

ISO Rules

Part 200 Markets

Division 202 Non-Routine Conditions in the Markets

Section 202.6 Adequacy of Supply



Applicability

- 1 Section 202.6 applies to:
 - (a) the **ISO**.

Requirements

Supply Adequacy Assessments Forecast

~~2 The **ISO** must, in order to assist in determining whether to cancel a **planned outage** or **unplanned outage** of generation under section 306.5 of the **ISO rules**, *Generation Outage and Reporting*, assess the **adequacy** of supply by, at a minimum, completing a supply and load forecast using the peak demand hour of every **day** for a two (2) year period, calculated as the sum of the following:~~

- ~~(a) the **maximum capability** from all **generating units** in Alberta with a **maximum capability** equal to or greater than 5-MW;~~
plus
- ~~(b) an estimate of the output from **aggregated generating facilities**;~~
plus
- ~~(c) import **available transfer capability** on **interconnections** with a program that increases **available transfer capability**;~~
minus
- ~~(d) declared **generating unit** derates;~~
minus
- ~~(e) any capacity of **generating units** which are affected by **transmission constraints**;~~
minus
- ~~(f) anticipated **generating unit** derates;~~
minus
- ~~(g) the daily forecast **Alberta internal load**;~~
minus
- ~~(h) **operating reserves** requirements;~~
plus
- ~~(i) price responsive load;~~
plus
- ~~(j) aggregate **planned outage**, **unplanned outage** and **forced outage** records for load;~~
plus
- ~~(k) load for **demand opportunity service**.~~

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Short Term² The ISO must forecast supply **adequacy**.

Real-time Adequacy Assessments

3 The ISO must ~~every hour~~, assess and report on the short-term **adequacy** of supply by, at a minimum, completing a real-time **adequacy** assessment ~~for each settlement interval of the current day and for the six (6) remaining days of the forecast scheduling period on the day preceding that current day~~, calculated as the sum of the following:

- (a) ~~available capability~~ from all generating ~~source assets~~ in Alberta with a **maximum capability** equal to or greater than 5 MW with a start-up time less than or equal to one (1) hour or with a submitted start time at or before the period being assessed;
plus
- (b) ~~estimated output from aggregated generating facilities~~;
plus
- (c) ~~estimated amount of price responsive load~~;
plus
- (d) ~~estimated amount of demand opportunity service load that is to be curtailed~~;
plus
- (e) ~~on-site generation that supplies behind the fence load and submits available capability as a net-to-grid value~~;
plus
- (f) ~~import available transfer capability on the interties~~;
minus
- (g) ~~the peak forecast load from the day-ahead forecast of Alberta internal load~~;
minus
- (h) ~~the ISO's spinning reserve requirement~~;
minus
- (i) ~~constrained down generation, with the exception of constrained down aggregated generation facilities~~.

Long Term Adequacy Metrics and Reporting

4(1) The ISO must ~~establish, maintain and report on long term adequacy metrics on a quarterly basis in accordance with this section 202.6.~~

The ISO must ~~make publicly available~~ the following **long term adequacy** metrics on a quarterly basis:

- (a) ana metric listing Alberta electrical generation projects and retirements ~~metric which is a non-confidential project list indicating such relevant information as the project name, the project~~

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- proponents, the MW size of the project and the estimated;
- (a) ~~a 5-year~~ of project completion;
 - (b) ~~a forecast reserve margin metric, including a reserve margin metric which must have a minimum five (5) year forecast period and be calculated using a methodology that:~~
 - (i) ~~is a measure, expressed in percentage terms, representing the amount of generation capacity at the time of system peak that is in excess of the annual peak demand;~~
 - (ii) ~~utilizes ISO load forecasts;~~
 - (iii) ~~utilizes existing **generating unit** capacity information such as **maximum capability** and the generation metric forecast capacity published as part of the Alberta electrical generation projects and retirements metric;~~
 - (iv) ~~accounts for behind-the-fence load and generation capacity;~~
 - (v) ~~excludes wind and solar generation and adjusts for hydro generation available at the time of system peak;~~
 - (vi) ~~incorporates **interconnection** capacity; and~~
 - (vii) ~~may reflect more than a single supply and load scenario for the system;~~
 - (c) ~~a supply cushion metric which provides a two (2)-year forecast of available daily generation capacity and peak demand both measured in MW which must be calculated using a methodology that; and~~
 - (i) ~~incorporates **generating unit** capacity information such as the **maximum capability of generating units**;~~
 - (ii) ~~utilizes ISO load forecasts;~~
 - (iii) ~~incorporates daily average **planned outages** and derates as reported by **pool participants** in their **planned outage** scheduling submissions as well as a nominal average **unplanned outage** and **forced outage** rate;~~
 - (iv) ~~accounts for behind-the-fence load and generation capacity;~~
 - (v) ~~excludes wind and solar generation and adjusts for hydro generation available at the time of daily system peak;~~
 - (vi) ~~excludes **interconnection** capacity; and~~
 - (vii) ~~excludes existing generation that is contractually available but that does not participate in the energy market;~~
 - (d) ~~a two (a 2)-year probability of supply **adequacy** shortfall metric which provides a probabilistic assessment of a state of **supply shortfall** over the next two (2) years and which must be calculated using a methodology that:~~
 - (i) ~~utilizes ISO load forecasts;~~
 - (ii) ~~utilizes existing **generating unit** capacity information such as **maximum capability** and the generation metric capacity published as part of the Alberta electrical generation and retirements metric;~~
 - (iii) ~~incorporates hourly **planned outages** and derates as reported by **pool participants** in their **planned outage** scheduling submissions;~~

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- ~~(iv) — incorporates **interconnection** capacity estimates; and~~
- ~~(v) — utilizes a distribution of outcomes for the following inputs:
 - ~~(A) — intermittent or energy limited resources; and~~~~
- (d) **unplanned outages and forced outages.**

Long Term Adequacy Threshold Determination and Use

5(1) The ISO must, for the ~~two (2)~~-year probability of supply **adequacy** shortfall metric model set out in subsection 4(~~2~~)(d), use a **long term adequacy** threshold which:

- (a) represents the equivalent impact of the probability of having a system supply shortfall occur once every ~~ten (10)~~ years; and
- (b) is calculated as the ~~one (1)~~ hour average **Alberta internal load** for a year divided by ~~five (5)~~;

being the level which, if exceeded, would indicate a need for the ISO to consider taking preventative action.

(2) The ISO must, using the ~~two (2)~~-year probability of supply **adequacy** shortfall metric, estimate on a quarterly basis the expected total system MWh not served in a subsequent ~~two (2)~~-year period.

(3) The ISO must, if the estimated total system MWh not served exceeds the **long term adequacy** threshold established at the time, undertake further studies to verify the likely cause, magnitude, and timing of the potential **adequacy** issue.

Long Term Adequacy Threshold Actions

6(1) The ISO may, if the **long term adequacy** threshold is exceeded and the ISO deems that a potential **adequacy** issue requires preventative action, procure ~~any one (1) or more of the following~~ services to address the potential adequacy issue, including:

- (a) load shed;
- (b) self-supply and back-up generation that would not otherwise be available to participate in the energy market; ~~and/or~~
- (c) emergency portable generation;

~~being long term adequacy threshold actions.~~

Procurement of Long Term Adequacy Threshold Actions

~~7 — The ISO must procure long term adequacy threshold actions using established ISO procurement procedures and, where possible and practical, in a manner that encourages competition.~~

Recovery of Long Term Adequacy Threshold Actions Costs

~~8(1) — The ISO must, if it procures long term adequacy threshold actions, establish a methodology that results in the recovery of the costs of long term adequacy threshold actions.~~

~~(2) — The ISO must institute a charge to load, primarily directed to the pool participants who consume energy during higher priced hours, which recovers the costs of long term adequacy threshold actions.~~

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[\(2\)](#) The ISO must, prior to procuring services in accordance with subsection 6(1), publish a report on the potential **adequacy** issues requiring preventative action.

Revision History

| Date | Description |
|----------------------------|--|
| 2021-xx-xx | Revised subsection 3 by removing the detailed calculations for short-term adequacy assessments; added a requirement in subsection 6(1) to publish a report on potential adequacy issues requiring preventative action; and other minor administrative amendments, including amendments to align with the AESOs drafting principles |
| 2018-09-01 | Revised references to “wind aggregated generating facilities” to “aggregated generating facilities”; replaced “wind” with “wind and solar generation”; administrative revisions. |
| 2014-10-01 | Amendment to the short term adequacy assessments calculation to include the ISO’s spinning reserve requirement. |
| 2013-12-20 | Initial release |