# Design Working Group Session Summary

**Date:** 5/2/2018 **Time:** 9:00 AM – 3:00 PM

**Location:** Sheraton Eau Claire – Wildrose North

**Agenda:**

| Time | Agenda Item | Presenter |
|---|---|---|
| 9:00 – 9:05 | Welcome, Introductions and Housekeeping | Jordan |
| 9:05 – 10:30 | Market Power Mitigation<br>- Review Approach | Kevin |
| 10:30 – 10:45 | Break | |
| 10:45 – 12:00 | Aggregation<br>- Review approach<br>- Examples of aggregated assets | Kevin |
| 12:00 – 12:30 | Lunch | |
| 12:30 – 1:45 | UCAP and Performance<br>- Assessment of the overall approach<br>- Analysis of stability of UCAP based on 100, 250, 500, 1000 hours per year<br>- Intertie UCAP approach<br>- Self Supply UCAP approach (including AF / CF approach)<br>- Demand Response UCAP approach<br><br>**Note**: Members of the TWG will be invited to attend this discussion topic | Kevin / Ketan / Nicole |
| 1:45 – 2:00 | Break | |
| 2:00 – 2:55 | UCAP and Performance (Continued) | Kevin / Ketan / Nicole |
| 2:55 – 3:00 | Session Close Out | Jordan |



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| (#) | Name | Company | Attendance Status (A) Attended / (R) Regrets |
|---|---|---|---|
| 1. | Colette Chekerda | Alberta Direct Connect | A |
| 2. | Surendra Singh | Alberta Newsprint Company | A |
| 3. | Hao Liu | AltaLink Management Ltd on behalf of Berkshire Hathway Energy Canada | A |
| 4. | Mark Nesbitt | ATCO | A |
| 5. | Keith Knudsen | BowArk Energy | A |
| 6. | Grant Berry | Capital Power | A |
| 7. | Edmond de Palezieux | Depal Consulting on behalf of Devon Canada | A |
| 8. | Kelly Cantwell | Emera Inc | R |
| 9. | Rob Kaczanowski | Enbridge | R |
| 10. | Sarah Griffiths | EnerNOC | A |
| 11. | Chris Joy | ENMAX | R |
| 12. | Stephen Thornhill | EPCOR Utilities | R |
| 13. | Derek Skeet | Husky Oil Operations Limited | A |
| 14. | Doug Sullivan | Insitu Power Corporation | R |
| 15. | Vittoria Bellissimo | IPCAA | A |
| 16. | Guido Bachmann | Kineticor Resources Corp | A |
| 17. | Kyle Mitton | Maxim Power Corp. | A |
| 18. | Tom Corscadden | MEG Energy | A |
| 19. | Martin Schultz | Morgan Stanley Capital Group | A |
| 20. | Dan Chapman | NRStor | A |
| 21. | Nola Ruzycki | Office of the Utilities Consumer Advocate | A |
| 22. | Kris Aksomitis | Power Advisory on behalf of Cogen Working Group | A |
| 23. | Clarke Lind | PowerEx Corp | A |
| 24. | Dan O'Hearn | PowerEx Corp | A |
| 25. | Robert Stewart | Rocky Mountain Power | A |
| 26. | Jason Zimmerman | Rodan Energy Solutions | A |
| 27. | Leonard Olien | Solas Energy Consulting on behalf of CanWEA | A |
| 28. | Marcy Cochlan | TransAlta Corporation | A |
| 29. | Janene Taylor | TransCanada Energy Ltd | A |
| 30. | Peter Bubik | Turning Point Generation | A |
| 31. | Tory Whiteside | URICA Energy Management | A |
| 32. | Jay Dyson | ENMAX | A |
| 33. | Akira Yamamoto | TransAlta | A |
| 34. | Kevin Dawson | AESO | A |
| 35. | Dustin Anderson | Stack'd Consulting (Facilitator) | A |
| 36. | Jordan Ludwig | Stack'd Consulting (Facilitator) | A |
| 37. | Reagan Nagel | Stack'd Consulting (Facilitator) | A |
| 38. | Leon Weinstein | AESO – Presenter | A |

| (#) | Name | Company | Attendance Status (A) Attended / (R) Regrets |
|---|---|---|---|
| 39. | Steve Waller | AESO – Presenter | A |
| 40. | Ketan Lakhani | AESO – Presenter | A |
| 41. | Shezana Assar | AESO – Presenter | A |
| 42. | Nicole LeBlanc | AESO – Presenter | A |
| 43. | Jenny Chen | AESO – Observer | A |
| 44. | Maria Gray | AESO – Observer | A |

## Meeting Minutes

**Topic:** Market Power Mitigation

**Working group members generally agree that the market design will create an over-mitigated market**:

- Both the screen (i.e. the percentage of the market that would be captured) and the default offer cap are concerning to participants, however the default offer cap is the higher priority of the two to address
- Some members believe the proposal will not incentivize new investment, and will therefore not reduce the market power concentration
- The majority of participants agree that the proposed market design is riskier than what exists today

- **AESO Design Clarification:**
  - In setting the default offer cap at 50% net-CONE, the AESO assumes as non-mitigated market participants enter the market, the offer price will be set above 50% net-CONE
  - The AESO did not presume which side of the demand curve the market would clear on (i.e. what the slope of the curve is at the point where the market clears)
    - The focus was on identifying participants that can have a material impact on the clearing price (i.e. firms that have the ability to profitably increase the clearing prices of an auction by 10% or more)
  - While the current illustrative curve uses ICAP values, the actual screen will be based on the demand curve based on UCAP values
  - With REP assets deemed ineligible, out of market payments are not a high priority relative to other topics at this time
    - The AESO will determine the timing on when out of market payments will be considered in greater detail and intends to include this topic in the roadmap

- **WG Commentary**
  - Work group members were concerned that the market power mitigation proposal will over mitigate the market by mitigating too many participants, at too low of a level
    - Capping the default offer cap at 50% is the level at which most participants are nearly ready to retire
      - The offer cap, combined with the increased administrative burden of adhering to 50% net-CONE, creates a disincentive to grow the participant's portfolio above the market power screen threshold
    - A clearing price at 50% net-CONE would make it difficult for new entrants to compete, especially when it captures 70% of participants
    - A healthy capacity price will attract new entrants; the current proposal will be a disincentive to new investment
      - In contrast, some participants believed that if the over-mitigated market will be beneficial to load, but may lead to market failure
    - Some participants suggested using 100% net-CONE offer cap
  - Risks / disincentives to potential investment:
    - Framework is currently unstable, and the introduction of a new framework will require time for market to rebuild trust
    - Participants need certainty they will earn a return over the life of the asset; investments shouldn't be considered sunk one year after initial investment
    - Stiff performance penalties
    - Government uncertainty
  - The market should correct itself with new entry
  - If EAS is supposed to be the major revenue provider, what is the materiality of mitigation in the capacity market?

- Does the market power mitigation approach assume that Alberta will continue to have a concentrated market, or does it perform under various other outcomes / futures?
- Could consider special depreciation schedule for return on and of capital for assets that have not been fully depreciated, and/or raise default offer cap, to better ensure the capacity market incents investment

- **Outstanding questions:**
  - What are the implications of the market power mitigation methodology on capacity market clearing price?
  - Should a return on, and of, capital be included in the net-CONE calculation?
    - What are the appropriate net go-forward costs that need to be considered?
  - How does mitigation for refurbished units work?
  - When will we formalize how the market addresses out of market payments?

**Topic:** Aggregation

**Participants are generally supportive of the aggregation proposal, but have a couple of outstanding questions to consider:**

- Should there be a cap on aggregation portfolio size? If so, what requirements should be in place regarding the offer behavior of the aggregated portfolio (i.e. should the bid need to be flexible?)
  - If a cap on aggregation is employed, participants generally agree that it should not be 50 MW as shown in the discussion materials
- While aggregating load and supply for the initial introduction of the market is not a priority, working group members generally believe the AESO should develop a timeline to allow for load and supply to aggregate together

- **AESO Design Clarification:**
  - The primary intent of allowing for aggregation is to allow resources to develop a portfolio of smaller assets such that the minimum size threshold can be satisfied. Aggregation also allows assets which have seasonal shape to participate
  - Aggregation doesn't necessarily improve UCAP beyond simply adding the resources together; however, the more uncorrelated the assets, the more aggregation can stabilize the UCAP
    - There is no onus to prove aggregation improves, or stabilizes UCAP
  - The minimum size threshold is applied to the aggregated asset (i.e. the sum of the individual assets)
    - The UCAP of the individual load settlement zones and individual assets could be less than 1MW
  - Aggregation of different supply types is permitted; if some assets use the Availability Factor, and others use the Capacity Factor, the Capacity Factor method will be used to calculate the aggregated asset's UCAP
  - Minor changes to a participants portfolio are not intended to be caught by the delist requirement (e.g. a portfolio of 500 units goes to 499), however further work is required to determine how these participants report on changes to their aggregated asset
    - If a Demand Response aggregated asset delists due to a participant exiting the market, it will not restrict the load site from participating in a different Demand Response aggregator's portfolio
  - Delist requirements for aggregation are the same as a non-aggregated asset; however, we need to recognize the different nature of the requirements for aggregation
  - Load and supply cannot be aggregated into the same asset at this time

- **WG Commentary:**
  - Some work group members feel the requirement to delist for de-aggregating assets seems unnecessarily onerous

        - Is there an easier process to update and make minor changes to the aggregated asset?
    - Self-supply resources that can act as net-generation or net-load may be better able to participate if they are treated as an aggregated demand response asset.
    - The working group generally agreed that a 50 MW aggregation cap size is too low:
        - Some participants believe there should be no limit for demand response aggregation
        - Participants generally agreed that if there is no cap, aggregation over certain size needs to be a flexible block
            - Concerned that without a cap on aggregation, a large amount of supply would simulate an inflexible block and result in negative implications on the market clearing price
        - Over aggregation (e.g. a player with market power aggregating its entire portfolio) would be disincentivized by reducing portfolio flexibility and reducing number of blocks available to that asset
        - Some participants believe that if there is a size limit, it should be linked to the intertie maximum contribution limit (as a reference point to the maximum portfolio size)
    - Working group was uncertain on how to apply mitigation on an aggregated asset co-owned by multiple entities where one party is subject to market power:
        - Some participants felt that mitigation should follow the party that holds offer control
        - Others felt that mitigation should apply to the assets based on ownership structure (and therefore mitigate the aggregated bid)

- **Outstanding questions:**
    - Is a new legal entity required to aggregate between multiple parties?
    - What does the requirement for demand response aggregation to become a retailer mean?
    - Will an external system resource be treated the same as internal aggregated resource?
    - How is storage treated for aggregation (i.e. can it be both supply and load simultaneously)?
    - What are the requirements for an aggregated asset to delist (i.e. do you need to delist if there are minor changes to your portfolio)?
        - What is the pragmatic process to update the market with minor changes to your asset?
    - Should there be a max size of aggregated assets? If so, what size? If not, what bid rules are required (e.g. bid must be flexible?)
    - How is mitigation applied to an aggregated asset between two parties where one is subject to market power mitigation?

**Topic:** Eligibility and UCAP

**WG members generally believe or were split on whether they believe the methodology for calculating UCAP could work in the future.**

- Some work group members believed that the approach could work in the future with a number of years of capacity market data to support the calculations
- Many work group members feel the 100 hours are not an accurate depiction of a resource's contribution to supply adequacy
    - Some members were supportive of investigating an EFORd approach to calculate UCAP in the future.
- Work group members pointed out that the approach to calculate UCAP may not be technology agnostic (e.g. it negatively impacts resources like wind and storage)
- Some work group members were concerned that the UCAP approach and formula is inconsistent with the resource adequacy model

- **AESO Design Clarification**
  - The UCAP approach is intended to reflect the uniqueness of Alberta's market (including tight supply cushion situations annually; not just in one season), and the proposed approach was the best way to reflect a resource's contribution to supply adequacy while including planned outages
    - There is a challenge to capture seasonality with an EFORd approach
    - The AESO also noted that some of the Eastern US markets, such as PJM, are considering moving to a UCAP calculation that includes planned outages
  - There is no risk to over-procurement from 'excessive' derates as the methodologies for resource adequacy modeling, establishing asset UCAPs, and the UCAP for the reference technology all use the same derate approach
  - Total capacity procurement limit for imports is calculated taking ATC before LSSi
    - LSSi is an ancillary service that enables imports to come over the tie and could result in load paying twice for capacity
  - Demand response assets will be considered as a 'new' assets, will use the 90% derate factor until we are able to build up data set for load derate factor
    - Must offer was never required by load, only by supply in past; thus, generators are not considered 'new capacity assets'

- **WG Commentary**
  - Working group members still have concerns with some of the foundational elements of the UCAP approach, however many believe that the approach could work with a couple of years of capacity market history to support the calculation. Specific comments include:
    - Concern that UCAP calculation isn't consistent with the resource adequacy model
      - The resource adequacy model assesses all 8760 hours, while the UCAP is calculated on the market's worst-case scenario of 100 hours
        - Some work group members felt this may result in over-procurement, while others suggested that the market's tightest 100 hours is representative of the level of reliability required to keep the lights on
      - Working group members requested the AESO to assess UCAP by asset type vs. the resource adequacy model
      - AESO holds the position that both UCAP and RAM are consistent, in that both are calculated using historical data, which reflect similar outcomes
    - This method is not based on best-practice in any other jurisdiction
      - Can the AESO calculate ELCC ranges to validate and/or test UCAP methodology?
    - WG members were concerned with excessive de-rates from their asset's full contribution to supply adequacy
      - The 100 hours tightest supply cushion hours do not necessarily capture peak load times, which are when load is much higher than in days of emergencies, thus, may not be an adequate reflection of participant behavior
      - Need to consider the level of reliability for consumers matches the penalties on suppliers
      - Some work group members are less concerned about the UCAP approach using 100 hours if the AESO was to centrally approve planned outages and not penalize participants for non-performance during that time
        - Participants believe that taking planned outages appropriately results in increased reliability, and there is an adverse incentive to penalizing participants for taking planned outages
        - Including planned outages as part of the calculation of system tightness may be inadvertently incenting participants to schedule

outages in the winter, as the systematic UCAP of the system is higher during this period (and therefore a less risky time to take an outage)
        - The calculation of UCAP is not technology agnostic; some technologies do better if UCAP is calculated based on the 100 tightest supply cushion hours and some do better based on 1000 hours
        - Participants would like better clarity on the results of the calculation of UCAP for the reference technology (i.e. is it derated to the same level?)
    - Working group members were generally supportive of the submission of their own UCAP within a range
    - Some participants are concerned with applying class averages for new assets (e.g. class average is 75%, but new asset is capable of performing at 90%)

    - **UCAP for Interties:**
        - Should increase eligibility amount of intertie
            - Propose calculating UCAP as the firm rating to AB border
        - Concerned that there isn't alignment between what the AESO is assuming for reliability in the resource adequacy model, vs. the calculation of its UCAP (i.e. is the import resource being underpaid for the level of reliability that it contributes?)
        - How is reliability between tie-lines taken into consideration for an import resource (e.g. The BC tie is more reliable than MATL, as MATL requires the BC tie to be working, while the BC tie-line does not)
            - Is load paying for an inferior product if there is no adjustment for this consideration in the UCAP calculation?

    - **UCAP for Self-supply:**
        - Participants would like confirmation of whether their assets will use an AF or a CF approach, and the hour-by-hour data that is used to calculate their UCAP values
            - If we have sufficient information, can we challenge the AESO's classification on the self-supply site?
        - If the resource adequacy model treats all cogeneration sites as one large asset, how is the AESO assessing availability for CF resources (vs. AF resources)?
        - Are there any implications on a resource's transmission tariff if a resource changes their self-supply configuration from net to gross, or vice versa?
        - Has the AESO considered a hybrid of the two approaches for calculating the UCAP for self-supply?

    - **UCAP for Demand Response:**
        - Some participants feel it is unfair that demand response needs to be ready for a physical test far before other participants
            - This concern is further compounded given the compressed schedule to the first auction
                - Is the test for the full obligation, or does it test that the demand response resource can receive and respond to a dispatch?
                    - Demand response participants were more comfortable with a test to assess if the resource can receive and respond to a dispatch with a portion of its UCAP at the time of physical testing. Additional financial assurances could be applied to cover additional risk of non-delivery.
                - Some market participants suggested the AESO should assess best-practice in other jurisdictions for testing demand response assets

- Participants need additional time to consider the implications of considering existing load sites as new capacity resources (given that they never had a must offer)
- Can the AESO consider using a same-day adjustment to baselines for UCAP calculation in real-time?

- **Outstanding questions:**
  - What is the range for UCAP values?
  - Can storage participate in UCAP as load and aggregation?
  - What tariff will the intertie go under, IOS or STS?
  - What is the must offer for a fixed consumption level demand response asset?
  - What will the allocation of tie-line limits be? How will it be determined?

**Topic:** Desired Topics for Next Work Group Agenda

**Working group members were asked what 'outstanding topics' they would like to discuss at the next working group session. The identified topics are listed below (subject to change based on CMD 3 content):**

- UCAP treatment for rebalancing auctions
- UCAP range
- How availability period evaluates storage
- Phasing in a penalty structure
- Capacity offer mitigation cap
- Demand response: SCADA data
- Mitigation and screen
- Temporary delist
- Pre-qualification
- How to demine self-supply and obligations for self-supply
- Penalty framework for self-supply
- Definition of going-forward costs
- Ex-post asset substitution for availability
- AESO involvement in planned outages (mixed responses for and against discussion)
- Obligation term (mixed responses for and against discussion)

| (#) | WG Action Items | Action by | Due Date |
|---|---|---|---|
| 1 | Determine timing for when out of market payments will be considered in greater detail | Kevin Dawson | |
| 2 | Develop a timeline for aggregation of demand response and supply (i.e. when it may be considered in the future) | Kevin Dawson | |
| 3 | Clarification on the necessity to create a separate entity for aggregation | Kevin Dawson | June 12th, 2018 |