NER change mechanisms for generating systems and integrated resource systems

April 2025

Fact Sheet

Throughout a generating system or integrated resource system's lifecycle it may be necessary to make changes to system designs, upgrades or replacements of equipment, or other changes that may impact the system.

The National Electricity Rules (NER) establish mechanisms for assessing and approving proposed changes to generating system or integrated resource system equipment (each referred to in this fact sheet as a 'system'), performance standards, protection or control settings. These include:

- NER 5.3.9: Alteration of a system.
- NER S5.2.2: Application of settings to a control or protection system.
- NER 4.14(p): Amendment of performance standards by agreement.

Which change mechanism will apply to a proposed change?

To determine the appropriate change mechanism, a Proponent[1] will need to understand:

- Which part of the system is being changed.
- Whether the proposed change will affect performance of the system relative to NER S5.2 technical requirements.
- The impacts of any proposed change such as general system strength impact, adverse impact on network capability, power system security, quality or reliability of supply, inter-regional power transfer capability or the use of a network by another Network User.

Proponents are encouraged to engage with the Network Service Provider (NSP) and the Australian Energy Market Operator (AEMO) to help them determine the applicable change mechanism. This engagement can be initiated by submitting a completed *generating system or integrated resource system change form*[2] which includes the details the NSP and AEMO will typically require to initially scope the proposed change.

How do change mechanisms differ?

The change mechanisms differ by application, acceptance criteria, and the roles of the Proponent, the NSP and AEMO. These aspects are compared for the three change mechanisms in Table 1.

These mechanisms apply from the time of execution of the connection agreement, regardless of whether the plant is operational.

If any of the change mechanisms apply, the Proponent must inform the NSP and AEMO on any matters relating to the proposed changes under these mechanisms. This is critical in order for the NSP and AEMO to comply with NER obligations.

---

[1] The person who proposes to alter their system, including equipment, controls or settings. That person will be either the registered Generator or Integrated Resource Provider, or the Connection Applicant (where performance standards have been included in an executed connection agreement but registration has not yet occurred).

[2] https://aemo.com.au/-/media/files/electricity/nem/network_connections/transmission-and-distribution/GS-or-IRS-Change-Form

Fact Sheet

Table 1: Comparison of NER change mechanisms

Mechanism	NER 5.3.9	NER S5.2.2	NER 4.14(p)
Change type	Alteration to a generating system or integrated resource system (system).	Application of or changes to control system or protection system settings.	Amendment of an existing performance standard.
Application	Proposed alteration to a system with potential to meet any of the following (NER 5.3.9 criteria): • Affect the performance of the system against NER S5.2 technical requirements. • Have a general system strength impact[3]. • Adversely affect network capability, power system security, quality or reliability of supply, inter-regional power transfer capability or the use of a network by another Network User.	Proposed application of settings to a control system or a protection system required to: • Comply with the relevant performance standards. • Maintain or restore inter/intra-regional power transfer capability.	If NER 5.3.9 does not apply, NER 4.14(p) can be used to amend the performance standards at any time by agreement between AEMO, NSP and the Proponent.
Impact on existing performance standards	May or may not result in changes to the existing performance standards.	No changes to the existing performance standards (unless the settings are explicitly specified in the performance standards).	Changes to the existing performance standards.

[3] AEMO considers the wording in NER 5.3.9(a)(ii) to be in error (it refers to an 'adverse' system strength impact) and anticipates that it will be subject to an administrative rule change

NER change mechanisms for generating systems and integrated resource systems

Fact Sheet

Mechanism	NER 5.3.9	NER S5.2.2	NER 4.14(p)
Initiating party	Proponent.	AEMO, NSP or the Proponent.	AEMO, NSP or the Proponent.
Approving party	AEMO and NSP.	AEMO and NSP.	AEMO, NSP and the Proponent.
Acceptance	Alteration assessed under: • Negotiated Access Standard requirements of NER 5.3.4A unless the relevant Automatic Access Standard requirements are met (for affected performance standards. • System strength mitigation requirements under NER 5.3.4B where relevant.	Does not cause non-compliance with performance standards or reduce inter/intra-regional power transfer capability.	Amended performance assessed under Negotiated Access Standard requirements of NER 5.3.4A(b), unless the amendment • meets the Automatic Access Standard; or • relates to a performance standard established under a transitional arrangement.
Examples	Alterations to the following within a system for which the NER 5.3.9 criteria are met: hardware, firmware, configuration, or protection and control systems. Examples of possible application include: • Substituting production units within a system. • Adding extra production units or reactive support equipment.	This could include setting changes in inverters, governor controllers, automatic voltage controllers, power plant controllers, protection relay settings, etc. Examples of possible application include: • Setting changes required to comply with existing performance standards due to network changes or updates during detailed design.	Examples of possible application include: • Amendments to capture plant performance due to changes in the network. • Amendments to performance requirements due to an updated control scheme participation such as an AEMO/NSP Special Protection Scheme. • Amendment of the performance standards to include a missed component

Fact Sheet

Mechanism	NER 5.3.9	NER S5.2.2	NER 4.14(p)
	• Firmware updates that impact system performance. • Altering the system from grid following to grid forming.	• Setting changes requested by NSP to improve plant performance to restore network transfers. • Changes to protection relay settings that do not affect performance standards.	of a performance standard such as inclusion of total harmonic distortion (THD) level for S5.2.5.2. • Amendments to remove ambiguity in wording, typos, errors or miswritten technical requirements. • Amendments to capture plant performance degraded over time (e.g. degradation of reactive power capability in a legacy plant).