

Alberta Capacity Market

Comprehensive Market Design (CMD 1)

Design Rationale Document

Section 5: Rebalancing Auctions

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5. Rebalancing Auctions

The rebalancing auctions provide a market-based mechanism for the AESO and participants to adjust to changes in load and transmission parameters since the forward auction. Updated reliability requirements are reflected in the AESO's rebalancing auction demand curve, 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. Resources with forward commitments will be strongly incentivized to deliver on their commitments to avoid buying out at the high rebalancing price, and new suppliers will be strongly incentivized to enter. If the system is long, prices in the rebalancing auction will be low. Resources with forward commitments will be able to buy out of those commitments relatively inexpensively, and new suppliers 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 reliability by:

- **Allowing the AESO to update demand for capacity based on a revised load forecast.** Load forecast error is an unavoidable component of a forward capacity market. While the AESO will aim to produce an accurate, and unbiased 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 forward 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 forward auction, the rebalancing auctions provide opportunities to sell excess supply and recover some costs for customers.
- **Allowing new resources to enter with less lead time than the three-year forward period.** The rebalancing auctions provide a mechanism for resources that were unwilling or unable to offer into the forward auction to obtain a capacity obligation. 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 obligation a few months ahead of the auction. Additionally, new resources that cleared the forward 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 also reduce costs for customers.
- **Allowing resources with a forward commitment to buy out if they are unable or unwilling to deliver.** Some new resources that have cleared in the forward auction will be unable or unwilling to bring their plant online in time for the start of the delivery year. The rebalancing auctions will provide these resources with an opportunity to buy out of their obligations, and ensure that the system has enough capacity online by the start of the delivery year.
- **Allowing up-rates or down-rates to forward-committed resources.** Similarly, resources that are able to increase the output of their plants through incremental modifications may wish to do so in order to capture a high energy price. Resources that must derate their plants to account for poorer-than-expected operating conditions or equipment problems will be able to find replacement supply.

Auction Timeline and Procedures

Input from Working Group Members and Industry Stakeholders through SAM 3.0

- The WG unanimously recommended that there should be two rebalancing auctions with the second auction held as close as possible to the start of the obligation term.
- Industry stakeholders were supportive the WG recommendation of two rebalancing auctions and added the following comments:
 - Rebalancing auctions should take place regardless on if the AESO needs to adjust its position.
 - Liquidity in the rebalancing auctions is incredibly important.

- Should the AESO have an obligation to act as a “market maker” during rebalancing auctions?

Comparison to SAM 3.0 Position

- The design is not materially different from what was described in SAM 3.0

AESO Rationale:

After the auction itself has concluded, two rebalancing auctions will be held prior to the delivery period. In addition to ensuring an efficient response to rebalancing needs, the timing of the rebalancing auctions occurs such that market participants are not overwhelmed by administrative duties for the forward capacity auctions that are occurring concurrently. The AESO’s proposal recommends holding two rebalancing auctions for each delivery period, conducted on a fixed schedule. The first rebalancing auction will occur 18 months prior to the delivery period, and the second will occur three months prior to the delivery period.

The fixed schedule for rebalancing auctions will facilitate participation in the auctions, and reduce participant uncertainty. With a fixed schedule, market participants offering new capacity into a rebalancing auction can ensure that their resource plan is sufficiently well developed to qualify by the time of the auction. Participants at risk of being unable to meet their forward commitments know exactly how much time is available to achieve their next construction milestones before the rebalancing auction bidding window opens. The AESO can establish an auction schedule that allows sufficient time to qualify, and establish UCAP ratings for all resources, publish auction parameters, and determine auction results, and that evenly distributes 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 between the forward 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 resource determines it will not be available in time for the delivery year and immediately buys out its obligation 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 the auctions.

The proposed rebalancing auction schedule was also based on a balance of factors. 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, but should also allow enough time for the AESO to take out-of-market actions if it comes up very short after the auction. The first rebalancing auction should be scheduled to evenly distribute auctions between the forward auction, and the start of the delivery period, but should also keep in mind the administrative overhead of running all auctions in a calendar. The AESO’s proposed schedule strikes a reasonable balance between these factors.

5.1 Market Participant Buy Bids and Sell Offers

Input from Working Group Members and Industry Stakeholders through SAM 3.0

¹ During the transition period, some delivery years will have zero or one rebalancing auctions.

- These details were not discussed by the WG through SAM 3.0

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 new resources to enter with less than the three-year forward period. Allow up-rates and UCAP increases of already-committed resources.
- **Repricing (Buy Out) Bids.** Enable resources with forward commitments to buy out of their obligations, or to derate their cleared capacity, contingent on a sufficiently low rebalancing price. Resources that are physically unable to deliver will be required to submit UCAP reduction bids rather than demand bids in the final rebalancing auction.
- **UCAP Reduction Bids.** Enable resources that are physically unable to deliver on their obligations, in part or in full, to buy out of their obligations regardless of the rebalancing auction price. UCAP reduction bids will be entered at a price in the final rebalancing auction just above the rebalancing auction price cap to ensure that they clear.
- **Non-Participating Supply.** Allows the majority of suppliers who do not wish to alter their positions in the rebalancing auctions to avoid the administrative burden of active participation in the auction. These resources will be automatically entered as price takers on the supply side of the auction, but will not incur any settlements as a result of the auction.

5.2 Administrative Demand Curve

Input from Working Group Members and Industry Stakeholders through SAM 3.0

- These details were not discussed by WG through SAM 3.0

The AESO proposes to participate in the rebalancing auctions using the same demand curve shape it uses in the forward auction. As described in Section **Error! Reference source not found.**, this curve represents the AESO's willingness to pay for capacity to achieve its reliability objectives. Since this fundamental willingness to pay for capacity does not change in the Rebalancing Auction, the shape of the AESO's demand curve will not change either.

Using the same demand curve shape in the rebalancing auctions will also help to avoid the market distortions that would occur if the rebalancing demand curve were systematically different than the forward demand curve. If the AESO's rebalancing auction demand curve were systematically lower than the forward demand curve, market participants would have an incentive to sell in the forward auction, and buy out in the rebalancing auction at a lower price. If the rebalancing auction demand curve were systematically higher than the forward demand curve, market participants would have an incentive not to offer in the forward auction, and instead sell in the rebalancing auction at a higher price.

The AESO will update load forecast and resource adequacy parameters of the demand curve using the load forecast and resource adequacy parameters from the most recent reliability study completed prior to the auction. Similarly, the AESO will update transmission data used to determine import limits from external areas and to evaluate the deliverability of capacity resources cleared in Alberta. These updates will allow the AESO to ensure reliability if it has under-forecasted load, reduce customer cost impacts if it has over-forecasted load, and send an accurate updated price signal to suppliers about the tightness of supply and demand in the market.

The AESO proposes not to update the net-cost of new entry (net-CONE) parameter in the rebalancing auctions. Net-CONE will likely be the subject of an extensive stakeholder process involving public release of draft parameter values. Since draft net-CONE values may be available more than a year before they are used in a forward capacity auction, use of an updated net-CONE parameter in a rebalancing auction would introduce an opportunity for gaming. Since market participants would know with reasonable confidence whether net-CONE is likely to increase or decrease in the rebalancing auction at the time they offer into the forward auction, they would have incentives similar to those described above for systematic differences in demand curve shape.

5.3 Auction Clearing and Price Setting

Input from Working Group Members and Industry Stakeholders through SAM 3.0

- These details were not discussed by WG through SAM 3.0

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 forward auction), but to settle the auction on 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. Clearing the rebalancing auctions in the same way as the forward 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.

5.4 Rebalancing Auction Assessment Against Capacity Market Design Criteria

The design allows for two rebalancing auctions to occur before the delivery year. 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.

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 resources. This satisfies the criteria of maintaining reliability objectives at lowest cost to consumers.