



Frequency Control Frameworks Review – Terms of Reference

Under section 45 of the National Electricity Law (NEL), the Australian Energy Market Commission (AEMC or Commission) has initiated a Review into market and regulatory arrangements necessary to support effective control of system frequency in the National Electricity Market (NEM).¹

The purpose of the Review is to progress a number of recommendations made by the Commission in the System Security Market Frameworks Review to address current concerns with frequency performance in the NEM and to consider how best to integrate faster frequency control services offered by new technologies into the current regulatory and market arrangements. The changing generation mix in the NEM, with the introduction of new technologies, is creating challenges for traditional forms of frequency control, but also offers opportunities to introduce new system services.

As with the System Security Market Frameworks Review, this Review will be coordinated with ongoing technical work on these and related issues undertaken by the Australian Energy Market Operator (AEMO).

Objectives of the Review

This Review will provide recommendations to the COAG Energy Council on changes required to the regulatory and market framework to meet the challenges in maintaining effective frequency control arising from, and harness the opportunities presented by, the changing generation mix in the NEM.²

Recommendations may include proposed revisions to technical standards, refinements to existing frequency control ancillary services (FCAS) markets, the establishment of new markets or other changes to the regulatory and market framework.

For any proposed solutions, the Review will:

- identify the reasons for the proposed change and likely impacts on the power system, the NEM and consumers; and
- describe pathways to implementation, including timing, possible interim stages and any necessary changes to the National Electricity Law or Rules.

The output of the Review will be reports to the COAG Energy Council highlighting actions taken including, where relevant, rule changes and technical changes made and recommendations for further action where required.

¹ Part 4 of the National Electricity Law (NEL) sets out the functions and powers of the Australian Energy Market Commission (AEMC). Under Division 5 of Part 4, the AEMC has the power to conduct a review into the operation and effectiveness of the National Electricity Rules (NER).

² The regulatory and market framework refers to the National Electricity Law and National Electricity Rules.

Scope of the Review

The Review will seek to address current concerns with frequency performance in the NEM and consider how best to integrate faster frequency response (FFR) services offered by new technologies into the current arrangements. Its scope may include, but is not limited to, the following:

- assessing whether mandatory governor response requirements should be introduced and investigating any consequential impacts including on the methodology for determining causer pays factors for the recovery of FCAS costs
- reviewing the structure of FCAS markets, to consider:
 - any drivers for changes to the current arrangements, how to most appropriately incorporate FFR services, or alternatively enhancing incentives for FFR services, within the current six second contingency service
 - any longer-term options to facilitate co-optimisation between energy, FCAS and inertia provision
- assessing whether existing frequency control arrangements will remain fit for purpose in light of likely increased ramping requirements, driven by increases in solar PV reducing operational demand at times and therefore leading to increased demand variation within a day
- considering the potential of distributed energy resources to provide frequency control services and any other specific challenges and opportunities associated with, their participation in system security frameworks.

The Review will develop and consider proposals for new or enhanced services to allow for the more effective control of system frequency in the NEM. These services, while yet to be fully considered, may be provided as the result of technical obligations, integration into existing service definitions or through additional market services. Consideration should be given to the co-optimisation of frequency control services, inertia and energy, particularly where some of these may be provided by regulated network businesses.

Key principles

The AEMC will conduct this Review in accordance with the following principles:

- The AEMC will be guided by the National Electricity Objective.
- The Review will coordinate with and build on relevant technical work undertaken by the AEMO, including but not limited to the work it is progressing through its Ancillary Services Technical Advisory Group. It will also take account of related work being done by other organisations on power system security and the National Electricity Market blueprint published on 9 June 2017 by the Finkel Panel Review.
- Solutions will be developed to account for the interaction of those solutions with other aspects of the market and regulatory frameworks, in particular those linked to power system security.
- Any solutions will, to the extent possible, be technology-neutral and take into account the full range of potential network and market solutions.

Outputs

The AEMC will publish an approach paper as a basis for initial stakeholder consultation. A progress update will be provided to the COAG Energy Council prior to its meeting in December 2017.

The AEMC will seek to publish a final report prior to the COAG Energy Council meeting in mid-2018.

Rule change requests related to the subject of the Review may be received by the AEMC while the Review is progressing. The Review will be progressed concurrently and in coordination with the assessment of these rule change requests. Any forums, meetings and workshops held as part of the Review may also be used to progress the assessment of the rule change requests, subject to the statutory rule change process requirements being met.

Collaboration with AEMO, the Market Bodies Forum and consultation with other stakeholders

- The AEMC will publish an approach paper as the basis for initial consultation.
- The AEMC will collaborate with AEMO on the development of proposals and recommendations arising from the Review. The collaboration will be conducted in a manner consistent with the existing memorandum of understanding between the two parties³ and the AEMC-AEMO agreement on Collaboration on Framework for System Security in the National Electricity Market.⁴
- The AEMC will provide regular updates on the progress of the Review to the Market Bodies Forum⁵ to allow a strategic, whole of system perspective to be considered.
- The Reference Group established by the AEMC for the System Security Market Frameworks Review, comprising senior representatives from the AEMC, AEMO, the AER and the Senior Committee of Officials will continue to provide high level input on the work of the Review and related system security matters.
- The AEMC, in consultation with AEMO, will establish a technical working group to provide advice to the work of the Review and related AEMO work. In addition to the AEMC, AEMO and AER the technical working group shall include representation from:
 - o transmission network businesses;
 - o distribution network businesses;
 - o conventional generation;
 - o renewable generation;
 - o retailers;
 - o energy service providers;
 - o consumers.

³ The Australian Energy Market Commission and Australian Energy Market Operator entered into a Memorandum of Understanding on 25 August 2014. The MOU sets out administrative arrangements and principles to promote communication and coordination between the two bodies in the performance of their complementary roles in Australia's energy markets.

⁴ The Australian Energy Market Commission and Australian Energy Market Operator entered into an agreement on Collaboration on Framework for System Security in the National Electricity Market on 8 July 2016. The agreement sets out how the two organisations will work together to address challenges in the NEM associated with the shift from synchronous generation to non-synchronous and intermittent generation.

⁵ The Market Bodies Forum is the coordinating body for Australia's east coast energy market institutions. For more information, see: <http://www.aemc.gov.au/News-Center/What-s-New/Announcements/Memorandum-of-Understanding-to-establish-Market-Bo>.