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14 May 2026

Ms Anna Collyer
Chair, Australian Energy Market Commission
Level 15, 60 Castlereagh St
Sydney NSW 2000

Dear Ms Collyer,

AEMO request for National Electricity Rule Change – Inverter Dispatch

AEMO is seeking a change to the National Electricity Rules (NER) to expressly enable dispatch instructions to include a limit on the number of Inverter-Based Resources (IBR) online at a connection point.

AEMO presently manages inverter-number limits through inefficient and untimely processes. AEMO is, in parallel with this rule change, introducing an automated inverter dispatch system to deliver an efficient single process. Following stakeholder engagement, AEMO expects many IBRs to voluntarily respond to this new system upon its implementation, expected by mid-2027.

AEMO wishes to clarify the system's function by incorporating inverter dispatch into the existing concept of a dispatch instruction. This will, in effect, mandate compliance with the system.

The rule change proposes an immediate change to connection requirements such that newly connecting plant incorporate the capability to comply.

Stakeholder engagement on the system revealed that some existing IBRs are not presently capable of automatically responding and will require some modification to comply. AEMO proposes an 18-month implementation period, after the making of the rule, for the change to the scope of a dispatch instruction.

Notwithstanding expected voluntary compliance and the proposed implementation period, AEMO requests the rule change be prioritised to provide clear early guidance to connecting and incumbent plant.

Please find attached the Rule Change proposal. Should you wish to discuss any aspect of our proposal, please contact Hannah Heath, Group Manager, Strategic Market Reform (Hannah.Heath@aemo.com.au).

Yours sincerely,

Violette Mouchaileh
Executive General Manager, Policy & Corporate Affairs

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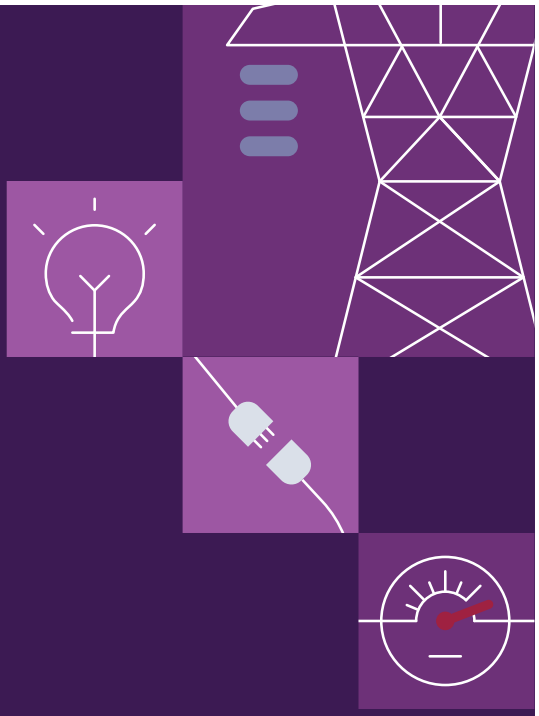

Electricity Rule Change Proposal

Inverter Dispatch

May 2026

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New South Wales | Queensland | South Australia | Victoria | Australian Capital Territory | Tasmania | Western Australia

Australian Energy Market Operator Ltd ABN 94 072 010 327

Contents

1. Summary

AEMO seeks amendments to the National Electricity Rules (NER) to expressly enable dispatch instructions to include a limit on the number of inverter-based resources (IBR) online at a connection point. Today, AEMO manages inverter-number limits indirectly through network constraints, manual operator phone calls, and—when timely response does not occur—through clause 4.8.9 instructions to Network Service Providers (NSPs) to disconnect plant. This approach has become increasingly inadequate as IBR penetration has grown, and as system-strength-related inverter limits are invoked more frequently, often during conditions when rapid resecuring is essential.

This proposal is made in the context of AEMO's parallel implementation of a voluntary automated inverter dispatch system ("inverter dispatch initiative").[1] The inverter dispatch initiative automates the communication, and monitoring adherence to, inverter limits from AEMO to the plant. This reduces reliance on manual phone calls and enables automated, real-time responses to inverter limits. AEMO will communicate per-interval inverter-limit values through EMMS and/or SCADA, and participants will act via their own processes, including local control systems, to reduce the number of inverters online. This system is expected to immediately improve operational efficiency with implementation indicatively mid-2027. However, without the proposed Rule amendment to incorporate inverter limits into dispatch instructions, compliance with this new automated system is voluntary.

AEMO has engaged with affected stakeholders regarding both the new automated dispatch system and this rule change proposal. Stakeholders have generally recognised the benefit of greater automation and clarity, acknowledging that the current approach is labour-intensive, inconsistent, with its slowness adding power system security risk. Broadly stakeholders have supported in-principle the use of the rule change to ensure clarity and compliance by expressly enabling inverter limits to be included within a dispatch instruction. AEMO understands for many plants (larger and newer units) compliance with a dispatch instruction that includes inverter limits is likely straightforward as they already have appropriate control systems, and that they intend to voluntarily respond to the inverter dispatch system without a rule obligation. Nevertheless, AEMO considers it prudent to recognise this action through the Rules and provide clarity for newly connecting units.

For some plant (smaller or legacy units), AEMO understands that due to technical characteristics, upgrades or site automations may be required. While improving the arrangements to manage inverter limits is an urgent operational priority, AEMO acknowledges not all market participants could practically comply from day one. As such, the inverter dispatch initiative will be implemented indicatively mid-2027 to bring improved process and reduced operational risk, while rule change proposes an implementation period of 18-months to provide existing stakeholders an appropriate and proportionate transition period. AEMO encourages the rule change consultation process to expressly consider the impact upon these participants when determining implementation and transition.

The rule change also includes an addition to connection requirements such that newly connecting plant must incorporate the capability to comply. This aspect does not require an implementation period.

[1] AEMO Inverter Dispatch project - https://www.aemo.com.au/initiatives/major-programs/nem-reform-program/nem-reform-program-initiatives/inverter-dispatch

2. Relevant background

2.1. Current framework

Under NER 4.2.6, AEMO must operate the power system in a secure operating state and, following a contingency (credible or non-credible), return the system to a secure operating state as soon as practicable and within 30 minutes (the resecuring requirement).

The relevant security metric for system-strength-limited conditions is often the number of inverters electrically connected, rather than a dispatchable energy metric. While AEMO's dispatch engine (NEMDE) can set an energy dispatch target of 0 MW, it cannot dispatch inverters offline - that action must be performed locally by the plant. Consequently, absent an explicit dispatch instruction for inverter-online limits, operators currently rely on indirect signals (constraint violation) plus manual coordination to achieve resecuring.

2.1.1. Existing SCADA data requirements for inverter-based resources

Operators of the affected inverter-based resources are currently required to install accurate, continuously available status telemetry (including inverters-online) in accordance with the Energy Conversion Model (ECM) and the AWEFS/ASEFS data standards (and as per the table below). As such, the proposal to include inverter limits in the dispatch instruction does not introduce a new data standard.

The table below sets out the mandatory data fields currently required for inverter-based plant.[2] Semi-scheduled generators are obliged to keep these telemetry signals accurate at all times.

Category	Wind	Solar	BESS
Output & limits	Active power output (MW) at the dispatch point; Control system set point (MW dispatch limit); Local limit on output (MW). Active power output (MW) at the dispatch point; Control system set point (MW dispatch limit); Local limit on output (MW). Active power output (MW) at the connection point (charge/discharge); Control system setpoint (MW); Local limit (MW).		
Availability	Number of turbines available and operating (online).	Number of inverters available (online).	State of Charge (SOC %); Charge/discharge availability; Number of inverter modules online (if modular design).
Weather / Other Inputs	Average wind speed and direction (farm-level); Ambient temperature.	On-site wind speed & direction; Ambient temperature and humidity (farm-level); Global horizontal & inclined solar irradiance (per cluster); Module temperature (per cluster).	Battery temperature (cells/racks); Voltage at connection point; Protection/alarm status affecting a

As such, the approach seeks to establish a new requirement using the information already provided in the Availability category above. Conformance with the inverter dispatch rule can be assessed against existing telemetered inverter counts.

[2] Required as per NER S5.2.6.1(c),(d)

2.2. AEMO's current method for managing inverter limits

AEMO routinely receives NSP limit advice indicating how many inverters can be online under certain network conditions and outages. The advice is implemented through outage constraint sets in NEMDE. When a limit applies and SCADA telemetry shows more inverters online than permitted, constraints bind or violate. NEMDE sets the DUID target to 0 MW, but violation persists until the telemetered inverter count falls to or below the advised limit. This is because the security condition is the inverter count, not the MW.

Under current practice, plant operators may respond to the indirect signals received from constraint violation. However, as NER 4.9.2 and 4.9.5 do not currently contemplate dispatch instructions including inverters limits, participants are not obliged to respond to the constraint violation. In these circumstances, the AEMO real time operations (RTO) controller will manually contact the affected operator to request that they block or disconnect inverters locally to meet the limit. While these requests are usually successful, they – and a participant's response to them – are voluntary and do not have an enforcement mechanism in the NER.

If action is not taken in time to meet AEMO's obligation to resecure the system under NER 4.2.6(b)(1), as necessary, AEMO may escalate action via issuing a clause 4.8.9 instruction to the NSP to open circuit breakers to disconnect the generating system, thereby restoring system security.

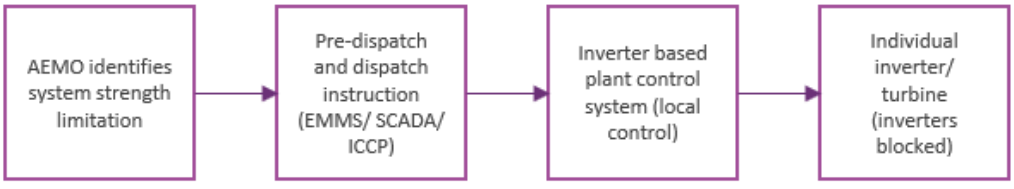
2.3. Automating inverter-limit delivery through AEMO systems

AEMO's inverter dispatch initiative will automate the way AEMO communicates inverter limits to inverter-based resources, sending automated instructions via both:

- EMMS (market data model pathways) for all participants;
- SCADA/ICCP for those who prefer operational signalling channels;

Inverter limits will be provided across dispatch, 5-minute pre-dispatch, and 30-minute pre-dispatch horizons to provide plant operators with a forward view of inverter limits. Following receipt of dispatch signal, participants can then reduce inverts online via local plant control to comply with the dispatch instruction within the 5-minute interval period. Integrated alarms, audit logs, and a fallback to manual calls if communication links fail will remain to mitigate operational risk of any failures to receive signals.

Figure 1 High-level process of automated inverter limit through dispatch instructions



The inverter dispatch initiative is being run by AEMO with industry consultation to ensure fit-for-purpose design reducing operational risks and manual workload for AEMO and participants. Further detail is published on AEMO's website including Final High-Level Implementation Assessment published 15 May[3] and the NEM Reform Program[4]. The inverter dispatch architecture ensures inverter-number communication is fast, automated,

[3] AEMO, Inverter Manager System – Final High-level implementation assessment - Inverter Management System (Inverter Dispatch) DRAFT HLIA v0.2

[4] AEMO Inverter Dispatch project - https://www.aemo.com.au/initiatives/major-programs/nem-reform-program/nem-reform-program-initiatives/inverter-dispatch

auditable, consistent with existing systems, and vastly more scalable than manual phone-based coordination. Stakeholders have indicated to AEMO in discussions that having both EMMS and SCADA pathways provides flexibility and reduces the technical burden for many inverter-based facilities.

The inverter dispatch initiative is being implemented as a two-staged solution: Stage 1 – interim solution implemented 31 March 2026 and Stage 2 - final automation estimated Q2 2027. The project has sought to develop a solution that meets AEMO's operational needs leveraging existing plant capabilities as a way to help minimise participant implementation and ongoing compliance costs.

2.3.1. Stakeholder feedback on inverter dispatch automation and rule change

AEMO has engaged stakeholders on both the automated inverter dispatch initiative and the rule change. AEMO received seven submissions and conducted interviews with 14 stakeholders. The stakeholders included inverter based resource operators, asset owners, third party service and software providers and NSPs.

Most stakeholders supported the project in-principle however noted caution with progressing the rule change and associated compliance requirements too quickly. Broadly, AEMO understands stakeholders sit across two groups with key issue focused on implementation timeframes and compliance requirements:

- **Newer and larger units** – can readily comply, already have local control and systems to receive dispatch instructions. These plant operators have indicated they are likely to voluntarily take up the automated inverter dispatch process once implemented as it is preferable to the manual alternatives. AEMO also understands from stakeholders that newly connecting units are likely to have control systems required to automate receipt and compliance.
- **Older or smaller units** – may require upgrades to plant controls, site automations and operational processes. Some stakeholders have suggested that there may be extensive upgrades required and suggested a longer implementation period of 18 months to ensure compliance requirements are clarified and appropriately assessed for existing plant.

3. Statement of issue

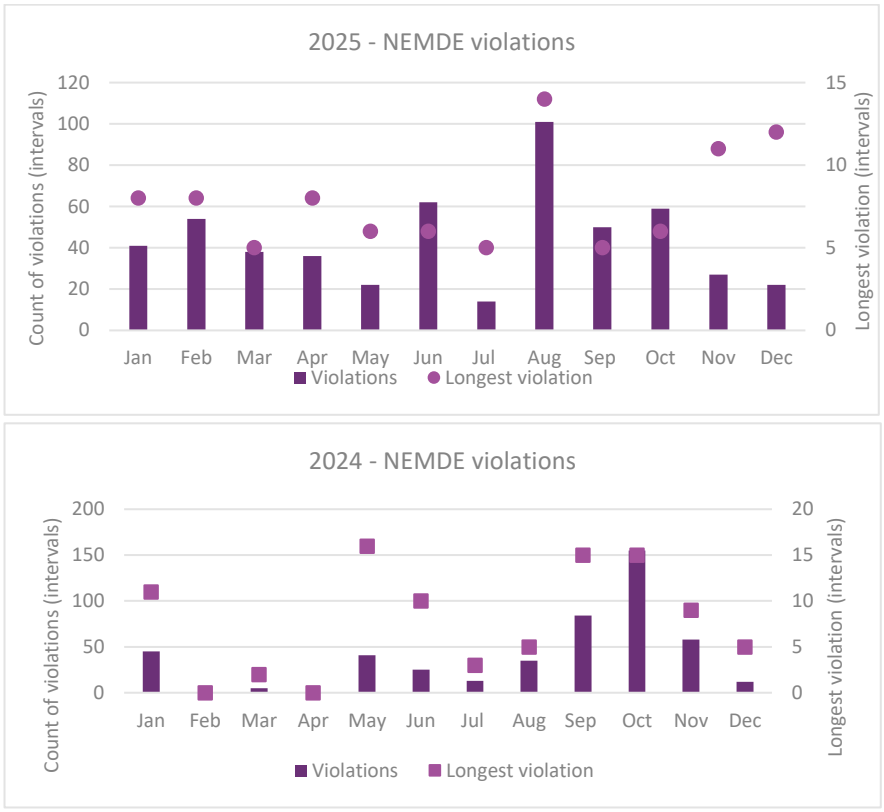
3.1. Issues with the current Rules

The current Rules do not provide a mechanism for AEMO to issue a dispatch instruction that limits the number of inverters online at a connection point. With the implementation of the automated inverter dispatch system, AEMO expects many plants will voluntarily receive and comply with automated inverter signals. However, the absence of an inverter-limit instruction in the Rules creates uncertainty for AEMO regarding whether or not participants will respond to the instruction and for participants regarding the status of the instruction.

3.1.1. Operational evidence

The existing use of manual processes to contact participants and the escalation to the NSP under NER 4.8.9 are disruptive to participants, resource-intensive for AEMO, and create ongoing risks to the secure operations of the market. Constraint analysis for 2024 and 2025 shows inverter constraints as violating in NEMDE for 473 and 526 intervals respectively over each year. This includes instances of maximum consecutive violations of up to 16 intervals. As noted previously, AEMO expects this situation to improve substantially when the system is complete thanks to voluntary compliance, however these results demonstrate the significance of the underlying issue and the need for a clear and enduring solution.

Chart 1: Inverter constraint violations 2024-25



4. How the proposal will address the issues

By incorporating inverter-online limits into dispatch instructions in NER 4.9.2 and 4.9.5, and by establishing capability requirements in NER S5.2.6.1(b1), the proposed rule creates a direct, formal dispatch pathway for managing the number of inverters online.

4.1. Alignment with inverter dispatch initiative

Why a Rule change is necessary even after completion of project

Even after completion of the inverter dispatch initiative, compliance would remain voluntary. Without inclusion in NER 4.9.2 and 4.9.5, plant would not be required to adjust the number of inverters online, which may necessitate AEMO continuing to issue manual requests and clause 4.8.9 instructions to NSPs to disconnect plant.

The proposed rule is therefore required for:

- Confidence that inverter-limits dispatch instructions will be complied with;
- Faster, automated reconnection of offline inverters once conditions allow it;
- Improved transparency and certainty for participants regarding compliance obligations;
- allowing the Australian Energy Regulator (AER) to monitor and enforce conformance;
- ensuring rapid action to meet resecuring requirements under NER 4.2.6(b)(1); and
- reducing the need for manual intervention, particularly for multiple DUID outage constraints under time pressure.

Flexibility of implementation ensures efficient transition and minimal burden on existing participants

AEMO's operational preference is to implement the rule change upon completion of the Inverter Dispatch Initiative. However, as described in Section 2.3.1 above, there are varied capabilities of existing plant to receive and comply with a dispatch instruction that includes inverter limits. Acknowledging this dynamic an implementation timeframe is proposed. Suggestions for this are included in Section 5 below, including:

- Timely progression of the rule change to provide clarity to newly connecting market participants of the updated requirements in NER S5.2.6.1(b1).
- Extended implementation period of 18 months to allow existing plant enough time to clarify, assess and where required update control systems.
- As per its role in monitoring compliance with dispatch instructions, the AER to provide clarity on compliance expectations.
- Transitional rules to enable, where required, expedient amendments to accepted performance standards under NER 5.3.9.

4.2. Amend NER S5.2.6.1(b1)

The proposal also inserts the "number of inverters online" as a listed quantity under NER S5.2.6.1(b1), the automatic access standard. This will update the connection requirements such that connecting plant will need to possess the capability to:

- monitor telemetered inverter online counts;
- receive inverter counts via EMMS and/or SCADA/ICCP; and
- respond locally to the dispatch instruction to reduce the number of inverters online.

As discussed in section 2.1.1 above, the receiving of inverter counts is presently achieved via the Energy conversion model. It is proposed to now elevate this requirement into NER S5.2.2.1(b1).

This amendment does not require existing plant to renegotiate performance standards unless a material change is proposed that would affect existing NER S5.2.5 standards. (See Section 5.2 for further detail).

4.3. AEMO Procedure changes

The initiative requires AEMO to update the dispatch procedure SO_OP_3705[5] and pre-dispatch procedure SO_OP_3704[6]. This will be updated during for inverter dispatch initiative and AEMO will be required to publish per-DUID inverter limits in pre-dispatch horizons.

AEMO's Primary Frequency Response Requirements (PFRR)[7] will require an update to recognise compliance with inverter dispatch in section 6.6 Standing Variations, which exempt the requirement to provide Primary

[5] AEMO, Dispatch procedure, SO_OP_3705 - https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Power_System_Ops/Procedures/SO_OP_3705%20Dispatch.pdf

[6] AEMO, Pre-dispatch procedure, SO_OP_3704 - https://www.aemo.com.au/-/media/files/electricity/nem/security_and_reliability/power_system_ops/procedures/so_op_3704-predispatch.pdf?la=en

[7] primary-frequency-response-requirements-clean.pdf

Frequency Response (PFR) when an affected unit is subject to certain factors. This matter was identified by stakeholders engaging with the Inverter Dispatch Initiative.

4.4. AER monitoring and guideline changes

The inclusion of inverter limits as a dispatch instruction will place inverter limits within the existing dispatch compliance obligations under NER 4.9.8. As such, the AER will be responsible for monitoring plant compliance under its existing role in monitoring compliance with dispatch instructions, offers and bids.[8] The AER's Rebidding and Technical Parameters Guideline[9] is the primary instrument that sets out how the AER translates NER obligations into enforceable participant behaviours during dispatch and bidding. As such, AEMO considers the AER would need to update this Guideline to:

- clarify how participants must comply with inverter limit dispatch instructions;
- confirm how local control logic, ramp-rate settings, and availability declarations interact with an inverter limit dispatch instruction;
- advise participants on the practical approach to enforcement and compliance the AER will look to apply.

This ensures participants have a clear and predictable compliance framework once the amended rule commences to inform their implementation requirements.

5. Proposed Rule

5.1. Proposed NER amendments

NER Provision	Proposed amendment
4.9.2(a)(3)	Insert a new subparagraph as follows: (3) a limit on the number of *online inverters*, where AEMO considers it necessary, to maintain *power system security*.
	This amendment explicitly empowers AEMO to issue dispatch instructions specifying the maximum number of inverters that may be online at a connection point.
4.9.5(a)(2)	Replace this subparagraph with the following: (2) the desired outcome of the *dispatch instruction* (if applicable) such as *active power*, *reactive power*, *transformer* tap, maximum number of *online inverters* or other outcome;

[8] AER, Compliance Bulletin - https://www.aer.gov.au/system/files/Compliance%20Bulletin%20No%201%20-%20Compliance%20with%20Dispatch%20Instructions%2C%20Offers%20and%20Bids.pdf

[9] AEMO, Technical Rebidding and Technical Parameters Guideline - https://www.aer.gov.au/system/files/2024-10/AER%20-%20Rebidding%20and%20Technical%20Parameters%20Guidelines%20-%20updated%20October%202024_0.pdf

	NER 4.9.5 prescribes the form and content of a dispatch instruction. Adding number of *online inverters* to this list ensures such an instruction has the same authority, clarity, and compliance expectation as existing outcomes such as MW targets, voltage set points, and reactive power requirements.
S5.2.6.1(b1)(1)(iii)	Insert a new subparagraph (iii) after S5.2.6.1(b1)(1)(ii) as follows: (iii) the number of *online inverters*.
	This amendment ensures that new connections (and connection applicants who have not yet negotiated their performance standards at commencement) possess the capability to monitor and control the number of inverters online in response to instructions provided by AEMO via EMMS and/or SCADA/ICCP.
Chapter 10	Insert new definitions of "*inverter*" and "*online inverter"* in Chapter 10 as follows: ***Inverter*** means an electronic device or circuit that converts direct current into alternating current at the desired voltage and frequency ***Online Inverter***… means an *inverter* that is *connected* and in a state enabled to provide *active power* or *reactive power*.
	The lack of a definition of *inverter* in Chapter 10 may present interpretive ambiguity. This definition provides clarity and aligns with standard industry usage for wind, solar, and battery energy storage systems. It clarifies that the rule applies to individual *inverters* that may be part of an *inverter based resource.* AEMO notes that the term "inverter" is already used in other parts of the NER in its plain English meaning and encourages the AEMC to check these references to ensure that a definition has no unintended consequences.
	"*Online Inverter"* has been proposed to recognise that an inverter may be dispatched offline in either of two ways: • It may be *disconnected* by a circuit breaker as already defined in the NER. • Its electronic controls may be set such that it produces no *active power* or *reactive power* and therefore has no *system strength* implications despite remaining electrically *connected* to the grid. This is commonly referred to as "blocking". AEMO expects most compliance will be via blocking.

5.2. Transitional rules

AEMO understands that some plant may require upgrades to plant control systems in order to comply with the automated dispatch instructions. The below transitional arrangements are proposed to clarify where performance standard changes may be required and, in those circumstances, to minimise regulatory burden and ensure a balanced approach to the application of NER 5.3.9.

Commencement of amended NER S5.2.6.1

AEMO proposes that the implementation approach for the proposed amendments to NER S5.2.6.1 align with the approach adopted in clauses 11.[XXX].3 and 11.[XXX].4 of the Draft National Electricity Amendment (Improving the NEM access standards – Package 2) Rule 2026.

Those clauses adopted a staged commencement framework under which, at a broad level, Connection Applicants that had not yet received an offer to connect would be subject to the new access standards and those that had already received an offer to connect would be subject to the old access standards.

Relationship with NER 5.3.9 — alteration of schedule 5.2 plant

Under NER 5.3.9, only certain modifications to a schedule 5.2 plant require a formal assessment where they may affect performance against existing performance standards (if NER 5.3.9(a) criteria is met).

- **Existing plant – minor changes** – Changes to enable system integration, such as configuring site controls to ingest EMMS and/or SCADA inverter dispatch instructions from AEMO to then disconnect inverters, would not be expected to trigger reassessment under NER 5.3.9 because they do not affect the performance of the plant against existing performance standards.
- **Existing plant - material control system changes** - If a participant must upgrade or materially modify plant-level control systems in a way that affects performance under S5.2.5, this may well trigger a NER 5.3.9 reassessment of performance standards. Triggering NER 5.3.9 would require reassessment and compliance with only the affected S5.2 technical requirements. To the extent there is participant concern regarding triggering NER 5.3.9, AEMO could provide guidance to clarify process and assist with specific control system configurations

  The positions above aim to balance the need to formalise the control of inverters for new connections while avoiding unnecessary processes for existing plant and provide guiding assurances to existing plant that assessments required under NER 5.3.9 will be limited to compliance required to meet dispatch inverter limits. AEMO does not intend to use this process to broaden review of plant requirements to other access standards that are not impacted.

5.3. Commencement

AEMO proposes the change to S5.2.6.1(b1)(1)(iii) and associated definitions commence upon making the rule. This will provide clarity to new and connecting units and seek to work in tandem with the inverter dispatch initiative to seek to mitigate the operational risk of increasing binding inverter dispatch limits prior to full commencement of the rule.

AEMO proposes the changes to chapter 4 involving dispatching inverters commence 18 months following publication. This transition period aligns with stakeholder feedback and seeks to provide enough time for material changes to control systems, where required. Despite the longer commencement period, it is important that operational and compliance documents, including the AER's Rebidding and Technical Parameters Guideline, are updated as soon as possible following the Final Determination. This will provide clarity on expectations and guidance relating to inverter limit compliance.

Operationally it would be AEMO's preference to have a shorter implementation period for changes to chapter 4 to mitigate the ongoing and increasing risk in the management of inverter limits as system security constraints. However, acknowledging the potential impact on existing stakeholders, AEMO's proposed 18-month implementation timeframe has been informed by stakeholder engagements already undertaken.

5.4. Prioritisation of rule change

AEMO requests the rule change is prioritised to:

- Advance as soon as possible from using manual dispatch approaches;
- Consolidate the effort already expended in the inverter dispatch initiative through a clear compliance mechanism;
- Provide a clear indication to connecting and incumbent resources that automatic inverter dispatch responsiveness will be in required in the near future. This will assist their own planning.

AEMO considers a transparent and timely rule change process followed by an 18 month implementation period balances the urgent need to better manage power system security against providing participants a reasonable implementation time.

6. How proposed rule contributes to the NEO

The proposed rule promotes the achievement of the National Electricity Objective (NEO) by materially improving the security and efficiency of power system operation in conditions of growing inverter-based resource (IBR) penetration. It does so by providing AEMO and market participants with a clear, enforceable, and timely mechanism to ensure that the number of inverters online does not exceed system-strength-related limits determined necessary to maintain a secure operating state.

6.1.1. Supporting secure and reliable power system operation

Today, under lower system strength conditions, the number of inverters electrically connected to the network is often the key determinant of whether the system is secure. By enabling AEMO to issue dispatch instructions that include a limit on the number of inverters online, the proposed rule provides a direct, reliable, and enforceable mechanism to achieve inverter reduction thereby reducing the risk of extended constraint violations and power system insecurity.

6.1.2. Improving efficiency and reducing operational burden

The current reliance on manual phone calls and, where necessary, clause 4.8.9 instructions is inefficient, operator intensive, and slow. These processes require coordination across AEMO operations staff, generators, and NSPs, and can consume minutes within the period to re-secure the system. As IBR operation increases, the number of inverters that may need to be reduced at any one time may increase, making the present approach increasingly unsustainable.

6.1.3. Enhancing clarity, transparency, and enforceability

A clear theme in stakeholder discussions has been a need for a transparent framework for inverter dispatch. The present approach creates ambiguity about obligations and leads to inconsistent responses across sites. Including inverter limits in dispatch instruction ensures compliance and enables the AER to apply standard conformance and enforcement expectations. This clarity combined with the implementation of the automated inverter dispatch system ensure the NER recognises and deals with this issue to ensure AEMO is able to maintain power system security and efficient operation through increasing penetration of IBR.

By adding “number of inverters online” to Schedule 5.2.6.1(b1), the rule provides a clear, technology neutral capability requirement for new connections and applicants without negotiated performance standards. This gives developers certainty about expectations early in the project lifecycle, avoiding later redesigns.

7. Costs and benefits of the proposed rule

7.1. Benefits of the proposed rule

Improved system security and compliance with resecuring obligations

The primary benefit of the proposed rule is the improvement in AEMO's ability to maintain and restore the power system to a secure operating state, consistent with NER 4.2.6(b)(1). Existing delays because of unclear compliance obligations, increase the risk of extended periods outside secure operating bounds, particularly in high-IBR regions or low-demand conditions.

Reduction in reliance on clause 4.8.9 instructions

Under current arrangements, if inverter reductions do not occur promptly following constraint violation, AEMO must escalate to clause 4.8.9 instructions to TNSPs to disconnect plant at the breaker. Participants consistently regard this as a high-impact action, both operationally and commercially, and AEMO aims to avoid its use wherever possible.

Greater operational efficiency and reduced control-room burden

The present framework requires AEMO real-time operations controllers to coordinate manual phone calls to multiple participants. As IBR penetration grows, AEMO considers this manual workload may become unsustainable with increased assurances that participants will act in response to inverter limit dispatch instructions. This improves operational resilience across AEMO and participants.

Increased transparency, auditability, and enforceability

Including inverter-limits in dispatch instructions aligns the NER with participant and AEMO operations while clarifying participant obligations. This enhances confidence in the dispatch process and provides a consistent regulatory foundation as IBR penetration rises while ensuring consistency and improved predictability for newly connecting plant.

7.2. AEMO-related costs

The inverter dispatch initiative is implementing the system functionality and capability to enable automated inverter dispatch as an element of NEM dispatch instructions. Outside this initiative's implementation, AEMO does not anticipant this rule proposal would result in any additional system related costs.

AEMO anticipates any updates required to its procedures from this rule proposal to be incremental, as AEMO will be updating these procedures as part of the inverter dispatch initiative implementation.

7.3. Cost of the proposed rule

The rule proposal would require the Australian Energy Regulator to review and update their Rebidding and Technical Requirements Guideline and may have implications for their ongoing compliance monitoring activities.

For participants whose plant will require upgrades to meet the new requirements, they will incur costs for control system and telemetry changes, and software changes to allow rebidding and availability practices to align with inverter-limit instructions. As discussed in section 2.3 above, AEMO understands from stakeholders

there will be a broad range in the materiality of costs incurred by stakeholders to comply with inverter limit dispatch instructions. For existing plant, these broadly fall into two categories:

Systems integration only changes (expected majority of existing plant)

Most existing IBR facilities, particularly newer connecting plant, should already remotely control inverters, so the requirement is integrating the AEMO input with the remote control system. These plants primarily require:

- ingestion of the inverter-limit value from EMMS and/or SCADA/ICCP
- updates to control logic to act on that limit
- testing and verification

These costs should hopefully be modest relative to overall plant operations and would likely avoid renegotiation of performance standards. Stakeholder discussions suggested that such system integration is manageable.

Material control-system changes (expected minority of plant)

A small number of plants may require more substantial modifications to control systems that affect performance standards. In these cases, the proposal preserves the existing NER 5.3.9 process, which remains the appropriate method for assessing changes that may affect a plants performance. These participants will have more significant costs as they implement the required modification to control systems to comply with the new dispatch requirements.

Example precedent – VAR dispatch scheduler

By way of comparison, the VAR Dispatch Scheduler may be an appropriate precedent. In that case:

- The existing NER 4.9.5 included VAR instructions in the form of dispatch instruction, yet common practice was for AEMO RTO controllers to phone participants and request a change of generator Tap position.
- To remove the manual burden on AEMO RTO an automated system was implemented, and dispatch instructions were sent to participants
- NER 5.3.9 was not applicable for most existing plant because control system redesign was unnecessary – Participants simply had to respond to the instruction and control VAR under local control.

A similar principle applies here, in that where inverter control can be achieved through systems integration and local control compliance costs should remain modest. AEMO would suggest the VAR scheduler precedent reinforces that the proposed approach is targeted, proportionate, and consistent with AEMO and AEMC regulatory practice.