



Non-scheduled generation and load in central dispatch

Final determination

The Australian Energy Market Commission has made a final determination not to make a rule change requiring additional market participants to participate in the central dispatch process. This determination to make no rule change applies to large price responsive loads as requested by Snowy Hydro Limited (Snowy), and to non-scheduled non-intermittent generators above 5MW nameplate generation capacity as requested by ENGIE.

Background

The National Electricity Market (NEM) is undergoing significant transition. Technological developments are impacting on generation and consumption decisions, a trend which is likely to continue into the foreseeable future.

The Australian Energy Market Commission (AEMC or Commission), the Australian Energy Market Operator (AEMO) and others are undertaking work to examine the issues raised by this transition. These projects are looking at what, if any, changes may be required to ensure efficient generation and consumption of electricity while maintaining power system security.

It is in this context that the AEMC considered two rule change requests which sought to alter the way:

- price responsive loads with maximum demand greater than 30 MW, and
- non-intermittent non-scheduled generators with nameplate generation capacity 5 MW or greater

participate in the market by making it mandatory for them to participate in central dispatch processes.

Snowy's rule change request proposed that large price responsive loads be required to participate in central dispatch as scheduled participants. ENGIE's primary proposal was for non-intermittent non-scheduled generators greater than 5 MW nameplate generation capacity to be scheduled. ENGIE's alternative proposals were that a new class of "soft-scheduled" generator be created requiring these generators to provide information relating to their generation intentions, and that AEMO develop a process to estimate demand responsiveness and to provide this information to the market in the form of proxy bids.

Issues for assessment

The principle issue raised in the rule change requests was that non-scheduled generation and price-responsive load cause forecasting inaccuracies that lead to inefficiencies in the electricity market.

Two consequent issues were also raised.

- It was claimed that a lack of visibility of the generation and consumption intentions of non-scheduled generators and loads impedes AEMO's ability to manage system security.
- It was stated that inefficient pre-dispatch forecasting impacts on the efficiency of the contracts market.

The materiality of the issue raised by the rule change requests is insufficient to warrant making the proposed changes

Final determination

The Commission has decided not to make a rule. At this time, the Commission considers the materiality of the issue raised by the rule change requests is insufficient to warrant making the proposed changes. The Commission's analysis indicates:

- the proposed changes would only apply to a limited number of generators and loads, and would therefore have limited impact on forecasting accuracy
 - there are 96 non-scheduled generators with nameplate generation capacity greater than 5 MW, representing 2,872 MW of total generation capacity in the NEM. The majority of these are not suited to scheduling because: they are intermittent wind or solar PV, and would therefore be semi-scheduled rather than scheduled; or, they generate electricity as the by-product of an industrial or commercial process, rather than in response to electricity market conditions. The remaining 33 generators representing 771 MW of generation capacity (which is less than two per cent of total NEM generation capacity) could potentially be scheduled.
 - there are 36 large loads in the NEM with maximum demand greater than 30 MW. Only a sub-set of these are price responsive, meaning they vary their consumption in response to high or low spot market prices. Other load variability is related to their industrial or commercial processes.
- AEMO's demand forecasts are generally accurate at dispatch, with forecast error rates between one to 1.5 per cent. This indicates an efficient quantity of generation is generally dispatched
- AEMO's price forecasts are less accurate than the demand forecasts, but this is to be expected given they provide signals to the market to enable participants to plan and adjust their generation or consumption
- the actions of non-scheduled generators and large price responsive loads were clearly not the only or necessarily the primary cause of forecast errors, and not all non-scheduled generators or loads contribute to forecast inaccuracy. Other identifiable factors contributing to forecast inaccuracy included: the actions of scheduled generators, in particular in relation to price forecasting; and, general issues associated with forecasting models, and forecasting intermittent and unregistered generation (ie that below the 5 MW registration threshold)
- the proposed changes would place considerable costs and obligations on parties that are not justified by the limited benefits that may accrue. In particular, loads are already under financial pressure from high wholesale electricity prices, and the scale of establishment and compliance costs for smaller generators would be material.
- it is important to distinguish between requirements for scheduling and the information and visibility requirements of AEMO
- AEMO has a range of powers to address forecasting issues and maintain system security, including security issues arising from market participation.

To the extent that benefits are uncertain and the costs may be inefficient and flow through to consumer pricing, the rule change requests will not, or are not likely to, contribute to the achievement of the NEO. The Commission has therefore determined not to make these changes or otherwise change the scheduling requirements for market participants at this time.

Additional considerations

The Commission recognises that the changes in generation and consumption technologies result in new system security challenges. These challenges may require changes to market participation requirements or processes and the information and data available to the system operator. Implementing a broad mechanism on all generating units of a particular size is not considered to be the appropriate answer to specific and evolving system security issues.

The benefits are limited and the costs may be substantial and flow through to consumers.

The Commission notes that AEMO has specific powers that enable it to deal with system security issues, and that system security work is being undertaken in other AEMC and AEMO processes that are more suitable forums for progressing such issues.

The Commission also notes that AEMO has recently used its power to address concerns it has in relation to the impact of batteries on system security and forecasting accuracy.

In relation to the contracts market, the proponent's claims were that inaccurate forecasting may impact on the efficiency of the contracts market. In the Commission's view, market participants value contracts on the basis of their particular circumstances, their expectations of the market, and their appetite for risk. Within this broad context the pre-dispatch price forecasts are just one of a range of inputs that must be considered in contracting, and not necessarily the most significant factor.

Recommendations

The Commission recognises the technological change that is occurring is likely to result in increased amounts of small generation and more responsive loads. In order to maintain a transparent market with accurate information for participants, the requirements to participate in central dispatch may also need to change. Any such change should take account of a broad range of factors and market design options, and be informed by the outcomes of the reviews and rule change requests that are relevant to the central dispatch process and are currently underway.

The Commission considers it is preferable for AEMO to continue to maintain and improve its forecasting, and to manage system security issues, by means of its existing powers. To the extent AEMO considers its powers are inadequate to manage system security issues or to continue to forecast with reasonable accuracy, the Commission will work closely with AEMO to examine the issues and develop appropriate mechanisms to ensure it has the necessary tools to operate the market.

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