AESO Discussion Paper – Short-Term Wind Integration

Response from: **Industrial Power Consumers Association of Alberta (IPCAA)**
Contact: **Sheldon Fulton (403 966 2300 / Sheldon.Fulton@IPCAA.ca)**

Section	Subsection	Stakeholder Response
4.0 Policy Coherence	**Wind Integration Principles** 1. Any potential suite of wind integration tools must ensure the safe and reliable operation of the system. 2. Market solutions are preferable to administrative solutions. 3. The energy market merit order is primarily a tool for balancing energy requirements on the system. 4. All generation should be treated fairly while recognizing their unique characteristics. 5. Ancillary services are a tool to protect the system from events that cannot be reasonably controlled. The draft principles are intended to outline a preliminary view on the interpretation of FEOC as it relates to the interaction between wind generation, the energy market and ancillary services. This relationship must be explored in order to develop a long-term wind integration plan that is grounded in policy and consistent with the current market design.	The fundamental question that is not addressed adequately is "Who is responsible for impacts on reliability?" The AESO takes the view that it is a ratepayer responsibility; therefore, all costs related to wind reliability impacts on the system flow to the ratepayer. It is IPCAA's view that the responsibility for the reliability impacts of wind generation accrues to the wind generator and therefore they should bear the costs. Wind developers are in a much better position to manage these impacts than end users are. The responsibility should lie with the party that is in the best position to manage the impacts. The proposed solutions presented by the AESO all socialize the risks associated with wind generation and charge them to ratepayers with no commensurate benefits. The solutions also result in an un-level playing field for other (non-wind) generators, in that these other generators provide a more reliable product with no associated compensation. IPCAA is concerned that no analysis was conducted about consequences of using Wind Power Management versus additional Ancillary Services. Why is it assumed that minimal WPM "lost opportunity costs" would be applicable to wind generators, whereas considerable additional AS would be required?

		The numbers for additional AS costs should be examined. No mention was made of the key differences between wind procuring AS in order to offer firm supply, and the AESO socializing the cost of AS. If wind procures their own AS for the purposes of submitting firm offers, this supply could be offered back to the market during high price events. If additional AS is procured by the AESO, it would still be held in reserve during high price events. IPCAA believes that having the AESO procure additional AS to accommodate wind, and having load pay for this additional AS is unacceptable, even in the short term. If this practice establishes a principle in the short-term it will set a dangerous precedent in the long-term. Instead, the AESO should set the reliability bar at a high level – then require all generators to meet this level. Since wind generation is unable to offer firm supply, wind generators should arrange their own reliability support services. IPCAA requests confirmation that the AESO has the authority to procure Ancillary Services beyond the levels specified by WECC.

6.0 Short-Term Integration Tools	**6.1 Energy Market Merit Order** Stakeholder feedback on using the EMMO to integrate wind generation is requested with the following key points: • At what point is over-dispatching the merit order for ramp rate unacceptable from a FEOC perspective? • If the need to over-dispatch EMMO can be anticipated prior to real-time, should tools such as incremental ancillary services and/or WPM be used in place of over dispatching EMMO? • In the long-term, should new ancillary services be developed that will reduce the instances of over dispatching EMMO for ramp rate both for wind and for other reasons?	IPCAA is strongly opposed to using the EMMO for wind integration. The EMMO is imperfect to begin with – it should not be further obscured by manipulation of the merit dispatch to accommodate wind generation. Even in the short-term, we need to establish fair principles. Temporary solutions have an uncanny way of becoming long-term solutions, and as such we should not settle for another market band-aid when it comes to wind integration. The AESO has provided insufficient analysis in the discussion paper to allow market participants to decide if over-dispatching is "viable" temporary position. A cost-benefit assessment should be conducted in advance of any decision-making. "Ancillary services" as they are currently defined, are paid by ratepayers. In the long-term, AS-like products could be developed to address current problems. However, these products do not need to be paid for by loads.
	6.2 Operating Reserve **<u>Regulating Reserve</u>** • Is it appropriate and FEOC to procure RR day-ahead when the wind forecast suggests they will be required to mitigate wind volatility? • How should the volume, if any, of incremental active regulating reserve be determined? o Based on the volume required to	IPCAA does not support the procurement of any additional Regulating Reserves to mitigate wind volatility. In its wind integration report, the AESO provides a very misleading analysis of the added costs to acquire additional Regulating Reserves. The analysis ignores the costs of existing reserves being all raised to a higher price level if added reserves are procured – it ignores the impact on the costs for spinning and supplemental if more regulating is procured – and it ignores the consequences to prices for energy if additional regulating reserves are taking generating capacity out of the merit order. The AESO does not propose to release the Regulating Reserves back to the energy market in the event of high prices such as the

	accommodate forecast wind energy?
	  ○ Based on a tradeoff between the cost of incremental reserve and the value of lost wind production?
	  ○ Based on the volume required to reliably integrate wind without planning to rely on tools such as over dispatching the EMMO?
	• Should standby RR be activated in near-real time to manage the system over and above current RR levels?
	  ○ Activating standby reserve would need to be done prior to an actual problem because moving reserve from standby to active make a situation worse as the unit activated alters its generation to provide the service.
	  ○ Is it appropriate and FEOC to activate standby RR near real-time (T-2 or even T-30min) when the near real time wind forecast and system conditions suggest they will be required to mitigate wind volatility?
	• In the long-term, should regulating reserve be split into a load following product and an AGC product?
		May 14th to May 17th interval when wind generation was negligible and a coincidence of events resulted in multiple hours of prices in excess of $200/MWh. If the AESO had acquired added RR on those days we would have seen higher RR and other OR prices, higher energy prices, and a valuable resource held in abeyance for an event that did not occur – i.e. more wind generation
		
		IPCAA believes that wind generators can manage their own risk by procuring market-based ("wind-following") products that will allow them to offer firm supply. Under no circumstances should the AESO use Regulating Reserves as a socialized risk tool for wind generators.

	6.2 Operating Reserve
	
	<u>Contingency Reserve</u>
	
	• Should the AESO use mandatory active contingency reserve to manage unexpected decreases in wind generation if allowed by NWPP?
	• Should the AESO carry incremental active contingency reserve to insure against decreases in wind generation?
	  o This reserve could be tailored for specific hours when wind is forecast to ramp down and load forecast to ramp up, for example.
	  o The alternative is likely to fully dispatch EMMO for ramp rate requirements when wind energy unexpectedly declines.
	  o This is consistent with the use of contingency reserve to replace lost generation from other resources.
	• Should standby contingency reserve be activated in near-real time to manage the system, i.e. the system would carry more than the minimum active contingency reserve in some hours to manage wind variability?
	  o Reserve would need to be activated prior to an actual problem.
		IPCAA's position on use of any contingency reserves to support wind generation are the same as for use of Regulating Reserves.
		
		The AESO's job is to set the reliability standard at a reasonable level to not jeopardize the system – it is the market's job to achieve this reliability level.

	○ The accuracy of the wind forecast inside T - 2 or even T - 30 minutes will determine the likelihood of activating standby reserve only when required. • Should unexpected decreases in wind generation be treated equivalently to other generation contingencies, i.e. the system carries sufficient contingency reserve to manage unexpected loss of generation?	
	6.3 Wind Power Management • Under what conditions is it appropriate to use WPM? ○ In advance of conditions that might place the system at risk? For example, if wind is at a high level and expected to ramp down concurrently with the morning load ramp up, should WPM be used proactively or should a solution such as activating standby contingency reserve be used? ○ When the wind ramp is not forecast? This implies the AESO purchase sufficient ancillary services to accommodate forecast ramps. ○ When the wind ramps up more rapidly than the EMMO can accommodate without over dispatching? This allows wind production to	See above comments. It is the responsibility of the wind generator to ensure that they meet the reliability standards – not the AESO's responsibility. The AESO should establish levels and let the market decide how to achieve them. WPM is prescribing a solution, which may not be the most effective solution for the wind integration problem. Wind generators need to make the necessary arrangements with other generators and marketers to meet the reliability standards, just as importers are required to firm their supplies. In Alberta we have a ten-year precedence wherein those offering energy are not the same participants as those generating the energy with the PPAs – the same principles and standards that apply between "buyers" and "owners" of PPAs can apply between wind generators and those offering firm reliable energy to the EMMO market.

	increase only as fast as the EMMO can ramp down and implies that incremental ancillary services will not be purchased to accommodate potential wind ramp up events. o Under supply surplus conditions? • Should the AESO establish a WPM market solution or is pro-rata appropriate? o How would a WPM market interact with the solution for supply surplus and/or congestion management? o Would participation be limited to wind facilities and how would costs be allocated? • In the long-term, should the AESO develop an ancillary service that accommodates wind ramps up by reducing production from in merit generators and/or wind facilities themselves? o Is this an appropriate cost for load to bear since wind can manage this operational challenge through a WPM protocol?	
	6.4 Wind Power Forecast • Should the system be able to accommodate forecast wind generation? o Purchase sufficient reserve to accommodate forecast wind generation. o The alternative is to rely on more	The wind power forecast risk MUST be borne by the wind generator, not the AESO. Wind developers can acquire energy support products from the market to accommodate any forecast risk – rather than have ratepayers pick up these costs.

	WPM and /or over dispatching EMMO. • Should the wind power forecast for individual facilities (or the aggregate wind forecast) resemble a must offer must comply obligation in the long-term? o If the forecast creates obligations for wind facilities, does it also create obligations for the system to absorb the forecast without using WPM?	
	6.5 Summary of Integration Options **<u>Short-Term Requirements</u>** • Determine the volume, mix and procurement strategy for incremental ancillary services as wind capacity increases • Develop a process to implement WPM • Develop guidelines on the use of WPM in real time or near real time	As stated IPCAA opposes all of these short-term solutions in the absence of any discussion on long-term solutions – and will oppose any Rule changes that are proposed to implement these actions.
	6.5 Summary of Integration Options **<u>Potential Long-Term Direction</u>** 1. Mitigate wind power primarily through the use of centrally procured ancillary services o Minimal use of WPM o No must offer must comply obligation for wind	IPCAA supports Option 3 – and is willing to begin immediate discussions on how this may be implemented. IPCAA believes that this can be done in a timely manner and meet any concerns that the AESO may have with integrating wind into the system.

	○ A ramping service would be developed 2. Mixed solution ○ WPM used to mitigate wind ramp up events ○ Reserve to mitigate wind ramp down events ○ A ramping service may be developed ○ Could entail a form of must offer must comply obligation for wind generators particularly to control ramp ups 3. Create similar obligations for wind generators as exist for other generators ○ Wind power forecast could be part of a must offer must comply obligation ○ Could require wind to be firm at T – 2 ○ Wind firming service developed either by the market or by AESO	