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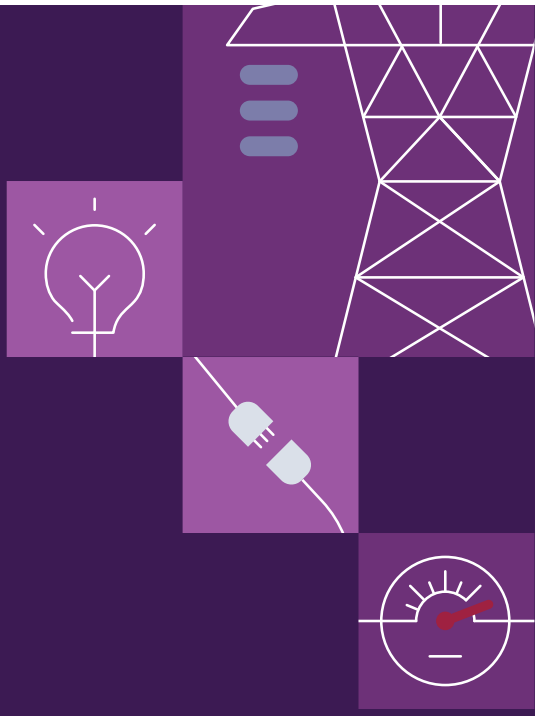

Security Enablement Procedures

Draft Report – Standard consultation for the National Electricity Market

Published: 13 June 2025

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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

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Executive summary and consultation notice

The publication of this draft report commences the second stage of the standard consultation procedure conducted by AEMO to consider proposed content for the Security Enablement Procedures (the proposal) under the National Electricity Rules (NER).

This consultation is undertaken as required by NER 4.4A.6(b), following the procedure in NER 8.9.2.

The National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024 (ISF Rule) requires AEMO to enable system security services procured by TNSPs and AEMO to meet minimum system requirements and stable voltage waveform requirements in accordance with the Security Enablement Procedures (SEP). The SEP includes:

- a methodology for how the minimum system security requirements are determined
- automated and manual enablement methodologies that meet enablement principles in NER 4.4A.4
- requirements for TNSP system security agreements
- how stable voltage waveform requirements will be determined and enabled

The initial draft of the SEP provided AEMO's proposal to address the above matters and raised a significant number of substantive issues in 11 submissions. AEMO has responded to these ideas and issues in the summary table in Appendix B, and included the following key points in the draft Procedure:

- clarity on the meaning of an enablement instruction amendment
- the timing requirement for variable operating parameters updates
- clarity that any enablement to meet a security service gap must be consistent with the service contracted
- clarity that a TNSP must use 'reasonable endeavours' to meet its system strength obligations
- clarity that stable voltage waveform enablement should achieve 'additional' IBR dispatch
- a diagram to illustrate the relationships between the SEP and other Procedures and guides

This consultation also covers minor administrative and consequential amendments to the:

- SO_OP_3708 Non-market Ancillary Services (including the Guide to Ancillary Services in the NEM)
- SO_OP_3704 Pre-Dispatch Procedure
- Spot market operations timetable
- SO_OP_3718 Outage Assessment
- SO_OP_3715 Power System Security Guidelines, and
- Schedule of Constraint Violation Penalty Factors.

AEMO's draft proposal is to make the Security Enablement Procedures in the form published with this draft report, with a proposed effective date of 31 August 2025.

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Consultation notice

AEMO invites written submissions from interested persons on the draft proposal and issues identified in this draft report to **NEMReform@aemo.com.au** by 5:00 pm (Melbourne time) on 15 July 2025.

Submissions may make alternative or additional proposals you consider may better meet the objectives of this consultation and the national electricity objective in section 7 of the National Electricity Law. Please include supporting reasons.

Before making a submission, please read and take note of AEMO's consultation submission guidelines, which can be found at https://aemo.com.au/consultations. Subject to those guidelines, submissions will be published on AEMO's website.

Please identify any parts of your submission that you wish to remain confidential, and explain why. AEMO may still publish that information if it does not consider it to be confidential, but will consult with you before doing so. Material identified as confidential may be given less weight in the decision-making process than material that is published.

Submissions received after the closing date and time will not be valid, and AEMO is not obliged to consider them. Any late submissions should explain the reason for lateness and the detriment to you if AEMO does not consider your submission.

Interested persons can request a meeting with AEMO to discuss any particularly complex, sensitive or confidential matters relating to the proposal. Please refer to NER 8.9.1(k). Meeting requests must be received by the end of the submission period and include reasons for the request. AEMO will try to accommodate reasonable meeting requests but, where appropriate, we may hold joint meetings with other stakeholders or convene a meeting with a broader industry group. Subject to confidentiality restrictions, AEMO will publish a summary of matters discussed at stakeholder meetings.

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1. Stakeholder consultation process

As required by National Electricity Rules (NER) 4.4A.6(b), AEMO is consulting on the Security Enablement Procedures (the proposal) in accordance with the standard rules consultation procedure in NER 8.9.2.

Note that this document uses terms defined in the NER, which are intended to have the same meanings. There is a glossary of additional terms and abbreviations in Appendix A.

AEMO's process and expected timeline for this consultation are outlined below. Future dates may be adjusted and additional steps may be included as needed, as the consultation progresses.

Table 1 Consultation process and timeline

Consultation steps	Dates
Publication of Provisional Security Enablement Procedures	30 June 2024
Consultation paper published	7 April 2025
Briefing to Electricity Wholesale Consultative Forum	8 April 2025
Stakeholder forum	10 April 2025
Submissions due on consultation paper	8 May 2025
Draft report published	13 June 2025
Submissions due on draft report	15 July 2025
Final report and procedure published	Expected 11 August 2025

AEMO's consultation webpage for the proposal is at https://aemo.com.au/consultations/current-and-closed-consultations/security-enablement-procedures, containing all previous published papers and reports, written submissions, and other consultation documents or reference material.

In response to its consultation paper on the proposal, AEMO received 11 written submissions including 4 late submissions.

AEMO also held a forum with industry on 10 April 2025.

This consultation also covers consequential amendments to the:

- SO_OP_3708 Non-market Ancillary Services (including the Guide to Ancillary Services in the NEM)
- SO_OP_3704 Pre-Dispatch Procedure
- Spot market operations timetable
- SO_OP_3718 Outage Assessment, and
- SO_OP_3715 Power System Security Guidelines
- Schedule of Constraint Violation Penalty Factors.

AEMO has provided marked versions of these documents at this draft report stage of the consultation.

Consequential amendments to the Constraint Formulation Guidelines will be managed separately, and not form part of this consultation, as required changes cannot be determined in the same timeframe.

AEMO thanks all stakeholders for their feedback on the proposal to date, which has been considered in preparing this draft report, and looks forward to further constructive engagement.

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2. Background

2.1. Context for this consultation

Under the National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024 (ISF Rule)[1], AEMO has been given a new power to enable system security services provided or procured by TNSPs or procured by AEMO to meet minimum system security requirements and to meet stable voltage waveform requirements.

The intention of this framework is to enable the most cost efficient system security services available to maintain system security in the transition to a low- or zero-emissions power system, and system strength services to meet stable voltage waveform requirements when appropriate to do so.

System security services include system strength services, inertia network services, network support and control ancillary services (NSCAS), and transitional services (introduced by the ISF Rule). Figure 1 illustrates the interaction between frameworks that are the subject of the Security Enablement Procedures. Transitional services, introduced under the ISF Rule, are also the subject of these procedures but are not included in Figure 1 as they do not relate to system strength or inertia. The same applies to NSCAS that is not related to system strength or inertia, for example, voltage control.

AEMO is taking an incremental approach to the implementation of the new system security services enablement framework under the ISF Rule. The intention is to agree an approach in consultation with industry that is achievable in the timeframes allowed, ensures compliance with the regulatory framework and provides an ongoing opportunity to develop the framework further as understanding of the available services, their enablement capabilities, the ongoing need and the impact of enablement on electricity market operation deepens.

The Security Enablement Procedures establish how AEMO will determine the minimum system security and stable voltage waveform requirements and the methodology by which system security services will be enabled to meet these requirements.

[1] https://www.aemc.gov.au/rule-changes/improving-security-frameworks-energy-transition

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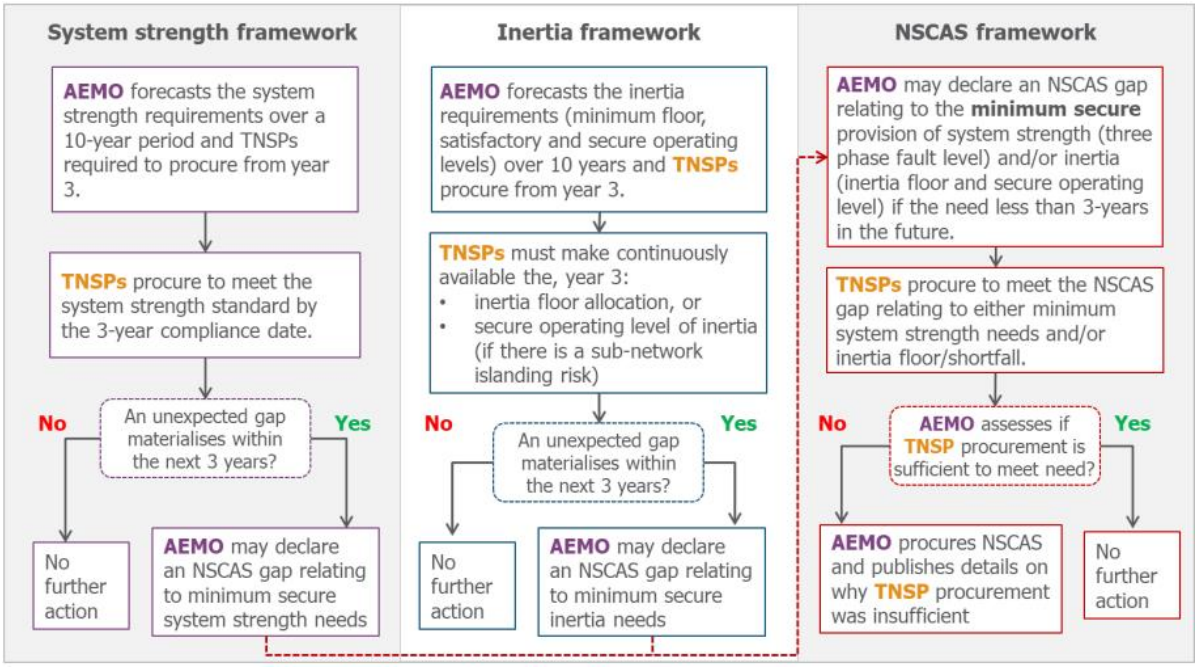
Figure 1 Interaction between system strength, inertia and NSCAS frameworks[2]



Note: From Australian Energy Market Commission (**AEMC**) Final Determination, page 37 Figure 3.8

2.2. NER requirements

NER 11.168.2 provides that AEMO must publish the first Security Enablement Procedures by 31 August 2025.

NER 4.4A.6 specifies the following requirements for the Security Enablement Procedures that are the subject of this consultation paper:

(a) AEMO must develop and publish procedures for the enablement of system security services (Security Enablement Procedures), which must include:

(1) a methodology for how AEMO will determine the minimum system security requirements in accordance with clause 4.4A.3;

(2) a methodology for the enablement of system security services in accordance with the enablement principles in clause 4.4A.4;

(3) any minimum or recommended requirements to be included in agreements for the provision of system security services entered into by Transmission Network Service Providers; and

(4) a description of how AEMO determines the level of stable voltage waveform requirements under clause 4.4A.1(b) and how it will enable system strength services under a system strength services agreement to support this level.

(b) AEMO must comply with the Rules consultation procedures when making or amending the Security Enablement Procedures.

[2] While this figure shows the relationship between these three frameworks, the scope of NSCAS gap declarations is broader than only System Strength and Inertia. NSCAS can include any characteristic necessary to maintain the security and supply reliability of the transmission network in accordance with the power system security standards and the reliability standard.

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2.3. The national electricity objective

Within the specific requirements of the NER applicable to this proposal, AEMO will seek to make a determination that is consistent with the national electricity objective (NEO) and, where considering options, to select the one best aligned with the NEO.

The NEO is expressed in section 7 of the National Electricity Law as:

> to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system; and
>
> (c) the achievement of targets set by a participating jurisdiction—
>
> (i) for reducing Australia's greenhouse gas emissions; or
>
> (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

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3. List of material issues

The key material issues arising from the proposal or raised in submissions or consultation meetings are listed in the following table:

Table 2 List of material issues

No.	Issue	Raised by
1.	Minimum system security requirements	
	1. Broad discretion with no accountability for decisions	1 AEC, EUAA
	2. Set out detail for 'other' power system security requirements	2 EUAA, Shell Energy
	3. How other power system security requirements would be communicated to market	3 Energy Australia
	4. Appreciate approach of allowing some flexibility in the procedure	4 Energy Australia
	5. Consistency underlying AEMO's decision making supported	5 AGL
2.	System security services enablement	1 AGL, Shell Energy, EUAA
	1. Should not differentiate enablement approach between technologies	2 EUAA, Shell Energy
	2. Should not enable services for post contingency purposes	3 EUAA, Shell Energy
	3. Clarify what an enablement instruction amendment means	4 Tesla
	4. Short lead time services should be catered for in scheduler	5 Energy Australia, Shell Energy, EUAA
	5. Unclear how an undefined service could be included in automated enablement	
	6. Improving automation overtime should be a focus	6 Tesla
3.	Market information	1 Energy Australia
	1. Notify market of security services gap, enablement time and minimum time for service	2 EUAA, AGL, Shell Energy
	2. Notification of system security gap via market notice mechanism	3 Energy Australia, EUAA, Shell Energy
	3. Communication to market on manual enablement activity	
	4. Details on operational decision making for a manual amendment	4 Energy Australia, EUAA, Shell Energy
4.	Operational considerations	1 Energy Australia, Origin, EUAA, Shell Energy
	1. Cancellation period should be longer to avoid market disruption	2 Shell Energy, EUAA
	2. State the timeframe over which variable operational parameters should be restated	3 EUAA, Shell Energy, Tesla
	3. Assumptions for grid forming battery operation too conservative	4 Shell Energy, EUAA, Energy Australia
	4. Operators of private synchronous condensers should provide online status	5 Shell Energy, EUAA
	5. Rationale behind 4-hour minimum enablement notice period	6 Shell Energy, EUAA, Transgrid
	6. AEMO should adopt a more efficient assumption for multiple unit DUIDs	
5.	TNSP system security service agreements	
	1. TNSP contract requirements by AEMO is an overreach	1 EUAA
	2.Requirements must be sufficiently clear and certain for TNSPs to meet ISF Rule obligations	2 Transgrid
	3. AEMO must ensure that any enablement is consistent with the contracted service	3 Transgrid
	4. AEMO to ensure contracts reflect least cost	4 Energy Australia
	5. TNSPs use reasonable endeavours to meet the system strength standard	5 Powerlink
6.	Stable voltage waveform	
	1. Additional drafting to clarify when enablement for stable voltage waveform can occur	1 EUAA
	2. Appropriate for the period from 2 Dec 25 to 1 July 26	2 Energy Australia, Powerlink
7.	Enablement delegation	
	1. TNSP to calculate lowest market cost overall	1 EUAA
	2. Flexibility provided for is appropriate	2 TasNetworks
	3. Further work required prior to delegating	3 Tesla

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A detailed table of issues raised by stakeholders in written submissions to the consultation paper, together with AEMO's responses, is contained in Appendix B. Each of the material issues in Table 2 is discussed in Section 4.

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4. Discussion of material issues

4.1. Minimum system security requirements

4.1.1. Issue summary and submissions

AEC, EUAA and Shell Energy raised concerns around the broad discretion that the drafting in the SEP afforded AEMO with respect to 'other' power system security requirements and the lack of detail on these requirements including how these requirements would be communicated to the market.

Energy Australia supported the level of flexibility that will allow AEMO to iteratively improve their enablement processes and AGL considered that the approach to establishing minimum system security requirements provided a level of consistency and transparency in AEMO's underlying decision making.

Powerlink requests that the term reasonable endeavours in be used in Table 1 to reflect the NER requirement for TNSPs with respects to their system strength obligations.

4.1.2. AEMO's assessment

AEC, EUAA and Shell Energy submissions have referenced the wording *whatever is reasonably considered necessary by AEMO to maintain the power system in a secure operating state* in the SEP which is a direct quote from NER 4.4A.3(b)(7) of the ISF Rule. AEMO has been afforded this discretion under the NER and not under the SEP which is the subject of this consultation.

AEMO considers that the daily reporting (NER 4.4A.7(a)), annual reporting (NER 4.4A.7(b)) and adherence to the methodologies identified for assessing the system security need and enablement set out in the SEP should ensure guardrails for how AEMO is exercising its system security service enablement responsibilities on a day to day basis. AEMO will be open to feedback on these reports once publication commences.

AEMO agrees that when new services are identified it is important that these are communicated to the market including how the enablement principles (NER 4.4A.4), for example, minimising cost and enabling as close to the time of need as practical, are being met. This will occur through established processes such as the annual Transition Plan for System Security, Statements of Need, constraints and directions. As the flexibility in the NER and SEP is to allow AEMO to address system security issues that are not yet defined AEMO does not consider that it is appropriate to attempt to articulate in detail how they will be addressed in the SEP.

AEMO accepts that the term reasonable endeavours be included in the SEP in relation to Powerlink's concern. However, AEMO notes the AER's December 2024 guidance note AER - Efficient management of system strength framework - Guidance Note - 16 December 2024.pdf:

- (Page 10) "Reasonable endeavours means that the system strength standard does not need to be met at any cost and in all circumstances…"
- (Page 11) "…it may also be relevant for the SSSP to accept reasonable additional costs in implementing a solution in the planning timeframe in order to avoid the uncertainties and complexities of AEMO addressing a shortfall in the operational timeframe."

AEMO's expectation is that the full amount will be met unless a TNSP can demonstrate to the AER's satisfaction that it is unreasonable to do so. If a TNSP is not able to meet their obligations AEMO will need to take operational action to ensure system security. This includes market intervention, procurement of services at short notice and constraining off IBR.

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4.1.3. AEMO's conclusion

Update to the draft SEP has been made to clarify that a TNSP must use reasonable endeavours to meet its system strength obligations.

4.2. System security services enablement

4.2.1. Issue summary and submissions

AGL and Shell Energy consider it inappropriate to differentiate between technologies and that the SEP should allow for enablement payments to continue for synchronous generators when they have chosen to move into commercial operation. Shell Energy also raise concerns relating to scenarios where a participant may be identified erroneously as commercially operating.

EUAA and Shell Energy do not believe that enablement of system security services should occur for 'just in case' or 'post contingency' purposes prior to a contingency event. They also request clarification of what an enablement instruction amendment means.

Tesla identify that short activation time technologies should be catered for in the scheduler and support the goal of improving automated enablement capability over time.

Energy Australia, EUAA and Shell Energy raise the concern that it is unclear on how undefined services may be automated and Shell Energy further propose that automation should not be available to these services under the SEP.

4.2.2. AEMO's assessment

The enablement principles under NER 4.4A.4 require AEMO to use reasonable endeavours to ensure lowest cost enablement solutions and to only enable when services are required.

In meeting these principles, AEMO does not believe it appropriate to pay enablement for a service from an asset that makes a commercial decision (potentially facilitated by an activation payment) to increase its dispatch above the minimum level required to meet an enablement instruction and provides that service as a byproduct of commercial operation. Where an action must be taken to provide a service from an asset, regardless of online status or dispatch level, AEMO considers it reasonable to enable and pay for that service. In these scenarios commercial operation is identified by dispatch above the minimum dispatch level.

NER 4.2.6 requires AEMO to take reasonable actions to ensure it is able to bring the power system to a secure operating state within 30 mins following a contingency event. In phase one of implementation, scheduling will address an impending security gap and in the event of a credible contingency, a manual solution will be enacted which may consider available security contracts and directions. The rationale behind enablement instructions will remain aligned to the binding constraint in all cases. Future phases of implementation will seek to use the scheduler and automated enablement to meet the NER 4.2.6 obligation wherever possible.

An amendment is typically a change in start time or end time to an issued enablement instruction, it may also include a change to technical parameters such as number of units and minimum dispatch level. This detail has been added into the SEP.

AEMO has included an option to manage services through automated or manual enablement. In each case the principles established under the NER must be upheld. Where a service efficiently fits into the system solution then this will be adopted, otherwise manual enablement or directions will be required. AEMO does not agree that the SEP should prohibit the option of automated enablement but should instead allow flexibility based on

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the future definition and requirement of a service. The scheduler is designed to be able to handle the full range of activation lead times.

4.2.3. AEMO's conclusion

The meaning of an enablement instruction and an amendment to an enablement instruction have been clarified in the updated draft SEP.

4.3. Market information

4.3.1. Issue summary and submissions

Energy Australia requested information to the market on the security services gap, enablement time and minimum time for service. EUAA, AGL and Shell Energy requested information on a system security gap to be issued through a market notice mechanism. AGL also proposed adoption of framework for notification similar to that for LOR or MSL.

Energy Australia, EUAA and Shell Energy requested information to be made available for any manual change to the system generated enablement schedule and details on the operational decision making when making a change.

4.3.2. AEMO's assessment

AEMO does not consider it appropriate to document the form of system security service market notification in the SEP, noting this is not a requirement under NER 4.4A.6.

AEMO is intending to provide a pre-dispatch forecast view of system security service gap assessments to the market by region as part of a secondary phase of implementation. AEMO will consider provision of information relating to manually enabled services as these arise, noting that a level of systemisation may be required to provide forecast information.

AEMO notes that LOR arrangements are established in the NER. AEMO considers that a (pre-dispatch) forecast view of system security service gaps should provide sufficient transparency of these requirements and that adoption of a framework established for an alternative purpose is unwarranted.

Assessment of the suitability of a given enablement instruction, or manual enablement of a service, will be an operational decision based on constraints that bind and a wide range of complex inter-related system outcomes. AEMO does not consider it practical or appropriate to document further detail in the SEP on this operational decision making process. The 'day+1' report required under NER 4.4A.7 will provide clarity on the enablement instructions that were issued to providers and AEMO will provide information on the level of manual oversight as part of its annual report. Consistent with other reporting requirements AEMO welcomes ongoing feedback on these reports following publication.

4.3.3. AEMO's conclusion

AEMO is not proposing to make any changes to the SEP on these matters.

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4.4. Operational considerations

4.4.1. Issue summary and submissions

Shell Energy and EUAA requested that clarification is provided regarding the timeframe over which variable operating parameters needed to be restated and suggested that this should be no longer than the pre-dispatch timeframe.

Energy Australia, Origin, EUAA and Shell Energy raised concerns with the cancellation timing, being as little as 5 minutes prior to enablement, due to operational limitations of plant, the management of gas volumes and potential market disruption.

EUAA, Shell Energy and Tesla proposed that the assumptions for grid forming batteries that were not service providers being grid following was unnecessarily conservative and Tesla added that it should be taken into account that some batteries would be always grid forming as part of their GPS.

Shell Energy, EUAA, and Energy Australia proposed that the assumptions for private synchronous condensers was too conservative and that these entities should be required to provide information on their online status.

Shell Energy, EUAA and Transgrid proposed that AEMO should adopt a more efficient assumption for multiple unit DUIDs and Shell Energy proposed that AEMO should contact participants to understand their operational plans.

Shell Energy, EUAA and Energy Australia requested details on how AEMO have determined the 4-hour minimum enablement notice period.

4.4.2. AEMO's assessment

AEMO is requiring providers to submit 7-day forecast availability information to allow preparation for anticipated power system conditions. Scenarios include:

- lack of system security service provision
- network outage planning that can impact system security service availability
- long term system security service unavailability that may require preparation for directions
- unavailability of the ISF scheduler requiring preparedness for manual enablement.

The enablement principles under NER 4.4A.4 require AEMO to enable at lowest cost and not enable unless the enablement is required, in AEMO's reasonable opinion, to meet system security service requirements. AEMO believes that these obligations require the shortest practical timeframe for cancellation.

The implementation of an activation lead time and a minimum enablement duration (minimum run time) should allow a provider's operational timing to be managed. AEMO's in principle approach will be to honour the activation lead time and minimum enablement duration. An instruction will not typically be cancelled if the service is within its activation lead time in which case it will run until at least the end of any minimum enablement duration. However, to provide AEMO with the ability to manage unforeseen operational conditions that impact on power system security AEMO does not consider it appropriate to limit the ability to cancel an enablement instruction at short notice in the Security Enablement Procedure.

A short notice cancellation will typically only occur when a gap has reduced or a materially lower cost enablement option has been identified (taking into account that activation and minimum enablement duration costs will still be incurred). This likely results from changes in pre-dispatch which in themselves are likely to

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change spot market outcomes. AEMO agrees that enablement of system security services may impact market outcomes. The ISF Rule does not require this to be taken into account when enabling to meet the minimum system security requirements.

AEMO agrees that the use of conservative assumptions should be avoided wherever practical. AEMO will consider options to identify private synchronous condensers in a later phase of implementation. Under the ISF Rule AEMO has no power to oblige a party that is not a service provider to provide operational data to AEMO on their operational mode or availability. Providers will be obliged to comply with the SEP through their TNSP contracts.

AEMO agrees that conservative assumptions should be avoided where information is available to make this possible and will consider alternative approaches for DUIDs with multiple generating units in future phases of implementation. AEMO does not consider it practical to contact participants regarding their on the day multiple unit DUID dispatch plans and manually provide this information to the scheduler in an operational timeframe, noting that the participant may alter their plans at any time.

In setting the 4-hour minimum enablement period AEMO has made a judgement call based on experience between the need for a level of certainty and preparedness for security service providers with respect to enablement instructions, visibility to the market in predispatch, and the avoidance of multiple amendments to enablement instructions as information from pre-dispatch changes over time. This value is parametrised to allow for changes should the market advise they are warranted.

4.4.3. AEMO's conclusion

The timing requirements for variable operating parameters has been clarified in the updated draft SEP.

AEMO welcomes input on the suitability of the 4-hour minimum enablement period and is interested to understand arguments to support an alternative timing.

4.5. TNSP system security service agreements

4.5.1. Issue summary and submissions

The EUAA considers that the TNSP contract requirements are an overreach by AEMO.

Transgrid has identified that contract requirements must be sufficiently clear and certain for TNSPs to meet their ISF Rule obligations for 2 December 2025 and that any enablement is consistent with the service contracted.

Energy Australia proposes that AEMO ensure that TNSP contracts reflect least cost for the service procured.

4.5.2. AEMO's assessment

NER 4.4A.6(3) requires AEMO to establish minimum or recommended requirements of the system security services agreements to be entered into by TNSPs. This is to ensure there are guardrails that allow for AEMO's system to consume cost and operational parameters and estimate the relative costs of each service to meet the principle of least cost enablement. Nothing in the SEP stops a TNSP developing innovative commercial arrangements, however they must provide these terms to AEMO in a form that is compatible with the least cost enablement mechanism..

AEMO will approve technical aspects of the services procured in accordance with NER 5.20B.6(f) and 5.20C.4(f). AEMO has no role in reviewing a system security services contract to ensure it reflects lowest cost for the service. That function is carried out by the AER.

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AEMO agrees that there is value in adding further clarity that, where an as-yet undefined need arises and it is not possible to efficiently meet that need with an existing contract, then directions will be utilised until such time that the need has been formally defined and services procured for enablement.

4.5.3. AEMO's conclusion

An update to the draft SEP has been made to clarify that any enablement to meet a security service gap must be consistent with the service contracted.

4.6. Stable voltage waveform

4.6.1. Issue summary and submissions

EUAA has proposed that additional drafting be provided to clarify that stable voltage waveform is used only to achieve 'additional' IBR dispatch and that it should only be used if an overall cost benefit for market is achieved.

Energy Australia and Powerlink consider that the approach outlined is suitable, Energy Australia specifically identify up to July 2026.

4.6.2. AEMO's assessment

AEMO considers it appropriate to clarify that stable voltage waveform enablement should achieve 'additional' IBR dispatch. AEMO believes that the stable voltage waveform requirements definition under NER 4.4A.4(d) reproduced in the SEP is a sufficient description of what other items are to be achieved by enablement for this requirement at this time.

AEMO is proposing to engage in detail with stakeholders on stable voltage waveform requirements later in the year. This will be an opportunity to discuss the manner in which services not contracted directly to meet a TNSP's system strength obligations but more broadly used to increase IBR dispatch in accordance with the stable voltage waveform requirement will be considered and updates to the SEP proposed accordingly.

4.6.3. AEMO's conclusion

The requirement that stable voltage waveform enablement should achieve 'additional' IBR dispatch has been clarified in the updated draft SEP.

4.7. Enablement delegation

4.7.1. Issue summary and submissions

EUAA suggest that rather than this section focusing narrowly on dispatch based on the lower cost dispatch of the power system security service(s), it should instead require that the TNSP demonstrate the ability to calculate lowest market cost overall. The second dot point in this section should be amended to "The relevant TNSP can demonstrate a process for enabling system security services under contracts to meet requirements at lowest overall cost to Market Customers." and "AEMO is satisfied that TNSP enablement is an efficient outcome for the market overall."

Tesla consider that further work is required prior to any delegation to ensure it is the most efficient outcome.

TasNetworks considers that the drafting on delegation is suitable.

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4.7.2. AEMO's assessment

AEMO considers that the conditions as written in the SEP will ensure that delegation only occurs if it is an efficient outcome for the market and does not agree that additional wording is required. In particular, the request for additional or updated conditions does not appear to augment the requirements in the current SEP drafting.

AEMO agrees that each delegation should be assessed on its merits at the time and take into account considerations such as transparency and least cost. AEMO notes that daily reporting will be required under NER 4.4A.7 regardless of any delegation.

4.7.3. AEMO's conclusion

AEMO is not proposing to make any changes to the SEP on these matters.

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5. Other matters

AEMO has included a diagram in the SEP to illustrate how other procedures, and importantly those with consequential changes, interact with the SEP.

Updates have been made to allow for enablement during limited initial automation delivered on 2 December 2025 as well as in anticipation of delivery a fully automated solution.

The current process of gap analysis in Tasmania has been allowed for in Table 1 Implementing minimum system security requirements in the operational timeframe. Section 3.2.1 has been added to clarify the Tasmanian enablement process. This is considered the most efficient process for Tasmania, a situation which is unlikely to change until the efficient level of stable voltage waveform is no longer equivalent to the minimum level (anticipated around 2029).

AEMO intends to publish a factsheet on the Tasmanian gap assessment and enablement process for transparency. AEMO is intending to publish a draft of this fact sheet in late June to allow participants to consider its contents in the context of the SEP consultation.

The term ‘minimum run time’ is replaced with the term ‘minimum enablement duration’.

Appendix B addresses all substantive matters raised in submissions.

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6. Draft determination on proposal

Having considered the matters raised in submissions to the consultation paper AEMO's draft determination is to amend the draft Security Enablement Procedure in the form published with this draft report, in accordance with NER 4.4A.6(a).

As stated in Section 2.3, AEMO has sought to make a determination that is consistent with the NEO and considers how the Security Enablement Procedure contributes to the efficient operation and use of system security services with respect to cost and efficiency to ensure the security of the national electricity system.

Effective date

AEMO's proposed effective date for the Procedure is **31 August 2025.**

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Appendix A. Glossary

Term or acronym	Meaning
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
BESS	Battery energy storage system
IBR	Inverter based resources
DUID	Dispatchable Unit Identifier
EUAA	Energy Users Association of Australia
GPS	Generator performance standard
ISF Rule	National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024
LOR	Lack of reserve
NEM	National Electricity Market
NER	National Electricity Rules
MSL	Minimum system load
NEO	National Electricity Objective
NSCAS	Network support and control ancillary services
NZ	New Zealand
RERT	Reliability and Energy Reserve Trader
SEP	Security Enablement Procedures
SSSP	System strength service provider, system security service provider
TNSP	Transmission Network Service Provider
PV	Power(real)-Voltage
RERT	Reliability and Energy Reserve Trader
SEP	Security Enablement Procedures
SSSP	System strength service provider, system security service provider
TNSP	Transmission Network Service Provider

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Appendix B.List of Submissions and AEMO Responses

No.	Stakeholder	Issue	AEMO response
1	Australian Energy Council	' the proposals appear to provide extremely broad discretion for AEMO to exercise its powers under the rules and we can see no provisions that hold AEMO accountable for its decisions'	AEMO considers that the daily reporting (NER 4.4A.7(a)), annual reporting (NER 4.4A.7(b)) and adherence to the methodologies for assessing the system security need and enablement set out in the SEP should ensure guardrails for how AEMO is exercising its system security service enablement responsibilities on a day to day basis. The quotations from the SEP presented in the submissions are from the ISF Rule and repeated in the SEP ie. NER 4.4A.3(b)(7): *any other power system security requirements that AEMO determines from time to time are necessary to maintain the power system security standards.* This discretion is afforded by the ISF Rule and not by the SEP. The SEP outlines the way in which AEMO will determine system security requirements and enable them in adherence to the framework established in the ISF Rule. AEMO has intentionally avoided prescription in some areas to allow for development of the assessment and enablement of system security services over time to allow for a learn, review and improve process. It is not possible at this time to articulate how an unknown security requirement and service will be addressed in detail. However, AEMO will make this clear as the need eventuates through standard processes such as the Transition Plan, a Statement of Need, constraints and directions.
2	EUAA	' the essential system services are poorly defined and are "whatever is reasonably considered necessary by AEMO to maintain the power system in a secure operating state", which appears to be a catch-all statement that doesn't require AEMO to justify its actions.'	
3	EUAA	'We are concerned with the apparent total discretion that the proposed Security Enablement Procedures provide AEMO without defining the breadth and limits of that discretion: "Any other power system security requirements that AEMO determines from time to time are necessary to maintain the power system security standards" and "To be determined based on type of security need being addressed." This in effect provides complete discretion to AEMO to do whatever it determines may be required with respect to Security Enablement. Additionally, the procedure sets out no context regarding how this requirement or the identified need are determined.'	
4	Shell Energy	' Section 2 - Minimum System Security Requirements In Table 1 the procedures indicate: "Any other power system security requirements that AEMO determines from time to time are necessary to maintain the power system security standards" and "To be determined based on type of security need being addressed." Shell Energy considers this scope to be too broad. We recommend the procedure should set out in detail how any "other power system security requirement" will be determined including the need for the requirement and how this requirement will be communicated to the market.'	
5	Energy Australia	'We appreciate AEMO's general approach that the procedure provides for some flexibility, allowing it to learn and in turn revise its procedures over time.'	
6	Energy Australia	'We ask AEMO to clarify how "Any other power system security requirements that AEMO determines from time to time are necessary to maintain the power system security standards" would be communicated to the market. There is a risk that the process remains opaque despite the explicit purpose of the procedure to be transparent.'	

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No.	Stakeholder	Issue	AEMO response
7	AGL	' AEMO's proposed approach to managing and procuring Inertia and System Strength is to be consistent, as much as possible, with the Inertia Requirements Methodology and System Strength Requirements Methodology. As a general principle, AGL supports consistency underlying AEMO's decision making, as it provides greater transparency and predictability for market participants as to how powers will be exercised.'	AEMO notes this comment.
8	AGL	'AGL strongly supports the use of transparent, competitive procurement in managing transitional services needs … AGL encourages the use of a 'market notice' to inform participants what services are required, over what operational timeframe. For example, these notices could mirror LOR and MSL notifications, which provide an opportunity for participants to adjust their operations to respond to the market need. AGL suggests it is appropriate to mirror the short-notice RERT contracting and procurement process to manage transitional services needs. This is a known framework that allows for scheduling and activation of resources within the timeframes contemplated by the Procedures.'	While AEMO understands the need for transparency, AEMO does not consider it appropriate to document the form of system security service market notification in the SEP, noting this is not a requirement under NER 4.4A.6. AEMO is intending to provide a pre-dispatch forecast view of system security service gap assessments to the market by region as part of a secondary phase of implementation. AEMO will consider provision of information relating to manually enabled services as these arise, noting that a level of systemisation may be required to provide forecast information. AEMO notes that LOR and RERT arrangements are established in the NER. AEMO considers that a (pre-dispatch) forecast view of system security service gaps to be provided in phase 2 of implementation should provide sufficient transparency of these requirements and that adoption of a framework established for an alternative purpose is unwarranted. Assessment of the suitability of a given enablement instruction, or manual enablement of a service, will be an operational decision based on constraints that bind and a wide range of complex inter-related system outcomes. AEMO does not consider it practical or appropriate to document further detail in the SEP on this operational decision making process. The 'day+1' report will provide clarity on the enablement instructions that were issued to providers. AEMO will provide information on the level of manual oversight as part of its annual report.
9	Energy Australia	'Determination of erroneous enablement instructions and what is being communicated to the market'	
10	EUAA	'The proposed Security Enablement Procedures for automated system security services enablement: • do not include provision for an AEMO market notice to advise the Market that a power system security shortfall exists and the latest time at which AEMO intends to enable dispatch of the required essential system service.'	
11	EUAA	'Fallback enablement mechanism …. Where AEMO use this feature due to AEMO's determination that automated system "fails to provide a solution that addresses the security services gap", then AEMO must provide details of the cause of failure in the AEMO automated system in a timely manner prior to enablement to the Market, followed by a thorough investigation and incident report to the Market.'	
12	EUAA	The Security Enablement Procedure should set out details regarding how and when cancelling erroneous enablement instructions will be determined, the timeliness of notification to the Market and how said cancellations will impact the Market.'	
13	EUAA	Manual system security services enablement ... this section should contain provision for communication to the Market of a shortfall in power system security services and the latest time that AEMO intends to enable dispatch of a power system security service(s).	
14	Shell Energy	'3.1 Automated system security services enablement ... the procedure should include such a step to ensure that the market is aware of the need for a	

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No.	Stakeholder	Issue	AEMO response
		power system security service prior to the enablement of dispatch. Issuing a market notice reflects that enablement of dispatch of a power system security service occurs outside the natural dispatch which would have occurred based on a participant's bids, and as such warrants the step of information provision to the market. We recommend the market notice be published at the same time as AEMO develops its schedule requirements, but should appear in the Table ahead of the 'Develop Schedule' area and should be named the 'Advise Market of Security Service Shortfall'. Figure 2 would also need updating to include this step in AEMO's process.'	
15	Shell Energy	3.2 Manual system security services enablement Similar to the point we identified earlier around issuing market notices for automated system security services enablement, this section should contain provision for communication to the market of a shortfall in power system security services and the latest time that AEMO intends to enable dispatch of a power system security service(s).	
16	Shell Energy	3.3 Fallback enablement mechanism … Where AEMO uses this feature due to its determination that AEMO's automated system "fails to provide a solution that addresses the security services gap", then AEMO must provide details of the cause of failure of the automated system in a timely manner to the market. We also call for clarity around the "Cancel erroneous enablement instruction" and how AEMO will determine this. We recommend the Procedure sets out details regarding this.'	
17	Shell Energy	'… the procedures do not define what is meant by update or amendment to an enablement instruction. In our view, a definition is necessary in the procedures to clarify what is within scope. '	An amendment is typically a change in start time or end time to an issued enablement instruction. It may also include a change to technical parameters such as number of units and minimum dispatch level This detail will be added into the SEP.
18	EUAA	The Security Enablement Procedure fails to define what is meant by update or amend an enablement instruction and	
19	EUAA	'The proposed Security Enablement Procedures for automated system security services enablement:.... • Whilst AEMO suggests it will use the automated system security services enablement process for the enablement of "Any other power system security requirements that AEMO determines from time to time are necessary to maintain the power system security standards" it's unclear as to how the automated process could be used for an unknown and undefined service.'	AEMO has included an option to manage services through manual or automated enablement. In each case the principles established under the NER must be upheld. Where a service efficiently fits into the system solution then this will be adopted, otherwise manual enablement or directions will be required. AEMO does not agree that the SEP should prohibit the option of automated enablement but should instead allow flexibility based on the future definition and requirement of a service.
20	Shell Energy	'Shell Energy considers it is unclear as to how the automated process could be used for an unknown and undefined service. We propose that enablement of the "Any other power system security requirements that AEMO determines from time to time are necessary to maintain the power system security standards" should not be included in the automated process but be restricted to the manual scheduling process.'	

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No.	Stakeholder	Issue	AEMO response
21	Energy Australia	Rationale for including "other" services under the automated enablement since they are expected to occur rarely and could be part of the manual scheduling process	
22	Tesla	'if there are IT challenges for the automated enablement process, then a backup system is required. There are issues with the algorithm, then manual intervention is unavoidable, but it is expected the algorithm will be improved as time goes by and should not be viewed as a deterrent.'	
23	AGL	'We agree that batteries can provide services without dispatching or consuming energy, but AEMO's assumption does not take into account that a battery can also choose to run commercially, the same as any other asset. There is no clear justification for the different treatment of batteries versus other assets in this scenario, and it would be more appropriate to apply assumptions universally.'	The enablement principles under NER 4.4A.4 require AEMO to use reasonable endeavours to ensure lowest cost and only enable when services are required. In meeting these principles AEMO does not believe it appropriate to pay enablement for a service from an asset that makes a commercial decision (potentially facilitated by an activation payment) to increase its dispatch above the minimum level required to meet an enablement instruction and provides that service as a byproduct of commercial operation. Where an action must be taken to provide a service from an asset, regardless of online status or dispatch level, AEMO considers it reasonable to enable and pay for that service. AEMO does not consider it necessary to state in the SEP that a participant will not forfeit system security payments based on actions of mandatory narrow-brand primary frequency response, the result of a clause 4.9.3A ancillary services dispatch instruction, or out of merit dispatch by AEMO for the following reasons: • Units will be constrained to provide the service so should be unaffected by out of merit order outcomes. • AEMO will determine if a service is being provided based on a unit being online and operating at its required minimum dispatch level. Plant will be considered to have entered commercial operation if it bids a higher availability and is dispatched based on that availability or it is dispatching for no identifiable reason above its minimum level. Where it is unclear if a participant has entered commercial operation AEMO intends to communicate with the participant to clarify if this is the case. • The process by which this is managed for TNSP procured contracts is between the TNSP and the provider of the service.
24	AGL	'... we consider that transitional services should be paid as enabled, irrespective of whether a participant bids above their minimum dispatch target, so long as the service is still being provided. This ensures the service being provided is appropriately valued and rewarded in the market, as is the case with other market and non-market service provision'	
25	Shell Energy	'Spot market operation and enablement – It is unclear why AEMO intends to treat a grid forming BESS differently to a synchronous generating unit in this area. Although it is not unreasonable to consider that a grid forming BESS will provide the service simply because it is energised to the grid, the same outcome applies for a synchronous generator following synchronisation to the grid. In this case, a BESS should be treated the same as any other generator when generating active energy output into the grid, but it would not be unreasonable to continue to be paid the enablement payment when consuming energy from the grid, which would be consistent with the treatment of other scheduled loads in the market, including load consumed by a private synchronous condenser. Further, in considering if a synchronous generating unit or BESS had dispatched above its minimum or zero active energy output level in response to a dispatch instruction, the Procedure should be clear that this only applies to a dispatch instruction issued in accordance with clause 4.9.2 and which has been based on a participant's dispatch offers submitted under clause 3.8.6. A participant should not lose power system security services payments in a trading interval due to the actions of mandatory narrow-brand primary frequency response, the result of a clause 4.9.3A ancillary services dispatch instruction, or out of merit dispatch by AEMO. This should include any trading intervals where a generating unit, including a BESS, is returning to its clause 4.9.2 dispatch instruction level as a result of the above.'	
26	Shell Energy	'Section 3 - System Security Services Enablement	

No.	Stakeholder	Issue	AEMO response
		Based on our interpretation, the Procedure is unclear about the provision of power system security services from a resource connected to the grid by a grid forming inverter when energised. The procedure appears to indicate that AEMO will treat grid forming inverters differently to synchronous generating units in assessing the provision of any power system security services. In our view, AEMO's proposed approach risks creating an unreasonable level of discrimination between different technologies. We recommend that AEMO maintain a consistent approach to assessing the provision of power system security services by a resource connected by a grid forming inverter which is energised and a synchronous generating unit which is synchronised to the grid.'	
27	EUAA	'Fallback enablement mechanism While we agree that this is a required procedure in the event of automated system security services enablement failure, it should ensure that AEMO do not need to enable dispatch of "just in case" or "post contingency" power system security services prior to a contingency event.'	NER 4.2.6 requires AEMO to take reasonable actions to ensure it is able to bring the power system to a secure operating state within 30 mins following a contingency event. In phase one of implementation, scheduling will address an impending security gap and in the event of a credible contingency, a manual solution will be enacted which may consider available security contracts and directions. The rationale behind enablement instructions will remain aligned to the binding constraint in all cases. Future phases of implementation will seek to use the scheduler and automated enablement to meet the NER 4.2.6 obligation wherever possible.
28	Shell Energy	'3.3 Fallback enablement mechanism Shell Energy agrees that this is required, but suggests the final procedures should ensure that AEMO do not enable dispatch of "just in case" or "post contingency" power system security services prior to a contingency event. '	
29	Energy Australia	'encourages AEMO to consider the interaction between contractual obligation between TNSP and the service provider to ensure it reflects the lowest cost for delivering the service.'	NER 4.4A.6(3) requires AEMO to establish minimum or recommended requirements of the system security services agreements to be entered into by TNSPs. This is to ensure there are guardrails that allow for AEMO's system to consume cost and operational parameters and estimate the relative costs of each service to meet the principle of least cost enablement. Nothing in the SEP stops a TNSP developing innovative commercial arrangements, however they must provide these terms to AEMO in a form that can be ingested by the system AEMO will approve technical aspects of the services procured in accordance with 5.20B.6(f) and 5.20C.4(f). AEMO has no role in reviewing a system security services contract to ensure it reflects lowest cost for the service. That function is carried out by the AER. AEMO agrees that there is value in adding further clarity that where an as yet undefined need arises and it is not possible to efficiently meet that need with an existing contract then directions will be utilised until such time that the need has been formally defined and services procured for enablement.
30	EUUA	NSP System Security Services Agreements We believe that the requirements of AEMO with respect to TNSP system security service agreements is an over reach. These contractual obligations exist between the TNSP and the Service Provider and whilst AEMO needs to be aware of the costs at any time, AEMO should not seek to take precedent in determining what costs should and shouldn't be covered by the contract(s) it is not a party to. Assessing the prudent and efficient provision of these services is a role for the AER, not AEMO.	
31	Transgrid	'The procedure must provide TNSPs with sufficient certainty and clarity to enter into binding commercial agreements with non-network service providers to enable us to meet our compliance obligations under the ISF Rule from December 2025.'	
32	Transgrid	'The SEP must ensure that non-network services are enabled in a manner that is consistent with the intent and binding contractual terms agreed between the TNSP and the service provider. In circumstances where this is not possible or greater flexibility is required, AEMO should revert	

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No.	Stakeholder	Issue	AEMO response
		to issuing directions to achieve system security outcomes'	
33	Powerlink	'Powerlink's key concern relates to AEMO's description in the Draft Procedures, which currently proposes to require Transmission Network Service Providers (TNSPs) who are System Strength Service Providers to procure sufficient assets and services to ensure that these planning requirements can be met continuously (see Table 1, page 8). Powerlink considers this statement may potentially be misconstrued as a requirement for TNSPs to procure excess system strength services, which may not fully be utilised. We do not consider that this is the intent of the Draft Procedures, given the potential for significant additional costs for customers. To provide greater clarity to TNSPs and other key stakeholders, Powerlink recommends that AEMO align its description in the upcoming Final Procedures with clause S5.1.14(b) of the Rules, which requires TNSPs to use reasonable endeavours to "plan, design, maintain and operate" their network, or "make system strength services available to AEMO" where necessary to meet relevant obligations.'	AEMO accepts that the term reasonable endeavours be included in the SEP in relation to Powerlink's concern. However, AEMO notes the AER's December 2024 guidance note AER - Efficient management of system strength framework - Guidance Note - 16 December 2024.pdf: • (Page 10) "Reasonable endeavours means that the system strength standard does not need to be met at any cost and in all circumstances…" • (Page 11) "…it may also be relevant for the SSSP to accept reasonable additional costs in implementing a solution in the planning timeframe in order to avoid the uncertainties and complexities of AEMO addressing a shortfall in the operational timeframe." AEMO's expectation is that the full amount will be met unless a TNSP can demonstrate to the AER's satisfaction that it is unreasonable to do so.
34	Tesla	'Tesla notes there may be adverse impacts (such as increasing the costs of initial contracting with TNSPs) when there is system strength and inertia services from one asset, with only one service being renumerated.'	AEMO considers that if one service is the byproduct of enablement of a second service and vice versa that there should be no cost impact to enablement. Ensuring appropriate pricing is the role of the procuring TNSP.
35	EUUA	Looking at the proposed Security Enablement procedure in detail, we believe it will result in significant additional costs to consumers.	The SEP lays out how the ISF Rule framework will be met and the way in which AEMO will seek to minimise the cost of system security service enablement.
36	EUUA	'Enablement Delegation Whilst it is not unreasonable that TNSP's may be delegated the control of enablement and dispatch of power system security services, we suggest that rather than this section focusing narrowly on dispatch based on the lower cost dispatch of the power system security service(s), it should instead require that the TNSP demonstrate the ability to calculate lowest market cost overall. The second dot point in this section should be amended to; "The relevant TNSP can demonstrate a process for enabling system security services under contracts to meet requirements at lowest overall cost to Market Customers." and "AEMO is satisfied that TNSP enablement is an efficient outcome for the market overall." '	AEMO considers that the conditions as written in the SEP will ensure that delegation only occurs if it is an efficient outcome for the market and does not agree that additional wording is required. In particular, the request for additional or changed conditions does not appear to augment the following from the SEP: *The relevant TNSP can demonstrate a process for enabling system security services under contracts to meet requirements at lowest cost* - includes costs to all market participant categories. *AEMO is satisfied that TNSP enablement is an efficient outcome for the market* – means the whole market. AEMO agrees that each delegation should be assessed on its merits at the time and take into account considerations such as transparency and least cost. AEMO notes that daily reporting will be required under NER 4.4A.7 regardless of any delegation.
37	TasNetworks	TasNetworks considers that the added flexibility in AEMO's Draft SEPs to potentially delegated responsibility to TNSPs, and/or utilise a manual process of dispatch of system security services will ensure that TansNetworks can continue to deliver the least cost procurement of system strength and inertia services for Tasmanian	

No.	Stakeholder	Issue	AEMO response
		customers while maintaining power system security'	
38	Tesla	Tesla believes further work is needed before determining whether obligations of the ISF rule should be delegated from AEMO to TNSPs. Tesla is supportive of the work being undertaken by AEMO in designing the scheduler outlined in the proposal and suggests that AEMO managing enablement will provide the most transparent and least-cost outcome. Furthermore, Tesla believes AEMO is best suited to producing centralised and industry-consulted agreements for defining services such as a stable voltage waveform requirement, rather than these services being defined and quantified at a TNSP level.	
39	AGL	'AGL considers a mechanism that gleans parts of the New Zealand "frequency keeper" market is worth debating as an industry. The frequency keeper service runs 24/7, and participants offer to provide their asset to provide the service based on an availability bid. Frequency keeper provides for a participant to be made whole for any constrained on/off energy movements, with the primary incentive being the availability payment. Operationally, Transpower, the NZ system operator, dispatches the required services on a half-hourly basis based on participant offers. We consider a frequency keeper-type procurement model is consistent with the enablement principles in NER cl. 4.4A.4 and can be automated in AEMO's proposed security service scheduler. Further, it is foreseeable that a transitional services market could also operate 24/7 in certain regions, with the option to procure the service further in advance than 30 minutes when required (e.g., 8-12 hours).'	AEMO has proposed the SEP, and is implementing systems and processes for system security service enablement in compliance with obligations and requirements set under the ISF Rule. AEMO is proposing to automate enablement of system security services wherever possible.
40	EUAA	'we believe that the proposed rule change and procedure will not result in unbundling of the essential system services but will continue to rely exclusively on AEMO's continued use of regional generation bundles. This means that the provision of dispatch of additional market services such as ramping reserves, headroom and foot room and ancillary services headroom and foot room as well as MNBPFR headroom and foot room will not be transparent in the market'	AEMO has proposed the SEP, and is implementing systems and processes for system security service enablement, in compliance with the system security service definitions set under the ISF Rule. AEMO agrees that the need for damping is important as we are fundamentally changing the power system and may need to procure damping as an 'other' service in the future.
41	Tesla	'it is also crucial that a minimum amount of damping is maintained as NEM transitions to higher penetration of inverter based renewables. This requires the system wide small signal stability studies and identifying any gaps, with the potential to contract with assets that that can providing a damping service.'	
42	Tesla	'Tesla encourages consideration for how the enablement processes will co-optimise with real-time dispatch. The scheduler is a halfan-hour ahead scheduling process, and should also consider how to lead to the least-cost outcome for the real-time dispatch engine as well. Additionally, Tesla notes that grid-forming batteries, which will play a greater and greater role in providing security services, do not have a	AEMO has proposed the SEP, and is implementing systems and processes for system security service enablement in compliance with obligations and requirements set under the ISF Rule. The ISF Rule does not establish co-optimisation with energy and FCAS.

No.	Stakeholder	Issue	AEMO response
		lead time like the 8 hour thermal generation requirements, so the scheduler algorithms should prepare for future providers.'	The current solver design can consider variable activation lead times enabling a future of low-lead time services
43	Transgrid	'We appreciate that in the first instance, enablement processes may be manual, with an opportunity to become more automated and efficient over time. We encourage AEMO to prepare a roadmap of these improvements and timeline to share with impacted stakeholders.'	AEMO notes this suggestion and will consider how best to share information on future plans.
44	Energy Australia	'We recommend the procedures generally provide for AEMO to give more information to market participants. Notification to market participants of a shortfall and the expected time of enablement (it is suggested in the paper that it is 4 hours) The minimum time required for the service	AEMO is intending to provide a forecast view of system security service gap assessments to the market by region as part of a secondary phase of implementation. Enablement instructions will be issued at the activation lead time, 4 hours ahead or when the gap is identified, whichever is the longer. All enablement instructions will honour activation lead times. The minimum time required for a service will be determined by the granularity of the scheduler (initially 30 minutes), the length of the identified system security gap and the minimum enablement duration (minimum run time) of the service provider.
45	Energy Australia	'Market participants have a relatively long lead time to inform AEMO, yet any cancellation issued by AEMO can occur within 5 minutes. This could have impacts on market prices as decisions could have been made already based on pre-dispatch forecast with effects on the financial contract market. We would encourage AEMO to consider a longer cancellation timeframe.'	AEMO is requiring providers to submit 7-day forecast availability information to allow preparation for anticipated power system conditions. Scenarios include: • lack of system security service provision • network outage planning that can impact system security service availability • long term system security service unavailability that may require preparation for directions • unavailability of the ISF scheduler requiring preparedness for manual enablement The enablement principles under NER 4.4A.4 require AEMO to enable at lowest cost and not enable unless the enablement is required to meet system security service requirements. AEMO believes that these obligations require the shortest practical timeframe for cancellation. AEMO's in principle implementation approach for services with a minimum enablement duration (minimum run time) is to honour the activation lead time and minimum enablement duration. In most circumstances an instruction will not be cancelled within an activation lead time and will run until at least the end of any minimum enablement duration. AEMO believes that this should allow a provider's operational timing to be managed. AEMO considers it important to reserve the right under the ISF rule to cancel within short timeframes to manage exceptional and unforeseen operational circumstances that impact power system security.
46	Origin	'we appreciate that system conditions can change unpredictably, the cancellation of enablement instructions at short notice could result in operational issues / costs for providers. For example, if an enablement instruction to a gas-powered generator is cancelled abruptly and this generator is no longer required to run, the affected participant may not have sufficient time to renominate a substantial quantity of gas. If such a scenario occurred regularly, the associated costs could diminish incentives for service providers to contract with AEMO to offer system services. We encourage AEMO to consider how it might provide additional notice / certainty around the cancellation of enablement instructions to help service providers mitigate / manage associated operational risks.'	
47	EUAA	the cancellation of an enablement instruction with 5 minutes notice has the potential for significant Market disruption where other participants commitment or dispatch decisions have been based on the dispatch of the power system security service provider in the pre-dispatch forecast. Such an outcome has the real potential to increase spot market outcomes with flow on impacts to the financial contracts market. There should be a 60-minute notice period for the cancellation, updating or amending of an enablement instruction to allow for reasonable time for the updating of the pre-dispatch schedule. This is consistent with AEMO's view	

No.	Stakeholder	Issue	AEMO response
		that the market needs a reasonable time period of notice that a power system security service has been enabled.	A short notice cancellation will only occur when a gap has reduced or a materially lower cost enablement option has been identified (taking into account that activation and minimum enablement duration costs will still be incurred). This likely results from changes in predispatch which are in themselves likely to change spot market outcomes. AEMO agrees that enablement of system security services may impact market outcomes. The ISF Rule does not require this to be taken into account when enabling to meet the minimum system security requirements.
48	Shell Energy	Further, the cancellation of an enablement instruction with 5 minutes notice has the potential for significant market disruption. Participants' commitment or dispatch decisions will be influenced by the dispatch of the power system security service provider in the pre-dispatch forecast. As such, late cancellation of system security enablement has the real potential to increase spot market outcomes with flow on impacts to the financial contracts market. Shell Energy proposes that there should be a 60-minute notice period for the cancellation, updating or amending of an enablement instruction to allow for reasonable time for the updating of the pre-dispatch schedule. This is consistent with AEMO's view that the market needs a reasonable time period of notice that a power system security service has been enabled.	
49	Shell Energy	3.4.4 - Variable operational parameters required to be restated Under this section, the draft procedures state that a range of information to be provided to AEMO, including current and forecast availability. Shell Energy considers AEMO must indicate over what time period this information is required – within the pre-dispatch period, or the pre-dispatch and short-term projected assessment of system adequacy periods. We question how the information would be relevant for this procedure outside the pre-dispatch time periods given that enablement of the dispatch for power system security services is restricted to a maximum of 12 hours ahead of	
50	EUAA	Variable operational parameters required to be restated The procedure should indicate over what time period this information is required to be provided. Would it only need to be provided within the pre-dispatch period, or the pre-dispatch and short-term projected assessment of system adequacy periods. It is unclear how the information would be of relevance for this procedure outside the pre-dispatch time periods given that enablement of the dispatch for power system security services is restricted to a maximum of 12 hours ahead of dispatch.	
51	EUAA	'The procedure should be clear regarding the provision of power system security services by a resource connected via a grid forming inverter which is energised to the power system consistent with the way a synchronous generating unit which is synchronised to the grid with regards to the provision of power system security services from that resource. That is, the procedure should not simply conclude that power system security services from a grid forming connected resource is unavailable unless the resource is enabled for the provision of a power system security service.'	AEMO agrees that the use of conservative assumptions should be avoided wherever practical. AEMO will consider options to identify batteries that are in grid forming mode, for example they are required to operate under grid forming mode as part of their connection agreement, for implementation in a later phase. Under the ISF Rule AEMO has no power to oblige a party that is not a service provider to provide operational data to AEMO on their operational mode or availability.

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52	EUAA	'Grid forming batteries – the proposed Security Enablement Procedure imply that AEMO will assume that a resource connected to the grid by a grid forming inverter when energised is operating in grid following operational mode unless stated otherwise. This proposed procedure maximises the need for AEMO intervention rather than the preferred minimum intervention. The Security Enablement Procedure should set out what steps AEMO intend to employ to ensure that they have the current status of grid-forming BESS, without using the assumption that the battery is in grid following mode. Again, the grid-forming assumption should be the fallback position where information can't be obtained This will ensure that unnecessary enablement of a power system security service does not occur.'	Providers will be obliged to comply with the SEP through their TNSP contracts.
53	Shell Energy	'Grid forming batteries – The table [4] implies that AEMO will assume that a resource connected to the grid by a grid forming inverter when energised is operating in grid following operational mode unless stated otherwise. Shell Energy considers it is better to understand how these kinds of resources operate and whether resources generally operate in such a manner. In addition, the Draft report should set out what steps AEMO intends to employ to ensure that providers with grid forming BESS are aware of the need to provide the required information with regards to operating mode in the Provider Interface. We also recommend that AEMO opens up the provider interface so that non-registered providers may also provide information regarding intended operation status of BESS connected via grid forming inverter. This will ensure that unnecessary enablement of a power system security service node not occur''	
54	Tesla	Tesla notes that a key assumption in table four is that grid-forming batteries are assumed to be providing no inertia or system strength unless contracted or enabled to do so. If the battery met grid forming Generator Performance Standards (GPS), then it will be maintained in grid-forming mode rather than grid-following. However, any grid-forming responses will be balanced with other operational and contractual requirements including energy dispatch. Tesla welcomes further discussion with AEMO on this topic on how to best quantify the contribution from grid-forming batteries when calculating the system security gap.	
55	Shell Energy	'Private Synchronous Condensers – AEMO's proposed draft approach appears to be reasonable. Notwithstanding, the Draft report should set out what steps AEMO intends to employ to ensure that providers of power system security services including participants operating private synchronous condensers are aware of the information requirements in the Provider Interface. AEMO has also indicated that where a synchronous condenser is not a registered provider and is not controlled by a TNSP, AEMO	AEMO agrees that the use of conservative assumptions should be avoided wherever practical. AEMO will consider options to identify private synchronous condensers in a later phase of implementation. Under the ISF Rule AEMO has no power to oblige a party that is not a service provider to provide operational data to AEMO on their operational mode or availability. Providers will be obliged to comply with the SEP through their TNSP contracts.

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		will assume the synchronous condenser is not on-line. Similar to the issues we raise above regarding grid-forming batteries, we recommend that AEMO open the Provider Interface so that non-registered providers can provide information regarding the intended operation status of a synchronous condenser. This will ensure that unnecessary enablement of a power system security service does not occur.'	
56	EUAA	Private Synchronous Condensers - the Security Enablement Procedure should set out what steps AEMO intend to employ to ensure that they have the current status of private synchronous condensers which are a power system security service provider. AEMO have also indicated that where a synchronous condenser is not a registered provider and is not controlled by a TNSP, AEMO will assume the synchronous condenser is not on-line. We recommend that AEMO open up the Provider Interface so that non registered providers may also provide information regarding intended operation status of a synchronous condenser. This will ensure that unnecessary enablement of a power system security service does not occur.	
57	EUAA	The proposed Security Enablement Procedures for automated system security services enablement:.... • suggest that AEMO will implement a 4-hour minimum notice period for enablement of a power system security service provider but have not provided details of whether this is the most effective or efficient timeframe for notice.	AEMO has made a judgement call based on experience between the need for a level of certainty and preparedness for security service providers with respect to enablement instructions, visibility to the market in predispatch and the avoidance of multiple amendments to enablement instructions as information from pre-dispatch changes over time. AEMO welcomes input on the suitability of this timing and is interested to understand arguments to support an alternative timing. This value is parametrised to allow for changes should the market advise they are warranted.
58	Shell Energy	Figure 2 suggests that AEMO will implement a 4-hour minimum notice period for enablement of a power system security service provider.... AEMO has not provided detail as to how the 4-hour minimum was determined. Shell Energy does not dispute that this notice period may be required, but for transparency purposes, we believe AEMO should provide details as to how the minimum notice period was determined.	
59	EUAA	DUID with multiple generating units – where an aggregated DUID has multiple physical units, the proposed Security Enablement Procedure indicate an intention to "assume the worst-case scenario". Whilst this is not unreasonable, it may result in the unnecessary dispatch of other power system security services. We propose that AEMO amend the Procedure to such that the first priority requires AEMO to receive or obtain direct information from the Participant regarding the number of physical units that will be in-service. The use of the "worst case scenario" should be the fallback position where information can't be obtained.	AEMO agrees that conservative assumptions should be avoided where information is available to make this possible and will consider alternative approaches for DUIDs with multiple generating units in future phases of implementation. AEMO does not consider it practical to contact participants regarding their on the day multiple unit DUID dispatch plans and manually provide this information to the scheduler in an operational timeframe, noting that the participant may alter their plans at any time.
60	Shell Energy	DUID with multiple generating units – where an aggregated DUID has multiple physical units, AEMO have indicated an intention to "assume the worst-case scenario". While this is not unreasonable, it may result in the unnecessary dispatch of other power system security services. We recommend the procedure be amended to require that AEMO, as a first priority, obtains	

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		direct information from the Participant regarding the number of physical units that will be in-service. This could be provided via the Provider Interface. The use of the "worst case scenario" should be the fallback position where information	
61	Transgrid	The SEP must be as efficient as possible and minimise unnecessary enablement as much as possible, to ensure that value for consumers is maximised. This includes the efficient enablement of power stations with multiple physical units and a single DUID.'	
62	EUAA	'Stable Voltage Waveform Requirements Enablement process Power system strength services to meet stable voltage waveform requirements should only be dispatched where dispatch of the service will result in additional dispatch from an inverter connected resource which would result in a reduction in the value of the total costs to the market at dispatch, otherwise market customers will simply incur the additional cost of the dispatch of the power system strength service for a negative benefit. The first dot point in this section should be amended by the addition of the word "additional" in the nominated area. "Receive limits advice from the relevant TNSP that articulates which system strength services should be considered for enablement, and which IBR units' additional dispatch is supported by the enablement of such system strength services" AEMO's process should include the provision that the enablement process of power system security services to meet stable voltage waveforms requirements should not simply result in the transfer of active energy output between inverter connected resources as this would be inefficient. We suggest an additional dot point between the first and second dot points as follows; "Determine if dispatch of additional active energy output from the identified IBR unit(s) will result in an overall cost benefit to the market including the costs of dispatching the power system security service." '	AEMO will add the word additional to the following in the SEP: Receive limits advice from the relevant TNSP that articulates which system strength services should be considered for enablement, and which IBR units' additional dispatch is supported by the enablement of such system strength services. AEMO is proposing to conduct a more fulsome discussion with the market on stable voltage waveform requirements later in the year. At this time the manner in which services not contracted directly to meet a TNSP's system strength obligations but more broadly used to increase IBR dispatch will be considered and updates to the SEP proposed accordingly.
63	Tesla	Tesla welcomes further briefings from AEMO on section 3.4 stable voltage waveform requirements.	
64	Energy Australia	'For the period of 2 December 2025 and 1 July 2026, EnergyAustralia supports the approach proposed by AEMO to engage with TNSPs to address any system strength enablement for stable voltage waveform requirements. We consider that for enablement it is important to determine the additional IBR unit dispatched to avoid inefficient outcomes related to the cost of overall energy dispatch at the time of enablement. This would align with the principles of low market costs.'	AEMO is proposing to conduct a more fulsome discussion with the market on stable voltage waveform requirements later in the year. At this time the manner in which services not contracted directly to meet a TNSP's system strength obligations but more broadly used to increase IBR dispatch will be considered and updates to the SEP proposed accordingly.
65	Powerlink	'supports the proposed methodologies outlined in the Draft Procedures to: • determine the minimum system security requirements;	AEMO notes this support.

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		• enable system security services in accordance with clause 4.4A.4 of the National Electricity Rules (Rules); and • determine and enable system strength services to meet stable voltage waveform requirements'	
66	Tesla	'Tesla seeks clarification on the definition of stable voltage waveform requirements, and how this differentiates from conventional voltage stability such as Criterion 2 - Change in voltage phase angle. Tesla's current understanding is that this criterion according to the descriptions is similar to conventional PV curve analysis.	The definition of stable voltage waveform requirements under NER 4.4A.1 (b) is *system strength services to achieve and maintain stable voltage waveforms for the level and type of inverter based resources and market network service facilities that AEMO forecasts would be dispatched in the relevant trading interval if this were not limited by system strength services*. The stable voltage waveform requirements aim to ensure there is sufficient system strength to accommodate the dispatch of IBR that would otherwise be constrained, through scheduling services in a steady-state domain; as opposed to voltage stability which seeks to maintain stable and controllable voltages at all locations following a contingency, which P-V curve analysis supports as a response in the real-time domain.
65	Energy Australia	'there may be benefits in opening the provider interface to non-registered providers that may share information regarding their operating status such as a private synchronous condenser to avoid unnecessary enablement of a power system security service.... If non-registered providers inform the gap analysis, this point should be made clearer in the final determination.'	The SEP glossary defines a Provider as *A System Security Service Provider who is providing system security services, or a party who has agreed with a System Security Service Provider to provide system security services, as appropriate*. Under the ISF Rule AEMO has no power to oblige a party that is not a service provider to provide operational data to AEMO on their operational mode or availability. Providers will be obliged to comply with the SEP through their TNSP contracts. Availability information from all Providers will be used in determining a system security services gap.
66	Shell Energy	Technical working group forum Finally, we suggest that once AEMO has undertaken a review of submissions to this consultation, there would be value in AEMO hosting a technical working group forum to further discuss and consider issues raised in stakeholder submissions. Shell Energy would be interested in participating if such a Forum were to be scheduled.	AEMO is proposing to hold a forum in early June 2025.
67	Tesla	Tesla welcomes further engagement with AEMO on this topic.	
68	Transgrid	It is essential that we have access to clear and accurate settlements-grade data about when our contracted services are available, activated and enabled, so that we can calculate liabilities and make payments to service providers in a timely manner. This requires clarity about when contracts are enabled vs operating in spot market (as the payment arrangements are different in each case).	AEMO notes this requirement and will continue to engage with TNSPs on the reports that they will receive to support their settlement obligations.
69	Lynette LaBlack	The current approach centralises too much power in AEMO without adequate checks and	AEMO considers that the daily reporting (NER 4.4A.7(a)), annual reporting (NER

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		balances. Enablement instructions should be subject to mandatory public reporting, cost-benefit analysis, and third-party oversight.	4.4A.7(b)) and adherence to the methodologies for assessing the system security need and enablement set out in the SEP should ensure guardrails for how AEMO is exercising its system security service enablement responsibilities on a day to day basis. Third party oversight is provided by the AER.

Version release history

Version	Publication Date	Summary of Changes
Initial	13 June 2025	-
Update	20 June 2025	Update to correctly attribute issue to Energy Australia (and not AGL)

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