

# ISO Rules

## Part 200 Markets

### Division 206 Capacity Market

#### Section 206.8 Obligation Period Performance Assessments



External Consultation Draft  
August 31, 2018

#### Applicability

- 1 Section 206.8 applies to:
  - (a) the **ISO**.

#### Requirements

##### Availability Hours during an Obligation Period

- 2(1) The **ISO** must select 250 hours from each **obligation period** to assess availability as follows:
  - (a) calculate the supply cushion for every hour in an **obligation period**;
  - (b) rank all hours based on supply cushion in ascending order;
  - (c) within the order referred to in subsection 2(1)(b), rank hours with equivalent supply cushion in ascending order from the most recent to the most distant of time; and
  - (d) select the first 250 hours after ranking in accordance with subsection 2(1)(b) and 2(1)(c).
- 2(2) The **ISO** must, in order to establish the availability hours for an asset, remove the following hours from the 250 hours identified in subsection 2(1) on an asset-specific basis:
  - (a) hours in which there was a state of markets suspension; and
  - (b) hours that the **ISO** determines that the asset is affected by an event of limited markets operations, war, invasion, armed conflict, blockade, act of public enemy, riot, revolution, insurrection, act of terrorism, sabotage, act of vandalism, fire that does not originate at the asset, lightning, explosion, earthquake or flooding.

##### Delivery Hours for a Settlement Period

- 3(1) The **ISO** must select hours to assess delivery for a **settlement period** by identifying any hours or portions thereof in which a supply shortfall has occurred and the **ISO** has declared an energy emergency event in accordance with Section 305.1 of the **ISO rules**, *Energy Emergency Alerts*.
- 3(2) The **ISO** must, in order to establish the delivery hours for an asset, remove the following hours from the hours selected in subsection 3(1) on an asset-specific basis:
  - (a) hours in which there was a state of markets suspension; and
  - (b) hours that the **ISO** determines that the asset was affected by an event of limited markets operations, war, invasion, armed conflict, blockade, act of public enemy, riot, revolution, insurrection, act of terrorism, sabotage, act of vandalism, fire that does not originate at the asset, lightning, explosion, earthquake or flooding.

##### Look-back Baseline for a Load Asset Providing a Firm Consumption Level

- 4 The **ISO** must, for each of the availability hours established in subsection 2(2), calculate the look-back baseline as a volume in MW for a load asset as follows:
  - (a) identify the **metered energy** for the **settlement intervals** with the same **hour ending** as the availability hour in the **days** which must be either:
    - (i) the 15 most recent **business days** prior to the **day** with the availability hour if the

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- availability hour falls on a **business day**;
- (ii) the 10 most recent weekend **days** or holidays prior to the **day** with the availability hour if the availability hour falls on a weekend **day** or a holiday; or
  - (iii) the **days** the **ISO** specifies if, in the 45 **day** period prior to the **day** with the availability hour, there are fewer than 15 **business days** and 10 weekend **days** when **days** containing **settlement intervals** identified in subsection 4(b) are excluded;
- (b) determine if any **settlement intervals** referred to in subsection 4(a) contain:
- (i) any of the availability hours established in subsection 2(2); or
  - (ii) any of the delivery hours established in subsection 3(2); and
- (c) calculate the average of the **metered energy** for the **settlement intervals** referred to in subsection 4(a) excluding the **metered energy** for the **settlement intervals** identified in subsection 4(b).

#### Delivery Baseline for a Load Asset Providing Guaranteed Load Reduction

**5(1)** The **ISO** must, for each of the delivery hours established in subsection 3(2), calculate the standard baseline in MW as follows:

- (a) identify the **days** for the calculation which must be either:
  - (i) the 10 most recent **business days** prior to the **day** with the delivery hour if the delivery hour falls on a **business day**;
  - (ii) the 5 most recent weekend **days** or holidays prior to the **day** with the delivery hour if the delivery hour falls on a weekend **day** or a holiday; or
  - (iii) the **days** the **ISO** specifies if, in the 35 **day** period prior to the **day** with the delivery hour, there are fewer than 10 **business days** and 5 weekend **days** when **days** identified in subsection 5(1)(b) are excluded or replaced;
- (b) exclude or replace any of the **days** identified in subsection 5(1)(a) if the following occurred:
  - (i) the asset received **dispatch** for an amount greater than 0 MW;
  - (ii) delivery was assessed in accordance with subsection 9(1);
  - (iii) the load asset was subject to a **delayed forced outage** or **automatic forced outage**;
  - (iv) the load asset was subject to a **planned outage**; or
  - (v) the load asset was tripped for the provision of **load shed service**;
- (c) for each of the **days** identified in accordance with subsections 5(1)(a) excluding or replacing the **days** as indicated in subsection 5(1)(b), identify the **metered energy** for the **settlement interval** with the same **hour ending** as the delivery hour; and
- (d) calculate the average of the **metered energy** for the **settlement intervals** referred to in subsection 5(1)(c).

**(2)** The **ISO** must, for each delivery hour established in subsection 3(2), calculate an adjustment factor as follows:

$$\text{adjustment factor} = \text{delivery consumption} \div \text{historical consumption}_{3W}$$

where:

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delivery consumption means the average consumption in MWh during the 3 hour window occurring 1 hour before the delivery hour;

historical consumption means the average consumption in MWh during all of the 3W hours on the **days** identified in accordance with subsections 5(1)(a) and excluding or replacing the **days** as indicated in subsection 5(1)(b); and

3W means the 3 hour window occurring 1 hour before the same **hour ending** as the delivery hour.

- (3) The **ISO** must establish the adjustment factor as:
- (a) 1.2 if the adjustment factor calculated in accordance with subsection 5(2) is greater than 1.2;
  - (b) 0.8 if the adjustment factor calculated in accordance with subsection 5(2) is less than 0.8; or
  - (c) the value calculated in accordance with subsection 5(2) in all other cases.
- (4) The **ISO** must calculate the delivery baseline in MW as follows:

$$\text{delivery baseline} = \text{standard day baseline} \times \text{adjustment factor}$$

where:

the standard day baseline in MW is calculated in accordance with subsection 5(1); and

the adjustment factor is the value established in accordance with subsection 5(3).

#### Asset-specific Penalty Rate for Availability Assessment

- 6(1) The **ISO** must calculate the asset-specific penalty rate in \$/MWh to be applied during the availability assessment, as follows:

$$\text{asset-specific penalty rate} = \frac{\text{capacity payment} \times 12}{\text{capacity commitment} \times \text{hours}}$$

where:

capacity payment in \$/month is calculated for the asset in accordance with Section 103.10 of the **ISO rules**, *Capacity Payment Calculation*;

**capacity commitment** is in MW; and

hours is the number of availability hours established in accordance with subsection 2(2).

- (2) The **ISO** must establish the asset-specific penalty rate in \$/MWh as:
- (a) \$133/MWh, if the rate calculated in accordance with subsection 6(1) is less than \$133/MWh and the clearing price of the **base auction** was greater than \$33/kW-year;
  - (b) \$0/MWh, if the rate calculated in accordance with subsection 6(1) is less than \$0/MWh and the clearing price of the **base auction** was less than or equal to \$33/kW-year; or
  - (c) the rate calculated in accordance with subsection 6(1) in all other cases.

#### Availability Assessment

- 7(1) The **ISO** must, as soon as practicable after an **obligation period**, identify the asset's availability volume in MWh during each of the availability hours identified in subsection 2 as follows:

- (a) for an asset with a **uniform capacity value** based on a capacity factor, availability volume is based on the sum of the following for each **settlement interval**, as applicable:

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- (i) **metered energy**;
  - (ii) in the case of an asset that was subject to a **dispatch** for **spinning reserve** or **supplemental reserve**, the volume that was provided according to Section 205.5 of the **ISO rules**, *Spinning Reserve Technical Requirements and Performance Standards* or Section 205.6 of the **ISO rules**, *Supplemental Reserve Technical Requirements and Performance Standards*;
  - (iii) in the case of an asset that provides **regulating reserve**, the volume based on the **regulating reserve** provided pursuant to Section 205.4 of the **ISO rules**, *Regulating Reserve Technical Requirements and Performance Standards* that is not captured as **metered energy**; and
  - (iv) in the case of an asset that was impacted by a **transmission market constraint**, the volume that was curtailed;
- (b) for an asset with a **uniform capacity value** based on **availability factor**, availability volume is equal to:
- (i) the **available capability** submitted into the Energy Trading System where the **offer** for electric energy was available for **dispatch** for that **settlement interval**; and
  - (ii) if applicable, any **operating reserves** provided in that **settlement interval** pursuant to a **dispatch**; or
  - (ii) 0 MW when there was no electric energy from the asset available for dispatch for that **settlement interval**;
- (c) for a load asset that provides a **guaranteed load reduction**, availability volume is the **available capability** for that **settlement interval**;
- (d) for a load asset that provides a **firm consumption level**, availability volume is based on the difference between the look-back baseline calculated in accordance with subsection 3 and the **firm consumption level** for that **settlement interval**;
- (e) for self-supply assets that are dispatched gross to grid, availability volume is based on the linear regression approach set out in Section 206.3 of the **ISO rules**, *Determination of Uniform Capacity Value*; and
- (f) for an import asset, availability volume is the **available capability** for that **settlement interval** capped at the volume of firm transmission established in accordance with Section 206.1 of the **ISO Rules**, *Qualification of Capacity*.

(2) The **ISO** must calculate the assessment volume in MWh for an asset as follows:

$$\text{assessment volume} = \sum \text{availability volume} - \text{capacity commitment} \times \text{hours}$$

where:

availability volume in MWh is the value identified for each of the availability hours in accordance with subsection 7(1); and

hours is the number of availability hours established in accordance with subsection 2(2).

#### Under-availability Adjustment

**8(1)** The **ISO** must, when the assessment volume calculated in accordance with subsection 7(2) is negative, calculate the under-availability adjustment in dollars for an asset as follows:

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$$\text{under-availability adjustment} = \text{adjustment rate} \times \text{assessment volume}$$

where:

adjustment rate in \$/MWh is calculated in accordance with subsection 8(2); and  
assessment volume in MWh is calculated in accordance with subsection 7(2).

- (2) The **ISO** must calculate the adjustment rate in \$/MWh, for each asset, as follows:

$$\text{adjustment rate} = 40\% \times 1.3 \times \text{asset-specific penalty rate}$$

where:

asset-specific penalty rate in \$/MWh is determined in accordance with subsection 6(2).

- (3) The **ISO** must, for each asset, limit the under-availability adjustment amount for an **obligation period** to:

- (a) an amount in dollars equal to the annual cap determined in accordance with subsection 14(2) minus the sum of all under-delivery adjustments determined in accordance with subsection 12(3) for the **obligation period**, if the sum of the under-availability adjustment determined in accordance with subsection 8(1) and under-delivery adjustments for the **obligation period** is greater than the annual cap; or
- (b) the amount in dollars calculated in accordance with subsection 8(1), in all other cases.

#### Over-availability Adjustment

- 9(1) The **ISO** must, when the assessment volume calculated in accordance with subsection 7(2) is positive, calculate the over-availability adjustment in dollars for an asset as follows:

$$\text{over-availability adjustment} = \text{adjustment rate} \times \text{assessment volume}$$

where:

adjustment rate is the value calculated in accordance with subsection 9(2); and  
assessment volume in MWh is calculated in accordance with subsection 7(2).

- (2) The **ISO** must calculate the adjustment rate in \$/MWh, which is the same value for all assets, as follows:

$$\text{adjustment rate} = \frac{\sum \text{under-availability adjustments}}{\sum \text{positive assessment volumes}}$$

where:

under-availability adjustments in dollars is determined in accordance with 8(3) for all assets subject to a **capacity commitment** in an **obligation period**; and

positive assessment volumes in MWh is the positive values calculated in accordance with subsection 7(2) for all assets subject to a **capacity commitment** in an **obligation period**.

- (3) The **ISO** must, for each asset, limit the over-availability adjustment amount for an **obligation period** to an amount in dollars equal to the annual cap determined in accordance with subsection 15 minus the sum of all over-delivery adjustments determined in accordance with subsection 13(3) for the **obligation period**.

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#### Asset-specific Penalty Rate for Delivery Assessments

**10(1)** The **ISO** must calculate the asset-specific penalty rate in \$/MWh for an asset, to be applied during the delivery assessments, as follows:

$$\text{asset-specific penalty rate} = \frac{\text{capacity payment} \times 12}{\text{capacity commitment} \times \text{hours}}$$

where:

capacity payment in \$/month is calculated for the asset in accordance with Section 103.10 of the **ISO rules**, *Capacity Payment Calculation*; and

hours is the greater of 20 or the forecasted number of energy supply shortfall hours for the **obligation period** as described in the *Capacity Market Auction Guidelines* published for the last **rebalancing auction** of the **obligation period**.

**(2)** The **ISO** must establish the asset-specific penalty rate in \$/MWh as:

- (a) \$1,667/MWh, if the rate calculated in accordance with subsection 10(1) is less than \$1,667/MWh and the clearing price of the **base auction** was greater than \$33/kW-year;
- (b) \$0/MWh, if the rate calculated in accordance with subsection 10(1) is less than \$0/MWh and the clearing price of the **base auction** was less than or equal to \$33/kW-year or
- (b) the rate calculated in accordance with subsection 10(1) in all other cases.

#### Delivery Assessments

**11(1)** The **ISO** must, as soon as practicable in the **settlement period** following each delivery hour established in subsection 3(2), identify an asset's delivery volume in MWh during each of the delivery hours as follows:

- (a) for an asset with a **uniform capacity value** based on a **capacity factor** or **availability factor**, the delivery volume is based on the sum of the following for each **settlement interval**, as applicable:
  - (i) **metered energy**;
  - (ii) in the case of an asset that was subject to a **dispatch** for **spinning reserve** or **supplemental reserve**, the volume that was provided according to Section 205.5 of the **ISO rules**, *Spinning Reserve Technical Requirements and Performance Standards* or Section 205.6 of the **ISO rules**, *Supplemental Reserve Technical Requirements and Performance Standards*; and
  - (iii) in the case of an asset that provided **regulating reserve**, the volume based on the **regulating reserve** provided pursuant to Section 205.4 of the **ISO rules**, *Regulating Reserve Technical Requirements and Performance Standards* that is not captured as **metered energy**;
- (b) for a load asset that provides a **guaranteed load reduction**, the delivery volume is equal to the delivery baseline calculated in accordance with subsection 5(4) minus the following for each **settlement interval**, as applicable:
  - (i) **metered energy**; and
  - (ii) in the case of an asset that provided **spinning reserve** or **supplemental reserve**, the volume that was dispatched.

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- (c) for a load asset that provides a **firm consumption level**, the delivery volume is equal to the qualified baseline as calculated in accordance with Section 206.3 of the **ISO rules**, *Determination of Uniform Capacity Value* minus the following for each **settlement interval**, as applicable:
  - (i) **metered energy**; and
  - (ii) in the case of an asset that provided **spinning reserve** or **supplemental reserve**, the volume that was dispatched.
- (d) for self-supply configurations with excess generation, the delivery volume is based on **metered energy**; and
- (e) for an import asset, the delivery volume is:
  - (i) the volume in a validated **e-tag**; or
  - (ii) in the case of an import asset where the **offer** price is greater than or equal to \$0.01 per MWh during the first two delivery hours that are subject to the limits referenced in Section 303.2 of the **ISO rules**, *Available Transfer Capability*, the volume in the **offer**.

(2) The **ISO** must adjust the delivery volumes identified in subsection 11(1) for each delivery hour to include any delivery volume adjustments due to any substitutions which was approved in accordance with Section 206.9 of the **ISO rules**, *Asset Substitution*, and as follows:

- (a) in the case of an asset that was impacted by a **transmission market constraint**, the volume that was curtailed will be added to the delivery volume identified in subsection 11(1);
- (b) in the case of a load asset that was armed for the provision of **load shed service**, the volume that was armed will be added to the delivery volume identified in subsection 11(1); or
- (c) in all other cases, no adjustments to the delivery volume identified in subsection 11(1).

(3) The **ISO** must calculate the assessment volume in MWh for an asset during each delivery hour established in subsection 3(2) as follows:

$$\text{assessment volume} = \text{delivery volume} - (\text{capacity commitment volume} \times \text{balancing ratio})$$

where:

delivery volume in MWh is the value identified in subsection 11(2);

capacity commitment volume in MWh means the quantity of electric energy expected to be delivered from an asset based on its **capacity commitment** during the supply shortfall hour or portion thereof; and

balancing ratio is the value calculated in subsection 11(5).

(4) The **ISO** must establish the assessment volume in MWh for an asset for each delivery hour established in subsection 3(2) as follows:

- (a) for an asset with a **uniform capacity value** based on a **capacity factor** or **availability factor**, the assessment volume is calculated in accordance with subsection 11(3) and subject to any reallocation volumes which were approved in accordance with Section 206.10 of the **ISO rules**, *Volume Reallocation*;
- (b) for self-supply configurations with excess generation the assessment volume is calculated in accordance with subsection 11(3) and subject to any reallocation volumes which were approved in accordance with Section 206.10 of the **ISO rules**, *Volume Reallocation*;

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- (c) for an import asset, the assessment volume is calculated in accordance with subsection 11(3) and subject to any reallocation volumes which were approved in accordance with Section 206.10 of the **ISO rules**, *Volume Reallocation*; or
- (d) for a load asset that provides a **guaranteed load reduction** or a **firm consumption level**:
  - (i) if the delivery hour occurred on a **day** which the load asset was subject to a **delayed forced outage** or **automatic forced outage**, that is not the first day of that **delayed forced outage** or **automatic forced outage**, the assessment volume is 0 MWh;
  - (ii) if the supply shortfall hour occurred on a **day** which the load asset was subject to a **planned outage**, the assessment volume is 0 MWh; or
  - (iii) in all other cases, the assessment volume is calculated in accordance with subsection 11(3) and subject to any reallocation volumes which were approved in accordance with Section 206.10 of the **ISO rules**, *Volume Reallocation*.

(5) The **ISO** must calculate for each delivery hour established in subsection 3(2), the balancing ratio as follows:

$$\text{balancing ratio} = \min\left\{\frac{\sum \text{delivery volumes}}{\sum \text{capacity commitment volumes}}, 1\right\}$$

where:

delivery volumes in MWh is the values identified in subsection 11(2) for all assets subject to a **capacity commitment** in an **obligation period**; and

capacity commitment volumes in MWh means, for each asset subject to a **capacity commitment** in an **obligation period**, the quantity of electric energy expected to be delivered from an asset based on its **capacity commitment** during the supply shortfall hour or portion thereof.

#### Under-delivery Adjustment

**12(1)** The **ISO** must, when the assessment value determined in accordance with subsection 11(4) is negative, calculate the under-delivery adjustment in dollars for an asset as follows:

$$\text{under-delivery adjustment} = \text{adjustment rate} \times \text{assessment volume}$$

where:

adjustment rate in \$/MWh is calculated in accordance with subsection 12(2); and

assessment volume in MWh is the value determined in accordance with subsection 11(4).

(2) The **ISO** must calculate the adjustment rate in \$/MWh as follows:

$$\text{adjustment rate} = 60\% \times 1.3 \times \text{asset-specific penalty rate}$$

where asset-specific penalty rate in \$/MWh is determined in accordance with subsection 10(2).

(3) The **ISO** must, for each asset, cap the under-delivery adjustment amount for each **settlement period** to the lesser of:

- (a) the monthly cap determined in accordance with subsection 14(1); or
- (b) an amount equal to the annual cap determined in accordance with subsection 14(2) minus the sum of all under-delivery adjustments calculated in accordance with this subsection 12(3) for the prior **settlement periods** of the **obligation period**.



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#### Over-delivery Adjustment

**13(1)** The **ISO** must, when the assessment value determined in accordance with subsection 11(4) is positive, calculate the over-delivery adjustment in dollars for an asset as follows:

$$\text{over-delivery adjustment} = \text{adjustment rate} \times \text{assessment volume}$$

where:

adjustment rate in \$/MWh is calculated in accordance with subsection 13(2); and

assessment volume in MWh is the value determined in accordance with subsection 11(4).

**(2)** The **ISO** must calculate the adjustment rate in \$/MWh as follows:

$$\text{adjustment rate} = \frac{\sum \text{under-delivery adjustments}}{\sum \text{positive assessment volumes}}$$

where:

under-delivery adjustments in dollars is determined in accordance with 12(3) for all assets subject to a **capacity commitment** in an **obligation period**; and

positive assessment volumes in MWh are the positive values calculated in accordance with subsection 11(4) for all assets subject to a **capacity commitment** in an **obligation period**.

**(3)** The **ISO** must, for each asset, limit the over-delivery adjustment amount in dollars for a **settlement period** to an amount equal to the annual cap determined in accordance with subsection 15 minus the sum of all over-delivery adjustments determined in accordance with this subsection 13(3) for the prior **settlement periods** of the **obligation period**.

#### Maximum Payment Adjustments for Under-availability and Under-delivery

**14(1)** The **ISO** must cap for each asset, any under-delivery adjustment for a **settlement period** at an amount in dollars equal to:

(a)  $\text{monthly cap} = \text{capacity payment} \times 3$

where capacity payment in \$/month is the asset's monthly capacity payment calculated in accordance with Section 103.10 of the **ISO rules**, *Capacity Payment Calculation*; or

(b)  $\text{monthly cap} = \text{default rate} \times \text{capacity commitment} \times \max\{\text{supply shortfall hours}, 20\}$

where the default rate is \$417/MW.

**(2)** The **ISO** must cap for each asset, the sum of any under-availability adjustment and under-delivery adjustments for each **obligation period** at an amount in dollars equal to the greater of:

(a)  $\text{annual cap} = \text{capacity payment} \times 12 \times 1.3$

where capacity payment in \$/month is the asset's monthly capacity payment calculated in accordance with Section 103.10 of the **ISO rules**, *Capacity Payment Calculation*; or

(b)  $\text{annual cap} = \text{default rate} \times \text{capacity commitment}$

where the default rate is \$33,333/MW.

#### Maximum Payment Adjustments for Over-availability and Over-delivery

**15** The **ISO** must cap for each asset, the sum of any over-availability adjustment and over-delivery adjustments for an **obligation period** at an amount in dollars equal to the greater of:

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(a)  $annual\ cap = capacity\ payment \times 12$

where capacity payment means the assets monthly capacity payment in dollars determined in accordance with Section 103.10 of the **ISO rules**, *Capacity Payment Calculation*; or

(b)  $annual\ cap = default\ rate \times capacity\ commitment$

where the default rate is \$33,333/MW.

#### Revision History

| Date       | Description     |
|------------|-----------------|
| xxxx-xx-xx | Initial release |