Payment Adjustment Mechanism

Alberta Capacity Market
Design Working Group Meeting

April 4, 2018

What do we want out of today

- Review changes to the Performance monitoring and payment adjustment approaches
- Look for feedback to help solidify position on items not landed
- Look for general feedback on approach

Outline

- Stakeholder feedback from February 2018
- Overview of the summary of post-CMD 1.0 design changes to the payment adjustment mechanism
- Review modeling results and seeking input
- Review the Ex post Volume Reallocation

Stakeholder feedback from February 2018

- AESO received feedback on the payment adjustment mechanism process that can be summarised into the following
  - Parameters/formulas proposed changes
    - Payment adjustments should be based on revenue each resource actually receives
    - “Less severe” caps, e.g. 100%, 200% or ISO-NE’s way
    - Change weighting between the two parts of the mechanism, e.g. 50/50 or 40/60 flipped
    - EEA hours needs to be “fixed” over a number of obligation periods
  - Transitional mechanism
    - Phase in of payments adjustments and caps
  - General approach
    - Allow the opportunity to earn over-availability payments through availability assessment and make it revenue-neutral
    - Consider assessing availability on a monthly basis, not annually
    - Non-committed resources should also be eligible to receive payments for over-performance

We heard you… potential CMD 2 design changes

- The following changes to the proposal in CMD 1 are being considered

1. Instead of the Max of last rebalancing and forward auction price, the payment adjustments may be based on revenue that each resource actually receives, i.e. resource's "obligation price per MW"
2. Maximum potential over-performance payment adjustments will be capped at resource's total annual capacity payment
   - I.e., if a 1 MW resource receives $100,000 per year of capacity payment, the maximum over-performance payment will be capped at $100,000 for that obligation period
   - Once the cap is reached before the end of the obligation period, the resource will not be eligible for over-performance payment after that
3. The specific value of expected EEA hours may be determined and communicated in advance of each forward capacity auction based on the AESO's reliability modeling and will remain constant for that obligation period. If the expected EEA hours is lower than 20, a floor of 20 hours will be used.
4. Actual performance and availability of resources that are constrained down due to transmission constraints will be measured as metered volume + constrained down volume. Site/ distribution transmission constraints will not be exempt.
5. The Ex post Volume Reallocation is proposed

Payment Adjustment Framework Changes - Review and Discussion

Payment Adjustment Framework Assessment

- A review of performance framework 2011-2017
- A UCAP was established for 12 resources representing combined cycle and simple cycle gas, coal, wind, and intertie
- Assumed an annual capacity payment of $105/kWy (an assumption only for illustrative purposes)

- Goal – to assess different frameworks across asset types
  - One resource had a very poor performance year – out 6 months during 39 performance hours
  - Geographically vary wind resources
  - Test a number of different gas assets: combined cycle and simple cycle

Payment Adjustment Framework Assessment (continued)

- Why 1.3x as the payment adjustment multiplier
- Why 300% as the single monthly adjustment cap
- Why 60% for the performance period
- Why annual availability assessment assessed through the entire year

Payment adjustment framework assessment: orientation for the following slides

- Annual Cap: the annual payment adjustment cap applied to unavailability and non-performance payment adjustments
- Monthly Cap: the monthly payment adjustment cap applied to non-performance payment adjustments
- Performance Wtg: the weighting to the performance period when allocating adjustments between the performance period and the availability period
- Perf Hours/yr: for illustrative purposes – the number of hours used in the denominator of the non-performance adjustment formula
- Single year summary
  - Assessing the best and the poorest net capacity market revenues after payment adjustment framework was implemented (Revenue – positive and negative payment adjustments)
- Full period summary
  - Assessing the performance over the full 7 year period (Revenue – positive and negative payment adjustments)

Why 1.3x as the payment adjustment multiplier

- Intent: a poor performing resource – or one that didn't show up for the year – would potentially have revenue adjustments of up to 1.3x annual revenues
  - Meant to dissuade speculative capacity market entrants that don't intend to materialize

Assessing the single monthly adjustment cap

- Intent: assess resources with poor availability or performance while adjusting the monthly cap to test total annual adjustment levels
- We tested 300% and 400% as the monthly cap
- Setting the monthly cap at 300% provided some limits to the downside risk faced by poor performing assets but didn't result in resources reaching the annual cap

Total Revenue after Availability and Performance Payment Adjustments									
						Single Year		Full Period	
Scenario #	Annual Cap	Monthly Cap	Performance Wtg	Performance Hrs/yr	Avail Hrs/yr	Min	Max	Min	Max
1	130%	300%	60%	20	100	-19%	141%	72%	107%
2	130%	400%	60%	20	100	-30%	143%	71%	108%
3	130%	300%	80%	20	100	-13%	150%	77%	110%
4	130%	400%	80%	20	100	-30%	155%	75%	111%
5	150%	300%	80%	20	100	-15%	154%	75%	111%
6	150%	400%	80%	20	100	-45%	160%	73%	112%

Why 60% weighting to Performance periods

- Intent: performance periods are periods of greatest system stress - assign a higher amount of payment adjustments to those periods than the availability periods
- Findings:
  - a 60% level for the performance period adjustment results in higher penalties for poor performing resources
  - an 80% level for the performance period adjustment results in higher payments for the better performing resources

Total Revenue after Availability and Performance Payment Adjustments									
						Single Year		Full Period	
Scenario #	Annual Cap	Monthly Cap	Performance Wtg	Performance Hrs/yr	Avail Hrs/yr	Min	Max	Min	Max
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Why is the availability payment adjustment assessed through the entire year

- Intent
  - The availability adjustment assess a resource's availability over the same measure it's UCAP was established
  - AESO considered assessing availability over shorter hours, quarterly or semi-annually, but was concerned that
    - The split would arbitrarily establish hours for assessment that didn't correspond with system tightness
    - If the split was uneven (e.g. 70 hours in the summer/ 30 hours in the winter) the outcome could be an unintended grouping of outages in the period with fewer assessment hours
    - By averaging the assessment over the year, periods of poor performance can be offset by periods of better performance

Ex post Volume Reallocation Definition

- A capacity supplier with a committed capacity asset that delivered metered volumes greater than expected performance under its obligation during an EEA event may sell its excess positive performance volume to another capacity supplier whose committed capacity asset did not deliver sufficiently to meet its entire obligation.
  - Only resources with capacity obligations are eligible to participate in Volume Reallocation transactions.
- The AESO will allocate the payment adjustments associated with under-performance and over-performance of the substituted asset to the original obligation holder, not to the substituted asset owner.
- The capacity obligation during the substitution period will not be transferred to the substituted asset.

Ex post Volume Reallocation Process

Step 1: AESO to notify Committed Capacity Assets of their performance

- No later than 5 business days following the end of the calendar month, performance volume data results provided for each performance assessment period (if any took place) in the previous calendar month

Step 2: Committed Capacity Assets submit Volume Reallocation Request to the AESO

- Between 4 business days and 6 business days following receipt of the performance volume results, volume reallocation requests are accepted. No financial transaction details are required to be submitted.

- The committed capacity asset that buys reallocated capacity would be considered to have met its obligation via a combination of any output of its own and that nominated from other capacity providers
- The AESO will not allocate an over-delivery capacity payment adjustment for the seller for any MW transferred to another capacity supplier

Questions for discussion

- Performance framework
  - Does a monthly cap at 300% achieve the intent? Should the monthly non-performance payment cap be set at 400% instead?
  - Should the over-performance payment adjustment cap be set at any other level than resource's total annual capacity payment?
  - Is the Ex post Volume Reallocation as proposed an effective risk mitigation tool for committed capacity assets?
  - Other than comments submitted in February, are there other things we should consider?

Thank you

Appendix

Overview of the Payment Adjustment Mechanism

- Goal: to ensure delivery of capacity obligation while balancing the financial risk of under availability or non-performance
- Payment Adjustment Mechanism incorporates four elements that review resources before and during the obligation period

Failure to Deliver for New Capacity Resources

- Assessed to new capacity committed resources which are at risk of not meeting their delivery obligations, e.g., due to construction delays or early retirement of the resources

Updates to Qualified Unforced Capacity (UCAP) Ratings

- UCAP ratings of resources with capacity obligations will be recalculated in advance of each rebalancing auction to reflect changes in the resource's capabilities

Availability Payment Adjustment Framework

- Unavailability payment adjustments assessed to committed resources with average availability levels below committed UCAP levels during the system tightest hours

Performance Payment Adjustment Framework

- Non-performance payment adjustments assessed to committed resources that, during emergency conditions, deliver a quantity of energy or ancillary services less than their capacity obligation adjusted for a balancing ratio (with overperformance payment adjustments rewarded for over-delivery)

Element 1:
Failure to Deliver for New Capacity Resources

- The AESO will use milestone tracking to assess the timely completion of new resources based on predefined milestones for both generation and demand resources
- New Resource owners must demonstrate that they have fulfilled development milestone requirements prior to each rebalancing auction
- New resources that have not met development milestones will be deemed to have failed to deliver on the new capacity resource and will be required
  - to buy out their obligation in the one of the rebalancing auctions; or
  - to engage in asset substitution prior to the final rebalancing auction such that their obligation is met via supply from another qualified capacity resource.

Element 2:
Updates to Qualified UCAP Ratings

- UCAP ratings of resources with capacity obligations will be recalculated in advance of each rebalancing auction to reflect changes in the resource's capabilities
- Resource with capacity obligations that experience a reduction in UCAP relative to their prequalification UCAP for a delivery period will be required
  - to buy out their obligation in the final rebalancing auction; or
  - to engage in asset substitution prior to the final rebalancing auction such that their obligation is met via supply from another qualified capacity resource

Element 3:
Availability Payment Adjustment Framework

- Availability of the committed resources will be assessed in the top 100 tightest supply cushion hours each delivery year
- The resources will be required to demonstrate that their Actual availability was at least equal to their expected availability
  - Actual availability is an amount of MW offered to energy and AS market (including dispatched), calculated as average availability during tightest supply cushion hours, multiplied by total number of assessment hours
    - For non-dispatchable resources availability will be measured as the amount of MW generated during the availability assessment hours
- Unavailability payment adjustments are assessed as an average unavailable capacity volume times unavailability payment adjustment rate:
- **Unavailability Payment Adjustment Rate ($/MWh)** = 40% × 1.3 × Obligation price per MW / 100 hours

Element 4:
Performance Payment Adjustment Framework

- Performance period starts with declaration of EEA 1-3 and ends with EEA 0
- The under-delivered capacity amount for a capacity committed resource is calculated as actual performance minus the expected performance, adjusted for a Balancing ratio (BR)
- Performance payment adjustments are assessed as under-delivered or over delivered capacity in each hour times non-performance payment adjustment rate:
  - **Non-performance Payment Adjustment Rate ($/MWh)** = 60% × 1.3 × Obligation price per MW / MAX(Expected EEA hours, 20 hours)
    - The specific value of expected EEA hours will be determined and communicated in advance of each forward capacity auction based on the AESO's reliability modeling and will remain constant for that obligation period. If the expected EEA hours is lower than 20, a floor of 20 hours will be used.
- Maximum potential over-performance payment adjustments will be capped at resource's total annual capacity payment
  - I.e., if a 1 MW resource receives $100,000 per year of capacity payment, the maximum over-performance payment will be capped at $100,000 for that obligation period
  - Once the cap is reached before the end of the obligation period, the resource will not be eligible for over-performance payment after that

Non-performance and Unavailability Payment Adjustments Exemptions

- Resources with capacity obligations that are constrained down due to limits on the Alberta internal transmission system will be exempt from non-performance and unavailability payment adjustments on that volume of their obligation
  - Actual performance and availability of resources that were constrained down in the hours when transmission constraints were observed will be measured as metered volume + constrained down volume
  - Site transmission or distribution system event will not be exempt (only constraints on transmission wires located after transmission substation will be exempt)
- Capacity resources will not be exempt from the non-performance and unavailability payment adjustments due to:
  - Forced outages or derates
  - Planned outages or derates
  - *Force majeure* events