

Changes to Market Rules and Market Manuals Post ESAG Posting

Changes have been made to some of the market rules and market manuals from the version of the rule set that was posted for the Energy Storage Advisory Group. The following outlines these changes and the reason for these changes. The redlines reflect the changes from the version that was posted for ESAG consultation. These changes have been incorporated into the June 24 ESAG entry under:

- [Guide to the Draft Market Rule Amendments](#)
- [Guide to the Draft Market Manual Amendments](#)

Market Rules

Chapter	Reason for change	Market Rule edit (in red)
Appendix 2.2 Section 1.1.12	Stakeholder comment on defined term aggregated electricity storage size. Defined term has been removed and replaced with a revised definition for the term <i>electricity storage facility size</i> (see below under Chapter 11).	1.1.12.1 one high priority path facility and one normal priority path facility at the dispatch centre, control center and authority centre for each of its electricity storage facilities provided that either: a. the IESO has determined that a high priority path facility and a normal priority path facility are required to enable the IESO to maintain reliable operation of the IESO-controlled grid; or b. one of the applicable electricity storage facilities is a major electricity storage facility; or c. the aggregated electricity storage facility size <u>aggregate of the electricity storage facility sizes</u> is 100 MVA or greater.

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		1.1.12.2 subject to section 1.1.12.1, one normal priority path facility at the dispatch centre, control centre and authority center for each of its electricity storage facilities provided that the rated aggregate electricity storage facility size <u>the aggregate of the electricity storage facility size ratings of the applicable electricity storage facilities</u> is less than 100 MVA;
Appendix 2.2 Section 1.1.13	Stakeholder comment on defined term aggregated electricity storage size. Defined term has been removed and replaced with a revised definition for the term <i>electricity storage facility size</i> (see below under Chapter 11).	1.1.13.1 includes an electricity storage unit with a rated electricity storage unit size of 20 MVA or higher or with an aggregated electricity storage unit size that comprises multiple electricity storage units , <u>the aggregated electricity storage unit size ratings</u> that equals or exceeds 20 MVA;
Appendix 4.2/4.3	Stakeholder comment on the differential between storage terms and performance requirements project.	These performance requirements shall apply to electricity storage units at all times while connected to the electricity system , <u>IESO-controlled grid</u> unless the IESO identifies specific performance requirements that are not applicable to an electricity storage unit for those with a connection assessment finalized after[effective date]. Due consideration will be given to inherent limitations
Appendix 4.24	Stakeholder comment on defined term aggregated electricity storage size. Defined term has been removed and replaced with a revised definition for the term <i>electricity storage facility size</i> (see below under Chapter 11).	The following information, as a minimum, shall be available on a continual basis to the IESO from: (a) any <i>electricity storage participant</i> (i) whose <i>electricity storage facility</i> is connected to the IESO-controlled grid, or (ii) that is participating in the IESO-administered markets; and (b) any <i>embedded electricity storage participant</i> (i) that is not a <i>market participant</i> or whose <i>embedded electricity storage facility</i> is not a <i>registered facility</i> ; (ii) whose <i>embedded electricity storage facility</i> includes an <i>electricity storage unit</i> with an <i>electricity storage unit size</i> rated at greater than 20 MVA or an aggregated electricity storage unit size that that comprises multiple electricity storage units , <u>the aggregated electricity storage unit size ratings of</u> which exceeds 20 MVA; and (iii) that is designated by the IESO for the purposes of section 7.3.1 of this Chapter as being required to provide such data in order to enable the IESO to maintain the <i>reliability</i> of the IESO-controlled grid.
Chapter 4 Section 7.3A	Stakeholder comment on defined term aggregated electricity storage size	7.3A.1.2 embedded electricity storage participant (i) that is not a market participant or whose embedded electricity storage facility is not a registered facility; (ii) whose embedded electricity storage facility includes an electricity storage unit

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		with a rated electricity storage unit size greater than 20 MVA or that has a rated aggregate electricity storage unit size <u>that comprises multiple electricity storage units, the aggregated electricity storage unit size ratings</u> of which exceed 20 MVA; and (iii) that is designated by the IESO for the purposes of this section 7.3A.1 as being required to provide such data
Chapter 5	Stakeholder comment	7.1.6 If required by the IESO, <u>for the purpose of enabling the IESO to produce the forecasts referred to in section 7.1.1,</u> each <i>electricity storage participant</i> shall, if required by the IESO, for the purpose of enabling the IESO to produce the forecasts referred to in section 7.1.1, provide to the <i>IESO</i> the load forecasts described in the applicable <i>market manual</i> in such form, at such time and having such resolution as may be specified in such <i>market manual</i> .
Chapter 5	Inclusion of electricity storage into list of resources that IESO may instruct.	3.2.1 The <i>IESO</i> shall direct the operations of the <i>IESO-controlled grid</i> pursuant to the provisions of all applicable <i>operating agreements</i> and shall maintain the <i>reliability</i> of the <i>IESO-controlled grid</i> . The <i>IESO's</i> responsibilities in this regard shall include, but are not limited to, the monitoring of, and the issuing of orders, directions or instructions to <i>dispatch generation, electricity storage facilities, -dispatchable loads, distribution facilities</i> and <i>transmission facilities</i> on the <i>IESO-controlled grid</i> .
Chapter 5	Inclusion of electricity storage into list of resources that may have committed capacity to an external control area	6.4.4A.1 the <i>transmitter's planned outage</i> is to a <i>connection facility</i> that would prevent the delivery of electricity to the <i>IESO-controlled grid</i> from a <i>generation unit</i> <u>or <i>electricity storage unit</i></u> that has committed capacity to an external <i>control area</i> in accordance with section 20.2 of Chapter 7;
Chapter 5	Response to stakeholder comment to provide additional clarity	8.1.1 <i>Special protection systems</i> (“ <i>SPS</i> ”) have been installed in a number of locations on the <i>IESO-controlled grid</i> which automatically initiate one or more of the following control actions: 8.1.1.1 load rejection;

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		<p>8.1.1.2 generation rejection;</p> <p>8.1.1.3 generation runback;</p> <p>8.1.1.4 shunt capacitor switching;</p> <p>8.1.1.5 shunt reactor switching; and</p> <p>8.1.1.6 cross-tripping.</p> <p>For further certainty, any of the control actions listed above may be applied by the IESO to <i>electricity storage facilities</i> <u>if and as applicable</u>.</p>
Chapter 7	Stakeholder comment seeking clarification on ability to provide regulation services and provide energy as a self-scheduler	21.3.3 An <i>electricity storage facility</i> that is providing <u>registered to provide regulation services</u> may not participate in the <i>energy</i> market or the <i>operating reserve</i> market.
Chapter 7	Renumbering of Section 21 to remove the 21.3A number in the ESAG version.	<p>21.3A<u>4</u> Day-Ahead- Energy Offers and Energy Bids</p> <p>21.4<u>5</u> Real Time Energy Offers and Energy Bids</p> <p>21.5<u>6</u> Revisions to Dispatch Data</p> <p>21.6<u>7</u> Operating Reserve</p> <p>21.7<u>8</u> Interpretation</p>
Chapter 7 21.4	Revisions to provide additional clarity and reflect renumbering above	<p>21.4<u>3A</u> Day-Ahead - Energy Offers and Energy Bids</p> <p>21.3A<u>4</u>.1 <u>In addition to submitting either an offer to inject energy or a bid to withdraw energy as part of the day-ahead commitment process, an</u> Notwithstanding section 3.3A.3, an <i>electricity storage participant</i> <u>may also submit both an</u> that is registered and wishes to submit energy offers or energy bids relating to a</p>

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		<p>single dispatchable electricity storage unit shall submit both an offer to inject energy and a bid to withdraw energy for <u>a single dispatchable electricity storage unit for the same that electricity storage unit during the same dispatch hour.</u></p> <p>21.3A4.2 For each <i>dispatch hour</i> in which both <i>energy offers</i> and <i>bids</i> are submitted in accordance with section 21.4.1, the <i>electricity storage participant</i> shall ensure that the lowest price of the <i>offers</i> submitted for that <i>electricity storage unit</i> to inject energy is greater than the highest price of any <i>bid</i> for that same <i>electricity storage unit</i> to withdraw energy.</p>
Chapter 7	To reference new section 21.6 as an exception to rule that requires no changes be made in the mandatory window.	3.3.5 Except as permitted by sections 3.3.4B, 3.3.8, 3.3.9.2, and 3.3.11 <u>and 21.6</u> no <i>registered market participant</i> may, without the approval of the <i>IESO</i> , submit revised <i>dispatch data</i> with respect to any <i>dispatch hour</i> within 2 hours of that <i>dispatch hour</i> .
Chapter 7	To provide additional clarity on permitted changes for storage within the mandatory window	<p>21.5.1 Notwithstanding section 3.3.56, the IESO shall approve <u>reduced injections or withdrawal amounts included in the submission of</u> revised <i>dispatch data</i> from <i>electricity storage participants</i> within 2 hours of a given <i>dispatch hour</i>, up to a closing time stipulated in the applicable <i>market manual</i>, where the <i>electricity storage participant</i> determines, acting reasonably that its <i>electricity storage unit's</i> may reach its:</p> <p>21.5.1a. <i>lower energy limit</i> in that <i>dispatch hour</i>, and will likely prevent the <i>electricity storage unit</i> from injecting energy in accordance with its <i>offer</i>; or</p> <p>21.5.1.b <i>upper energy limit</i> in that <i>dispatch hour</i>, and will likely prevent the <i>electricity storage unit</i> from withdrawing energy in accordance with its <i>bid</i>.</p>
Chapter 9	Revised reference needed as a result of renumbering in Chapter 5, Section 21	3.5.6E The IESO may recover congestion management <i>settlement</i> credits or ramp-down <i>settlement</i> amounts in accordance with sections 3.5.6B, 3.5.6C and 3.5.6D and Section 21.3 <u>21.5</u> of Chapter 7. In this situation, the IESO shall:

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Chapter 11	Stakeholder comment on defined term aggregated electricity storage size	<p><i>aggregated electricity storage facility size means the greater of (i) the sum of all maximum injection capabilities and (ii) the sum of all maximum withdrawal capabilities of all electricity storage facilities included in the aggregate, expressed in either megawatts (MW) or megavolt amperes (MVA);</i></p> <p><i>aggregated electricity storage unit size means the greater of (i) the sum of all maximum injection capabilities and (ii) the sum of all maximum withdrawal capabilities of all electricity storage units included in the aggregate, expressed in either megawatts (MW) or megavolt amperes (MVA);</i></p> <p>electricity storage facility size means <u>the greater of the absolute values of</u> the maximum injection and maximum withdrawal capabilities of the electricity storage facility expressed in either megawatts (MWs) or megavolt amperes (MVAs);</p> <p>electricity storage unit size means <u>the greater of the absolute values of</u> the maximum injection and maximum withdrawal capabilities of the electricity storage unit expressed in either megawatts (MWs) or megavolt amperes (MVAs);</p>
Chapter 11	Correction to the italics and refinement of the definition	<p><i>remaining duration of service</i> means <u>means</u> the remaining expected <u>time it is expected that</u> an <i>electricity storage facility</i> can continue injecting, or withdrawing, until it reaches its <i>lower energy limit</i>, or <i>upper energy limit</i>, respectively, assuming the <i>electricity storage facility</i> continues operating at its quantity offered or bid;</p>
Chapter 11	Refinement of term electricity storage unit	<p><i>electricity storage unit</i> means the equipment used for the sole purpose of withdrawing electricity from the <i>electricity system</i>, storing that electricity as <u>energy</u>, and re-injecting it, or a portion thereof, as electricity into the <i>electricity system</i>;</p>

Market Manuals

Market Manual	Reason for Change	Section	Market Manual Section edit (in red)
Part 1.5: Market Registration Procedures	Updated for consistency with market rule (see above).	3.11	A self-scheduling electricity storage facility <u>registered to provide</u> providing -regulation service only will not be permitted to participate in the energy market or the operating reserve market.
Part 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets	Updated market rule number for Chapter 7 references	Throughout	Throughout
	Included for additional clarity	B.2.2	<i>state of charge</i> related revisions <u>can only be reductions in quantity</u> and must be submitted prior to the closing of the mandatory window.
	Included for additional clarity	B.3	for <i>state of charge</i> related revisions, <i>offers</i> and <i>bids</i> setting out the quantity that the <i>electricity storage participant</i> reasonably expects to inject and withdraw needs to be revised prior to the closing of the mandatory window. <u>Note: only quantity reductions are permitted.</u>
Part 7.8: Ontario Power System Restoration Plan	Included for additional clarity	2.2.6	Has a maximum injection capability of: <ul style="list-style-type: none"> • <u>≥ 100 MW</u> if the <i>facility</i> is located electrically <u>south of Essa TS in Barrie, or</u> — <u>≥ 50 MW</u> if the <i>facility</i> is located electrically <u>north of Essa TS in Barrie, or</u>