Comprehensive Market Design Stakeholder Comment Matrix
Energy and Ancillary Services WG – *FINAL*

Please complete this matrix by February 27, 2018, and upload it to the "Feedback" folder on the CMD SharePoint site. The AESO will post all comment matrices received from working group members on www.aeso.ca. **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. Offer Obligations, Dispatch, and Scheduling: Are there any issues or gaps / in the CMD proposal for intra hour scheduling and priced import assets?	The AESO states, external resources will use the minimum of firm transmission, the Alberta scheduling limit, or the observed historical scheduled energy flow during defined tight supply cushion hours. This restrictive approach to imports is anti-competitive and would not facilitate the Government's objective of achieving 30% renewable supply by 2030 at least cost; this, as well as the availability of Site C hydro energy from BC should encourage the AESO to rethink its strategy respecting imports. Import capability should be based on what the supplier (Powerx for example) is willing to supply in a go forward market and should not be restricted to performance during historical years. Capacity limitations based on historical numbers or scheduling restrictions should not limit ability on the part of inter ties to participate fully in the energy and ancillary services market.
2. Offer Obligations, Dispatch, and Scheduling: Assuming imports can be scheduled and priced intra-hour, can you support that capacity committed imports must offer their capacity volumes?	Interties as well as demand response could play a more significant role as suppliers in both the energy and capacity markets if they had the ability to schedule firm supply at a firm price, ahead of time. In a binding time ahead market the risk of imbalances shifts to loads and any imbalances in a time ahead market are settled during the settlement of imbalances in real time. The present proposal of the AESO, which is intra hour scheduling for imports via the inter ties, while comparable to the existing approach, would likely be restrictive and may not facilitate greater levels of renewable power supply (capacity and energy) via inter ties (subject to the existing inter tie available transfer capability).

CMD Key Design Questions	Comments and / or Recommendations
3. Flexibility and Price Fidelity: a. Any concerns with addressing ramp by block and dispatch tolerance to address system variability? b. Any concerns with shorter settlement at 15 minutes? 5 minutes? c. Any options missing from the options to evaluate to address variability? d. Any unintended consequences with optimization look ahead or pre-dispatch? e. Any comments on ramp product? 4. Any comments on co-optimization (EAS) in the context of SCED model? Note: The AESO will continue the analysis on the options for flexibility and present at the next WG session in April.	We see the move to 15-minute settlement interval from the existing hourly settlement as an improvement and has the potential to reduce uplift payments which are borne by customers. However, in a market (as it develops) with frequent cycling of units (and ramping up or down) the 15-minute settlement would be too long; hence the AESO should consider 5 minute settlement intervals for implementation, either in Phase I or Phase II. An effective market-based approach to market power mitigation would be through adoption of SCED in Phase I and moving quickly to financially binding time ahead unit commitments (SCUC) in Phase II. The AESO's Rules and Legislation should clearly contemplate the time frames for Phases I and II of the capacity market design.

CMD Key Design Questions	Comments and / or Recommendations
5. Market Power Screen and Mitigation: Can you support the proposal for ex ante mitigation as stated (RSI and scarcity screen and conduct threshold), specifically: a. Are there issues with 0.9 RSI that warrant further consideration? b. Are there any issues with the revised RSI formula? Is it required? c. Are there any issues / unintended consequences with additional scarcity screen? d. Are there any issues with a conduct threshold at 3x? Are there better alternatives? e. Are there any issues with opportunity cost exceptions? Any input for formulae / evaluation?	An effective market-based approach to market power mitigation would be through adoption of SCED and moving to financially binding time ahead unit commitments (SCUC). The use of administrative mechanisms such as RSI requires finding the right balance between unduly depressing energy prices (i.e. not consistent with supply and demand) versus not being effective in curbing market power. An optimization mechanism such as SCED/SCUC may not require such potentially contentious administrative mechanisms. We would not oppose the use of a 0.9 RSI screen as an interim measure in a Phase I capacity market design. However, rather than dismissing binding time ahead markets for energy as an out of scope item, it is our submission that in a Phase II, the AESO move to SCED and binding time ahead markets with SCUC. With regard to the 3X conduct threshold, the better alternative would be to move to SCED/SCUC, However, 3X may be used as an interim measure in Phase I.

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6. Roadmap: A fulsome roadmap will be presented to the April WG. The rules required for 2021 and taken out of scope have been identified. Rules that may be delayed or phased in will be identified at that time. a. Can you support the efficiency pieces taken out of scope (SCUC, BDAM, co-optimization)? (See section 10.4) b. Scope: Can you support the pricing pieces taken out of scope (price cap, shortage pricing, negative pricing)	We do not support the AESO's proposal in CMD 1 to consider as out of scope the efficiency initiatives, namely, SCUC, binding time ahead market and co-optimization because, absent such initiatives, efficiencies arising from an integrated market will not be achieved and the overall market design would be sub optimal. The AESO appears to have assessed impacts of these market efficiencies in relation to current and near-term forecasts for NDV and does not appear to have considered the dynamics of the future market for supply and use of electricity, including the role of new technologies such as storage. If there is to be a capacity payment to generators to compensate them for missing money at a time when there is significantly more resource adequacy than required, negative pricing should be allowed to encourage flexible generation/storage in the context of the changing outlook for supply and demand and increased cycling of units. Any increase in missing money, if any, arising from negative pricing may potentially be captured in the capacity payments. This approach would at least encourage faster ramp up and ramp down and use of flexible resources such as storage to do this.

General Comments: Any comments on relevant scope areas of the CMD that are not addressed above

The public interest is best served when the market is designed with economic efficiency as the primary consideration. There are two customer groups (UCA, CCA) that represent the broad public interest in these discussions. While there may be a perceived momentum from legacy investors and other private interests to preserve certain design attributes of the past, we submit that the above noted recommendations of the customers representing a majority of customers in the Province be taken seriously and not be subject to summary dismissal as reflected in the CMD 1 write up.

We have concerns that the modeling results which have been used to justify the view that efficiency initiatives namely, SCUC, BDAM, co-optimization are out of scope, are based on modeling of existing resource mix and modes of operation with little regard to the dynamic ongoing changes (increasing NDV, availability of flexible resources given the right price signals) that are shaping the design of markets in most other jurisdictions. We also have concerns with the AESO proposed approach to determination and procurement of capacity resources.

The approach to procurement as proposed by the AESO, which is predominantly an administrative approach, increases the risk of higher costs to consumers whereas a market based approach favoured by CCA would result in lower costs and lower risks. This matter has been discussed with AESO personnel and in the Energy & Ancillary Services (E&AS) working group from time to time but the AESO's design approach remains fundamentally unchanged since SAM 1. I am bringing this to your attention now so that the AESO could perhaps be encouraged to consider and fully evaluate (model) our proposal before it is too late.

The AESO has proposed, as part of CMD 1, acquiring capacity up to a level that would meet the reliability standard (still to be determined by the DOE) using administratively determined performance standards such as unforced capacity or UCAP. The AESO has also proposed to pay up to certain multiples of net cost of new entry (net CONE), in order to acquire 100% of the capacity requirements. At the same time the AESO has not proposed, changes to the energy market that would see energy prices drop proportionate to the additional costs to consumers arising from capacity payments. The result could be high risk of increased costs to consumers.

The primary objectives in establishing a capacity market are to address, adequacy and timeliness of investment in capacity resources and to mitigate undue levels of price volatility. Other objectives include the greening of the grid as well as energy efficiency. In our view these objectives can be met using market responsive and market-based approaches while minimizing the potential for exercise of market power which looms large when administratively determined performance standards such as UCAP are adopted.

The adequacy and timeliness of adding capacity resources could be achieved if the missing money issue is addressed. Missing money primarily arises when the price cap for energy is insufficient for certain generators with relatively low running hours to recover their capacity costs; it could also be due to low pool prices arising from an overhang of excess capacity. Under these circumstances it is important to compensate those generators with missing money either by way of scarcity payments for energy when there is the potential for reserve shortfalls, or through capacity payments. If the objective is to mitigate price volatility under conditions of system stress the capacity payments would be the preferred option. The net CONE calculations for different types of generation (peaking, mid merit, base load etc.) provide an indication of the missing money that needs to be compensated through capacity payments.

What follows is the CCA view on determining and procuring capacity requirements:

At a time when there appears to be significant reserve capacity for the foreseeable future as per the AESO's reserve adequacy screens, scarcity of capacity is not an issue and therefore payment for capacity any more than the net cone on a weighted average basis, (for peak, mid merit and base load) is not warranted and simply serves to increase the costs paid by customers. Accordingly, we recommend changes to the CMD 1 proposals as follows:

- Since different types of supply based on projected operating hours (base, mid merit, peaking) require different capacity prices to compensate for missing money, a three-tiered pricing approach may be adopted (if required there could be more than 3 tiers depending on the spread in operating hours).
- Rather than procuring supply to meet a demand curve designed to procure 100% of adequacy requirements, procure the offered capacity, based on the net cone applicable to each type of capacity, under a left moving demand curve
- Rather than using an administratively determined UCAP for the maximum obligation of suppliers, use capacity products with performance targets that would meet the system requirements and specifications; the products must be tied to physical units or the interties as applicable
- A fixed price declining block auction could be designed to procure the three types of capacity simultaneously. Under this auction approach, prices are reduced if there is over supply in one or more categories of products; one of the constraints for the auction would be that the cost of each type of capacity acquired should not exceed the applicable net cone.
- The suggested mechanism allows for price discovery and, in the absence of scarcity pricing for energy, can provide the right fixed price signals for missing money; any capacity provider who stays out of capacity bids can be considered as not experiencing missing money.

The second main objective of the capacity market is to mitigate price volatility. The decision to replace energy-based scarcity payments by way of capacity payments to compensate for missing money would help mitigate price volatility when the system is stressed. Any further mitigation of price volatility ought to be undertaken by customers who according to their aversion for price volatility would enter into forward contracts (fixed for floating swaps).

The AESO's proposed approach, by virtue of being a highly administrative approach (as opposed to market based), risks the potential for higher overall costs to consumers (through exercise of market power) or if there is too much capacity procured, the potential for unduly low energy prices. Both of these outcomes are contrary to the Government's objectives. Unduly low energy prices would not facilitate energy efficiency or the addition of distributed renewable resources.