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 firms to adjust to changes in the load forecast, UCAP ratings, new asset delivery expectations and to optimize the sales in their portfolio since the base auction. The updated resource adequacy target is reflected in the AESO's rebalancing auction reliability requirements, which determines the value of capacity under current system conditions. If the system is tight in the rebalancing auction timeframe, rebalancing auction prices will be high. Capacity committed assets will be strongly incentivized to deliver on their commitments to avoid buying out at the high rebalancing price, and additional capacity assets will be strongly incentivized to enter. If the system is oversupplied, prices in the rebalancing auction will be low. Capacity committed assets will be able to buy out of those commitments relatively inexpensively, and additional capacity assets may not wish to enter.

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 revised reliability requirements.** Load forecast error is an unavoidable component of a forward capacity market. While the AESO will aim to produce an accurate forecast, there will inevitably be some level of error. A key function of the rebalancing auctions is to minimize the reliability and economic impacts of this error. If the AESO under-forecasted load in the base auction, the rebalancing auctions provide opportunities to buy additional supply, and ensure the reliability 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 unwilling or 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 auction but may be willing to accept a capacity commitment a few months ahead. In addition, capacity assets that cleared the base auction but came online in less than three years would be able to sell capacity early into a rebalancing auction. 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.** Capacity committed assets that have cleared in the base auction will be unable or unwilling to bring their capacity asset online in time for the start of the obligation period. The rebalancing auctions will provide these capacity committed assets with an opportunity to buy out of their capacity commitments and ensure 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.

Two rebalancing auctions will be held prior to the delivery period. The AESO's proposal to hold two rebalancing auctions between the base auction and the start of the delivery period strikes a reasonable balance between several competing factors.[1] 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 price. On the other hand, holding fewer rebalancing auctions increases liquidity in each individual auction, reducing transaction costs and reduces the administrative burden of facilitating and participating in the auctions.

6.1.2-5 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 3 months prior to the obligation period. During the transition period, the reduced number of the rebalancing auctions would provide an opportunity for market participants to adjust capacity commitments and for the AESO to adjust procurement volume while avoiding the situation where it becomes impractical to administrate 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. For the post transition period, the final rebalancing auction should take place close enough to the start of the delivery period that load forecasts, and generator availability are essentially final.

The fixed schedule for a rebalancing auction will facilitate participation in the auction and reduce participant uncertainty. With a fixed schedule, firms offering additional capacity into a rebalancing auction can ensure that their resource plan is sufficiently well developed 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 construction milestone before the rebalancing auction bidding 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 only one rebalancing auction during the transition period and two rebalancing auctions between the base auction and the start of the obligation period post transition period strikes a reasonable balance between the following considerations. 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 price. On the other hand, holding fewer rebalancing auctions increases liquidity in each individual capacity auction, reducing transaction costs and reduces the administrative burden of facilitating the capacity auctions.

The proposed rebalancing auction schedules for the transition period and post transition period were based on a balance of factors.

Rebalancing auctions follow similar steps and timeline to those of the base auction, providing a consistent process for all capacity auctions.

6.2 Market participant bids and offers

6.2.1-2 The AESO's proposal allows market participants to submit several types of offers, and bids into the rebalancing auctions. Each offer and bid type corresponds directly to one or more of the 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.** 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 committed asset that is physically unable to deliver will be required to submit a UCAP reduction bid rather than a repricing bid in the final rebalancing auction.
- **UCAP Reduction Bids.** 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.
- **Non-Participating Supply.** Allows a capacity supplier who is not required to or does not wish to alter its position in the rebalancing auctions to avoid the administrative burden of active participation in the 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 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 committed assets buying out of their existing capacity commitments. Bids are required to be capacity asset specific. No firm is allowed to have a net short capacity position; therefore, bids are not allowed to exceed the capacity asset's existing capacity commitment volume. The same capacity asset is allowed to submit up to seven buy bid blocks to allow capacity buy bids to place different values on different quantities of capacity

6.2.4 In order to mitigate the risks associated with the design of new capacity assets and capacity assets that cannot operate below a minimum volume, a capacity asset is allowed to identify a bid block as an inflexible block. Subsequent to the inflexible block, all buy blocks with buy bid prices higher than that of the inflexible block are required to be flexible. This ensures that a capacity committed asset sheds capacity commitments of the flexible blocks before the inflexible block and also reduces auction settlement computational complexity.

In addition, buy bids quantities in each price-quantity pair shall be incremental quantities, such that the aggregate UCAP offered across all price-quantity pairs submitted decreases monotonically with increasing price. This requirement also reduces auction algorithm clearing complexity.

6.3 AESO bids and offers

6.3.1 With a gross clearing methodology, a demand curve shift or firms' bids and offers will cause the AESO to buy or sell capacity. All of the AESO's transaction will be facilitated through the demand curve, the AESO will not submit offers or bids through the supply curve. However, in order to mitigate reliability risks the AESO will submit offers on behalf of firms that have not submitted the required UCAP reduction bids. These bids will be submitted marginally above the price cap on behalf of the capacity assets whose UCAP reduction exceeds the lesser of the maximum of (2% of the UCAP subject to a capacity commitment or 1 MW), and 8 MW. The capacity supplier is responsible for all the costs associated with covering the obligation caused by a UCAP reduction. The UCAP reduction threshold being established as a range to recognize that UCAP estimation has some amount of variability. The maximum of 2% or 1 MW recognizes that a small asset may have a UCAP adjustment that's greater than 2% but less than 1 MW, the minimum size of the capacity market. The lesser of (2% / 1 MW) and 8 MWs recognizes that a 2% change in UCAP for a large sized asset may result in a large volumetric change in overall UCAP and in that case establishes 8 MWs as the threshold at which a UCAP reduction transaction should occur.

6.4 Auction clearing, price setting, and settlement

6.4.1-2 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 forward and rebalancing cleared quantities would be settled at the rebalancing price). Gross clearing in the rebalancing auctions increases transparency by allowing 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 Rebalancing auctions treat anticipated transmission constraints in the same manner as base auctions. The rationale for the proposed methodology is discussed in Section 5.

Rebalancing auction assessment against capacity market design criteria

Post the transition period, the design allows for two rebalancing auctions to 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.