Information Document
Energy Offers and Bids
ID #2012-008R

Information documents are not authoritative. Information documents are for information purposes only and are intended to provide guidance. In the event of any discrepancy between an information document and any authoritative document[1] in effect, the authoritative document(s) governs.

1 Purpose

This information document relates to the following authoritative document:

- Section 203.1 of the ISO rules, *Offers and Bids for Energy* ("Section 203.1").

The purpose of this information document is to provide additional background information on the requirements for offers and to clarify procedural applications of the requirements contained in Section 203.1. This information document is likely to be of interest to pool participants who own or operate either one or both of source assets and sink assets.

2 Net-to-Grid Offer Requirements

Subsection 3 of Section 203.1 sets out the obligation for all source assets 5 MW or greater to submit offers.

If permitted under an applicable approval that has been issued by the Alberta Utilities Commission (for example, a Power Plant Approval or Connection Order),[2] pool participants with on-site load may choose to offer their energy net-to-grid rather than offering their gross generation. They may do so by entering the source asset's maximum capability as only the energy that they expect to export to the grid rather than the entire generating capacity of the source asset. The AESO then deems the source asset's size to be equivalent to such maximum capability. If a pool participant expects to export energy net-to-grid of more than 5 MW (i.e. their maximum capability is greater than 5 MW), the pool participant is obligated to submit offers.

3 Inflexible Market Offers

Subsection 3 of Section 203.1 sets out the information that must be included in an offer. Offers can be made up of up to 7 operating blocks. Subsection 3(3)(c) of Section 203.1 requires pool participants to indicate whether each operating block is flexible or inflexible. When an operating block is flexible, the AESO may issue a dispatch for all or a portion of the energy contained in that operating block. When an operating block is inflexible, the AESO may only issue a dispatch for the total volume of the energy in the operating block.

If the total volume of the energy in an inflexible operating block is not required, the AESO may bypass that operating block in the energy market merit order and dispatch the next operating block that satisfies current volume requirements. The pool participant's inflexible operating block will not be dispatched until the real time energy requirements reach a point where the full volume of the operating block is required.

Please also note that Section 202.5 of the ISO rules, *Supply Surplus* includes specific provisions regarding the treatment of flexible/inflexible operating blocks during events of supply surplus.

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[1] "Authoritative document" is the general name given by the AESO to categories of documents made by the AESO under the authority of the *Electric Utilities Act* and regulations, and that contain binding legal requirements for either market participants or the AESO, or both. Authoritative documents include: the ISO rules, the reliability standards, and the ISO tariff.

[2] For further context, see Alberta Utilities Commission Decisions, including: Decision 23418-D01-2019, EPCOR Water Services Inc., E.L. Smith Solar Power Plant, February 20, 2019 and Decision 24126-D01-2019, Keyera Energy Ltd., Cynthia Gas Power Plant, June 25, 2019.

4 Operating Constraints

Subsection 6 of Section 203.1 sets out the obligation for submitting a source asset's relevant operating constraints. Clarification of those operating constraints is set out below. As well, subsection 6(2) requires pool participants to re-submit operating constraint information "as soon as reasonably practicable" when those operating constraints change. The AESO expects that when a pool asset's operating constraints (as listed below) change, the pool participant also updates that operating constraint within 15 minutes of becoming aware of the change. Minimum on-time, minimum off-time and maximum run-up time are not mandatory operating constraints required Section 203.1 but the capability exists to enter them in the Energy Trading System.

4.1 Ramp Rate

Ramp rate is defined in the AESO's *Consolidated Authoritative Document Glossary*. Regarding subsection 6(2) of Section 203.1, the AESO expects that when a source asset's ramp rate changes, the pool participant also updates the ramp rate within 15 minutes of becoming aware of the change, and ideally no later than the beginning of the settlement interval in which the new ramp rate is to be used.

4.2 Initial Start-up Time

Additional detail on the initial start-up time operating constraint can be found in Section 202.4 of the ISO rules, *Long-lead Time Energy*.

4.3 Minimum On-time and Minimum Off-time

Minimum on-time describes the amount of time, in minutes, needed for a source asset to fully warm up and reach a point where shutting down the generating unit would not cause undue wear and tear. Minimum off-time describes the amount of time needed for a generating unit to fully cool down and reach a point where starting up the generating unit again would not cause undue wear and tear.

4.4 Maximum Run-up Time

Maximum run-up time is the time, in minutes, required for the generating unit to reach minimum stable generation once it is synchronized to the grid.

In general, the AESO uses the operating constraints a pool participant submits to gauge compliance with the applicable ISO rules, making it in a pool participants' best interest to ensure that they are kept accurate.

5 Energy Storage

For a stand-alone energy storage facility[3], the maximum capability of the corresponding source asset is based on the discharge portion of the energy storage facility. For a hybrid site[4], being an energy storage facility co-located with at least one other generating unit or aggregated generating facility, for which a pool participant submits offers that include the output from all of the generating facilities on the site as a single source asset, the AESO expects a pool participant to elect a maximum capability that reflects the energy expected to be exported to the interconnected electric system from the single source asset.

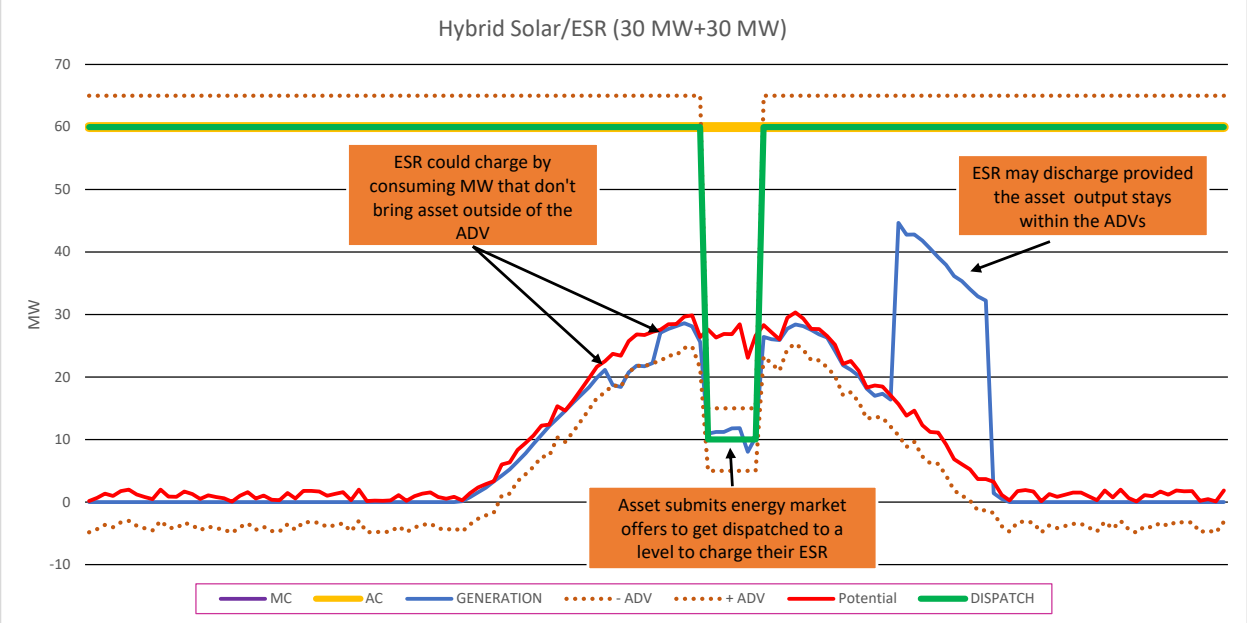
The AESO expects the pool participant to manage the operation of its facility through its offers and bids. Figure 1 below, provides an example of how a pool participant with a single source asset comprised of an energy storage facility and a solar aggregated generating facility may structure its offer to charge the

[3] Information Document #2020-013, *Energy Storage Guidance Document* provides additional detail on energy storage operating as generating units or aggregated generating facilities.

[4] Information Document #2020-013, *Energy Storage Guidance Document* provides additional detail on hybrid sites.

energy storage facility, and receive a dispatch which enables charging, while remaining compliant with the ISO rules.

Figure 1 – Energy offers that permit charging of the energy storage component of a source asset



*ADV is “allowable dispatch variance”; and ESR is “energy storage resource” or “energy storage facility”

In Figure 1, the pool participant of a 30 MW energy storage facility and 30 MW solar facility choses to participate in the energy market as a single source asset. For the first 12 hours of the submission period the pool participant choses to submit an offer for the entire 60 MW of capability at $0.00/MWh and, as a result, receive a dispatch for 60 MW. As this asset is classified as a wind and solar aggregated generating facility the dispatch variances are based on the solar potential and the dispatch level.[5] This offer structure and resulting dispatch enables dispatch compliance provided the net-to-grid generation output (shown as the ‘GENERATION’ line) does not drop lower than the allowable dispatch variance which is 5 MW below the potential MW of the facility (shown as the red line). When the pool participant wants to charge the energy storage facility from the on-site solar facility, the pool participant submits an offer that may result in the asset receiving a dispatch below its solar potential MW. In Figure 1 above, for HE 14 (starting 13:00) the pool participant had submitted an offer for 10 MW at $0 in block 0 and the remaining 50 MW of capacity in block 1 at a block price higher than the current system marginal price. This resulted in the system controller issuing a dispatch for the asset from 60 MW to 10 MW, allowing the pool participant to use a portion (~ 15 MW) of the ~ 25 MW of solar potential to charge the energy storage facility. According to the current ISO rules, the lower allowable dispatch variance is assessed against the dispatch level rather than the solar potential MW when dispatched below the current solar potential MW. At 14:00, the pool participant’s offer returned to a single block of $0/MWh and 60 MW; and the system controller issued a dispatch for the asset back to 60 MW.

[5] Information Document #2012-005R, *Dispatches* provides additional detail on dispatch variances.

Revision History

Posting Date	Description of Changes
2020-06-19	Addition of subsection 5 Administrative amendments
2019-07-11	Clarification to Section 2
2017-04-04	Addition of Section 3; and Administrative Amendments
2013-01-08	Initial Release