8 Supply Obligations and Performance Assessments

This section addresses the obligations of legal owners of capacity assets and how capacity asset performance will be assessed prior to and during an obligation period.

8.1 Assessment prior to commencement of obligation period

8.1.1 Prior to the commencement of an obligation period, the AESO will monitor capacity committed assets and assess whether:

(a) in the case of a new capacity committed asset, the asset has satisfied development milestone requirements and will achieve commercial operation in time to meet its capacity commitment; and

(b) in the case of an existing capacity committed asset, the asset's UCAP has not deteriorated relative to the asset's capacity commitment for that obligation period.

Obligation of new capacity asset during prequalification

8.1.2 The legal owner of a new capacity asset must provide the AESO with a detailed project plan during the prequalification stage of each base auction or rebalancing auction. The project plan must include sufficient detail to demonstrate that the new capacity asset will achieve commercial operation prior to the commencement of the applicable obligation period.

8.1.3 The AESO will use the project plan described in subsection 8.1.2 above to:

(a) validate whether the development of the new capacity asset is proceeding as per the project plan;

(b) assess whether the new capacity asset will achieve commercial operation prior to the commencement of the applicable obligation period; and

(c) establish credit requirements for the new capacity asset (see discussion regarding Market Participant Buy Bids and Sell Offers and Credit Requirements in other sections of the CMD).

Failure to deliver assessment for new capacity committed assets

8.1.4 As per section 2, *Supply Participation*, a new capacity supplier must demonstrate that it has fulfilled development milestone requirements during the prequalification stage of each rebalancing auction.

8.1.5 A new capacity supplier that cannot demonstrate that it has fulfilled the development milestone requirements will be deemed to have failed to deliver on the new capacity asset and will be required to buy out its capacity commitment for that new capacity asset in one of the rebalancing auctions.

8.1.6 A new capacity supplier must buy out its capacity commitment in the first rebalancing auction if that new capacity asset is more than eight months delayed, vis a vis a major milestone, in its project schedule.

8.1.7 A new capacity supplier must buy out its capacity commitment in the second rebalancing auction if its new capacity asset is more than five months delayed in its project schedule.

Updates to qualified UCAP ratings

8.1.8 The AESO will recalculate the UCAP rating for a capacity committed asset in advance of each rebalancing auction to reflect any changes in the capacity committed asset's capabilities as described in Section 6.

8.2 Assessment during obligation period

8.2.1 The AESO will assess a capacity committed asset on both an availability and performance basis during the obligation period. If the performance assessment period and availability assessment period hours overlap, availability and performance of the capacity committed asset will be assessed separately and, if applicable, both types of payment adjustments will be applied for those same hours.

Unavailability payment adjustment mechanism

8.2.2 The AESO will conduct availability assessments during the tightest supply cushion hours.

8.2.3 Based on availability assessments, the AESO will apply an unavailability payment adjustment to a capacity committed asset that is not available to satisfy its capacity commitment during an availability assessment period.

Availability assessment period

8.2.4 A capacity supplier will be required to demonstrate that its actual availability was at least, on average, equal to its obligation during the availability assessment period.

8.2.5 The AESO will assess the actual availability of a capacity committed asset by comparing each capacity committed asset's capacity commitment to its availability during the 100 tightest supply cushion hours over the course of the obligation period. The capacity committed asset's actual availability will be measured in alignment with the AESO's UCAP calculation methodology as described in section 3, *Calculation of Unforced Capacity*; i.e., based on the amount of MW offered to the energy and ancillary services market (including any dispatched volumes), or as the amount of MW generated during the availability assessment period.

8.2.6 To determine the availability assessment period, the AESO will perform a supply cushion analysis at the end of each obligation period to identify the 100 tightest supply cushion hours.

Availability volume definition

8.2.7 The availability volume of a capacity committed asset will be defined as:

Availability Volume (MW) = (Actual Availability Volume - Expected Availability Volume)

Where Expected Availability Volume = capacity committed asset's Obligation Volume

Where Actual Availability Volume = average availability volume during 100 tightest supply cushion hours:

a. For an asset whose UCAP is based on a capacity factor, a sum of metered volume and dispatched contingency reserve volume (if spinning and supplemental reserve provided) or regulating raise range[1] (if regulating reserve provided).

b. For an asset whose UCAP is based on an availability factor, stated available capability (AC) volume.

c. For a guaranteed load reduction (GLR) asset, its stated available capability (AC) volume will be adjusted for armed LSSi volumes.

[1] I.e., the volume in the regulating reserve range that has not been dispatched.

d. For a firm consumption level asset, availability will be measured by the difference between a "look back baseline" less the firm consumption level. For purposes of the foregoing, "look back baseline" means the recent load profile used to assess the availability of firm consumption level assets. The look back baseline will be calculated by averaging the five highest load observances over the immediately preceding 10 days.

A capacity asset with an AC value greater than zero but which is not ready to receive a dispatch will, for that period of time, be deemed unavailable for the purpose of an availability assessment.

Unavailability payment adjustment for negative availability volume

8.2.8 For a capacity committed asset with negative availability volume throughout an obligation period, the AESO will calculate an unavailability payment adjustment as follows:

Unavailability Payment Adjustment Rate ($/MWh) = 40% x 1.3 x obligation price per MW */ 100 hours*

The total Unavailability Payment Adjustment in $ will then be calculated as:

Unavailability Payment Adjustment Rate multiplied by *Availability Volume* multiplied by 100

For example, assume the capacity committed asset's obligation price was $100,000/MW. *Actual Availability Volume* was 95 MW and *Expected Availability Volume* was 105 MW. The resulting unavailability payment adjustment would be:

(0.4 x 1.3 x $100,000/MW-year) / 100 hours = $520/MWh for each assessment hour and the total payment adjustment would be $520/MWh x (95 – 105) MW x 100 hours = -$520,000.

This amount would act to reduce capacity revenue paid to the resource as per Section 9.

Over-availability payment adjustment for positive availability volume

8.2.9 A capacity committed asset that has a positive availability volume will be eligible to receive an over-availability payment adjustment. Over-availability payment adjustments will be wholly funded from the unavailability payment adjustments received from capacity committed assets with positive availability volumes.

8.2.10 For a capacity committed asset with positive availability volume throughout an obligation period, the AESO will apply an over-availability payment adjustment for each MWh of average over-availability during the 100 tightest supply cushion hours, calculated as follows:

Over-availability Payment Adjustment ($/MWh) = Total Unavailability Payment Adjustments Collected in an obligation period ($) / Total over-availability volume (MWh)

8.2.11 An over-availability payment adjustment for a capacity committed asset will be subject to the cap described under the heading "Maximum Amounts for Over-availability and Over-performance Payment Adjustments", below.

8.2.12 In the event that there are residual funds remaining after all unavailability payment adjustments and over-availability payment adjustments for an obligation period have been applied, or in the event that there are no capacity committed assets that are eligible to receive over-availability payment adjustments for an obligation period, such residual funds will be applied by the AESO against the costs incurred by the AESO to procure capacity from capacity suppliers.

Performance payment adjustment mechanism

8.2.13 The AESO will assess a capacity committed asset's performance relative to its capacity commitment during EEA events for the full duration of the performance assessment period.

8.2.14 The AESO will calculate a capacity committed asset's performance volume to determine the volume of the asset's capacity that will be subject to either over-performance or under-performance payment adjustments.

Performance assessment period

8.2.15 A capacity supplier will not be given any notification prior to the commencement of a performance assessment period declared by the AESO.

8.2.16 Performance will be assessed hourly; i.e., the assessment calculations will be completed for each hour or portion of an hour during a performance assessment period.

Performance volume definition

8.2.17 Performance volume is the volume of a capacity committed asset's actual performance minus its expected performance during a performance assessment periods.

8.2.18 A capacity committed asset's performance volume will be defined as:

*Performance Volume (MWh) = Actual Performance - (Expected Performance * Balancing Ratio)*

8.2.19 Actual performance volume will be measured in MWh as:

(a) For capacity factor and availability factor capacity assets, the sum of metered volume, and dispatched contingency reserve volume (if spinning and supplemental reserve provided) or regulating raise range (if regulating reserve provided).

(b) For a guaranteed load reduction (GLR) capacity committed asset, a reduction in energy consumption from the ten day average baseline. The ten day average baseline will be the recent load baseline established by the AESO for a guaranteed load reduction asset and is the average of load in the same hour in the preceding 10 similar load days. If the performance event occurs in an on peak day hour ending 10, the ten day average baseline will be the average of load in each immediately preceding hour ending 10 over the immediately preceding 10 on peak days. If one of the preceding hour ending 10's was a performance hour, that hour will be removed from the average. Load not reduced due to operating reserves or LSSi arming will be deducted from the metered volume of the asset. The load reduction from the ten day average baseline must be equal to or greater than the obligation volume.

(c) For a firm consumption level capacity committed asset, metered volume of load not reduced due to operating reserves or LSSi arming will be deducted from the metered volume of the asset. This difference must be equal to or less than the firm consumption level.

8.2.20 The legal owner of a Long Lead Time Energy (LLTE) capacity asset, in order to be assessed as having delivered on its capacity commitment during a performance period, must be providing energy in response to a dispatch during a performance assessment period. LLTE assets that are issued a directive at any point to provide energy for a performance assessment period will be assessed as having failed to deliver on its capacity commitment during the performance assessment period.

8.2.21 A capacity asset with an AC value greater than zero but not ready to receive a dispatch will, for that period of time, be deemed to be non-performing for the purpose of a performance assessment.

8.2.22 Expected performance will be equal to:

(a) For generating assets and guaranteed load reduction assets (GLR) - the asset's obligation volume multiplied by the balancing ratio.

(b) For firm consumption level assets – the qualified baseline minus firm consumption level multiplied by the balancing ratio.

Non-performance payment adjustment

8.2.23 The AESO will apply a non-performance payment adjustment for a capacity committed asset with a negative performance volume.

8.2.24 The AESO will set the non-performance payment adjustment based on the obligation price per MW. The non-performance payment adjustment will also be dependent upon the expected number of EEA hours for the obligation period as determined for the base auction.

8.2.25 The AESO will determine and communicate to market participants the specific value of expected EEA hours in advance of each base auction using the AESO's reliability modelling. This value will remain constant for the applicable obligation period. If the expected EEA hours based on the AESO's reliability modelling is lower than 20, a floor of 20 hours will be used.

8.2.26 The AESO will calculate the non-performance payment adjustment using the following formula:

Non-performance payment adjustment rate ($/MWh) = 60% x 1.3 x Obligation price per MW / max (Expected EEA hours, 20)

The *non-performance payment adjustment rate* will then be multiplied by the *performance volume* to determine the non-performance payment adjustment for the performance event for the capacity committed asset.

Over-performance payment adjustment

8.2.27 A capacity committed asset that has a positive performance volume will be eligible to receive an over-performance payment adjustment. Over-performance payment adjustments will be wholly funded from the non-performance payment adjustments received from capacity committed assets with negative performance volumes.

8.2.28 The AESO will calculate over-performance payment adjustments for each MWh of over-delivery during EEA events and will pay those capacity committed assets with positive performance volumes at the $/MWh payment adjustment:

Over-performance Payment Adjustment ($/MWh) = Total Non-Performance Payment Adjustments *Collected $ / Total positive Performance Volume MWh*

8.2.29 Over-performance payment adjustments will be capped in the manner described under the heading "Maximum Amounts for Over-availability and Over-performance Payment Adjustments", below. Non-performance payment adjustment funds remaining after the payment of over-performance payment adjustments (for instance, as a result of a lack of capacity committed assets that are eligible for over-performance payment adjustments) will be applied against the costs incurred by the AESO to procure capacity from capacity suppliers.

Maximum amounts for unavailability and non-performance payment adjustments

8.2.30 The AESO will cap the combined payment adjustment exposure to unavailability and non-performance payment adjustments for each capacity committed asset.

8.2.31 The monthly non-performance payment adjustments for a capacity committed asset will be capped at 300% of the monthly capacity revenue based on the capacity committed asset's obligation price per MW.

8.2.32 The cumulative annual unavailability and non-performance payment adjustments for a capacity committed asset will be capped at 130% of the annual capacity revenue based on the capacity committed asset's obligation price per MW.

Maximum amounts for over-availability and over-performance payment adjustments

8.2.33 Maximum potential over-availability and over-performance payment adjustments will be capped at a capacity committed asset's total annual obligation price per MW; i.e., if a 1 MW asset receives $100,000 per year of capacity payment, the maximum cumulative over-availability and over-performance payment adjustments will be capped at $100,000 for that obligation period, such that total revenue earned is $200,000.

8.2.34 If the cap described in subsection 8.2.33 is reached before the end of the obligation period, the capacity supplier will not be eligible for further over-performance or over-availability payment adjustments for the remainder of the obligation period.

Unavailability and non-performance payment adjustment exemptions

8.2.35 A capacity committed asset that is constrained down due to limits on the Alberta internal transmission system will be exempt from unavailability payment adjustments on that volume of its obligation. The actual availability of a capacity committed asset that is constrained down due to

transmission constraints will be measured as metered volume plus constrained down volume plus, if applicable, contingency reserve volume dispatched for regulating raise range. Similarly, a capacity committed asset that is constrained down due to limits on the Alberta internal transmission system will be exempt from non-performance payment adjustments on that volume of its obligation.

8.2.36 Availability and performance assessments will not be conducted during periods when a state of market suspension, as described in Section 202.7 of the ISO rules, *Market Suspension or Limited Markets Operations*, is in effect.

8.2.37 No other exemptions to the assessment of unavailability payment adjustments or non-performance payment adjustments will be permitted. For clarity, if a capacity committed asset is not available or does not perform for the following reasons, no exemption to the assessment of an unavailability payment adjustment or a non-performance payment adjustment will be granted:

(a) forced or planned derates;

(b) forced or planned outages;

(c) force majeure;

(d) on-site and/or distribution system constraints; or

(e) transmission outages that result in the asset being electrically disconnected from the transmission system.

8.3 Ex ante asset substitution and volume reallocation

8.3.1 A capacity supplier will have the option of ex ante asset substitution, or volume reallocation to avoid or decrease non-performance payment adjustments associated with a failure to deliver on its obligation volume during a performance assessment period.

8.3.2 Ex ante asset substitution and volume reallocation are risk mitigation approaches that will be available to the capacity supplier in addition to the option of participating in the rebalancing auctions to adjust or buy back such asset's capacity obligation.

Ex ante asset substitution

8.3.3 A capacity supplier may engage in asset substitution with a qualified but non-committed or partially committed capacity asset commencing after the last rebalancing auction and until the start of the energy market settlement interval.

8.3.4 The legal owner of a qualified capacity asset may only substitute a volume less than or equal to its uncommitted capacity from a qualified but non-committed or partially capacity committed asset.

8.3.5 A capacity supplier must register all ex ante asset substitutions with the AESO specifying the:

(a) start date and time, and end date and time of the substitution. The start date and time must not be prior to the date and time upon which the substitution is registered with the AESO.

(b) volume of the capacity obligation to be substituted. This volume must be less than or equal to the obligation volume of the substituted asset.

(c) approval of the substitution by both counterparties. Approval is required before the begin date and time of the substitution.

Details in respect of the financial arrangements between the two counterparties will not be required for the asset substitution registration.

8.3.6 The AESO will allocate the payment adjustments associated with under-performance and over-performance of the substituted asset to the original obligation holder and not to the substituted asset owner.

8.3.7 The AESO will not transfer a capacity obligation during the substitution period to the substituted asset. However, the substituted asset will be utilized for purposes of performance.

Ex post volume reallocation

8.3.8 Following a performance assessment period, a capacity supplier that delivered metered volumes greater than expected performance under its obligation during a performance assessment period may sell its excess positive performance volume to another capacity supplier whose capacity committed asset did not deliver sufficiently to meet its entire obligation. Only capacity committed assets are eligible to participate in volume reallocation transactions.

8.3.9 A capacity supplier must indicate to the AESO if its capacity committed asset(s) can be considered for volume reallocation after the last rebalancing auction and before the start of the obligation period (i.e., November 1 of a corresponding year).

8.3.10 The AESO will allocate the payment adjustments associated with under-performance and over-performance of the substituted capacity asset to the original obligation holder and not to the substituted capacity asset owner. The capacity obligation during the substitution period will not be transferred to the substituted capacity asset.

8.3.11 If one or more performance assessment periods takes place in a calendar month, the AESO will be required to notify the legal owner(s) that have indicated its capacity committed asset(s) can be considered for volume reallocation, no later than 5 business days following the end of the calendar month, of performance volume data results for each performance assessment period in the previous calendar month.

8.3.12 The performance volume data results will be required to contain the following information for each performance assessment period in the previous calendar month and in respect of each capacity committed asset, using the most recent data:

(a) the capacity delivered in metered volumes (MWh) during the performance assessment period;

(b) the balancing ratio;

(c) the initial positive performance volume; and

(d) the initial negative performance volume.

8.3.13 Following receipt of its performance volume results a capacity supplier must submit a volume reallocation request to the AESO within 6 business days if it wishes to participate in volume reallocation.

8.3.14 A volume reallocation request must include, the:

(a) names of the volume reallocation transferee legal owner and the volume reallocation transferor legal owner(s).

(b) performance assessment period to which the volume reallocation request relates; and

(c) reallocated capacity volume. In the case of the transferee this is a positive number, and in the case of a transferor this is a negative number.

Details in respect of the financial transaction or the volume reallocation trade between a transferee and a transferor are not required in the volume reallocation request.

8.3.15 A capacity supplier that buys reallocated capacity will be considered to have met its obligation volume via a combination of any output of its own and output nominated from other legal owners of capacity committed assets through capacity volume reallocation (if sufficient amount of positive performance volume was reallocated).

8.3.16 The AESO will not allocate an over-delivery capacity payment adjustment for the seller for any MW transferred to another capacity supplier through volume reallocation.