Comprehensive Market Design Stakeholder Comment Matrix
Design Working Group *FINAL*

The AESO is requesting written feedback from the Capacity Market Design Working Group (DWG) members about the content of the first draft Comprehensive Market Design (CMD 1) and about the working group session in which CMD 1 was discussed. This draft comment matrix is provided in advance to help working group members prepare for their upcoming session. Following the working group session, the AESO will post a **final comment matrix** one (1) day after the session. This final comment matrix should be completed by working group members within four (4) business days. The final feedback matrix is intended for working group members to provide written feedback about CMD 1 or the content of their working group session that is within the scope of their working group.

The AESO will post all comment matrices and any other feedback received from working group members on www.aeso.ca and on the Capacity Market SharePoint site. **Please note that the names of the parties submitting each completed comment matrix will be included in this posting.** The AESO does not intend to respond to individual submissions.

If you have any questions about this comment matrix, please email capacitymarket@aeso.ca

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Date: February 27, 2018

CMD Key Design Questions	Comments and / or Recommendations
1. UCAP: Can you support using Availability factor for dispatchable resources? Does the approach meet the intent of a resource neutral approach to capacity volume that reflects the deliverability of energy during periods of tight system conditions?	Yes, MAXIM can support using Availability factor for dispatchable resources, but we believe that a historical based UCAP ***range*** should be provided to resources and they should be permitted to offer within that range of UCAP values. **MAXIM's Proposal for allowing dispatchable capacity resources to offer within a range of historical UCAP values** With the AESO's proposed availability penalty structure we have an effective incentive for participants to offer an accurate capacity value, but the proposed UCAP calculation does not give market participants the ability to then offer their most accurate capacity value into the capacity market. To correct this, MAXIM proposes that the MW quantity of the "must-offer" obligation should be adjusted to give generators the ability offer within a range of their historical UCAP values to ensure they can accurately reflect their expected actual availability during the delivery year, similar to how the PJM market works. The current method of an AESO-assigned fixed UCAP value does not give generators the ability to respond to the penalty structure incentive and only provide capacity which they are confident they can deliver. MAXIM proposes the following method of determining an acceptable offer range for each resource: Min UCAP: The minimum of the last 5 years' average availability when looking at the top 100 tightest hours in each of the five years. Max UCAP: The maximum of the last 5 years' average availability when looking at the top 100 tightest hours in each of the five years. MAXIM proposes that the resource would then be required to offer between their Min and Max UCAP values. Since the penalty structure creates the incentive for resources to offer an accurate capacity value, resources should be given flexibility to offer within the observable 5 year range of UCAP values. If a resource wishes to offer outside of this range, they would apply to the AESO for an exemption and be required to justify why an adjustment is required. If there are concerns regarding withholding MWs through this mechanism, MAXIM suggests that perhaps the Min UCAP in the acceptable offer range could be adjusted to be the 5 year historical average UCAP (ie. the same value the AESO is currently proposing). So the range would then be between the Average UCAP and the Max UCAP. Again, resources wishing to offer outside of this range would then apply to the AESO for an exemption and be required to justify why an adjustment is required. Concerns related to resources offering more capacity than they are able to deliver are mitigated by

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	the availability penalty structure. Regardless of the mechanism used to assign UCAP, MAXIM feels strongly that there must be a mechanism for challenging and adjusting UCAP if maintenance or upgrades have been performed to the resource, or if an event occurred in the past that would not be reasonably expected to occur in the future. There are incentives in place through the availability penalty structure to motivate resources into only selling capacity which they can ultimately deliver. With this incentive in place, it is crucial that resources are able to dictate the quantity that they are comfortable offering into the capacity market. Without the ability to dictate their own capacity value, resources end up being measured against a value which they may not be comfortable with. This issue is particularly important with the "one-sided" penalty structure for availability. The proposed "one-sided" availability penalty structure can work if resources are given the ability to dictate the amount of capacity they offer into the market. Yes, MAXIM believes this is a resource neutral approach to capacity volume for dispatchable resources and reflects the deliverability of energy during periods of tight system conditions.
2. Payment Adjustment Mechanism: Can you support using a 60/40 performance/ availability framework? Does the approach achieve the intent of higher adjustments to performance periods?	Yes, MAXIM can support using a 60/40 performance/availability framework. Yes, the approach achieves the intent of higher adjustments to performance periods.
3. Payment Adjustment Mechanism: Can you support a monthly cap at 300%? Does the approach achieve the intent of reasonably limiting adjustment payments?	MAXIM is concerned that a penalty structure that is more punitive than other capacity markets may make the Alberta market less attractive to investors. Our understanding is that ISO-NE has the following penalty caps: • Capped at 10% on any day • Capped at 2.5 months capacity revenue in one month • Capped at 12 months capacity revenues in one year MAXIM would support payment adjustment mechanisms that are more in line with these limits as we believe these limits will not have the effect of deterring investment from the province.
4. Payment Adjustment Mechanism: Can you support a 1.3x annual revenue/ rebalancing assessment limit? Does the approach achieve the intent of ensuring capacity resources are available for the obligation period?	MAXIM is concerned that a penalty structure that is more punitive than other capacity markets may make the Alberta market less attractive to investors. Our understanding is that ISO-NE has the following penalty caps: • Capped at 10% on any day • Capped at 2.5 months capacity revenue in one month

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	• Capped at 12 months capacity revenues in one year MAXIM would support payment adjustment mechanisms that are more in line with these limits as we believe these limits will not have the effect of deterring investment from the province.
5. Market Power Mitigation: Can you support setting a market power screen as a fixed percentage of aggregate UCAP requirement for the auction? Does the approach meet the needs of mitigating supplier market power?	Yes, MAXIM can support setting a market power screen as a fixed percentage of aggregate UCAP requirement for the auction. Yes, this approach meets the needs of mitigating supplier market power.
6. Market Power Mitigation: Is a price cap of 50% of net CONE appropriate to mitigate the offers of suppliers with market power?	MAXIM believes that the calculation of a price cap should start with the approximate fixed costs of the most expensive resources in the market. Then those costs should be adjusted to reflect an appropriate expectation of return on those costs. Once that value is determined, it could then be presented as a percent of the net-CONE of the reference technology. But to start with the percentage of net-CONE and ask stakeholders for their support does not seem appropriate. Conceptually, MAXIM would support a value and a procedure that allows the highest costs resource to collect their full going forward costs plus some percentage to cover cost of capital and return of capital.
7. Market Power Mitigation: Do you think there is sufficient support that mitigation of buyer side market power is not initially required in the capacity market?	Without visibility of each participant's position in the market MAXIM cannot support this. At the very least, MAXIM believes the AESO should make it clear that while ex-ante mitigation measures may not initially be created for buyer side market power, they will evaluate offers ex-poste to check for buyer-side market power.
8. Delisting: Are there some circumstances where the delist bid of an asset does not clear but the asset continues to participate in the energy market?	If a market participant wants the option of participating in the energy market even if they don't clear in the capacity market, they should not classify their offer as a "delist bid" at all. They should just offer into the market without specifying that their offer is a delist bid. An offer that is classified as a de-list bid, should mean that a participant is not eligible to participate in the energy market if they do not clear in the capacity market.
9. Delisting: Should a resource be able to delist from the capacity market but be eligible to participate in the energy and ancillary services market? For example: a. An asset of a non-mitigated supplier fails to clear, should it be allowed to continue energy	MAXIM suggests that some clarity is required around a regular offer versus a de-list bid. For point (a): As stated above, if a market participant wants the option of participating in the energy market even if they don't clear in the capacity market, they should not classify their offer as a "delist bid" at all. They should just offer into the market without specifying that their offer is a delist bid. An offer that is classified as a de-list bid, should mean that a participant is not eligible to participate in the energy market if they do not clear in the capacity market.

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market participation? b. For long outage requirements that are for a substantial portion of the year?	For point (b): If a resource needs to delist for a portion of the year because of an outage, they should submit the duration of the outage along with their de-list request. The “de-list” would apply only for the outage dates. If that de-list request is approved, the AESO should publish the de-list information, providing MWs and time period of the de-list (which would match the outage dates). The resource would then not be permitted to participate in the energy market for the duration of the de-list, which would match their outage. For the remainder of the year, the resource would be permitted to participate in the energy market. This ensures that other market participants have a more accurate picture of how many MWs will be in participating in the energy market, allowing them to better reflect their expected energy margins in the capacity market offers.
10. Transition to Capacity Market: Is a rebalancing auction for first obligation period 2021/22 required and practical?	Yes, since this is the first capacity year MAXIM feels that a single rebalancing auction should happen as close as practically possible to the delivery year. This allows market participants and the AESO to adjust their position going into the delivery year. Without this rebalancing auction all participants, the AESO and consumers bear an unnecessary amount of risk.

General Comments

Term for New Resources in the Capacity Market

(While this topic was not discussed during our first meeting, we feel it is important to submit this feedback regarding term length for new resources in the capacity market considering we are nearing the final market design.)

MAXIM believes a longer term for new resources will attract new investment and lower cost to consumers. As evidence that a longer term can significantly reduce cost to consumers, MAXIM would like to point to the recently announced REP Round 1 results. The term length associated with the REP Round 1 procurement allowed investors to reduce their financing costs significantly and then pass that savings on to consumers through reduced prices. Similarly, a multi-year term for new resources in the capacity market will lead to lower prices for consumers.

The goal of the capacity market is to provide a price signal for new investment when the price signal from the energy market no longer exists or would have an unacceptable level of volatility. MAXIM feels strongly that a one year term falls short of meeting this goal and recommends that new resources are given a 7 year term. There are two key reasons behind MAXIM's support for a 7 year term for new resources:

1. Provides a more attractive investment climate – A single year term for new entrants fails to provide a stable price signal and is not meaningfully different from the existing energy-only market structure.

2. Reduces cost to consumers
    a. Reduces the volatility premium that new resources would otherwise include in their offers
        i. If new resources are awarded a single year, they would be forced to include a volatility premium in their offers to reflect the expected volatility in the capacity market prices during years 2 through 7. In a small market like Alberta where new resources may not be needed every year, MAXIM expects the capacity market price will fluctuate significantly and multiple consecutive years with a low clearing price is quite likely. This means that the volatility premium would have to be very high for new resources if they are only given a single year term when they first clear. The consumer would then pay that volatility premium to all MWs in the market, not just the new entrant, resulting in a significant over-payment by consumers.

    b. Reduces the financing cost of new entrants by offering increased revenue certainty
        i. A seven year term would allow new entrants to reduce their cost of financing and offer into the market at a lower price. (See REP round 1 results)

    c. A more attractive investment climate results in more competition and lower prices for consumers
        i. The NYISO and Analysis Group examined the possibility of moving to a forward capacity market. In that analysis they acknowledged that a 7 year term for new entrants would lower the total cost to load by up to 17% when compared to a forward capacity market with a 1 year term.