AEMC

INFORMATION

Frequency control frameworks review

The AEMC has today published the final report on its review of the market and regulatory arrangements that underpin frequency control in the National Electricity Market.

The report highlights several issues that will need to be addressed to support better frequency control in the long-term, and to enable the delivery of frequency control services from new technologies. It makes recommendations on how these issues can be addressed. The major deliverable of this report is a work plan, developed collaboratively by the AEMC, AEMO and the AER, detailing actions to be taken by the market bodies, in consultation with stakeholders, to address these identified issues.

Background

The electricity industry in Australia is undergoing fundamental change as newer types of electricity generation, such as wind and solar, connect and conventional forms of electricity generation, such as coal, retire. In addition, a formerly passive demand side is becoming increasingly engaged in energy markets through the uptake of new technologies and services, such as solar PV, storage and demand response. These technologies are changing the way in which these consumers draw electricity from, and export electricity to, the broader power system.

This transformation presents both opportunities and challenges for power system security. The AEMC and the Finkel Panel have previously identified the system security challenges associated with the transformation of the energy sector. These challenges are reflected in the mixed security performance of the power system in 2016/17, resulting in a less secure power system and in some cases load being shed. Undertaking work to improve security outcomes in the NEM is therefore a priority. To date, the AEMC has made five rule changes, and two more are underway, to help AEMO, as the body responsible for maintaining power system security, address the immediate system security needs of the transforming system.

The final report

The gradual shift toward more variable sources of electricity generation and consumption, and difficulties in predicting this variability, increases the potential for imbalances between supply and demand that can cause frequency disturbances.

The AEMC's *Frequency control frameworks review*, published today, responds to the specific challenge of maintaining good frequency control as the power system changes, and removing inefficient barriers to the provision of essential frequency control services by new technologies.

The AEMC's conclusions and recommendations on these matters, summarised below, have been developed in consultation with stakeholders. They represent the completion of this stage of the review and of the action items assigned to the AEMC by the Finkel Panel in 2017.

Frequency control during normal operation

Frequency performance under normal operating conditions has been deteriorating in recent times. AEMO is undertaking a range of actions in an attempt to better understand the drivers of the deterioration, and to appropriately address it. It advises that there is no immediate need to implement regulatory change to address the deterioration before the results of its short term actions to understand the issue are known, and that current

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The AEMC will continue to identify evolving challenges and opportunities so that the security needs of the system can be achieved at least cost.

regulatory tools are expected to be adequate to manage frequency performance in a manner consistent with the requirements of the frequency operating standard within this timeframe. The AEMC's report therefore does not recommend any regulatory change in the immediate term to address the deterioration, but concludes that there is a need to find a more permanent solution to the issue and sets out some potential options for further development.

Future FCAS frameworks

The AEMC has examined the structure of the existing FCAS markets to determine whether they will remain fit for purpose in the longer-term as the power system changes. This has included consideration of how to most appropriately incorporate fast frequency response, and longer-term options to facilitate co-optimisation of energy, FCAS and inertia. The AEMC's report sets out a spectrum of potential frameworks for the procurement and dispatch of FCAS to address the potential deficiencies of the existing arrangements as the system changes, and concludes that the best approach to the procurement of frequency services in the longer-term is one that is performance-based, dynamic and transparent.

Frequency monitoring and reporting, and forecasting

The AEMC has explored ways in which the existing forecasting and frequency reporting arrangements could be adjusted to enhance the operation of the frequency control frameworks. This report proposes two rule change requests to promote transparency of the frequency performance of the power system and the competitiveness of FCAS markets. It also describes the range of initiatives underway to improve AEMO's approach to supply and demand forecasting.

Participation of distributed energy resources in system security frameworks

The AEMC has explored the potential for distributed energy resources to provide system security services. This report concludes that there are some existing inefficient regulatory barriers that may hinder or prevent distributed energy resources from providing these services. It makes recommendations, including proposed rule changes, on how these barriers could be addressed.

AEMO's market ancillary services specification (MASS)

The MASS underlies the provision of FCAS in the NEM. Through this review the AEMC has explored whether there are aspects of the MASS that could be amended to facilitate and better value the provision of FCAS from new technologies, including storage, aggregated distributed energy resources and demand response. AEMO has signalled an intention to commence a review of the MASS in August 2018. The AEMC's report sets out some issues that AEMO should consider in its review, including whether the response times associated with the existing contingency services will continue to be fit for purpose as the energy system changes.

Next steps

As noted above, the report has identified issues that still need to be addressed through a longer-term, collaborative work plan, which is set out in detail in the final report. The AEMC will progress its part of the work plan in the coming months, including those recommendations and rule change requests referred to above.

The AEMC will continue to work closely with AEMO and other stakeholders to identify evolving challenges and opportunities so that the security needs of the system can be achieved at least cost.

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