



Generating System Model Guidelines rule change

Publication of final rule determination and final rule

The Australian Energy Market Commission (AEMC) has made a rule that clarifies what model data must be provided to the Australian Energy Market Operator (AEMO) and network service providers.

This final rule is designed to provide AEMO and network service providers with the information necessary to accurately model the power system, taking into account changed power system conditions such as reductions in system strength. This rule change complements and is part of the AEMC's broader system security reforms. An overview of the AEMC's Security and Reliability work program is attached.

Modelling the power system

AEMO and network service providers study the power system in order to be able to plan and operate it. Participants such as generators also undertake these studies when planning their investments and when negotiating connection agreements. Power system studies use models as inputs. These models are mathematical representations of how generation and power system equipment will perform under different conditions.

The National Electricity Rules (NER) currently includes a model data provision framework, which sets out the process for provision of model data from generators to AEMO and, where relevant, network service providers. This framework describes when model data must be provided, including when a generator connects to the power system, or when the generating system is changed.

Importantly, this framework applies only to generators, and does allow for additional model data to be requested other than when the generator is connecting or altering a system.

Changes in the power system, particularly reductions in system strength, mean that more detailed models may be required from a broader range of participants. The model data provision frameworks therefore require amendment, so that AEMO and network service providers can gain access to the model data necessary to continue to accurately model the power system.

The final rule

The final rule is part of the broader package of system security work being progressed by the AEMC. It includes changes to the NER model data provision frameworks that are designed to complement other reforms, particularly those related to system strength.

The final rule expands the application of the existing model data provision frameworks in the NER, to include additional participant types such as network service providers, market network service providers, ancillary service providers and customers.

The final rule also expands this framework to apply to a broader set of equipment, such as protection systems and network equipment.

Importantly, the final rule makes a number of changes designed to support AEMO and network service providers in meeting various system strength obligations.

For example, the final rule requires AEMO to have regard to the information requirements of network businesses, and sets out a process for AEMO to request model data where this is necessary for network service providers to meet their system strength obligations.

The final rule provides a clearer model data provision framework. The final rule clarifies the scope and level of detail of model data that registered participants are required to submit to AEMO and network service providers.

The final rule is also designed to provide participants with increased clarity regarding exactly when model data may be requested. In addition to the existing conditions in the NER, it provides further specification about the conditions under which AEMO may request additional data from existing participants.

It also requires AEMO to provide, in its power system model guidelines, further details of what kind of model data it will require from different participants and the specific circumstances in which this data will be required.

The final rule requires AEMO to have regard to the costs participants will face while complying with the model data provision requirements. This is intended to limit the extent of potential costs that may be imposed on participants in terms of providing additional model data.

Additionally, the final rule requires AEMO to have regard to the sensitivity of highly detailed model data. This is intended to provide as much protection as is possible to information provided under the model data provision frameworks that may be commercially sensitive to various parties.

The final rule implements a recommendation made in the Independent review into the future security of the National Electricity Market (Finkel Panel Review), that “to be approved for connection, new generators must fully disclose any software or physical parameters that could affect security or reliability.”

Background

In its rule change request, AEMO proposed to amend the NER to require generators and other parties to provide it with specific kinds of model data.

The proposed rule from AEMO included amending the NER to:

- broaden the scope and increase the level of detail of model data AEMO may request from participants, including generators, customers and network service providers
- increase the depth of model data AEMO may request from parties tendering for the provision of ancillary services.

AEMO considered that these changes would provide a number of benefits, including more effective and efficient:

- generator connection processes
- power system operation
- network planning processes
- procurement of ancillary services.

Commencement

New obligations arising from the final rule will commence on 1 July 2018 by which date AEMO must develop and publish the revised power system model guidelines and data sheets to take account of the amending rule.

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AUSTRALIAN ENERGY MARKET COMMISSION

AEMC SYSTEM SECURITY AND RELIABILITY ACTION PLAN

Final:
Mar 2017

Emergency frequency control scheme rules

Enhanced schemes to act as a last line of defence in an emergency

Final:
Jun 2017

System security market frameworks review

Recommendations to deliver a stronger and more resilient system with better frequency control as the generation mix changes

Final:
Sept 2017

Managing the rate of change of power system frequency rule

Makes networks provide minimum levels of inertia

Final:
Sept 2017

Managing power system fault levels rule

Makes networks provide services necessary to meet minimum levels of system strength

Final:
Sept 2017

Generating system model guidelines rule

Requires detailed information on how generators and networks perform

Draft:
Nov 2017

Inertia ancillary service market rule

Will deliver inertia above minimum levels where there is market benefit

Stage one
final:
Nov 2017

Reliability Panel review of frequency operating standards

Assessing whether the existing standard is appropriate to maintain a secure power system as the generation mix changes

Final:
mid-2018

Frequency control frameworks review

Looking at ways to integrate new technologies and demand response to help keep the system secure

Consultation:
Sept 2017

Generator technical performance standards

Updating the technical performance standards for connecting generators and the process for negotiating them

Underway

Review of the system black event in South Australia on 28 September 2016



SYSTEM SECURITY

Keeping the lights on: Measure of the power system's capacity to continue operating within defined technical limits, even if a major power system element disconnects from the system.



RELIABILITY

Power when you need it: having enough generation, demand response and network capacity to supply consumer needs.

Final:
Jul 2017

Coordination of generation and transmission investment review: stage 1

Recommended that stage 2 investigate options to improve the coordination of transmission and generation investment

Final:
Apr 2018

Reliability Panel review of reliability standard and settings 2018

Assessing whether the standard and settings are appropriate to guide efficient investment to meet consumer demand

Options
paper:
Dec 2018

Reliability frameworks review

Considering what changes may be needed to deliver enough dispatchable energy from the supply and demand side in the short term, to support more efficient operational decisions, and the longer term to guide necessary investment. The review will also look at Finkel recommendations:

- a Generator Reliability Obligation
- the need for a Strategic Reserve
- the suitability of a 'day ahead' market
- mechanisms to address demand response priorities

Draft:
Oct 2017

Declaration of lack of reserve conditions rule

Seeks to amend lack of reserve framework so it can support changing power system conditions

Options
paper:
Nov 2017

Coordination of generation and transmission investment review: stage 2

Investigating options to improve coordination of generation and network investment, including potential renewable energy zones, transmission pricing and access

