Stakeholder Comment Matrix – Oct. 1, 2020

Request for Feedback on *Long-term Energy Storage Market Participation Options Paper*

Period of Comment: Oct. 1, 2020 through Oct. 30, 2020	**Contact:**
Comments From: TransAlta Corporation	**Phone:**
Date: 2020/10/30	**Email**:

Instructions:

1. Please fill out the section above as indicated.
2. Please respond to the questions below and provide your specific comments.
3. **Please submit one completed matrix per organization.**
4. Email your completed comment matrix to energystorage@aeso.ca by **Oct. 30, 2020**.

The AESO is seeking comments from Stakeholders with regard to the following matters:

	Questions	Stakeholder Comments
1.	Are there additional issues to energy storage market participation within the current ISO rules that AESO did not identify?	No comment at this time.
2.	Are there additional options to energy storage market participation within the current market structure that AESO did not identify?	***Full range participation should be voluntary and should combined the existing "may bid" framework with implementation of "half-range".*** The AESO's paper identifies what we may could be called the bookends of possible solutions. It does not identify all of the options between those bookends, which we believe should be considered for the option that is ultimately selected. For example, the AESO identifies full range options including a "B-Offer" option, which places a mandatory must bid requirement. We note that full range could be accommodated with the existing "may bid" option combined with the half-range option. We view this option as superior to the options that the AESO has identified in its paper.
3.	Do you agree with the evaluation of options?	***It's too early to evaluate the options; we should scope the problems, brainstorm and identify possible solutions and then assess them.*** No, we are not sure that the design principles that the AESO is evaluating options against is the right set of decision-making criteria. Even if this is the AESO's decision-

		making criteria, we are concerned with assigning each "design principle" or criteria with an equivalently weighted. Additionally, we are concerned about the AESO's subjective assessments using a 5-point scale as it creates an impression that a higher level of objectivity was applied to rate each option and when those rating are combined or used to assign an overall rating it can lead to misleading conclusions about the ranking of the alternatives. For example, a one-point difference in "dispatch-ability" is not necessarily the same as a one-point difference in "Minimize Complexity". The "No grandfathering required" criterion does not lend itself to a 5-point scale at all as it only appears to have two responses (yes or no). While we appreciate that the AESO's desire to advance to the evaluation phase expeditiously, we caution against doing so at this stage. While we do agree with noting the drawbacks and benefits of each identified option, we recommend that evaluation proceed after all of the alternatives raised by stakeholders are also included.
4.	Is full range market participation an important priority for energy storage right now; or is half-range providing required market access? Should full range market participation be deferred for investigation and implementation at a future date?	***The AESO should continue to move forward with implementation that enables the full range market participation of energy storage.*** The Information Documents and existing ISO Rules have provided the clarity to allow energy storage to participate on a "half-range" basis. We understood the purpose of the Long-Term activities (in the one to two-year horizon) on the Energy Storage Roadmap was to formalize the ISO Rules to permit energy storage to be fully enable the integration of energy storage technology. We expected this forum to be the investigation and development of implementation of full range participation in the energy and ancillary services markets. For example, the exploration of energy storage to manage wind generation ramping (e.g. the load range of energy storage is an alternative to ramping down intermittent resources). We are also interested in exploring the use of Payment to Loads on Margin (part of the sub-hourly settlement market initiative), which requires the enablement of full range market participation. Energy storage is more likely than most other loads to bid into the market as these resources may be even more price sensitive to energy price – unlike other loads, whose economics of power consumption are tied to the economics of producing goods or providing services, the economics of charging decisions are entirely tied to the provision of source capacity and electricity.

5.	Should Variable Energy Resources and Storage hybrids be permitted to participate? a. If no please explain why not b. If yes please provide a rationale as to why and how the dispatch variability issue should be addressed?	***Yes, Variable Energy Resources and Storage hybrids should be permitted to participate.*** We strongly disagree with the AESO suggestion that they may consider not permitting Variable Energy Resources and Storage hybrids from being able to participate. We note that the AESO had only recently provided clarity on "hybrid" configurations and how these assets can participate in the market. We are highly concerned having invested millions into a hybrid asset that just entered service a little over a month ago that the AESO is now creating new regulatory risk and uncertainty. We were directly impacted by the changes in the metering configuration for hybrid assets that the AESO decided upon with additional infrastructure that had to be procured in a matter of months during a pandemic. We see no justification for the AESO changing its course or view on the acceptability of hybrid assets when it directed specific metering infrastructure to enable these assets to participate in the market. The existence of an energy storage resource behind-the-fence of an intermittent resource does not increase the system demand variability (it may actual help reduce it). The only difference is that the energy storage asset can consume generation produced by the intermittent resource, which varies the amount of generation that is sent to the grid (and may reduce high levels of intermittent generation in the system when it isn't needed). The AESO has full visibility of what the energy storage asset is doing behind-the-fence. In fact, the market participant must schedule charging that would be greater than the allowable dispatch variance of the intermittent resource by pricing those megawatts out of merit. In this respect, the system controller is made aware from offers from the intermittent resource when it is going to use the generation to charge the energy storage asset (those megawatts would be priced out of merit). Any charging that is within the allowable dispatch variance is too low to provide meaningful information to the system controller (and is visible to them in any event by the Supervisory Control and Data Acquisition (SCADA) data from the energy storage asset).
6.	How should storage and potentially other demand side resources be required to participate in the energy market? a. Must submit full range b. May submit full range c. Only submit discharge capability	***No change should be made to the manner in which demand side resources are required to participate in the energy market today due to storage.*** *Section 203.1: Offers and Bids for Energy* does not impose a requirement on load resources today to bid into the market. Rather, the rule permits a load resources the option to bid to purchase electricity at a bid price determined by the market participant. We are not aware of the active use of the option to bid by load customers currently or historically as such we expect that imposition of such a requirement on loads would be onerous and burdensome on those market participants. We see no justification for

	Please provide a rationale for your choice.	changing the rules for load resources due to the participation of energy storage resources. ***No requirement should be imposed on storage to submit bids; it should be voluntary just as it is for load resources.*** Energy storage assets should also be permitted to consume from the grid without scheduling ahead of time just as load customers currently are allowed to do. The energy storage resource is be charged the prevailing pool price on electricity consumed from the grid, which is reasonable and fair. Energy storage assets should be permitted to submit priced bids just like loads. This requirement should not be made mandatory on energy storage assets just as it is not mandatory on load resources. We believe that energy storage assets may be more inclined to bid into the market than loads particularly if the value of doing so is enhanced by the availability of a program such as payment to loads on margin.
7.	In regard to the full range market participation options, how do you feel the chosen option should land when trading off technology agnostic treatment and complexity against participation flexibility?	***Full range market participation should be enabled but it should be voluntary not mandatory; voluntary load participation is already permitted, enabled by the existing systems, and provides flexibility participation in energy market participation.*** It is important to arrive at a model where full range market participation in possible. Fortunately, we think that option is already available with the existing framework and only has to be enabled for energy storage. As stated in our response to question 3 above, we are not sure that the “design principles” are the relevant criteria for making the decision. We do not see the fact that energy storage has a load and generation range as a level playing field issue or a deviation from the market treatment of all other participating technologies – it is just a recognition that there aren’t other resources that exhibit this characteristic. We disagree with how the AESO evaluates complexity. Complexity as proposed by the AESO is its assessment about what it believes market participants find intuitive. The fact that the AESO ranks this without stakeholder input really calls into question what design principles is truly evaluating. It appears that complexity is really an evaluation of the degree of administrative change such that any alternative that results in a change would be evaluated as more complex than not making a change at all. We find it highly intuitive to enable a resource that can participate in the market as a load to be enabled to do so in a similar manner as other load resources.

8.	Do you have any comments on defining the state of charge? Is there anything the AESO has not considered? Please explain.	***State of Charge should be based on MWs available for the delivery/settlement interval not MWhs of stored capacity.*** Our understanding was that the State of Charge (SOC) was a term that the AESO felt needed to apply for the purposes of clarifying the Acceptable Operating Reason (AOR) specific to energy storage technologies for Available Capability (AC) restatements. More specifically, market participants are prohibited from misrepresenting the capability or operational status of a generating facility under the *Fair, Efficient and Open Competition Regulation* (FEOC Reg). With respect to an energy storage facility, SOC directly affects AC and without AOR that would permit the AC to restated down for SOC an energy storage facility would be out of compliance with FEOC Reg. In terms of this specific purpose, SOC is better reflected in terms of AC or MW derate to the capacity that is available for dispatch in the delivery hour. This is consistent with the FERC Order 841 language of "The State of Charge as a bidding parameter is the level of energy that an electric storage resource is anticipated to have available at the start of the market interval rather than the end". • For example, a 25% SOC on a battery with an MC of 10 MW translates to an AC of 2.5 MW (for all batteries of the same MC irrespective of differences in storage capacity). We appreciate that this is different than the PJM definition which is measuring the MW-hours stored in the energy storage asset. While we cannot provide the reason for PJM's different definition, providing the MWhs of stored electricity is not a very clear representation of AC. In fact, the system controller would then have to know the Maximum Capability (MC) of the battery and take the SOC based on MWhs to figure out whether the AC has been stated correctly. Moreover, we can see some potentially confusing interpretations that may arise due to differences in stored capacity. For example: • A 4-hour battery with a MC of 10 MW can store 40 MWhs. A 25% SOC (based on MWhs) translates to AC of 10 MW (100% of MC and no AC restatement required). • A 2-hour battery with a MC of 10 MW can store 20 MWhs. A 25% SOC translates to an AC of 5 MW (50% of MC and an AC restatement is required). As shown in the examples above, using a SOC definition based on MW versus MWh is more straightforward and easier to interpret.

9.	Do you have any comments on the commissioning requirements for storage? Is there anything the AESO has not considered? Please explain.	We are confused by the AESO's reference to *Section 203.6: Available Transfer Capability and Transfer Path Capability* and more specifically to subsection 5 that deals with *Submissions of Interchange Transaction Bids and Offers by a Pool Participant* as the ISO Rule that creates an issue for storage facility commissioning. We do not understand how storage facility commissioning has anything to do with an interchange transaction or the why a storage facility would be making import offers or export bids when it is commissioning. That said, if the AESO interprets its rules as not permitting multiple offer blocks for storage facilities then it does present issues for commissioning testing. The AESO identified the need for at least two offer blocks as a solution. We note that this could also be dealt with if commissioning requirements was identified as an AOR, which would allow the storage asset to restate its AC to the amount that it would delivery in its commissioning testing (and then only one block would be required). We do not see the same issue per se with bid blocks. Energy storage should be able to choose to consume just as load does (which does not require prescheduling through bids). In commissioning testing, maintaining the commissioning schedule is likely the key decision driver rather than price as such the use of bids is just additional administrative burden for the market participant on top of the important activities that must be done to commission a new asset. We view this as providing limited value.
10.	Do you have any concerns or suggestions on the energy storage market participation engagement process and timeline?	No concerns at this time.
11.	Do you have any other suggestions or comments you would like to share with the AESO related to the Long-term Energy Storage Market Participation Options Paper or the engagement activities?	***Energy storage tariff treatment needs to progress,*** We are concerned that tariff treatment for energy storage has yet to make any real progress but is a key impediment for the development of stand-alone energy storage. We would like to see this tariff work prioritized even ahead of the Long Term Energy Storage Market Participation Options.

Thank you for your input. Please email your comments to: energystorage@aeso.ca.