AEMC

INFORMATION

System Services rule changes

Consultation begins on six rule change requests for system services

The AEMC is seeking stakeholder feedback on six rule change requests that relate to the planning, procurement, pricing and payment for system services that maintain the reliability and security of the power system.

Necessary system services in a transitioning power system

The AEMC has received six rule change requests that propose new ways of providing the system services necessary to support the security and reliability of the power system.

As the power system transitions to a lower emission generation mix, moving from a system of large, remote power stations towards smaller, distributed generators, many critical system services are no longer provided as by products of energy generation. This impacts on the reliability and security of the power system:

- A reliable power system requires an adequate supply of capacity to meet demand and with a buffer available to respond to shocks, a reliable transmission and distribution network, and the system being in a secure operating state. While historically, reliability in the NEM has been high, there is concern that reliability is becoming more challenging to maintain as the supply / demand balance tightens — especially on very high temperature and high demand days.
- Power system security is the power system's capacity to continue operating within defined technical limits even if a major power system element, like a large generator or a major customer, disconnects from the system. The levels of system services like inertia, frequency control and system strength are deteriorating as the generation mix changes. These services, once provided as a 'by-product' of generating electricity from coal, gas and hydro generators are not being provided in the same way, or in the same amount any more.

This is reinforced by AEMO's Stage 1 Renewable Integration Study, which finds that, in the next five years the NEM power system will continue its significant transformation to world-leading levels of renewable generation, testing the boundaries of system security and current operational experience. This requires a rethink of how we plan and develop market and regulatory frameworks in order to deliver a secure and reliable supply to customers.

In March 2019, the COAG Energy Council requested the Energy Security Board (ESB) to advise on a long-term, fit-for-purpose market framework to support reliability, modifying the NEM as necessary to meet the needs of future diverse sources of non-dispatchable generation and flexible resources, including demand side response, storage and distributed energy resource participation. The AEMC is working closely with the ESB and the other market bodies on this work.

It is within that context that these rule change requests propose new ways to replace these system services, which are required to operate the power system in a secure and reliable state, now and into the future.

Overview of the rule change requests

The AEMC has used the solutions included in each rule change request to group them into three time frame-based "work streams", to allow common issues to be considered and consultation to be streamlined.

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Dispatch work stream, which will consider proposed solutions where participants make short-term decisions between dispatch intervals to meet system needs. The rule change requests being considered in this work stream are:

- *Fast frequency response market ancillary service* (Infigen Energy)— a proposal to introduce new markets for fast frequency response to efficiently manage power system risks associated with reduced system inertia.
- *Primary frequency response incentive arrangements* (AEMO) — through this rule change the Commission will investigate the appropriateness of the existing incentives for the provision of primary frequency response during normal operation.[1]

Commitment work stream which will consider proposed solutions which involve committing or procuring the service ahead of the period for which there is a forecast need for it. The rule change requests that will be considered as part of this work stream are:

- *Operating reserves* (Infigen Energy) — a proposal to introduce a reserve market to operate alongside the existing energy and frequency control markets, to help AEMO manage new and emerging operational challenges.
- *Introduction of ramping services* (Delta Electricity) — a proposal to introduce 30-minute raise and lower "ramping" services .
- *Capacity commitment mechanism for system security and reliability services* (Delta Electricity) — a proposal to introduce an ex-ante, day ahead capacity commitment mechanism and payment to provide access to operational reserves and other required system security or reliability services.

Investment work stream which will consider solutions for the longer term timeframes for building the new assets needed to provide system services. The rule change request that will be considered as part of this work stream are:

- *Efficient management of system strength on the power system* (TransGrid) — a proposal to allow for TNSPs to be more proactive in the provision of system strength in the NEM. The request proposes to abolish the “do no harm” obligation and substantially amend the minimum system strength requirements.

The TransGrid rule change request in the investment work stream will be progressed alongside the AEMC's system strength investigation[2] given the number of common issues also being explored in that review.

A further rule change request on S*ynchronous services markets* (from Hydro Tasmania) will also be progressed alongside the AEMC's system strength investigation. While the proposal relates to dispatch time frames, it has implications for the investment in assets for the provision of synchronous services, which aligns with the issues being considered in the system strength review and TransGrid rule change**.**

The AEMC has established these work streams based on time frames to group the rule change requests, as a starting point for consultation. However, any new frameworks developed in response to the rule change requests will be focused on delivering the most efficient outcomes for consumers, having regard to outcomes across all time frames.

Linkages between system services rule change requests and the ESB post-2025 work program

The ESB has been tasked with developing advice on a long-term, fit-for-purpose market framework to support security and reliability, which could apply from the mid-2020's. The issues raised in these rule change requests relate to and complement elements of the ESB's market design program. Elements of ESB work program relevant to the system services rule change requests include:

- **Resource adequacy mechanisms** — evaluation of potential options for additional resource adequacy mechanisms that could be implemented in the NEM post-2025. This includes considering the scenarios under which a new mechanisms may be needed to underpin new investment in the "right resources” to deliver reliable supply.

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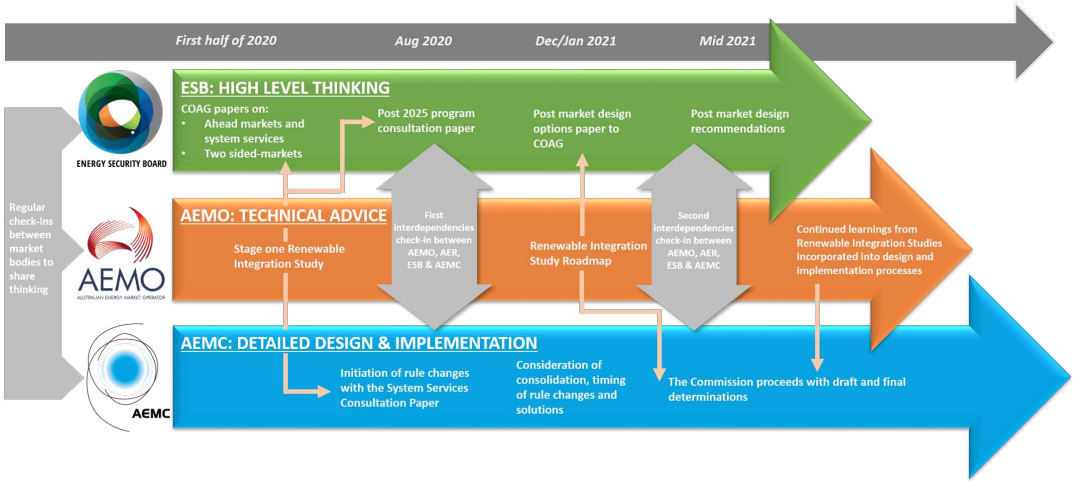
1 This rule change request has previously been referred to by the AEMC as the *Removal of disincentives to primary frequency response* and has already been initiated.

2 https://www.aemc.gov.au/market-reviews-advice/investigation-system-strength-frameworks-nem

- **Ageing thermal generator strategy** — assesses the effectiveness of market arrangements or regulatory approaches to ensure large, ageing thermal generators are replaced with sufficient capacity and system services as they exit the NEM.
- **Essential system services** — examines efficient market mechanisms to value, procure and schedule essential system services.
- **Ahead markets** — assesses mechanisms that may improve the visibility and scheduling of resources ahead of dispatch.

The AEMC is working closely with the ESB and the other market bodies, particularly AEMO on these rule change requests, given that these rule changes dovetail with this other work. The rule changes complement and are interdependent with the work of the ESB in its 2025 project. These rule changes provide us with an opportunity to complement some of the thinking and assessment done in the ESB work program, as well as technical input from AEMO through its renewable integration study. It allows us to address the issues in a cohesive way, as well as addressing system security issues that are more urgent in nature.



Consultation and next steps

The AEMC is facilitating consultation on the six rule change requests at the same time through the publication of a single consultation paper. Submissions from stakeholders should be provided to the AEMC by **13 August 2020**.

The AEMC is undertaking a combined consultation on these rule change requests in order to allow stakeholders to comment on and consider the interactions between issues raised in relation to the different system services and the different solutions proposed. The Commission is mindful of the challenge for stakeholders engaging in the large volume of regulatory reforms under way. The coordinated approach to consultation on the system services rule change requests is intended to help reduce this overall burden on stakeholders.

Following receipt of stakeholder submissions, the AEMC will update stakeholders on the next steps for each of the work streams and the related rule change requests, including timing. This will include consideration of how each rule change request can dovetail in with other work underway, such as that by the ESB & AEMO.

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