

# 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 Term~~<sup>2</sup> The ISO must forecast supply **adequacy** in accordance with a prescribed methodology.

#### **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-~~

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- ~~confidential project list indicating such relevant information as the project name, the project 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 (.~~

#### Publications and Provision of Notice

##### 5(1) The AESO must publish:

- (a) the forecasts and reports set out in subsections 2)-years and which must be calculated using a methodology that:; 3, and 4; and
  - ~~(viii) utilizes ISO load forecasts;~~

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- ~~(ix) — 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;~~
- ~~(b) incorporates hourly **planned outages** details of the calculations and methodologies underlying the forecasts and reports referenced in subsection 5(1)(a).~~
- (2) The ISO must:**
  - ~~(a) give 60 **days**' notice of any proposed changes to the calculations and derates as reported by **pool** methodologies referenced in subsection 5(1)(b); and~~
  - ~~(a)(b) provide an opportunity for **market participants** in their **planned outage** scheduling submissions; to provide feedback on the proposed changes.~~
  - ~~(x) — incorporates **interconnection** capacity estimates; and~~
  - ~~(xi) — utilizes a distribution of outcomes for the following inputs:
    - ~~(A) — intermittent or energy limited resources; and~~
    - ~~(B) — **unplanned outages** and **forced outages**.~~~~

#### Long Term Adequacy Threshold Determination and Use

**56(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

**67(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.~~

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#### **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.~~

(2) The ISO must, prior to procuring services in accordance with subsection 7(1), publish a report on the potential adequacy issues requiring preventative action.

#### **Revision History**

Date	Description
<u>2022-xx-xx</u>	<u>Revised subsection 2 by adding a reference to a prescribed methodology; subsection 3 by removing the detailed calculations for short-term adequacy assessments; added requirements in subsection 5 to publish forecasts, assessments, and associated calculations and methodologies, and to provide notice of potential changes and opportunity for feedback; added a requirement in subsection 7(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</u>
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