



Generator ramp rates and dispatch inflexibility in bidding

Commencement of consultation on rule change request

The AEMC has commenced consultation on a rule change request submitted by the Australian Energy Regulator (AER) proposing a requirement for generator ramp rates and dispatch inflexibility profiles to reflect the technical capabilities of generating plant.

The AER's rule change request

Ramp rates and dispatch inflexibility profiles are specified by generators as a component of their bids and govern the manner in which the generation output from power stations can be physically changed through time.

The AER considers that ramp rates and dispatch inflexibility profiles are on occasion used by generators to achieve commercial objectives and that this can be harmful both in terms of inefficient market outcomes and on the ability for the Australian Energy Market Operator (AEMO) to efficiently manage the security of the electricity system.

Under the current rules, generators must submit a minimum ramp rate of 3 MW/minute (or 3 per cent of maximum capacity for generators below 100 MW) except where it can be demonstrated that a lower ramp rate is required for technical or safety reasons. The AER may request additional information to verify a reason provided for a ramp rate below the minimum.

Through this rule change request, the AER proposes that the ramp rate provided to AEMO would be the maximum the generator can safely attain at the time. If a generator submits a ramp rate lower than the maximum it is technically capable of achieving then it would be required to provide a brief, verifiable, and specific reason relating to the relevant technical limitation on their generating plant. In addition, the AER proposes that fast-start generators, such as gas turbines and hydro generating units, be required to submit a dispatch inflexibility profile that reflects the technical capabilities of their plant.

To provide further clarity on how the proposed rule would operate in practice, and how the AER would enforce it, the AER proposes to amend its Rebidding and Technical Parameters Guideline.

Proposed assessment framework

The Commission's assessment of the rule change request will consider both the nature and extent of the costs identified by the AER and the practicality and merits of the AER's proposed rule.

In consideration of a framework to assess the rule change request, the Commission has made a distinction between those costs proposed by the AER that may be more directly attributable to generators changing ramp rates under constraint conditions and those costs where changing ramp rates may be a contributing or supporting factor but which is not necessarily the principal or underlying cause. This distinction is primarily driven by the priority afforded to satisfying ramp rates and dispatch inflexibility profiles submitted by generators in the market dispatch process.

The Commission also intends to assess the practicality and merits of the AER's proposed rule including a consideration of how ramp rates would be determined and enforced, the extent to which the costs on generating plant should be considered as a factor in determining technical capabilities, and any benefits that the current rules provide to generators in the management of dispatch risk

A consultation paper has been prepared to facilitate consultation on the key issues in the rule change request. Stakeholders are encouraged to provide any submissions by 27 March 2014.

Background

A principal function of the National Electricity Market (NEM) is the coordination of the output of generating plant to meet customer demand. Generators are prioritised in the dispatch order based on the bids they submit to AEMO. Generators with the lowest bids are dispatched first with progressively higher bids dispatched in order to meet increases in demand. In this fashion, an economically optimal dispatch arrangement of generation is achieved.

AEMO's coordination of dispatch must take into account the limitations of the transmission lines that convey electricity from generating plant to customer load centres. The capacity ratings of these network lines may impact the extent to which electricity can be sourced from generators with the lowest bids. Changes in the capacity ratings of network lines, due to ambient temperature fluctuations and weather events or technical limitations of generating plant, can expose generators to the risk of not being dispatched.

Generators that are forecast to be constrained off in this way have an incentive to vary different parameters in their bids to reduce the risk of being constrained. For example, generators that are likely to be constrained off may rebid to reduce the rate that they can be ramped down in order to reduce the extent to which their dispatch levels will be decreased.

The AER considers that generators rebidding ramp rates to low levels at times of network constraints has become increasingly prevalent over the last three years. The AER considers that the use of ramp rates and dispatch inflexibility profiles to achieve commercial objectives can be harmful as it reduces the effectiveness of interconnectors and the ability for AEMO to determine an economically efficient dispatch arrangement while maintaining system security. These issues are primarily driven by the priority afforded to satisfying generator ramp rates and dispatch inflexibility profiles over other technical parameters in the market dispatch process.

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