Energy and Ancillary Services Session Summary

Date: 4/5/2018 **Time:** 9:00 AM - 3:00 PM

Location: Westin

Time	Agenda Item	Presenter
9:00 – 9:05	1.0 Introduction (no material)	Dustin
9:05 – 10:00	2.0 CMD Update (no material): - 2.1 Import - 2.2 CCL - 2.3 LLTE - 2.4 Storage - Mothball Rule	Cheryl
10:00 – 12:00	3.0 Market Power Mitigation: - Pivotal Supplier Test o Net obligation - Scarcity Pre-Screen Test - Mitigation conduct threshold - Opportunity cost	Cheryl
12:00 – 12:30	Lunch Break	
12:30 – 2:30	4.0 Flexibility & Roadmap - NDV Problem summary 4.1 Pricing / compensation / SCED - Shorter settlement - Dispatch Tolerance - Ramp by block - Ramp product	Cheryl
2:30 – 2:45	5.0 Roadmap - Needs for 2021 - Flexibility Roadmap - Triggered	Cheryl
2:45 – 3:00	Session Wrap-Up o Review action items & next steps o Review WG feedback process	Dustin

2500, 330-5th Avenue SW, Calgary, Alberta T2P 0L4 Phone: 403-539-2450 Fax: 403-539-2949
www.aeso.ca www.poweringalberta.com

(#)	Name	Company	Attendance Status (A) Attended / (R) Regrets
1.	Cheryl Terry	AESO - Work Group Lead	A
2.	Cameron Hughes	AltaGas	A
3.	Matt Davis	ATCO	A
4.	Patrick Bowes	BowArk Energy	R
5.	Santi Churphongphun	Capital Power	A
6.	Ron Holberton	City of Calgary	A
7.	Dwayne Aasberg	Dow Chemical on behalf of Alberta Direct Connect	A
8.	Raj Retnanandan	Energy Management & Regulatory Consulting Ltd on behalf of Consumers Coalition of Alberta	A
9.	Chris Joy	ENMAX	A
10.	Meredith Conrod	Genalta	R
11.	Darwin Gillies	Insitu Power	A – Colette Chekerda (Proxy)
12.	Richard Penn	IPCCA	A
13.	Tom Rudd	Nexen Energy	A
14.	Dan Chapman	NRStor on behalf of Energy Storage Canada - Alberta Advocacy Council	A – Robert Stewart (Proxy)
15.	Doug Simpson	Office of the Utilities Consumer Advocate	A
16.	Kris Aksomitis	Power Advisory on behalf of Cogen Working Group	A
17.	Danny O'Hearn	PowerEx	A
18.	Leonard Olien	Solas Energy Consulting on behalf of CanWEA	A
19.	Gursharan Grewal	Syncrude Canada Ltd	A
20.	Marcy Cochlan	TransAlta Corporation	A – Akira Yamamoto (Proxy)
21.	Mark Thompson	TransCanada Energy Ltd	A
22.	Tory Whiteside	URICA	A
23.	Dustin Anderson	Stack'd Consulting (Facilitator)	A
24.	Jordan Ludwig	Stack'd Consulting (Facilitator)	A
25.	Kevin Dawson	AESO - Observer	A
26.	Derek Olmstead	AESO - Presenter	A
27.	Shezana Assar	AESO - Presenter	A
28.	Will Chow	AESO - Presenter	A
29.	Neil Curtis	AESO – Observer	A
30.	Maria Gray	AESO – Observer	A

Meeting Minutes

CMD Update

Work Group members reviewed papers developed by the AESO in response to the feedback received during the first work group sessions of 2018.

- **Capacity Committed Imports**
  - **Work Group members were generally supportive of the proposed approach for CCI participation in the energy market and would like further clarification on the implementation details for the proposed approach**

  - **AESO Design Clarification**
    - CCI's do not have to provide the source of the asset
    - The e-tag will only be provided when you are in merit
      - We are dispatching minute to minute

  - **WG Commentary**
    - A generator should be able to offer in their portfolio if CCI's don't have to provide information on the source assets. Additional commentary:
      - Does it create a level playing field?
      - Are asset substitution rules sufficient?
      - How is aggregation proposed?
    - Some participants are concerned that bumping non-firm transmission with firm transmission will result in no activity on the intertie
    - Importers want the opportunity to price
    - Concerns that a CCI with firm transmission may be penalized by the AESO from an availability perspective, when a non-firm, cheaper resource has been dispatched in the merit order
    - There are concerns that the MSA will have exceptions with the proposed approach
      - As such, the CCI may always be a price taker

  - **Outstanding Questions:**
    - Provide additional clarity on how behind the intertie congestion will be treated in a performance assessment
    - Provide additional clarity on how firm and non-firm transmission will be managed
    - Provide additional clarity on AOR for Interties

- **Capacity Committed Load (CCL)**
  - **WG members were generally supportive of the material proposed for CCL as was outlined for E&AS. However, PRL raised concerns about their ability to participate**

on the supply side of the capacity market and its implications in the E&AS markets.

- **AESO Design Clarification**
  - If you become a capacity committed load, the CCL must be dispatched in the merit order
    - If CCL self-dispatches off, that is not an AOR
  - A down-to site can increase its load up to its down-to level in a performance period, however the participant would likely choose not to, as they would be in a situation of over-performance
  - Delisting for CCL would work the same as delisting for other resources
    - A delisted CCL is still allowed to 'stay around as a load'

- **WG Commentary**
  - PRL will have considerable difficulty participating on the supply side of the capacity market
    - In T-2, it is not clear how will PRL manage coincident peak as they wouldn't have clarity in price
    - Cost-avoidance for transmission versus capacity market payments are not comparable, which will create a barrier for PRL to participate in the capacity market
  - There is a lack of clarity on if CCL will have to comply with the dispatch variance rules

- **Outstanding Questions:**
  - Can a self-supply resource participate as a generator and curtail load as a demand response resource?
  - What are the implications for suppliers on the margin as a CCL?
  - Can the AESO provide additional clarity in the language for delisting a CCL

- **Long-lead time energy (LLTE):**
    - **WG members raised many questions regarding qualification and performance assessments of LLTE assets. This discussion was identified as out of scope for the EAS session and have been captured below in the WG commentary section so that the feedback is documented for the capacity market design stream.**

    - **AESO Design Clarification:**
        - A CCI would not be allowed to have a LLTE resource as part of qualification
        - All energy has a must offer including LLTE

    - **WG Commentary**
        - Additional clarity was requested on what a LLTE resource will need to do to be available during an availability performance assessment
            - Concerns were raised that a LLTE will be counted as available if they are only required to have a start-time in the merit order (e.g. asset is available 20 hours out, but is counted as available because they have a start time)

- **Storage**
    - **WG members raised questions regarding storage resources. It was identified that this material will be included in the planned dispatchable renewables report**

    - **AESO Design Clarification**
        - There is further work required to clarify how storage participates;
            - The AESO has been directed to determine how dispatchable renewables are managed (outside of the scope of the capacity market)

    - **Outstanding Questions:**
        - How does the AESO treat aggregated resources of different technologies (e.g. storage and solar)?
        - Is a battery storage asset charging meeting its compliance by either cutting its load or starting its supply?
        - When a storage asset is at 0 charge, and not operating as a load, is it an AOR? What are the obligations?

- **Mothball Rule**
    - Was not discussed during the session

Market Power Mitigation

- **The AESO continued further explanation of the market power mitigation proposal that advanced from the WG session in February. Focus of the discussion included:**
  - **RSI Formula**
  - **No-Look Scarcity Test**
  - **RSI Value**
  - **Reference Price and Opportunity Cost**
  - **Implementation Considerations**

- **Overall, there is general support for the evolving energy market mitigation proposal with some outstanding concerns.**
  - **Summary of outstanding concerns:**
    - Appreciate the need for including physical obligations in the RSI formula, but a few members challenged the feasibility of getting accurate information on an hourly basis
    - Supportive of the no-look scarcity test, with outstanding questions on how frequently that will occur given how much capacity is procured
    - Some participants preferred a lower RSI screen of 0.9 to 1.0, or for a graduated mitigation approach
  - **Requested Further Investigation:**
    - WG members would like the AESO to investigate the feasibility of utilizing a graduated approach to the RSI screen

- **AESO Design Clarification**
  - Only physical obligations, not financial are included in $Oblig_{it}$ variable, of the RSI formula
  - Imports are based on forecasted ATC in the hour
  - Must-run blocks are included in the Supply(it) variable in the RSI formula
  - The screen will only assess those in the merit order (as it relates to LLTE)
  - On a voluntary basis, participants would include their physical obligations if they believed they were going to be mitigated
  - The AESO will perform audits on participants
  - The system will adjust pivotal supplier bids above the reference price to the reference price (as opposed to self-mitigation as was previously proposed)
  - A supply cushion of 500 MW was selected based on previous historical outcomes where the market was demonstrating economic and physical scarcity
  - The intent of the screen is to assess the hours that are susceptible to market power without artificially failing participants
  - The intention of the RSI screen is to test those with offer control (not just those with supply)

- **WG Commentary**
  - RSI Formula:
    - Majority of WB members were supportive of obligation variable not including financial obligations

- Mixed opinions on the accuracy and / or availability of information for the AESO to audit physical obligations
    - Assume it includes net physical position including BTF load, retail, etc.
    - The screen encourages physical forward behaviors (which has a time-ahead component)
    - LLTE units should be included in the screen. If they are not included, they have an opportunity for physically withholding.
- No-Look Scarcity Test:
    - 500 MW threshold might need to be increased if you account for priced DR in the future
    - Could a graduated approach to the RSI be utilized?
        - Concerned that prices will be choppy
        - With a graduated approach you could achieve a curve versus a cliff
- RSI Value:
    - Challenged using 2013 as part of the data set
    - Concerns about comparing the RSI value from other jurisdictions without looking at the full picture of the market structure (i.e. the markets are too different)
    - Concerns that an RSI of 1.0 would result in the energy market being over mitigated and value needs to be maintained in the energy market
        - The net will become too large and you will start to catch the small guys
        - This could move value from the energy market to the capacity market (which is undesirable for load)
        - Participants expressed a desire to include heavier mitigation in the capacity market, vs. the energy market
        - Note: It was noted that from the analysis conducted by the AESO, that a value of 1.0 does not appear to cast a wide-net, instead capturing only a small number of participants during a small number of hours. The AESO would like to review any data/analysis that is contrary to their analysis of the RSI screen
    - Need to ensure the RSI screen does not include any biases to over-or-under mitigate
    - A participant challenged that if a participant has units that aren't capacity committed, those units shouldn't be included in the RSI screen
    - If the MSA isn't aligned with this mitigation approach, it really doesn't matter (i.e. if there are ex-post investigations, then all behavior will change)

- Reference Price:
    - Most WG members were supportive of the reference price being 3x SRMC; a couple of members questioned if 2x SRMC was sufficient
    - Setting the reference price for non-thermal units should consider other variables (e.g. running time, peak, or super-peak)
    - A formula approach to calculate opportunity cost makes more sense than hard-coding a value / submission
        - It was noted that a formula approach would create new / various incentives for hydro to participate
        - MidC based formula is more suitable for imports than Alberta generation

- For those resources that are not recovering their capacity costs in the capacity market (e.g. wind), it is important to maintain the flexibility to producers to recover cost (e.g. 3X SRMC) to keep value in the energy market

  - Implementation Considerations:
    - Large participants may only put in high offers if they know the AESO will automatically mitigate their bids down to the reference price
      - Alternative perspective was that this is still a competitive market and that this will not reflect the offer behavior as these participants will need to compete to clear in the merit order in times where the supply cushion is not tight
    - Running the screen at T-3 would allow participants to respond
      - Some participants were supportive of exploring an RSI screen conducted earlier than T-2
      - Interties would be favorable of T-3
      - If respondents can't respond, could you do the test as close as you can (e.g. 15 minutes out)
      - Testing at T-2 provides no incremental value vs testing at T, so we should test as close to real-time to ensure the most accurate measure
    - Request the T-6 report will include required information for participants to forecast when they will be mitigated
    - Showing mitigated bids on the merit order snapshot could provide unit costs to the market (which is unacceptable to market participants)

- **Outstanding Questions:**
  - RSI Formula:
    - If must-run blocks are offered in at 0, you can't use that block to exercise market power so why include as part of $Supply_{it}$?
    - How are operating reserves accounted in the screen?
    - For the portion of a resource that isn't taken in the capacity market (either full units or portions of a unit), should that unit be able to offer at any price?
  - No-Look Scarcity Test:
    - Is this 500MW value accurate for future performance if we're expecting priced DR offers in the future?
    - Can the AESO provide forward analytics on how frequently the 500 MW supply cushion is expected to be hit?

- **Actions**
  - AESO to investigate the feasibility of utilizing a graduated RSI screen

Flexibility

- **WG members were generally supportive of exploring a shorter settlement period, but challenged if changing the dispatch tolerance rules were required at this time**

- **AESO Design Clarification**
  - The NDV study is based on 2017 LTO
  - The displayed histogram (presentation 4.0 – slide #6) is based on the 2017 LTO and does not include any revised assumptions

- **WG Commentary**
  - NDV Study Comments:
    - Histogram: How can you isolate the fact that the system is bigger and will result in larger swings
    - There is a difference between variability and uncertainty
      - Solar has some variability, but is relatively certain
      - Wind has both variability and uncertainty (i.e. when is the wind blowing, vs. when is the sun shining?)
  - Flexibility:
    - A WG member questioned if it is most cost effective to achieve flexibility through the AS market or to incent more flexible technology (e.g. storage) in the capacity market
  - Ramp Uncertainty:
    - The AESO stated that if dispatch behavior changes from observed historical behaviors, there could be an issue sooner with NDV
    - WG members did not see the value in changing the dispatch tolerance rules currently
      - There may be significant cost to participants if the AESO tightens the dispatch tolerance rules, especially when it appears that many participants are already over-complying
        - As technology improves, dispatch tolerance is expected to improve
        - WG members stated that there should be no reason and/or incentive for them to change their dispatch behavior
    - WG members don't want to 'tighten up the tolerance' if there are no issues right now
    - WG members said they would be happy to provide additional information to the AESO to help reduce uncertainty due to lack of information
    - It was noted that re-writing dispatch tolerance rules will increase compliance risk, but may not result in improved flexibility and ramp management
  - Shorter-Settlement:
    - WG members were supportive of moving to shorter-settlement (i.e. 15 mins)
      - It doesn't appear that this will have any unforeseen consequences
      - Some participants were concerned that there may be a considerable increase in the cost to manage a shorter settlement period; is the cost worth the benefit?

- Some participants believed 15 is good; 5 is better
    - Other markets are all moving to a shorter settlement, and it sends a stronger price signal to participants
    - Shorter settlement allows for market participants to better manage their business
    - Moving to shorter settlement could create immediate opportunity on the export side
- Roadmap:
    - WG members encouraged the AESO to understand and assess the implications of changes to the E&AS markets (e.g. what is the implication to the downstream billing systems by moving to shorter settlement?)
    - AESO's IT planned changes should be shared with participants, so they can plan for downstream system changes

- **Outstanding Questions:**
    - What would the impact of shorter settlement have on other markets (e.g. the ancillary services market)

Action Items:

Meet (#)	(#)	WIG Action Items	Action by	Due Date
2	1	AESO to investigate the feasibility of utilizing a graduated RSI screen	Derek	04-27
2	2	All members to complete the WG feedback matrix. Note: The sooner the feedback matrix is completed the greater the chance of incorporating feedback into CMD 2	All WG Members	04-18