



System Security Market Frameworks Review – Terms of Reference

Under section 45 of the National Electricity Law (NEL), the Australian Energy Market Commission (AEMC) has initiated a Review into market frameworks necessary to support the secure operation of the electricity system.¹ The AEMC considers that a Review is timely to consider whether market frameworks are suitable to complement the increasing volume of renewable energy and to enable the maintenance of a power system security. A changing generation mix with increasing levels of intermittent non-synchronous forms of electricity generation in the National Electricity Market (NEM) are creating challenges for maintenance of system security. This Review follows and 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 framework to meet the power system security challenges in the NEM caused by increasing levels of non-synchronous generation.²

Recommendations may include proposed refinements to frequency standards, revisions to technical standards and system standards, additional services markets or other changes to the regulatory 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.

Scope of the Review

The Review will consider the power system security challenges caused by increasing levels of non-synchronous generation. It will include an initial focus on issues related to:

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 framework refers to the National Electricity Law and National Electricity Rules.

- frequency control and lower levels of inertia during normal operation of the power system, such as a high rate of change of frequency, and a shortage of frequency control ancillary services; and
- the emergence of areas of the power system that will be weak, that is have low fault levels.

The Review will develop and consider proposals for market or regulatory frameworks for the efficient integration of services to manage the impacts of low inertia and low fault levels into the existing frameworks.

It is expected that these solutions, while yet to be fully considered, are likely to fall into several categories including but not limited to the development of new pricing mechanisms for particular services, functions available to the power system operator, regulatory obligations on connecting parties to procure such services as a requirement for connection and/or service requirements on regulated network businesses.

Many of these issues only become critical when a region is at risk of becoming islanded from the rest of the network. However the primary focus of the Review will not be mechanisms for preventing this islanding occurring.

Key principles

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

- The AEMC will be guided by the National Electricity Objective.
- This work will coordinate with and build on the work undertaken by the Australian Energy Market Operator through its Future Power System Security Program in respect of defining and prioritising the power system security challenges. It will also take account of related work being done in other organisations on power system security.
- Solutions will be developed to account for linkages between the different power system security challenges, and the interaction of those solutions with other aspects of the market and regulatory framework.
- The Review will consider how challenges to power system security have manifested in the NEM. While many of the issues have so far been evidenced in South Australia, any solutions will be designed for NEM-wide application and adaptable to different needs.
- 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 2016.

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.

Coordination with AEMO

- 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 parties.³
- A Reference Group comprising senior representatives from the AEMC, AEMO, the AER and the Senior Committee of Officials will be established by the AEMC to provide high level input on 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 and AEMO, the technical working group shall include representation from:
 - o the AER;
 - 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.