

# Rebalancing Auctions

## Rationale

### 6.1 Rebalancing auction timelines and procedures

6.1.1 A rebalancing auction provides a market-based mechanism for the AESO and capacity market participants to adjust to changes in the load forecast, UCAP ratings, new capacity asset delivery expectations, and their portfolio of assets since the base auction. The updated demand curve reflects the value of capacity under updated system conditions. If the system is expected to be tight, rebalancing auction prices will be high. Capacity committed assets will be incentivized to deliver on their commitments as opposed to buying out at the high rebalancing price, and additional capacity assets will be incentivized to enter. If the system is expected to be oversupplied, prices in the rebalancing auction will be low. Capacity committed assets will be able to buy out of commitments relatively inexpensively, and new capacity assets may not wish to enter the capacity market.

The rebalancing auctions are an important component of the AESO's effort to create an efficient capacity market that ensures the reliability of the Alberta electricity system. The rebalancing auctions support efficiency and resource adequacy by:

- **Allowing the AESO to update demand for capacity based on the revised procurement quantity required to meet the supply adequacy requirement.** Load forecast error is an unavoidable component of a forward capacity market. While the AESO aims to produce an accurate forecast, there will inevitably be some level of error. A key function of the rebalancing auction is to minimize the reliability and economic impacts of this error. If the AESO under-forecasted load in the base auction, the rebalancing auctions provides an opportunity to buy additional supply and ensure supply adequacy of the system. If the AESO over-forecasted load in the base auction, the rebalancing auctions provide opportunities to sell excess supply and recover costs for consumers.
- **Allowing new capacity assets to enter with less lead time than the three-year forward period.** The rebalancing auctions provide a mechanism for capacity assets that were unable to offer into the base auction to obtain a capacity commitment. Demand response providers may not have enough information about their underlying load three years ahead of the obligation period but may be willing to accept a capacity commitment a few months ahead. In addition, capacity assets that cleared the base auction for a given obligation period but came online in less than three years would be able to sell capacity early into a rebalancing auction for an earlier obligation period. Accessing this additional supply should reduce costs for customers.
- **Allowing capacity committed assets with a capacity commitment to buy out if they are unable or unwilling to deliver.** There may be capacity committed assets that cleared in the base auction that will be unable or unwilling to bring their capacity asset online in time for the start of the obligation period. There may also be capacity market participants that wish to increase or decrease the capacity obligations of their assets to optimize their capacity asset revenue. The rebalancing auctions provide capacity market participants the ability to complete these transactions while ensuring that the system has enough capacity online by the start of the obligation period.

- **Allowing up-rates or down-rates to capacity committed assets.** Capacity committed assets that are able to increase the output of their plants through incremental investment may wish to make additional volume sales in the rebalancing auction in order to capture additional revenue. Capacity committed assets that must derate their plants to account for poorer than expected operating conditions or equipment problems will be provided an opportunity to purchase replacement supply.

#### 6.1.2 - 6.1.5

The AESO proposes that in the initial stages of Alberta's capacity market program, there will be a transition period in which capacity auctions are held using a compressed schedule whereby only one rebalancing auction will be held for each obligation period. Post transition period, there will be two rebalancing auctions for each obligation period.

Rebalancing auctions will be conducted on a fixed schedule. During the transition period, the rebalancing auction will be held approximately three months prior to the obligation period. During the transition period, the reduced number of rebalancing auctions still provides an opportunity for capacity market participants to adjust capacity commitments and for the AESO to adjust procurement volume while avoiding the situation where it becomes impractical to administer too many capacity auctions within a compressed timeline. Post transition period, the first rebalancing auction will occur 18 months prior to the obligation period and the second will occur three months prior to the obligation period. Holding the final rebalancing auction approximately three months prior to the start of the obligation period allows for essentially final load forecasts and generator availability information to be used.

The fixed schedule for a rebalancing auction will facilitate participation in the auction by reducing the uncertainty faced by capacity market participants. With a fixed schedule, capacity market participants offering new capacity into a rebalancing auction can ensure that their project development and implementation plan is sufficiently progressing to qualify by the time of the auction. Capacity committed assets at risk of being unable to meet their capacity commitment know exactly how much time is available to achieve their next milestone before the rebalancing auction offer and bid submission window opens. The AESO will establish a capacity auction schedule that allows sufficient time for capacity assets to qualify, to establish UCAP ratings for all capacity assets, to publish auction parameters, to determine auction results, and to evenly distribute the administrative requirements of running auctions over each calendar year. The alternative to fixed schedules—running auctions only when certain criteria are met—results in less predictability.

The AESO's proposal to hold two rebalancing auctions post transition period strikes a reasonable balance between several competing factors. Holding more rebalancing auctions promotes transparency and rapid price discovery by making relevant information available to the market soon after it becomes available. For example, if a new capacity asset determines it will not be available in time for the obligation period and immediately buys out its capacity commitment in a rebalancing auction, the rest of the market will quickly become aware of the increased supply tightness through a higher rebalancing auction price. On the other hand, holding fewer rebalancing auctions increases liquidity in each individual auction; reduces transaction costs; and reduces the administrative burden of facilitating and participating in the auctions.

Rebalancing auctions follow similar steps and timeline to those of the base auction, providing a consistent process for all capacity auctions. The AESO estimated that approximately eight months are required to complete all the activities necessary for conducting a capacity auction.

## 6.2 Bids and offers by capacity market participants

### 6.2.1 - 6.2.2

The AESO's proposal allows capacity market participants to submit offers and bids into the rebalancing auctions under the following rebalancing auction objectives:

- **Incremental sell offers.** Enable capacity assets to enter the capacity market with less than the three-year forward period. These offers also ensure increased UCAP is offered into the capacity market.
- **Repricing (buy-out) bids (incorporated in supply offers under gross clearing).** Enables a capacity committed asset to buy out of its capacity commitment or to reduce its cleared capacity, contingent on market clearing prices. A capacity supplier looking to buy back who wishes to have a high degree of certainty to clear may submit a bid price at the price cap.
- **UCAP reduction bids (incorporated in supply offers under gross clearing).** Enable a capacity committed asset that is physically unable to deliver on its obligation, in part or in full, to buy out of its obligation regardless of the rebalancing auction price. A UCAP reduction bid price will be entered at a price in the final rebalancing auction marginally above the rebalancing auction price cap to ensure that it clears. Capacity suppliers choosing to buy back an obligation will not have the ability to submit a bid price above the price cap unless they are subject to a UCAP reduction in the final rebalancing auction or have not achieved development milestones. Since a capacity supplier is able to select a UCAP within an available range, UCAP reduction only occurs when the existing obligation volume of a capacity asset is greater than its final UCAP determined in accordance to Section 3, *Calculation of Unforced Capacity (UCAP)*.

Capacity suppliers which are not required to or do not wish to alter capacity commitments do not need to participate in a rebalancing auction. This type of capacity committed asset will be automatically entered as a price taker on the supply side of the auction, but will not incur any settlement as a result of the rebalancing auction. The majority of capacity suppliers who clear the base auction are expected to fall into this category.

6.2.3 Rebalancing auctions facilitate capacity suppliers buying out of their existing capacity commitments. Therefore, bids are required to be capacity asset specific and are not allowed to exceed a capacity asset's existing capacity commitment volume. The following requirements ensure that the auction clearing algorithm can be solved:

- sell offer quantities in each price-quantity pair shall be incremental quantities, such that the aggregate UCAP offered across all price-quantity pairs submitted increase monotonically with increasing price;
- buy bid quantities in each price-quantity pair shall be incremental quantities, such that the aggregate UCAP bid across all price-quantity pairs submitted decrease monotonically with increasing price.

6.2.4 Rebalancing auctions treat offer formats in the same manner as base auctions. The rationale for the proposed methodology is discussed in subsections 5.5 of Section 5, *Base Auction*.

## 6.3 AESO's bids and offers

6.3.1 With a gross clearing methodology, a demand curve shift or firms' bids and offers may cause the AESO to buy or sell capacity. All of the AESO's transactions will be facilitated through the demand curve, and the AESO will not submit offers through the supply curve. However, the AESO will submit bids on behalf of firms that have not submitted the required UCAP reduction bids in the second rebalancing auction. These bids will be submitted marginally above the price cap on behalf of the capacity assets with a UCAP reduction. The capacity supplier is responsible

for all costs associated with covering the obligation caused by a UCAP reduction. This measure is put in place to mitigate supply adequacy risks caused by capacity committed assets not having enough UCAP to fulfill their obligation volume.

## 6.4 Auction clearing, price setting, and settlement

### 6.4.1 – 6.4.2

The AESO proposes to clear the rebalancing auction on a gross basis (i.e., including all supply, and demand in the market in the same way as the base auction), but to settle the auction on a net basis (i.e. only differences between the quantities cleared in the base auction and rebalancing auctions would be settled at the rebalancing price). Gross clearing in the rebalancing auctions increases transparency by allowing capacity market participants to easily see the effect of updated auction parameters on the AESO's demand curve and to see the volume cleared in the prior auctions. Clearing a rebalancing auction in the same way as the base auction reduces the likelihood of unanticipated outcomes due to idiosyncratic differences between forward and rebalancing auction mechanics. The gross clearing with net settlements approach is used by ISO-NE in its forward capacity market, and is also used in US real-time energy markets, which follow and rebalance day-ahead markets.

## 6.5 Anticipated transmission constraints

### 6.5.1 - 6.5.2

Rebalancing auctions treat anticipated transmission constraints in the same manner as base auctions. The rationale for the proposed methodology is discussed in subsections 5.9 and 5.10 of Section 5, *Base Auction*.

## Rebalancing auction assessment against capacity market design criteria

After the transition period, two rebalancing auctions occur before the obligation period. These rebalancing adjustments employ market-based mechanisms that should provide an effective balance between capacity cost and supply adequacy resulting in a reasonable capacity costs for consumers while still contributing to the reliable operation of the electricity grid.

The use of rebalancing auctions are an effective best practice found in other capacity market implementations for dealing with forecast risk in the capacity procurement volume and availability risk for capacity assets. Inclusion of this design feature assists with satisfying the criteria of maintaining reliability objectives at lowest cost to consumers.