO posted a supplementary document on the proposed alternatives for standby reserve pricing.

In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>The AESO stated in its presentation that prices at or near the present AESO bid price of \$100 / MWh are currently rare, at less than 1% of time for all products. Based upon this data it is not clear why the AESO wishes to retain a bid price, other than a Maximum Operating Reserve Price set at the price of energy at \$999.99 / MWh. Has the AESO undertaken any competitive analysis on the impact of removing the bid price?</p>
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>IPCAA believes that opting out of partial clearing of a marginal price offer may increase the competitive volumes of OR offered.</p>
3	<p>Offer transparency</p>	<p>The Tie-Break should be based upon the earliest submitted offer.</p>

	Questions	Stakeholder Comments
	<p><u>Tie-break for equal priced marginal offers</u></p> <p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	<p>IPCAA believes this will result in a more competitive outcome.</p> <p>It is our understanding that after the fact a participant may breakdown a winning large operating reserve offer block into subsets differentiated by generator. If correct, this provides an advantage to large generators, who under the AESO’s proposed tie-breaker formula can gain a larger share of the MWs.</p>
4	<p>Minimum qualification & offer size</p> <p><u>Directive tolerance</u></p> <p>Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>No comment</p>
5	<p>Hourly procurement</p> <p><u>Maximized participation</u></p> <p>With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p>IPCAA believes that hourly procurement will lead to a greater volume of operating reserve offers by minimizing barriers to entry.</p>

	Questions	Stakeholder Comments
6	<p>Hourly procurement <u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p>No comment.</p>
7	<p>Standby reserve pricing <u>Option 1 – Single-part offers with only an activation price</u></p> <p>Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	<p>The AESO has indicated that the present Standby reserve pricing mechanism creates:</p> <ul style="list-style-type: none"> - Uncertainty and price risk; - Complex; - Pay-as-bid distorts offer strategy incentives. <p>Option 1 while simple in concept eliminates, complexity, the price risk and simplifies a participants offer strategy.</p> <p>Real-time activation prices should lead to significantly larger volumes of offered stand-by reserves. and should lead to competitive activation offers.</p>
8	<p>Standby reserve pricing <u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	<p>No Comment</p>
9	<p>Standby reserve pricing <u>Option 3 – Two-part offers with an indexed activation price</u></p> <p>Do you have any feedback on Option 3 for standby pricing, as</p>	<p>No Comment</p>

	Questions	Stakeholder Comments
	described in the supplementary document?	
10	<p>Standby reserve pricing</p> <p><u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	IPCAA would prefer Option 1 due to its simplicity in design and the likelihood that it will maximize the stand-by volumes available.
11	<p>Standby reserve pricing</p> <p><u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	See Comments under Number 1.

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: Suncor Energy Marketing Inc.</p> <p>Date: 2022/10/04</p>	<p>Contact: Horst Klinkenberg</p> <p>Phone: (403) 819-7125</p> <p>Email: horst.klinkenberg@suncor.com</p>
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	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>Suncor reiterates its previous comments that a price cap, <i>i.e.</i> AESO bid prices, is unnecessary and inappropriate for the OR market.</p> <p>Suncor particularly objects to any kind of <i>grounding</i> of a price cap in some kind of cost recovery analysis, which is entirely inappropriate for Alberta’s overall market design.</p>
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>Suncor has no further information regarding this concern at this time.</p>
3	<p>Offer transparency</p> <p><u>Tie-break for equal priced marginal offers</u></p> <p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use</p>	<p>Suncor believes that it might be useful to consider additional attributes in addition to a pure mathematical allocation of the equal priced offers. For example, the total volume sold by participant/asset and historical performance could be considered in order to ideally increase performance and reduce risk.</p>

	Questions	Stakeholder Comments
	<p>submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	
4	<p>Minimum qualification & offer size <u>Directive tolerance</u> Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability \leq 200 MW and 10 MW for assets with maximum capability $>$ 200 MW?</p>	<p>Suncor is concerned about a misalignment between energy market compliance and OR market compliance.</p>
5	<p>Hourly procurement <u>Maximized participation</u> With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p>Neither approach would likely significantly impact Suncor’s participation. However, in order to minimize the additional administrative overhead created by hourly procurement, Suncor would likely not actively use the incremental flexibility but largely maintain block offers.</p>
6	<p>Hourly procurement <u>Auction duration and format</u> If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p>It is difficult to foresee how much time would be needed; this would very much depend on the simplicity of submitting and modifying offers. However, a slightly increased time would seem appropriate.</p>
7	<p>Standby reserve pricing <u>Option 1 – Single-part offers with only an activation price</u> Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	<p>Suncor continues to oppose this option. As previously explained, a standby provider is providing the AESO with an option that has value, even if it is not exercised, which justifies the inclusion of a premium.</p>

	Questions	Stakeholder Comments
8	<p>Standby reserve pricing <u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	<p>This seems like the most logical alternative for revamping standby reserve pricing. Competition should occur along a single price and not require an artificial blending of two prices. Since an activated standby provider provides the same service as an originally active provider in real-time, it is appropriate for both to receive the same payment, <i>i.e.</i> the activation price should be the same.</p> <p>It is worth noting though that if activation prices can vary hourly, premiums should be allowed to vary hourly accordingly.</p>
9	<p>Standby reserve pricing <u>Option 3 – Two-part offers with an indexed activation price</u></p> <p>Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	<p>The blending of two prices (premium and activation) is already arbitrary and likely inefficient. While moving to an index for activation creates marginally better alignment with the active market, the bigger issue would remain.</p>
10	<p>Standby reserve pricing <u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	<p>Out of the proposed options, Suncor vastly prefers Option 2.</p>
11	<p>Standby reserve pricing <u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	<p>See response to 1.</p> <p>Offer caps are solely a market power tool and their necessity, if any, as well as their potential levels should be carefully considered in that context. Suncor believes that given the nature of the market and its competitiveness, price caps are not justified.</p>

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: TransAlta Corporation</p> <p>Date: 2022/10/04</p>	<p>Contact: Akira Yamamoto</p> <p>Phone: 403-267-7304</p> <p>Email: akira_yamamoto@transalta.com</p>
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Instructions:

1. Please fill out the section above as indicated.
2. Add your feedback to the following comment matrix.
3. Email your completed comment matrix to rules_comments@aeso.ca.

The AESO appreciates stakeholders’ ongoing participation and feedback in this initiative. Information from the slide decks presented during the three Stakeholder sessions is available on aeso.ca and may be helpful in responding to the questions below. Additionally, the AESO posted a supplementary document on the proposed alternatives for standby reserve pricing.

In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

TransAlta General Comments:

TransAlta does not support continuation of the AESO’s Operating Reserves Market Review. The AESO has not presented a compelling case for change in any of its proposals since it commence the market initiative. Despite receiving feedback from various stakeholders that have challenged the basis for any of its proposed changes, the AESO has chosen to largely ignore those comments and continued to expand the scope of its review and to propose novel, experimental changes that largely have no or poor stakeholder support. TransAlta is very concerned about the lack of transparency of the AESO’s decision making process, which we were surprised to hear has arrived in many cases at final decisions and recommendations without industry support or any strong rationale supporting its decisions. While TransAlta has sought to understand the AESO’s rationale and case for change and has attempted to participate in a constructive fashion in the consultation by providing comments on the questions the AESO’s has sought to hear from stakeholders, none of TransAlta comments should be construed as support for the AESO’s Operating Reserves Market Review or any changes to the existing operating reserves market design.

	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and</p>	<p>There is no clear support for the AESO’s final decision to move to uniform pricing; the AESO’s decision should be further reviewed and not pursued</p> <p>TransAlta generally does not support the AESO’s Operating Reserves Market Review. With respect to the AESO’s proposal to change from</p>

	Questions	Stakeholder Comments																								
	<p>\$50/MWh for spinning and supplemental reserves?</p>	<p>equilibrium to uniform pricing, we are indifferent to the proposal. We have seen no compelling rationale in the material presented by the AESO for this change, aside from the AESO’s own new found preference for marginal pricing over equilibrium pricing for operating reserves – a preference is not justification on its own for a change. The operating reserves market has used an equilibrium pricing without issue for many years and there appears to be little support for the AESO’s “final decision”. The AESO needs to provide stakeholders an explanation for how it can arrive at a final decision without any clear rationale for its proposal.</p> <p>The AESO needs to perform more analysis of the costs of other resources that are key providers of operating reserves to inform its recommendation on bid prices</p> <p>Transalta does not agree that an analysis using the characteristics of an aeroderivative simple cycle gas turbine (a study that was conducted in 2018) and the AESO’s determination of what its cycling costs could be as the sole data point for determining what the AESO bid price should be. It is doubtful that a new aeroderivative would ever be developed solely to provide operating reserves that would at maximum bid cap only cover its costs to cycle on. It is not clear why the AESO believes that the bid price should be set based upon only allowing for the cycling costs of a new gas fired generator (particularly when there are so few such resources that even participate in the operating reserves market) and why that should inform the caps for a competitive operating reserves market that is served by a range of resources and technology types beyond just simple cycle gas turbines.</p> <p>As an additional point of reference, we have provided below, the cost recovery required for a coal-to-gas facility with a 12-hour long lead asset and a 10 heat-rate during a \$0/MW pool price environment under the following gas and carbon scenarios.</p> <table border="1" data-bbox="1138 1232 1946 1448"> <thead> <tr> <th>Gas (\$/GJ)</th> <th>Carbon Price (\$/TON)</th> <th>CR (5 MW)</th> <th>CR (10MW)</th> <th>RR (5MW)</th> <th>RR (10MW)</th> </tr> </thead> <tbody> <tr> <td>\$6.83</td> <td>\$50</td> <td>\$2,590</td> <td>\$1,295</td> <td>\$6,906</td> <td>\$3,453</td> </tr> <tr> <td>\$10.00</td> <td>\$170</td> <td>\$4,410</td> <td>\$2,205</td> <td>\$11,760</td> <td>\$5,880</td> </tr> <tr> <td>\$0.00</td> <td>\$50</td> <td>\$326</td> <td>\$163</td> <td>\$870</td> <td>\$435</td> </tr> </tbody> </table>	Gas (\$/GJ)	Carbon Price (\$/TON)	CR (5 MW)	CR (10MW)	RR (5MW)	RR (10MW)	\$6.83	\$50	\$2,590	\$1,295	\$6,906	\$3,453	\$10.00	\$170	\$4,410	\$2,205	\$11,760	\$5,880	\$0.00	\$50	\$326	\$163	\$870	\$435
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\$0.00	\$170	\$1,096	\$548	\$2,923	\$1,461			

	Questions	Stakeholder Comments
		<p>from reflecting the value to load that would arise due to a lack of sufficient reserves or the consequences of insufficient reserves procurement (e.g., requirements that may be imposed by WECC to procure more reserves in the future).</p> <p>We are concerned that the AESO’s bid price proposals are unsound, based upon weak evidence, could have the unintended consequences of weakening incentives to provide operating reserves, increase the risk of under-procurement, and could result in more forced conscription of operating reserves. The AESO should withdraw this proposal until it can perform a comprehensive analysis of supplier and consumer economics on the value of service including consideration of the impact of under-procuring reserves to inform a final decision on bid price. For example, the AESO is obliged to procure a higher level of contingency reserves if it does not procure enough, the cost of this impact should be considered in determining the value to load of procuring sufficient reserves.</p> <p>Transalta believes that the AESO bid price should be reflective of the value the service is to the AESO and the overall reliability of the provincial electric system. The current recommended bid prices could have unintended consequences in the future. Given these significant concerns, TransAlta does not believe that the AESO should proceed with its proposal on bid prices and that further analysis, considering both the supplier and consumer economics, should be performed before reaching any conclusion let alone any final decision on the AESO’s proposal.</p>
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>As discussed throughout the consultation to date, TransAlta <u>strongly</u> objects to the AESO’s final decisions on sealed bid and offer transparency. We support maintaining the status quo, which does not require any new mechanism to be implemented for partial clearing or opting in or out of partial offer clearing.</p> <p>Inflexible blocks and opting out of partial clearing</p> <p>The need to consider how to deal with inflexible blocks and partial clearing issues as a result of the AESO’s proposed change to uniform pricing highlights how unnecessary and complex the AESO’s recommendation is. We repeat our position that no such change to equilibrium pricing is necessary or provides any clear benefit.</p>

	Questions	Stakeholder Comments
		<p>However, we do agree that if uniform pricing were to be implemented, suppliers should be able to indicate inflexible blocks and opt out of partial clearing. This would support suppliers in making better decisions with respect to their long lead time assets and/or assets with limited fuel. The tradeoff is that the ability to opt-out inflexible blocks from partial clearing could diminish the AESO’s ability to procure sufficient operating reserve volumes as participants could choose to opt the maximum size of a resource as an inflexible block and that would have impacts on the AESO’s ability to clear only the volume it requires.</p> <p>One potential mitigation that may reduce the risk described above is that the AESO could partially clear versus its current practice of skipping offers that cannot be procured in whole and potentially under procuring its target volume. Under the current clearing mechanism, there is no partial clearing so when the AESO cannot clear the full offer block to meet its requirement it is skipped and that can result in the AESO missing its target. Under the partial clearing proposal, the AESO could clear the next eligible block, including volumes that opt to be partially cleared, which could increase the likelihood that the AESO always procure its target volume depending on how market participants opt in or out of partial clearing.</p> <p>Furthermore, there is a risk that by creating such provisions for inflexible blocks, the AESO is actually incentivizing less dispatchable and inflexible units versus providers that have more controllable, flexible units that could provide a higher quality operating reserves service. More than anything else, and despite our attempts to proffer solutions to the issues to mitigate risks, the concerns that we have highlighted are strong reasons for maintaining the status quo (and should not be interpreted as support for uniform clearing).</p>
3	<p>Offer transparency</p> <p><u>Tie-break for equal priced marginal offers</u></p> <p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a</p>	<p>As stated above, TransAlta strongly objects to the AESO’s final decisions on sealed bid and offer transparency. We support maintaining the status quo, which does not require any new tie-break mechanism to be implemented.</p> <p>Tie-breaks should be divided on a pro-rata basis of offered volume</p> <p>Volumes for equally priced marginal offers should be divided proportionately to the size of the offered volume (on a pro-rata offer basis) not on an equal basis between suppliers. As applied to the example, we recommend that the</p>

	Questions	Stakeholder Comments
	<p>proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	<p>tie break would proportionately split and allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>With respect to the secondary tie break, the AESO should round to the nearest whole MW to eliminate any need for the secondary tie break based on earliest submitted offer.</p>
4	<p>Minimum qualification & offer size</p> <p><u>Directive tolerance</u></p> <p>Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>The AESO should not move forward with its recommendation to reduce the minimum qualification threshold</p> <p>TransAlta remains <u>strongly opposed</u> to the AESO’s proposal to reduce the qualification threshold for operating reserves. TransAlta raised its concerns about the different directive rates between small and large providers in the Distributed Energy Resource consultation, where the AESO first raised this proposal, which was disregarded by the AESO until the MSA reported on the historical difference in its Q4 2021 report. Our concerns are not only that there is a clear preference for the system controllers to direct larger resources to provide active operating reserves but that the AESO’s proposal does not appropriately recognize the significant difference in the reliability product provided by small versus large resources. These cannot be priced and procured as if they are equivalent products with equivalent obligations or risks. In fact, it is quite clear from historical evidence on directive rates that large resources receive directives 2-6 times more than small resources. It is obvious from historical evidence that services provided by small and large provides carry different risks and should be reflected as incomparable costs for providing the services that large providers are preferred by system controllers in actual system operations. TransAlta acknowledges that the AESO has attempted to assuage these concerns with a theoretical assessment of comparative frequency response and updating its directive practices. However, there has been no demonstration that this has, or will, address the issue. In fact, the AESO has no explanation for the root cause of these different directive rates and even under its proposal the system controllers retain “final discretion” to override the update. There is no evidence that anything the AESO has proposed will actually address this</p>

	Questions	Stakeholder Comments
		<p>issue.</p> <p>Moreover, there has been no demonstration of the AESO's capability to monitor, measure and ensure compliance for small resources. It is untenable to create a construct where small and large resources may in practice be evaluated under different compliance standards with different directive rates but procured and priced under the assumption that they provide the same reliability product. The AESO's verbal assurances that it can do this is neither proven or founded in evidence – the AESO itself never identified the issue with directive rates and in the past its system controllers have considered deviations of 5-10 MW at the individual asset level as too granular to notice at the system level. We have yet to see any evidence that the AESO can and will monitor compliance on what could be at the kW or W level.</p> <p>Our concerns about this risk are elevated given that the AESO suggested that its control center was not able to issue pro-rata directives due to the increased complexity of enabling this capability. This inability was largely confirmed by the information provided by the AESO that it is just in process of creating tools to dispatch multiple assets and that it did not have a way to dispatch assets on a pro-rata basis. TransAlta is skeptical of the AESO's claim that it can manage the dispatching and directives to an increased number of assets and to assets even smaller than what it has ever had to manage before when it has not even had the systems in place to treat large and small providers in an equivalent and fair manner historically.</p> <p>As stated in TransAlta's comments to session 2, the AESO should immediately design a new pricing construct for operating reserves products if it chooses to continue with its current recommendation. It does not suffice for the AESO to suggest that the AESO will fix issues that it has never been forthcoming in identifying or has even properly explained the reasons for its occurrence. At a minimum, the AESO's recommendation should be put on hold until there is at least one year of historical evidence that it has sufficiently addressed the problem and its capability to enforce equivalent compliance expectations.</p> <p>Directive Tolerance</p> <p>TransAlta's only concerns with respect to the proposed change in directive</p>

	Questions	Stakeholder Comments
		<p>tolerance is the AESO’s ability to monitor, measure and assess compliance for small resources.</p> <p>We have seen no demonstration of the capability of the AESO to do this at such a granular level (sub-MW variances). The most appropriate way to demonstrate this capability is in the energy market where these small resources are already participating and after the AESO has clearly demonstrated this ability it may make some sense to revisit small resource participation.</p> <p>It is noteworthy that none of these sub-5 MW resources are obliged to even offer to be dispatched in the energy market let alone be required to comply with any dispatch tolerance. It is incomprehensible and unjustified that the AESO would go so far as to suggest that they would rely on these resources to backstop system reliability when it hasn’t and won’t impose offer and dispatch compliance obligations on these resources in the energy market.</p>
5	<p>Hourly procurement <u>Maximized participation</u> With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p>Hourly procurement should not be pursued</p> <p>TransAlta opposes a change from the current blocks to hourly procurements. We view this as another unnecessary change that the AESO has added to the already unclear scope of this Operating Reserves Market Review initiative. This appears to be in response to a small constituency of prospective battery suppliers, despite the fact that there are battery suppliers that currently actively participate in the operating reserves market under its existing block procurement structure.</p> <p>Not only does this create an enormous amount of unnecessary complexity in the operating market design, the resource requirements to participate in hourly procurements will increase significantly for all participants, erect a higher barrier to competition in terms of cost and time spent in participating in procurements and, when combined with the myriad of other proposed experimental changes put forth by the AESO, it is difficult to provide any constructive feedback on other than to question the AESO about what it is seeking to achieve.</p> <p>The AESO’s consultation to date has been a series of proposals from the AESO on potential changes without any real definition or direction guided by what may be necessary for the future. These are not productive stakeholder</p>

	Questions	Stakeholder Comments
		<p>engagements for industry who are attempting to engage in discussions on the AESO’s thought experiments in market design and responding to requests for feedback on AESO proposals that they have already expressed their disagreement with or even questioned the merits of pursuing. It is notable that the AESO has already stated that the operating reserves market is functioning well and even suggested that it believes future reform may be necessary – this drives the question why we should pursue any change at this time and does not support the AESO’s position that it would like to ensure the market is functioning as efficiently as possible before it considers future change. This appears to be the pursuit of a change for change’s sake and certainly makes even less sense if it is not even guided by changes that may be necessary for the future (there is a higher likelihood that any change made now may be unwound in a future reform).</p>
6	<p>Hourly procurement <u>Auction duration and format</u> If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p>Hourly procurement is impractical and would vastly increase complexity</p> <p>As state above, TransAlta objects to the proposal for hourly procurements. In furtherance of the reasons for not pursuing this change, consider the total amount of time that would be necessary to participate in day-ahead procurements for hourly products. Assuming the same rate of procurement, two share per ten minutes, three operating reserves products (regulating, spinning and supplemental), and active and standby products, we arrive at procurements for one day of hourly product taking 840 minutes or 14 hours.</p> <p>On its face, this resourcing requirement is impractical and prohibitive. The simple time estimate provided above does not include the amount of time that would be required for multiple day procurements (such as weekends and holidays). This is just the estimated time for participating, the resource time required to participate hourly, in terms of dealing with the complexity of managing these volumes of individual transactions, is vastly greater under this procurement approach than maintaining the status quo.</p> <p>Hourly procurement should not be explored any further at this time.</p>
7	<p>Standby reserve pricing <u>Option 1 – Single-part offers with only an activation price</u> Do you have any feedback on Option 1 for standby pricing, as</p>	<p>TransAlta thanks the AESO for providing illustrative examples as requested. After review of Standby Reserve Pricing Alternatives supplement, it is clear to TransAlta that the proposals are inferior to maintaining the current standby</p>

	Questions	Stakeholder Comments
	<p>described in the supplementary document?</p>	<p>pricing approach.</p> <p>Option 1 should not be adopted</p> <p>The AESO’s supplement has confirmed TransAlta’s understanding of the AESO’s proposal. As stated in our previous submission:</p> <ul style="list-style-type: none"> • Single part offers with only an activation price provides limited incentive to participate and will likely drive down supplier interest and competition. • The combination of a clearing price and lack of a premium will drive up the cost of standby reserves. Standby operating reserve providers will require a significant premium to active markets in order to compensate for the uncertainty around being activated due to the lack of any mechanism to earn revenues that could offset the cost of being ready to be activated. • The activation price only proposal drives greater complexity and likely requires new investment into the AESO’s settlement tool and process. As noted by the AESO it will require the development of a new process to determine an activation price index, and participants will need to update their own systems and processes to enable the tracking of cash flows in real time. <p>Overall, this alternative is significantly inferior to the current approach and should not be adopted.</p>
8	<p>Standby reserve pricing</p> <p><u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	<p>Option 2 should not be adopted</p> <p>While Option 2 retains the premium price, as stated in TransAlta’s previous submission:</p> <ul style="list-style-type: none"> • A higher price cap is necessary (above even the AESO’s recommendation on price cap) to compensate suppliers for not being able to set their own activation price. • The proposal to use the prevailing active reserve price is problematic because that price is determined by participants that are offering block products and have the certainty of earning that price over all hours of the block product. The standby provider does not have that certainty therefore the use of active reserve price imposes a new risk on suppliers.

	Questions	Stakeholder Comments
		<p>The premium would need to be even higher and certainly higher than the current approach.</p> <ul style="list-style-type: none"> The lack of activation prices to determine activation order combined with the AESO’s proposal to activate based upon premium and to base activation compensation on the active reserves price reduces any benefit from paying a uniform premium price that reflects the higher offer. Typically, such a model would incentivize suppliers to offer as low as possible. However, suppliers could actually seek higher premium prices to compensate for the unnecessary risks that they are forced to accept because they cannot determine their own activation offer price as accommodated for under the current approach. <p>Overall, this alternative has significant flaws like Option 1, is significantly inferior to the current approach and should not be adopted.</p>
9	<p>Standby reserve pricing</p> <p><u>Option 3 – Two-part offers with an indexed activation price</u></p> <p>Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	<p>Option 3 should not be adopted</p> <p>The AESO’s proposal for Option 3 attempts to address some of the concerns with Options 1 and 2 but with the activation price indexed to pool price.</p> <p>TransAlta cannot support Option 3 due to the AESO’s proposal on the activation price caps, which we view as too low. This is a key example of the AESO proposing changes everywhere that cannot be properly understood because the proposals have interdependencies that have meaningful consequences to potential impacts. The caps that are applied will have significant impacts on how the standby reserve pricing options will work; we have significant concerns that the AESO will selectively consider feedback, cherry-pick comments, and arrive at its own final recommendations that are really an amalgam of disjointed “fixes” that will work at counter-purposes when implemented. It is unfair for the AESO to expect stakeholders to be in a place to provide helpful feedback when its proposals are disjointed alternatives with no clear focus or drivers for change.</p> <p>Given these concerns, TransAlta recommends that the AESO maintain the status quo.</p>

	Questions	Stakeholder Comments
10	<p>Standby reserve pricing</p> <p><u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	<p>The current two-part approach to standby reserve pricing should be maintainedFor the reasons provided on each option above, TransAlta does not support any of the AESO’s proposed standby pricing proposals and recommends that the status quo be maintained.</p>
11	<p>Standby reserve pricing</p> <p><u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	<p>The AESO needs to perform more analysis on the costs of other resources that are key providers of active operating reserves to inform its recommendation on active offer caps</p> <p>TransAlta’s comments on the AESO bid cap are also applicable to an activation offer cap. Please refer to our comments in in section 1 above.</p> <p>TransAlta disagrees that the AESO’s proposed activation offer cap is informed by any relevant or sound analysis to determining the activation offer cap. We are even more concerned with the application of the activation offer price cap to standby products under a proposal (option 1) where standby products earn no premium. Under proposals with only an activation price, the cap likely needs to be higher to compensate for the fact that no premium can be earned.</p> <p>For similar reasons, we disagree that the premium offer cap would be sufficient under a proposal (option 2) earn no activation price. Under a proposal with no activation price paid, the premium offer cap should be set higher than it has been capped at historically. As mentioned in our comments in section 9 above, the AESO’s proposals have many interdependencies that could change the impacts and concerns about other proposals. We are not in a place to be able to understand or even contemplate how the AESO’s alternatives could work together.</p>

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: TransCanada Energy Ltd. (TCE)</p> <p>Date: 2022/10/04</p>	<p>Contact: Mark Thompson</p> <p>Phone: 403-589-7193</p> <p>Email: markj_thompson@tcenergy.com</p>
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Instructions:

1. Please fill out the section above as indicated.
2. Add your feedback to the following comment matrix.
3. Email your completed comment matrix to rules_comments@aeso.ca.

The AESO appreciates stakeholders’ ongoing participation and feedback in this initiative. Information from the slide decks presented during the three Stakeholder sessions is available on aeso.ca and may be helpful in responding to the questions below. Additionally, the AESO posted a supplementary document on the proposed alternatives for standby reserve pricing.

In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>TCE supports removing the equilibrium pricing and setting the uniform price at the marginal offer price. However, TCE is concerned that such a fundamental change to the Ancillary Services market design could be made without oversight from the Alberta Utilities Commission (AUC). TCE strongly encourages the AESO to incorporate the proposed pricing mechanism into an ISO Rule and seek regulatory approval.</p> <p>In prior stakeholder comments, TCE had stated that its support of the proposed pricing mechanism was contingent upon the proposed price cap. Based on the AESO’s analysis and the resulting effective price caps of \$1,150/MWh for regulating reserves and \$1,050/MWh for spinning and supplemental reserves, TCE supports the AESO’s draft recommendation for setting its bid prices for regulating reserves at \$150/MWh and for spinning and supplemental reserves at \$50/MWh.</p>

	Questions	Stakeholder Comments
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>TCE has no comment.</p>
3	<p>Offer transparency</p> <p><u>Tie-break for equal priced marginal offers</u></p> <p>The AESO's draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO's draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	<p>TCE is concerned that the AESO has made a final decision to move to a sealed-bid format for operating reserve offers to the Watt-EX platform without AUC oversight. Fundamental changes to the market design should be overseen by the AUC to provide additional assurance that the AESO's unilateral decisions do not create unintended consequences. TCE strongly encourages the AESO to incorporate its sealed-bid format proposal into an ISO Rule and seek the associated regulatory approval.</p> <p>If the AESO moves to a sealed-bid format, TCE sees no reason to award tie-breaks to the earliest submitted offer. As such, TCE supports clearing equal-priced marginal offers on a pro-rata basis.</p>
4	<p>Minimum qualification & offer size</p> <p><u>Directive tolerance</u></p> <p>Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>TCE has no comment.</p>
5	<p>Hourly procurement</p>	<p>TCE has no comment.</p>

	Questions	Stakeholder Comments
	<p><u>Maximized participation</u></p> <p>With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	
6	<p>Hourly procurement</p> <p><u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	TCE has no comment.
7	<p>Standby reserve pricing</p> <p><u>Option 1 – Single-part offers with only an activation price</u></p> <p>Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	TCE has no comment.
8	<p>Standby reserve pricing</p> <p><u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	TCE has no comment.
9	<p>Standby reserve pricing</p> <p><u>Option 3 – Two-part offers with an indexed activation price</u></p> <p>Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	TCE has no comment.

	Questions	Stakeholder Comments
10	<p>Standby reserve pricing</p> <p><u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	TCE has no comment.
11	<p>Standby reserve pricing</p> <p><u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	TCE has no comment.

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: URICA Asset Optimization</p> <p>Date: 2022/10/03</p>	<p>Contact: Tory Whiteside</p> <p>Phone: 403-689-7243</p> <p>Email: Tory.whiteside@urica.ca</p>
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The AESO appreciates stakeholders’ ongoing participation and feedback in this initiative. Information from the slide decks presented during the three Stakeholder sessions is available on aeso.ca and may be helpful in responding to the questions below. Additionally, the AESO posted a supplementary document on the proposed alternatives for standby reserve pricing.

In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>URICA is amenable to this change in light of the changes to the offer and clearing prices. However, URICA feels this could be optimized to allow for scarcity pricing with regard to the AESO bid price.</p>
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>Unlike the energy market Operating Reserves is a may offer market; therefore, URICA does not believe that inflexible blocks are inherently required. Furthermore, URICA believes that allowing inflexible blocks could lead to uneconomic market outcomes. URICA believes that allowing inflexible blocks in the Operating Reserve market will negatively impact the market.</p>
3	<p>Offer transparency</p> <p><u>Tie-break for equal priced marginal offers</u></p>	<p>URICA believes that retaining the existing tie-break based on time submitted would be the prudent course of action. Clearing volumes proportionally has legitimate issues where allocating</p>

	Questions	Stakeholder Comments
	<p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	<p>volumes to multiple counterparties will result in volumes under 1 MW being assigned to one of the entities. URICA in unsure why unnecessary complexity is being proposed to solve an issue that does not appear to be broken.</p>
4	<p>Minimum qualification & offer size <u>Directive tolerance</u></p> <p>Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability <= 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>URICA believes this change will likely affect smaller assets much more than larger assets, and with the AESO opening the Operating Reserve market to assets 1 MW and larger this change appears to be a negative incentive for these new entrants.</p>
5	<p>Hourly procurement <u>Maximized participation</u></p> <p>With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p>URICA believes on larger scale that moving to hourly procurement may make sense if the AESO were also incorporating different/new AS products and looking at overall structural and holistic changes to the Operating Reserves and potential Energy markets. However, at this time and without a lot more analysis this change seems to be needlessly adding increased complexity based on a naïve expectation of savings. URICA does not feel our participation would change under an hourly scenario, and strongly recommends that further analysis is completed by the AESO for market participant’s review prior to any further movement on this recommendation.</p>

	Questions	Stakeholder Comments
6	<p>Hourly procurement <u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p>This would definitely take much longer to manage both on the AESO and the market participant side of the equation. 10 minutes would not be sufficient for each procurement, especially for entities with many assets that could/would potentially require restatements across all 24 hours. URICA does not believe that we can give a required time for each procurement without testing the hourly methodology to understand how the mechanism would work and what extra effort could be required.</p>
7	<p>Standby reserve pricing <u>Option 1 – Single-part offers with only an activation price</u></p> <p>Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	
8	<p>Standby reserve pricing <u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	
9	<p>Standby reserve pricing <u>Option 3 – Two-part offers with an indexed activation price</u></p> <p>Do you have any feedback on Option 3 for standby pricing, as described in the supplementary document?</p>	
10	<p>Standby reserve pricing <u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	<p>URICA believes that the existing methodology is efficient and that the options presented are not guaranteed to produce better efficiency or save money - which appears to be the primary driver of the recommended change.</p>



	Questions	Stakeholder Comments
11	<p>Standby reserve pricing</p> <p><u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	

<p>Period of Comment: September 12, 2022 through October 4, 2022</p> <p>Comments From: Voltus Energy Canada</p> <p>Date: 2022/09/30</p>	<p>Contact: Nicole Irwin-Viet</p> <p>Phone: (857) 321-0314</p> <p>Email: nirwin@voltus.co</p>
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In consideration of the London Economics report submitted by TransAlta, the AESO will be conducting further process on moving to a sealed-bid auction format. Therefore, the AESO is not seeking feedback on this topic through this matrix. The AESO will advise stakeholders on this additional process in the coming weeks.

	Questions	Stakeholder Comments
1	<p>Equilibrium pricing & AESO bid price</p> <p><u>AESO bid prices</u></p> <p>Do you have any feedback on the draft recommendation to set AESO bid prices of \$150/MWh for regulating reserves and \$50/MWh for spinning and supplemental reserves?</p>	<p>Voltus continues to oppose the removal of equilibrium pricing. We reiterate our request from Session 2 feedback: Voltus requests that the AESO share publicly an analysis of expected outcomes under the proposed change away from equilibrium pricing, including impact to total cost of Active Operating Reserve and examples of expected offer behavior and market clearing outcomes under the existing and alternative approaches. There is an undeniable need for such analysis given that 8 out of 16 stakeholders who submitted comments after Session 2 opposed removing equilibrium pricing without further details and analyses. Such information will help stakeholders understand the assumptions AESO is operating under regarding this proposed change, and enable stakeholders to comment on whether those assumptions are reasonable.</p> <p>Voltus strongly opposes the AESO’s moving from draft recommendation to final decision without additional information and stakeholder engagement.</p>

	Questions	Stakeholder Comments
2	<p>Offer transparency</p> <p><u>Inflexible blocks</u></p> <p>Some stakeholders expressed concerns that the ability to opt-out of partial clearing will negatively impact the market. Do you have any further information or specific examples to substantiate this concern?</p>	<p>Voltus supports allowing the ability to opt out of partial clearing. We do not share the concern over introducing this option, as it would only grant further flexibility to market participants and remove potential operational barriers.</p> <p>Being able to prevent offer blocks from being partially filled would enable diverse resources to participate more flexibly. Allowing for partial clearing will help diversify the market by allowing load and energy storage resources to participate.</p>
3	<p>Offer transparency</p> <p><u>Tie-break for equal priced marginal offers</u></p> <p>The AESO’s draft recommendation is to divide volume between equally priced marginal offers instead of favouring the earliest submitted offer. Should this volume be divided evenly, or proportionately to the size of the offered volume? For example, if 10 MW were needed from equally priced offers of 20 MW and 80 MW, an even split would allocate 5 MW to each offer and a proportional split would allocate 2 MW to the 20 MW offer and 8 MW to the 80 MW offer.</p> <p>In cases when the even or proportional division is not possible using whole megawatts, the AESO’s draft recommendation is to use submission time as a secondary tie break, favouring the earliest submitted offers. This secondary tie break would only be necessary to allocate residual megawatts after allocating based on the even or proportional split. Do you have any feedback or alternatives to this proposal?</p>	<p>Voltus supports an alternative to a time-based tie-break. We believe that using a proportional split of volume would be most desirable, especially under the proposed sealed bid auction format.</p> <p>Using the proportional tie-break method would result in the most equitable outcome for all concerned market participants and we expect would reduce any concerns of new market participants being forced out due to unfavorable market conditions.</p> <p>The use of submission time for secondary tie breaking and allocation of residual megawatts makes sense to us.</p>
4	<p>Minimum qualification & offer size</p> <p><u>Directive tolerance</u></p> <p>Do you have any feedback on the draft recommendation to set directive tolerance of 5% of maximum capability for assets with maximum capability ≤ 200 MW and 10 MW for assets with maximum capability > 200 MW?</p>	<p>Voltus supports the recommendation to set directive tolerance to 5% of maximum capability for assets with maximum capability ≤ 200 MW and 10 MW for assets with maximum capability > 200 MW. As previously expressed, Voltus also supports the AESO’s proposal to decrease the minimum qualification and offer size to 1 MW for all Operating Reserve products. In light of the change to lower the minimum qualified volume, the current 1 MW tolerance for performance of assets ≤ 20 MW becomes unacceptably large relative to dispatched quantity. All assets must be held</p>

	Questions	Stakeholder Comments
		to the same standards of performance in order to maintain the reliability of Operating Reserve programs in Alberta.
5	<p>Hourly procurement <u>Maximized participation</u></p> <p>With reserves still procured day-ahead, would your participation be maximized under hourly procurement, where participants offer for each hour separately, or block procurement, where reserves continue to be procured in blocks as they are defined today?</p>	<p>Voltus continues to strongly support the transition to hourly procurement. As a Demand Response provider, we operate assets that consist of end-use customer sites that reduce load when called upon in a directive. Each site has its own schedule of operations that draw electricity from the grid, corresponding to available curtailable load that can be offered into the market. Hourly procurement would allow customer sites to offer varying MW amounts in certain hours, rather than being constrained by their lowest availability across the on- or off-peak block. Hourly procurement will be more cost-efficient from a system perspective for this reason, as well.</p>
6	<p>Hourly procurement <u>Auction duration and format</u></p> <p>If hourly procurement were pursued, would longer than 10 minutes be needed in each procurement in the day-ahead market for you to effectively participate? If so, what duration would you prefer? Would any other changes to the timing or format of the procurement be helpful?</p>	<p>If hourly procurement were pursued, Voltus expects that simultaneous procurement across hours could be a reasonable approach. The alternative of running individual procurement auctions for each hour, or for smaller blocks of hours, would significantly lengthen the auction.</p> <p>However, Voltus has previously expressed concern over the fact that details of implementing hourly procurement are still largely undefined - including the details of how participants might control offer parameters in either a simultaneous or sequential auction across hours to help govern clearing outcomes. We maintain this concern, and encourage the AESO to source further feedback from Stakeholders regarding the detailed implementation of hourly procurement.</p>
7	<p>Standby reserve pricing <u>Option 1 – Single-part offers with only an activation price</u></p> <p>Do you have any feedback on Option 1 for standby pricing, as described in the supplementary document?</p>	<p>Voltus does not have any comments on Standby reserve pricing at this time.</p>
8	<p>Standby reserve pricing <u>Option 2 – Single-part offers with only a premium price</u></p> <p>Do you have any feedback on Option 2 for standby pricing, as</p>	

	Questions	Stakeholder Comments
	<p>described in the supplementary document?</p> <p>If Option 2 were pursued, what mechanism should the AESO use to determine the order in which standby providers receive a dispatch?</p>	
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10	<p>Standby reserve pricing</p> <p><u>Preferred option</u></p> <p>Do you prefer one of the proposed options for standby pricing?</p>	
11	<p>Standby reserve pricing</p> <p><u>Offer caps</u></p> <p>Do you have any feedback on the proposal to apply the recommended active offer caps of \$150/MWh for regulating reserves and \$50/MWh for contingency reserves to the activation price?</p> <p>Do you have any feedback on the proposal to retain the current \$99/MWh offer cap for the premium price?</p>	