

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 governs.

1 Purpose

The purpose of this information document is to provide guidance to market participants regarding which information documents have been amended or developed to include information on energy storage facilities and how those amendments and developments relate to the associated authoritative documents. In addition, this information document contains information regarding energy storage configurations and terminology used throughout the information document amendments.

This information document does not contain references to all ISO authoritative documents applicable to energy storage facilities. It is the obligation of all legal owners, operators, market participants and pool participants to ensure they understand and comply with all authoritative document provisions that are applicable to their facilities.

1.1 ISO rules related documents

This information document relates to the following documents:

- Information Document #2009-003R, *Acceptable Operational Reasons*, which relates to:
 - Section 203.1 of the ISO rules, *Offers and Bids for Energy* (“Section 203.1”);
 - Section 203.3 of the ISO rules, *Energy Restatements* (“Section 203.3”);
 - Section 203.4 of the ISO rules, *Delivery Requirements for Energy* (“Section 203.4”); and
 - Section 203.6 of the ISO rules, *Available Transfer Capability and Transfer Path Management*.
- Information Document #2011-002R, *Power Pool Settlement Guide*, which relates to Section 103.4 of the ISO rules, *Power Pool Financial Settlement*;
- Information Document #2012-008R, *Energy Offers and Bids*, which relates to Section 203.1;
- Information Document #2012-005R, *Dispatches*, which relates to:
 - Section 201.7 of the ISO rules, *Dispatches*;
 - Section 203.2 of the ISO rules, *Issuing Dispatches for Energy*; and
 - Section 203.4 of the ISO rules, *Delivery Requirements for Energy*;
- Information Document #2013-005R, *Operating Reserves*, which relates to:
 - Section 205.1 of the ISO rules, *Offers for Operating Reserves*;
 - Section 205.2 of the ISO rules, *Issuing Dispatches for Operating Reserve*;
 - Section 205.3 of the ISO rules, *Restatements for Operating Reserve*;
 - Section 205.4 of the ISO rules, *Regulating Reserve Technical Requirements and Performance Standards*;
 - Section 205.5 of the ISO rules, *Spinning Reserve Technical Requirements and Performance Standards*; and

¹ “Authoritative documents” 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 associated 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.

- Section 205.6 of the ISO rules, *Supplemental Reserve Technical Requirements and Performance Standards*;
- Information Document #2012-009R, *Restatements*, which relates to Section 203.3;
- Information Document #2013-003R, *Outages*, which relates to:
 - Section 306.3 of the ISO rules, *Load Planned Outage Reporting*; and
 - Section 306.5 of the ISO rules, *Generation Outage Reporting and Coordination*; and
- Information Document #2020-003R, *Performance Criteria for Energy Storage*, which relates to Section 505.2 of the ISO rules, *Performance Criteria for Refund of Generating Unit Owner's Contribution*.

1.2 Reliability Standard Related Documents

Reliability standards and associated information documents that place requirements on aggregated generating facilities. See section 4 below for further information.

2 Asset Configuration for the Energy and Ancillary Services Markets

This subsection refers to asset configuration treatment within the ISO rules and ISO tariff. For the purposes of participation in the energy and ancillary services markets within the current ISO rules and ISO tariff, the AESO considers an energy storage facility to be a generating unit or aggregated generating facility, as defined in the AESO's *Consolidated Authoritative Document Glossary*, when it is offering or exchanging energy or ancillary services in those markets. This treatment aligns with the Alberta Utility Commission's findings that although the existing legislation, *Hydro and Electric Energy Act* and *Electric Utilities Act*, does not specifically address a battery energy storage facility as a power plant or a generating unit, a battery energy storage facility does function as a power plant or generating unit since, like those facilities, a battery energy storage facility can produce electric energy from any source.²

As such, the AESO intends any reference to a generating source asset within the ISO rules to apply to energy storage facility.

2.1 Stand-Alone Energy Storage Site Configuration

The AESO considers a stand-alone energy storage site to be a site with an energy storage facility and no other generation facility.

The AESO intends to treat a stand-alone energy storage facility as a generating unit or aggregated generating facility. As such, for participation in the energy market, operating reserve markets, and market settlement, the AESO expects to assign to a pool participant with a stand-alone energy storage facility both a source asset and a sink asset in relation to that facility.

2.2 Hybrid Site Configurations and Market Participation

The AESO considers a hybrid site to be a site with a combination of an energy storage facility co-located with at least one other generating unit or aggregated generating facility that is not an energy storage facility.

A pool participant with a hybrid site may choose to offer all the generating facilities on site as a single source asset; or to offer each generating facility as a separately registered source asset. The choice to combine or separate facilities as one or multiple source assets may require modification of the physical configuration of the site, including the point(s) of connection to the interconnected electric

² AUC Decision 25205-D01-2020, eReserve1 Battery Energy Storage Power Plant Project, TERIC Power Ltd., April 6, 2020.

system and the integration of the technologies (for example, for AC- or DC-coupled equipment). Market participants are encouraged to initiate conversations about hybrid site configuration with the AESO early in the connection process to ensure adequate time to address these matters.

If the hybrid site is directly connected to the transmission system, each source asset will correspond to a unique point of supply at which system access service is provided. An energy storage facility may charge from either the interconnected electric system or from another co-located pool asset on the hybrid site. A pool participant choosing to operate the energy storage facility as a separate source asset from other on-site generating facilities will require appropriate metering and measurement points to reflect the multiple points of supply that are necessary. Metering and measurement point considerations are project-dependent and may add complexity to the configuration and operation of a hybrid site. As noted above, market participants are encouraged to initiate conversations about hybrid site configuration with the AESO early in the connection process to ensure adequate time to address these matters.

2.2.1 Renewable Hybrid Site Configurations

The AESO considers a renewable hybrid site to be a site with a combination of an energy storage facility co-located with a wind or solar aggregated generating facility. Similar to a hybrid site as discussed above, a pool participant may choose to offer the energy storage facility as a source asset separate from the wind or solar aggregated generating facility; or offer all generating facilities on site as a single source asset.

Pool participants are expected to meet the dispatch requirements placed on generating units and aggregated generating facilities as described in Section 203.4 of the ISO rules, *Delivery Requirements for Energy*. If a pool participant chooses to offer as a single source asset, the size and configuration of the energy storage facility and renewable hybrid site determine the allowable dispatch variance for that source asset as further discussed in Information Document #2012-005R, *Dispatches*.

The configuration of the renewable hybrid site will also determine the method by which the AESO will calculate the availability assessment used to determine the refund of GUOC, as discussed in Information Document #2020-003, Performance Criteria for Energy Storage.

3 State of Charge

This subsection refers to state of charge treatment within the ISO rules. The AESO has adopted the phrase “state of charge” to describe the level of charge of an energy storage facility relative to its capacity. In its information documents, the AESO refers to state of charge in relative percentage terms. The normal operating limits of an energy storage facility are represented as, in relative terms, 100% when an energy storage facility is completely charged and 0% when an energy storage facility is completely discharged. These relative terms of 100% and 0% are not intended to represent an absolute state of charge.

The AESO will include the normal operating limits in the applicable functional specification for the energy storage facility. Real-time state of charge information will be provided to the AESO through SCADA.

4 Application of Reliability Standards to Battery Energy Storage Facilities

For the purposes of applying the requirements for Alberta reliability standards, a battery energy storage facility will be considered an aggregated generating facility.

If a battery energy storage facility is installed with another aggregated generating facility and system access service(s) for these facilities is provided through a common switchyard, then the AESO will use the combined maximum authorized real power rating of these facilities (i.e. maximum authorized discharging power for the battery energy storage facility plus maximum authorized real power for the aggregated generating facility) in determining the applicability of a reliability standard to each of these

facilities. For example, if a battery energy storage facility that has a maximum authorized discharging power rating of 15 MW is installed at a wind aggregated generating facility that has a maximum authorized real power rating of 55 MW and system access service for these facilities is provided through a common switchyard, then the AESO will use the combined maximum authorized real power rating of 70 MW in determining the applicability of a reliability standard to each of these facilities.

Revision History

Posting Date	Description of Changes
2020-06-19	Initial Release