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Mr Mark McLeish
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Via email: AERInquiry@aer.gov.au

Dear Mr McLeish

Rebidding and Technical Parameters Guideline – Amendments for Five Minute Settlement 2019

On 28 November 2017, the Australian Energy Market Commission (AEMC) amended the National Electricity Rules to reduce the interval for settlement of the wholesale National Electricity Market (NEM) to five minutes.

As part of the implementation of five-minute settlement (5MS), the Australian Energy Regulator (AER) is now making consequential amendments to the Rebidding and Technical Parameters Guideline (the Guideline).

This submission provides a number of specific comments about the draft Guideline but also provides information about rebidding behaviour that AEMO has been observing which includes the way individual generators are engaging with the transitioning National Electricity Market (NEM).

AEMO's perspective

The NEM is experiencing a rapid and fundamental transition. Continued growth in rooftop photovoltaic (PV) and large commercial PV, in combination with improvements in consumer energy efficiency, is reducing electricity consumption and demand across the NEM. In October of this year for example, South Australia recorded its lowest minimum operational demand of 533MW (12 October 2019).

The 2019 Electricity Statement of Opportunities (ESOO) identified nearly 5GW of new generation as well as updates to existing generation over the next three years. These changes are in addition to the Snowy 2.0 (2040MW) project which is assumed to be operational in March 2025.

Most new generation identified in the ESOO is variable renewable energy (VRE) generators, which may not generate during periods of peak demand. Grid scale solar is significantly increasing the available supply of electricity during the middle of the day.

The combination of low demand and abundant solar generation available in the middle of the day is resulting in periods of negative pricing in South Australia and Queensland. Negative prices are not new in the NEM; however, they are becoming more common and it is logical to assume that this will continue as more solar is introduced.

AEMO has outlined two key issues in the following section which are considered to be compounding the risk to system security. Although not directly related to the Guideline, these issues highlight the need for increasing monitoring and where necessary, actions for non-compliance with the NER and technical guidelines.

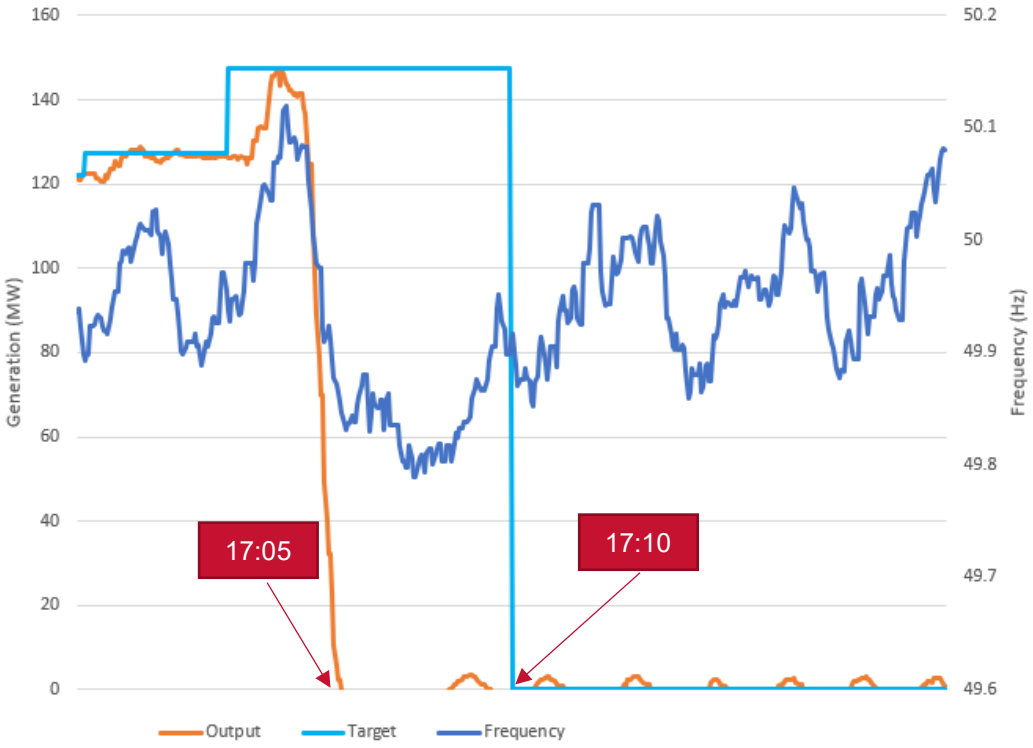
AEMO considers these issues can be somewhat mitigated by strengthening the compliance monitoring and enforcement processes in relation to bidding and dispatch requirements outlined in the National Electricity Rules (NER).

Generators not rebidding to reflect their market intentions

During periods of forecast negative pricing, some participants are responding by rapidly reducing the output from their generating units to avoid uneconomic operation without a dispatch instruction based on an appropriate rebid that reflects this intention. This behaviour results in large dispatch errors, a greater need for frequency regulation and potential breaches of the frequency operating standard.

The example below shows a generator that reduced output to zero in response to negative prices during the dispatch interval ending 17:05 hours without a zero MW dispatch instruction for that interval. The actions of this generator resulted in a noticeable dip in frequency, although (in this instance) the frequency did not move outside of the frequency operating standard.

A rebid was not received until the next dispatch interval ended (17:10 hours).



In this example, the early rapid reduction in output without an instruction was clearly unrelated to unforeseen technical or available energy limitations (although such factors might be relevant

when assessing compliance, particularly the wind/solar energy available at the time for semi-scheduled generation).

Generators not linearly ramping to next dispatch instruction

A feature of VRE generators is the speed at which these technologies are able to ramp up or down. This means that the risk of large frequency deviations is potentially increased with VRE generators because the output reduction occurs over a period of a few seconds, rather than at a controlled linear rate over the next five minutes as is required under Section 5 of AEMO's Dispatch Operating procedure.

Fast reduction in generator output is causing frequency changes in a shorter timeframe. AEMO considers it important that these requirements be mandated in rules or procedures for linear ramping (unless otherwise specified) towards semi-dispatch caps "subject to energy availability". Whilst to date these scenarios have largely been managed, of particular concern is the potential for a coordinated or coincidental curtailing of significant volumes of generation occurring without a prior rebid.

All forms of generators should be expected and relied upon to bid their intentions to the market, and then respond to dispatch instructions. Recent examples seen in the NEM would indicate that some generators are either unaware of, or have chosen to ignore, their obligations to rebid to reflect their market intentions.

AEMO recognises that this it is not always possible for VRE generators to forecast, given that there will be times when wind or solar resource becomes unavailable. It should however be clear that in normal circumstances, managing volumes down from capacity should only occur following a dispatch instruction that resulted from a bid or rebid.

AEMO feedback on the proposed changes to the Guideline

AEMO has reviewed the changes that the AER has proposed to the Guideline and has provided some specific comments and some general suggestions for future enhancement in the following sections.

Specific comments on the draft proposed changes to the Guideline

Draft Guideline - Section 2.1 - Ramp rates

- Ramp rates should be expressed as "the lower of 3 MW/min or 3% of maximum generation expressed as MW/min rounded down to the nearest whole number not less than 1 MW/min."
- AEMO suggests that it should be made clear that the requirement to submit the maximum ramp rate does not apply just to generators

Draft Guideline - Section 2.1.1 - Information to be provided

- The time the technical issue occurred: The NER require this information only if it is a rebid.
- The AER should consider asterisking the first bullet point to maintain consistency with the format used in Section 3.4.

Draft Guideline - Section 2.2.3 - Information to be provided

- The time the abnormal plant conditions or other abnormal operating requirements were identified: Similar to 2.1.1, the NER require this only if it is a rebid.

Draft Guideline – Section 2.3 - Market ancillary services

- Number of trading intervals: 288 intervals will apply from 1 July 2021, however if this Guideline is to apply for the period up until that point, it should also allow for the possibility of an FCAS offer containing 48 trading intervals. AEMO suggests that the AER should not stipulate the number of trading intervals in the Guideline.

Draft Guideline – Section 3.4 - Form of Rebid

- This section of the draft Guideline covers the same information as in existing Section 3.2.1 and could be merged into that section.

Future enhancements to the Guideline and compliance

Given the continuing energy transition, AEMO believes that there is a need for ongoing improvements to the regulatory framework to enable the secure operation of the power system. In particular, AEMO believes that effective and efficient system operations, and therefore the long-term interests of consumers, could be better promoted through:

1. A more active monitoring and enforcement processes under NER 3.8.22 (d);
2. Expanding the scope of the Guideline to cover bidding (and not just rebidding).
    - The Guideline currently only focuses on the requirements relating to rebids, but excludes the broader requirement that dispatch bids, dispatch offers, and rebids must not be "false or misleading or likely to mislead".
3. Expanding the list of technical parameters within a bid/rebid to include unit maximum availability and *dispatch inflexibility profile* and apply requirements to those:
    a. The Guideline only defines *ramp rates*, *inflexibilities* (fixed loading), and *market ancillary services* as technical parameters;
    b. However, unit *available capacity*[1] (maximum availability) and *dispatch inflexibility profile* (fast start inflexibility profile) also are technical parameters and these should not be used for commercial reasons; and
    c. The Guideline should define unit *available capacity* and *dispatch inflexibility profile* as technical parameters, and include a requirement that bid/rebid unit *available capacity* and *dispatch inflexibility profile* only reflect technical or energy limitations.

1 Unit available capacity is defined in the NER as either
- For Scheduled units: scheduled capacity under NER 3.8.4
- For Semi-scheduled units: UIGF under NER 3.7B.

In the immediate term, to support the AER to become more active in monitoring and enforcement, AEMO is equipped to provide the AER with additional information, as necessary, to assist in investigating whether a breach has genuinely occurred. This information can include estimates of possible power (that would have been generated had the VRE generator not curtailed), if required.

Thank you for the opportunity to provide comments in response to the Draft Guideline.

If you would like to discuss anything related to this matter further, please contact Kevin Ly, Group Manager - Regulation, on 02 9239 9160 or kevin.ly@aemo.com.au.

Yours sincerely

Peter Geers
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AEMO