



24<sup>th</sup> July 2020

Mr Peter Adams  
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Australian Energy Regulator  
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Lodged by email: [wholesaleperformance@aer.gov.au](mailto:wholesaleperformance@aer.gov.au)

Dear Mr Adams,

### **Issues paper on Semi-Scheduled Generators – Proposed Rule Changes**

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in renewable energy and energy storage along with more than 7000 solar and battery installers. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC welcomes the opportunity to comment on the Australian Energy Regulator's (AER's) issues paper discussing proposed rule changes for semi scheduled generators. Our submission will primarily focus on the first rule change as we agree with the AER that the second rule change relies heavily on the changes made through the first rule.

The CEC agrees with the AER that the Australian Energy Market Operator's (AEMO's) reliance on generators meeting dispatch expectations to balance customer demand is critical. Improving confidence in semi scheduled generators meeting their dispatch instructions is important to support a future National Electricity Market (NEM) that comprises significantly higher levels of semi scheduled generation.

We agree with the AER's assessment of the issue as outlined in the paper that recent behaviour by some semi scheduled generators moving away from their expected output in response to negative price intervals, without rebidding, is causing issues for the market operator's ability to maintain a stable power system, including by eroding the frequency control ancillary services (FCAS) reserves held for legitimate disturbances on the power system. It is, however, worth noting that this behaviour is a response to market incentives and is currently allowed provided generators stay below the semi-dispatch cap. In the vast majority of dispatch intervals, renewable generators are not exhibiting this behaviour and meeting their dispatch commitments.

We accept the AER's position that although this behaviour is being exhibited by a minor subset of the renewable generation fleet, it may grow in magnitude as the penetration of renewables increases if not addressed through a rule change. AEMO's draft 2020 Integrated System Plan (ISP) predicts that under the central scenario renewable generation will grow to approximately 50% of generation in the

NEM by 2035.<sup>1</sup> The CEC's own submission to the draft ISP suggested the adoption of the central scenario is conservative and that the transition to renewables will be much more rapid. The CEC supports changes to the market framework, such as proposed here, that support the ability for the market to increase the levels of variable renewable energy (VRE) in the NEM.

The issues paper outlines several options for stakeholder consideration that the AER believes will address the issue. A key principle in the AER's consideration of those options is that the selected option must provide a proportionate response to the identified problem.

The CEC suggests that the majority of the options presented involve significant reform that will dramatically impact the clean energy industry. The CEC is concerned that the AER's preferred option to implement a firm megawatt target in its current form would result in considerable curtailment issues for semi schedule generators, to the detriment of the system. However, we believe the AER's alternative solution to prevent the ability for semi scheduled generators to use systems and procedures that allow this behaviour would address the identified issue.

### **Supported AER option**

The CEC suggests the option to *'prevent the installation or use of either systems or procedures that allow for, or automate, a reaction to price that does not match their target'* most suitably addresses the identified issue without unnecessary complexity or cost. We believe it would improve confidence in semi scheduled generation as it will ensure this behaviour does not occur. It should be noted that the continued use of automatic bidding systems should be allowed, and the focus should be on elements of systems or procedures that react or automate deviations in response to price. This is likely the AER's intent, but we draw attention to it to ensure that any rule drafting does not inadvertently capture automatic bidding systems.

The AER has noted concerns with this option stating that this approach is impractical due to the ability generators retain to manually override the system, intervene and deviate from a dispatch instruction. We suggest that this is a simplistic view of this option and the proposed rules could very easily include wording, and subsequent enforcement measures, to ensure that this behaviour is prohibited.

The AER has also noted that this option may need to be tied to a generator's registration and that subsequently, rule changes may be required to allow AEMO to enforce this registration commitment. The AER suggests this would mean current registrations would be excluded and therefore this option may not be suitable. The CEC disagrees with this assessment. We suggest that the same option to *'prevent the installation or use of either systems or procedures that allow for, or automate, a reaction to price that does not match their target'* could be simply applied in the National Electricity Rules (NER) either in NER cl 2.2.7 or elsewhere as appropriate. We believe modifying this option to lift the requirement into the NER will solve the issues the AER have presented with registration and creating legacy conditions. The possible application to other registration categories in the NER should also be considered.

The CEC understands that this option would be easily enforceable due to AEMO's visibility of the generator active power set point. If a generator's active power set point is to significantly deviate from the forecasted value for that generator, that could be a trigger for a non-conformance to dispatch instructions based on this behaviour.

It is also worth the AER considering the required educational and compliance aspects to this change in order to ensure industry is fully across their commitments to meeting dispatch requirements and

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<sup>1</sup> AEMO 2019, Draft 2020 Integrated System Plan, Draft 2020 ISP Generation outlooks, Central scenario, [www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2020-integrated-system-plan-isp](http://www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2020-integrated-system-plan-isp)

potential actions or penalties should they not comply. The CEC would be happy to work with the AER to facilitate this process.

### **Alternative option**

The CEC suggests an alternative option the AER should give due consideration to can be sourced from the New Zealand electricity market. This option has received some attention throughout the industry in various forums during the AER's consultation period. We suggest this option is worthy of consideration due to its ease of implementation and because it limits the costs and changes enforced on semi scheduled generators.

The New Zealand Electricity Authority implemented a change in 2019 that ensures this behaviour does not occur through a simple change to their Code.<sup>2</sup> The change only allows a generator to deviate more than 30MW below their forecasted output in their final offer for "bona fide physical reasons" e.g. a loss of resource. This change includes a subsequent requirement that if that generator does deviate below the 30MW threshold in any trading interval, it is required to submit a report to the authority that details the 'bona fide physical reason'.

We suggest the AER could explore New Zealand's implementation of this option to understand if a version of this would be suitable for the NEM, as it appears to present a simple solution to the identified problem while maintaining the integrity of the semi scheduled category.

### **Unsupported AER options**

The AER's preferred option is to amend the existing arrangements for semi scheduled generation to '*require a megawatt dispatch target to be met by the end of the interval and an accompanying ramp rate*'. The CEC believes there is a fundamental flaw with this option that the AER has not considered that will result in dramatic negative impacts on the renewables sector. Due to this flaw, the CEC does not support this option. The AER have outlined that this option would include a firm target, meaning that output above this target would be prohibited. We strongly disagree with this element of this option and suggest the AER reconsider their position regarding the firm target.

Semi scheduled generators rely on the natural resource available to them to provide energy into the market. This is managed by both generators and the market operator via the use of complex forecasting systems that are constantly assessing weather conditions to predict the output of semi scheduled generators. Despite best efforts, these forecasts can be inaccurate and semi scheduled generators either over-generate or under-generate. If semi scheduled generators were to have a firm target applied that removed the ability to over-generate, VRE generators in the NEM will only ever be at the target or under-generating, resulting in an average under-generation from the VRE fleet.

The CEC is strongly opposed to this outcome as it will result in a significant proportion of renewable energy being 'spilt' due to an average under-generation across the VRE fleet in the NEM. This would have cascading impacts across the market, most importantly the impact this lost energy will have on the feasibility of renewable generators. Analysis from CEC members of historical dispatch data on the impacts of the firm target has suggested that the lost energy from solar farms would be approximately 3.2% of total energy production and 2.5% of total energy production for wind farms. When focussing on NEM wind farms specifically, this level of curtailment would represent a loss of about 430GWh per year of zero marginal cost electricity. This loss of production would need to be replaced by more expensive and more emissions intensive generation, with the costs being passed to consumers.

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<sup>2</sup> NZ Electricity Authority, 2019, <https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/wind-generation-offers/>

This reduction in generation production will flow into increased costs for development of wind and solar generation as construction and operational costs will remain the same for less energy production from the plant. It is possible that these increased costs could result in a slowdown in investment in new zero marginal cost generation in the NEM. The AER have stated many times that they do not intend to enforce requirements upon semi scheduled generation that does not recognise the reality that their output is tied to the natural resources available to them. Enforcing a firm target that does not recognise the ability of natural resources to increase is in direct contradiction to this intent.

In addition to the direct impacts on generators, we suggest that a firm target would result in a significant increase in the need for FCAS regulation and subsequently contingency raise services due to the removal of the natural balance between under and over-generation that is currently experienced in the market. This natural balancing between semi scheduled generators across the NEM due to their available resource reduces the requirement for ancillary reserves significantly. Capping generators to a target will result in under-generation at a fleet level and mean that significantly more raise FCAS services will be required. Analysis by CEC members suggests that the average dispatch error in the current market is -5.5MW. Under a firm target as proposed, this would increase to -82MW, significantly increasing the requirement for FCAS raise services in an average dispatch interval. This would be a costly system outcome.

This could be overcome by modifying this option to include '*change in resource*' rather than '*loss of resource*' as it would allow over-generation as well as under-generation due to the variability of the natural resource renewable generation rely on. However, on balance we still believe the above supported option to prevent the installation or use of either systems or procedures that allow for, or automate, a reaction to price that does not match their target is a more appropriate option.

As the AER has noted, the penetration of renewable generation will rapidly grow in the future. If the firm target is implemented so too will these issues. The CEC suggests that due to these unintended consequences of the firm target, the AER's preferred option is unlikely to meet the National Electricity Objective (NEO).

The AER has outlined several other options in their issues paper. The CEC does not support any of these options as they would represent either inefficient or heavy-handed approaches. For example, removing the semi scheduled category would result in a fundamental change to the market and such a change is not required when there is a simple solution available that achieves the same result without unnecessary complexity.

### **Interaction with other processes**

It is likely that some stakeholders will suggest that this process should be abandoned as the behaviour and subsequent system issues are likely to be addressed through other reform processes underway. Two such reforms are the introduction of the five-minute settlement process and the new mandatory primary frequency response (PFR) requirement for generators. We suggest the AER should consider the validity of these points in response to stakeholder comment should they arise.

It may be argued that this behaviour will diminish with the introduction of five-minute settlement. While this behaviour might not have happened had five-minute settlement been in place, we believe it will not completely solve the issue as the rules will still allow it to occur in the future. The same level of competition will remain in the market, and in the case of negative pricing events the price risk will become much sharper with participants receiving the five-minute price, rather than the thirty-minute price, increasing the economic incentive to deviate from dispatch targets.

It can also be argued that the mandatory PFR requirement will contribute to addressing the frequency issues created by this behaviour. While we believe that this is true, again, it will not resolve the fundamental issue of generators exhibiting this behaviour as the rules will remain unchanged. It may also lead to higher PFR costs in the future as the Australian Energy Market Commission (AEMC)

intends to transition the provision of PFR to a market-based arrangement at the sunset of the PFR rule. Requiring PFR to correct this behaviour is less efficient than it not occurring to begin with.

### **Second rule change**

The AER is also consulting on the request from the Commonwealth of Australian Government Energy Council (COAG EC) to improve the information provisions between participants and AEMO. It is difficult to comment on this rule change proposal because as the AER has noted, the solution for the first rule change can have impacts on the second. However, we suggest that the supported option above could fit well with the second rule change with additional requirements to provide AEMO with the necessary information.

### **Conclusion**

In summary, the CEC supports addressing this issue through a simple adjustment of the rules that achieves the intention to prevent generators deviating from dispatch instructions without informing the market operator of their intention to do so but in a way that minimises market disruption. We believe this is best achieved by including *'preventing the installation or use of either systems or procedures that allow for, or automate, a reaction to price that does not match their target'* in the NER.

Thank you for the opportunity to comment on this consultation. We appreciate the AER's early and open engagement with the CEC and our members on this issue. If you would like to discuss any of the issues raised in this submission, please contact Tom Parkinson, Policy Officer, on (03) 9929 4156 or [tparkinson@cleanenergycouncil.org.au](mailto:tparkinson@cleanenergycouncil.org.au) or myself, as outlined below.

Yours sincerely,



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