

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 document¹ 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 that are dispatchable.

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 5 MW or greater (i.e., their maximum capability is equal to or greater than 5 MW), the pool participant is obligated to submit offers.

Subsection 3 of Section 203.1 sets out the obligation for a pool participant to submit an offer for each source asset with a maximum capability of 5 MW or greater. The intent of this obligation is to ensure that the AESO has the appropriate market and operational visibility for the fair, efficient, and openly competitive operation of the market and the safe, reliable operation of the interconnected electric system. Source assets with a total collective output of 5 MW or greater currently have the ability to affect both the operation of the electricity market and the reliability of the interconnected electric system and are, therefore, subject to applicable ISO rules and reliability standards. The AESO may consider revising subsection 3 of Section 203.1 in the future if the 5 MW threshold is no longer sufficient to support the fair, efficient, and openly competitive operation of the market and the safe, reliable operation of the interconnected electric system.

The AESO considers asset or operational configurations by market participants that attempt to, or in effect, avoid the operation of the electricity market or the application of the reliability standards to, respectively:

- (a) be conduct not supporting the fair, efficient, and openly competitive operation of the electricity market; and
- (b) have a potentially negative impact on reliability.

In the case of a source asset consisting of individual generating units or energy storage resources that:

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.

- (a) are located in the same general proximity (i.e., behind the same substation or feeder);
- (b) are controlled by the same market participant, or an affiliate or associate of a market participant; and
- (c) export power onto the interconnected electric system

with a combined maximum capability of the individual generating units of 5 MW or greater, the AESO expects these individual generating units to be operated as one source asset.

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. An inflexible block is used to indicate when, due to an operating constraint, only the full amount of MW in the operating block can be dispatched.

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.

4 Operating Constraints

Subsection 6 of Section 203.1 sets out the obligation for submitting a pool 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 practicable" when those operating constraints change. The AESO expects that when a pool asset's operating constraints (as listed below) change, the pool participant will also update 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 under Section 203.1 but the capability exists to enter them in the Energy Trading System ("ETS").

The AESO uses the operating constraints a pool participant submits to review compliance with applicable ISO rules. Any changes to operating constraints must be submitted as soon as practicable.

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 pool asset's ramp rate changes, the pool participant also updates the ramp rate within 15 minutes of becoming aware of the change, and no later than the beginning of the settlement interval in which the new ramp rate is to be used.

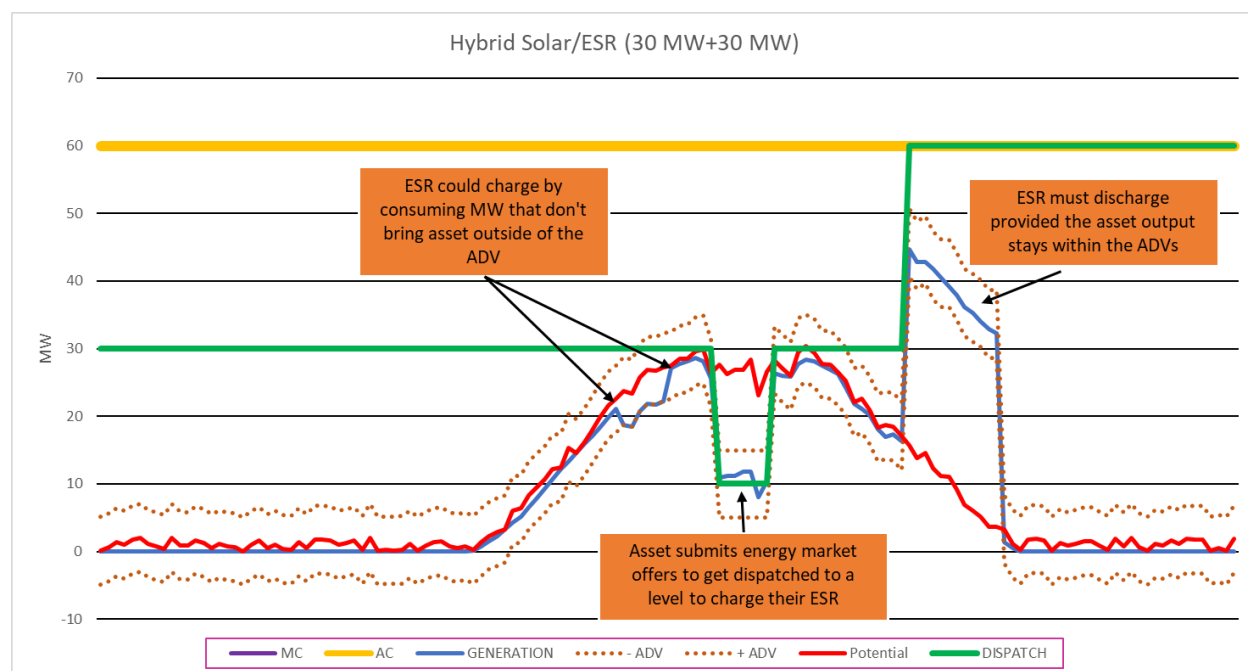
4.2 Initial Start-up Time

For all source assets with energy offers, an initial start-up time is expected to be entered in ETS, which reflects the time required for the source asset to synchronize to the interconnected electric system when the asset is in a cold state under normal operating conditions. Additional detail on the initial start-up time operating constraint can be found in ID #2012-007R *Long Lead Time Energy* and ID #2024-005 *Interim Supply Cushion Directives*.

5 Energy Storage

For a stand-alone energy storage resource³, the maximum capability of the corresponding source asset is based on the discharge portion of the energy storage facility. For a hybrid asset⁴, a pool participant may submit offers that include the output from all of the resources on the site as a single source asset. The AESO expects a pool participant to select 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 provides an example of how a pool participant with a single source asset comprised of an energy storage resource and a solar aggregated facility may structure its offer to charge the energy storage resource, and receive a dispatch which enables charging, while remaining compliant with the ISO rules.



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

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

In Figure 1, the pool participant of a 30 MW energy storage facility and 30 MW solar facility chooses to participate in the energy market as a single source asset with a maximum capability of 60 MW. For the first 12 hours of the submission period the pool participant submits an offer of 30 MW of capability at \$0.00/MWh and the remaining 30 MW at \$999/MWh. As a result, it receives a dispatch for 30 MW. As this asset is classified as a partially controllable⁵ source asset with a VERq⁶ equal to 30MW, the dispatch variances are based on the solar potential as long as the price remains below \$999/MWh.⁷ This offer structure and resulting dispatch enables dispatch compliance provided the net-to-grid generation output (shown as the blue ‘GENERATION’ line) does not deviate outside of the allowable dispatch variance which is 5 MW above and below the potential MW of the facility (shown as the dotted red lines).

³ Information Document #2020-013, *Energy Storage Guidance Document* provides additional detail on energy storage operations.

⁴ Hybrid assets are energy resources co-located with at least one other generating unit. Information Document #2020-013, *Energy Storage Guidance Document* provides additional detail on hybrid assets.

⁵ Partially controllable is a defined term in the Consolidated Authoritative Document Glossary.

⁶ VERq is the Variable Energy Resource quantity as defined in the Consolidated Authoritative Document Glossary.

⁷ Information Document #2012-005R, *Dispatches* provides additional detail on dispatch variances.

When the pool participant wants to charge the energy storage facility from the on-site solar facility, the pool participant submits an offer that results 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 from 30 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 30 MW; and the system controller issued a dispatch for the asset back to 30 MW.

Later in the day, during the peak hour (HE 18) the pool participant chooses to discharge the full capability of the battery. In order to do so, both block 0 and block 1 must be priced at or below the current system marginal price. The System Controller will dispatch the asset to 60 MW. In order to remain compliant with the dispatch instruction, the pool participant must provide MW equal to the full potential of the solar resource plus 30 MW from the storage resource, as illustrated by the blue line in Figure 1.

Revision History

Posting Date	Description of Changes
2024-08-22	Updated Section 4.
2024-04-23	Updated subsection 5 to include examples of the new ISO energy storage rules for partially controllable assets; added clarity regarding inflexible blocks in subsection 3
2021-12-03	Changed “more than 5 MW” references to “equal to or greater than 5 MW”.
2021-11-08	Added clarity in subsection 2 regarding the expected operation of a source asset that consists of multiple generating units.
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