Australian Energy Market Commission

RULE

Consultation paper

National Electricity Amendment (Security framework enhancements) Rule

National Electricity Amendment (Clarity and transparency in security frameworks) Rule

Proponents
Australian Energy Market Operator (ERC0424)
Australian Energy Council and Clean Energy Council (ERC0428)

12 March 2026

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Reference: ERC0424 and ERC0428

About the AEMC

The AEMC reports to the energy ministers. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the energy ministers.

Acknowledgement of Country

The AEMC acknowledges and shows respect for the Traditional Custodians of the many different lands across Australia on which we live and work. The AEMC office is located on the land of the Gadigal people of the Eora nation. We pay respect to all Elders past and present, and to the enduring connection of Aboriginal and Torres Strait Islander peoples to Country.

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Summary

1 The Australian Energy Market Commission (AEMC or Commission) has received two rule change requests relating to the current frameworks for system security in the National Electricity Market (NEM); one from the Australian Energy Market Operator (AEMO) and one from the Australian Energy Council (AEC) and the Clean Energy Council (CEC).

- AEMO's rule change request seeks enhancements to the system strength, inertia and network support and control ancillary services (NSCAS) frameworks, with associated changes proposed to the regulatory investment test for transmission (RIT-T) process and notice of closure for generators. The changes aim to ensure the frameworks are set up to provide sufficient time and flexibility to respond to the range of variables that can alter system conditions and the resources available to maintain system security. It was received on 17 November 2025.
- The AEC and CEC's rule change request seeks to improve accountability and transparency in system security planning and provision, with a focus on ensuring that the governance arrangements elicit clear, consistent and timely investment signals. It was received on 21 January 2026.

2 Efficient and effective system security frameworks are necessary to support the transition to a lower- and ultimately net zero-emissions power system. While the rule change requests are distinct, they raise related issues and are directed at the effective operation of the current frameworks during a period of rapid change in the power system. Accordingly, the AEMC has commenced its consideration of both rule change requests, and this joint consultation paper is the first stage. After this consultation stage, the Commission will determine how to progress the rule changes and whether to consolidate them or continue them as two separate processes.

3 We are seeking your feedback on the problems raised in the rule change requests and the materiality of the problems, the solution set and any alternative solutions, and how we propose to assess if each request will promote the long-term interest of consumers.

The rule change requests focus on enhancing the current system security frameworks in the NEM

4 Australia's power system is undergoing a rapid and far-reaching transformation. High penetrations of renewable generation, supported by batteries and flexible demand, offer the prospect of a power system with lower operating costs, reduced fuel price exposure and improved resilience. However, realising these opportunities depends on ensuring that the power system can continue to operate securely as the generation mix changes.

5 Maintaining a secure power system relies on effectively managing transition points in the NEM, where changes in generation mix, network configuration or operating conditions may materially alter the level or type of security services required. The rule change requests from AEMO and the AEC and CEC both speak to the inherent tensions we face when achieving this. In particular:

- Regulatory oversight is needed to achieve efficient provision of security services throughout the transition and protect consumers from undue costs, but timing and process limitations may be hindering the ability of transmission network service providers (TNSPs) to deliver assets within the required timeframes.

- Our understanding of, and confidence with, new technologies is still evolving, meaning flexibility is required so that the frameworks can incorporate new technologies and innovative solutions as they emerge.
- Investors are seeking greater clarity about future security needs in an increasingly uncertain environment, so they can consider opportunities to provide security capabilities in their broader investment decisions - and so the frameworks can ultimately incentivise providers to offer services at least cost to consumers.

6 Ultimately, consumers face exposure to risks and costs when it comes to maintaining system security, as an insecure system can impose material costs on consumers, for example, through increased use of directions and higher prices, or supply interruptions.

We are seeking your views on the limitations in the current security frameworks

7 The current frameworks for system security have undergone a series of rule changes over the last five years that have aimed to ensure timely procurement ahead of system security issues arising, and encourage innovation in the provision of security services. Some aspects of the frameworks have only recently been implemented or have become effective. Specifically:

- There are proactive procurement frameworks in place for system strength, inertia, and NSCAS.
- Obligations on TNSPs under the system strength frameworkcame into effect in December 2025. TNSPs have undergone system strength RIT-Ts over the previous two to three years and have started procuring solutions.
- New inertia procurement obligations for TNSPs will begin in December 2027, and there is a new inertia network service specification in place.
- AEMO has implemented a scheduling approach to enable security services to support dispatch - and will evolve this approach over time.
- AEMO has now published and sought stakeholder feedback on two annual Transition Plans for System Security (TPSS).
- AEMO now has powers to procure Type 1 and Type 2 transitional services to manage gaps in security services and conduct trials of emerging security capabilities. AEMO has recently begun procurement for both types of services.

8 The problems raised by both proponents in their rule change requests reflect the perspectives of the system operator and industry participants on how the frameworks are operating in practice to date.

9 Both rule change requests raise problems with the ability of the current security frameworks in the National Electricity Rules (NER or the Rules) to effectively and efficiently deliver a secure system.

- AEMO's rule change request focuses on issues with frameworks for system strength, inertia and NSCAS, as well as the RIT-T process for procuring security services and generator notice of closure obligations.
- The AEC and CEC focus on issues with governance and transparency in system security planning and provision, and particularly call out obligations on different parties in the Rules and the annual TPSS process.

10 Through this consultation paper, we are particularly interested in stakeholder information and evidence to help us understand the problems raised and show where previous assumptions may not have played out in practice.

11 These rule change requests are one component of a wide range of work programs that are considering how best to support system security through the transition.

12 The AEMC has been working collaboratively with the other market bodies and the Federal Government to progress a National System Security Action Plan since mid-2025. The plan is aiming 'to ensure the power systems remain strong and stable as energy systems transitions to higher penetrations of renewable energy', and was discussed in December 2025 by the Energy and Climate Change Ministerial Council (ECMC) (for further information, refer to the ECMC Meeting Communique, 16 December 2025, p. 3). The AEMC's progression of the issues contained in this paper will support this plan.

13 As we progress through the rule change process, it will be important for the Commission to consider the other related work programs that are detailed in this paper, to ensure consistency and complimentary of reform work and to ensure security is provided in a timely and efficient way, provides clarity on opportunities to investors, and ultimately delivers the best security and cost outcomes for consumers. In particular, we note the importance of consistency with the potential future direction of the Energy Services Entry Mechanism (ESEM), as recommended in the NEM wholesale market settings review.

The proponents consider there is a misalignment in timing of planning and procurement against transition points

14 Both proponents raise issues related to lengthy timelines for system security procurement, and subsequent investment, which can delay provision of system services and contribute to market uncertainty. The cost to consumers of delays can be very large given the risks of not meeting security requirements, as well as the potential for investment duplication.

15 Currently, TNSPs have three years from the publication of system security reports to ensure that sufficient system strength and inertia is available in their networks. AEMO suggests that the timeline for TNSP obligations is too short due to a number of contributing factors that have played out in initial procurement under the system strength framework:

- TNSP assessment and investment approval requires significant time and resources, leaving little time for procurement activities within the three-year window.
- The assets that TNSPs are seeking to procure have long lead times, meaning that a three-year timeframe is too short, even if the RIT-T approval process was shortened.
- TNSPs do not have incentives to procure and commission solutions, or begin early works, ahead of their binding compliance dates (that is, three years after the relevant report).

16 AEMO considers that there is insufficient lead time between the relatively short timeframes for planning information, including notice of closure information, and the longer lead times required for response from TNSPs and market participants/investors.

17 AEMO also considers that the minimum 42 months (3.5 years) notice of closure for retiring plant may not give enough time for:

- AEMO and TNSPs to identify, assess and procure options to replace security service provision
- Investors to know and be able to depend on market needs to improve revenue certainty, secure financing and deliver large-scale investments.

18 The timely provision of the right information to support investment is also a key theme in the AEC & CEC rule change request (see below). The AEC and CEC raise that there is insufficient lead time in planning cycles for investors to factor in security needs and the need for potential/additional capabilities. This may mean that incoming projects miss out on commercial opportunities to

negotiate and sign contracts with TNSPs, including contracts for co-optimised solutions, such that consumers potentially miss out on lower-cost solutions (for example, clutched gas turbines or grid forming batteries).

The proponents consider that assessment and procurement processes do not facilitate efficient and timely investment in security

19 Both proponents raise concerns related to the assessment and procurement process for system security investments. This may limit competition, extend assessment timelines (as above), and lead to elevated costs to consumers.

20 AEMO raises that the assessment process for system security investments is lengthy and complex, and requires significant time and resources.

21 TNSPs use the RIT-T to assess options to meet security needs. This includes three stages of consultation and detailed market modelling to assess network wide market benefits. They may then need to submit a contingent project application (CPA) to the Australian Energy Regulator (AER) to adjust their revenue to fund security investments. This assessment process is intended to provide sufficient oversight of network expenditure and ensure the proposed services maximise net benefits.

22 AEMO is concerned that the current process may not strike an appropriate balance between oversight of network spending, selecting lower-cost solutions and enabling timely investment.

23 The AEC and CEC also consider that there are barriers related to assessment and procurement processes that restrict non-network proponents participating in the provision of system security services. We understand that these barriers may include, but are not limited to, issues relating to:

- the length and complexity of the assessment process, including the many process steps and stages of interaction with industry (as raised by AEMO)
- the different and inconsistent approaches used, and underlying technical capability requirements, by each TNSP to seek expressions of interest from and go out to tender for non-network options (see below).

AEMO considers that there are limitations with the NSCAS framework for addressing short-term security gaps

24 The NSCAS framework is intended to act as a backstop mechanism for unexpected or unprecedented security or reliability 'gaps' that may arise at short notice. AEMO considers there are limitations on its use of the NSCAS framework to procure security services in short timeframes, which reduce its effectiveness as a backstop mechanism.

25 In particular, AEMO can only declare an NSCAS gap for system strength or inertia if it has revised the underlying security requirement. That is, if AEMO has determined that the underlying security requirements have not increased, but it considers there is a risk that the security requirement will not be met, then it cannot declare an NSCAS gap to trigger NSCAS procurement. AEMO can also only declare an NSCAS gap for the minimum level of system strength, and not for the stable voltage waveform.

26 AEMO also considers that the three-year timeframe for NSCAS procurement of system strength and inertia may be too short for it to act as an efficient backstop procurement mechanism. This arises due to the same issues as AEMO's general procurement timeframe concerns: the length of assessment and procurement processes are proving to be longer in practice than the timing of the security need arising.

The AEC and CEC consider that the efficient delivery of security services is limited by issues with governance and transparency

27 The AEC and CEC consider that governance gaps in the current frameworks raise accountability and transparency concerns, compromising the efficient and timely delivery of new services, and skewing investment towards network solutions. The proponents identify a number of detailed issues:

- There is uncertainty about when and where investment in security will be delivered because there is no single party that is accountable for the successful deployment of essential system services (ESS)
- Forward planning signals do not provide sufficient lead time for investment in ESS or cooptimisation with procurement of other resources, increasing the risk of investment duplication and additional consumer costs.
- There is a lack of clarity and standardisation across regions in ESS procurement processes, which limits commercial appetite to provide non-network security options.
- There is also uncertainty and risk for potential providers of ESS (particularly in innovative technologies like batteries) arising from the lack of clearly defined:
  - investment targets for ESS, and
  - specific service definitions, technical standards, and ESS technological specifications.

28 These issues focus on the core problem of uncertainty for investors in security services, caused by a lack of clarity in roles, security requirements, and procurement processes across the security frameworks - which are all aspects of the governance of the frameworks.

29 The AEC and CEC consider that this weakens the forward-planning signals for security services, and the frameworks therefore do not provide sufficient incentives or lead times for new investments to provide security capabilities. The proponents consider that this leads to:

- inefficient outcomes for system security, potential duplication of investment, and higher costs to consumers, because the frameworks are not able to fully incentivise co-optimised investment in multi-service investment (for example, procuring security services in parallel with energy)
- security risks, because if investors are not provided clear and timely incentives to provide security capabilities when and where they are needed, this can lead to critical services not being available when and where they are needed, and creates the potential for suboptimal outcomes like delayed closure of synchronous plant and market interventions.

We are also seeking your views on the package of proposed solutions

30 Both rule change requests raise a range of solutions to the problems identified across both requests. We are seeking stakeholder views to further develop these options and propose other options, drawing on examples from stakeholder experiences implementing the frameworks.

31 To encourage on time and efficient procurement of security services, AEMO proposes:

- extending the binding requirement for meeting system security specifications for inertia and system strength from three years to five years
- a streamlined or alternative RIT-T for system security investments, including access to early works funding
- extending notice of closure obligations from 42 months (3.5 years) to five years

32 The AEC and CEC also propose more consistency in how jurisdictions define and procure ESS

(discussed further below).

33 To address limitations with the ability of NSCAS to address short-term security gaps, AEMO proposes:

- removing the requirement for AEMO to have revised the inertia or system strength requirements to declare an NSCAS gap
- allowing the NSCAS framework to procure system strength to achieve stable voltage waveforms (also known as 'efficient levels of system strength'), rather than just the minimum security requirement
- extending the time period within which an NSCAS gap can be declared, to align any changes to the timelines for TNSP binding requirements (see the proposal above)
- subjecting system strength and inertia NSCAS to a streamlined investment approval process and have access to early works funding, to align with any changes to the RIT-T process.

34 To address governance and transparency concerns, the AEC and CEC propose:

- embedding principles in the Rules to elevate the strategic importance of AEMO's annual TPSS, to guide what the TPSS must cover, and specify that it must include actionable plans for investment, 10 years ahead of the earliest relevant identified security requirements. AEMO would also need to identify new ways of providing ESS.
- amending the Rules so that a single entity (such as an industry or consumer panel) is responsible for determining the 'efficient' levels of each essential service to be procured. In doing this, the proponents propose that the responsible party would be required to consider factors including (but not limited to):
  - what scenarios should be planned for through forward investment vs operational management (e.g. delays to asset delivery, weather events, seasonal operation of synchronous plants, changes in uptake of inverter-based resources (IBRs)
  - the level of risk to be maintained
  - lead times for investment, and
  - the backstop mechanism to address gaps.
- amending the Rules to require that procurement processes, the determination of security service specifications and the determination of the appropriate future technology mix are standardised across the NEM.

35 The proponents consider that, if implemented, the proposals could support a more timely, transparent and coordinated approach to delivering the services required to operate the power system securely as thermal generation retires and the penetration of IBRs increases. These changes could provide clearer signals to investors, improve the cost-effectiveness of procurement, and reduce reliance on last-minute operational interventions.

We are seeking your views on a number of timing, coordination and implementation factors

36 The rule change requests raise a broad range of issues and solutions. There are further details to test and work through to understand the magnitude of the problems, the potential design of the proposed solutions, potential alternative solutions, and the costs and benefits of the different options.

37 The Commission considers there are a number of timing, coordination and implementation factors that may impact how we ultimately consider the magnitude and urgency of the issues

raised in the rule change requests and the benefits of different pathways to progressing potential solutions.

38 We are seeking stakeholder feedback on the considerations we have identified, which include that:

- **Some of the issues identified in the requests are resulting in risks to achieving system security in the near- to medium-term,** so there may be benefits in progressing consideration of some proposals ahead of others.
- **The frameworks in their current form were relatively recently implemented,** with some aspects of the frameworks still being embedded and familiarity with the frameworks among market participants still developing. There may be benefits in gathering more information about how the frameworks are playing out in practice before progressing some issues and solutions.
- **The first round of TNSP RIT-Ts has been completed and procurement/investment is being progressed,** so changes made in the near-term will have little to no impact on current procurement.
- **The next round of system security reports (system strength, inertia and NSCAS) are due to be released on 1 December 2026,** and will dictate if there are any further activities (for example, new RIT-Ts) that TNSPs need to undertake to meet their obligations under the framework. We are interested in views and information on how the rule change proposals could, or should, interact with the timing of these reporting cycles
- **There are a number of work programs (either ongoing or soon-to-be-initiated) that may touch on adjacent topics,** including the AEMC's Electricity Network Regulation Review, the AEMC's Review of the Integrated System Plan (ISP) framework, the Review of AEMO Governance and potential further work on the Electricity Services Entry Mechanism (ESEM). It may be worthwhile waiting to make some changes until these processes are more progressed.

39 Given the breadth of the rule changes and these factors, the Commission is considering whether to consolidate the rule change requests, or progress one ahead of the other, subject to the statutory test for extension for each request. This may provide greater certainty to AEMO and market participants by allowing us to finalise some items ahead of others, where this is appropriate.

40 Our preliminary view is that issues related to procurement timing, procurement assessment processes, and procurement backstop mechanisms could be considered first, as these issues are already playing out in heightened risks to our ability to achieve system security in the near- to medium-term. We could target completion of the AEMO rule change request in 2026, and then completion of the AEC & CEC rule change request over a longer timeframe (likely mid-2027). Our approach to the rule changes will be informed by stakeholder feedback to this consultation paper on the issues, solutions and implementation considerations.

41 In considering the rule change requests, the Commission will also draw on recent work by the AEMC or others where this can inform our approaches to the problems and solutions identified. This may include, for example, our previous work on improving the cost recovery arrangements for transmission non-network options, and the current review of the Essential System Services Framework in Western Australia's Wholesale Electricity Market.

We consider that there are four assessment criteria that are most relevant to this rule change request

42 Considering the National Electricity Objective (NEO) (see Section 7 of the National Electricity Law (NEL)) and the issues raised in the rule change requests, the Commission proposes to assess the rule change request against four assessment criteria.

43 We are seeking feedback on our proposal to assess the requests against:

1. **Safety, security and reliability** - Robust security frameworks are critical to maintaining system security, particularly as higher-emitting plant retire, and the capabilities of new types of assets are evolving.
2. **Principles of market efficiency** - Security needs should be as clear and transparent as possible to enable participation from a range of technology types, such that the benefits of competition can be realised.
3. **Innovation and flexibility -** Solutions should capture a mix of current and future resources that can provide security services (for example, synchronous condensers, grid forming batteries, clutched turbines). Reducing barriers to investment across all types of assets can help provide benefits to consumers.
4. **Implementation considerations** - Solutions should be able to be implemented in a timely manner, given the timing imperative for security transition points, lead times for new system strength assets, and because procurement rounds are ongoing.

Submissions are due by 16 April 2026, with other engagement opportunities to follow

44 There are multiple options to provide your feedback throughout the rule change process.

45 Written submissions responding to this consultation paper must be lodged with Commission by **Thursday, 16 April 2026**, via the Commission's website, www.aemc.gov.au.

46 There are other opportunities for you to engage with us. See the section of this paper about "How to engage with us" for further instructions and contact details for the project leader.

Full list of consultation questions

Question 1: What are your views on the issues relating to the timing of system security procurement against transition points?

- Are the timelines for TNSP obligations and incentives (or lack thereof) to commit ahead of requirements limiting the ability of TNSPs to procure and commission system security solutions ahead of transition points? If so, in what way?
- Is the right information provided in the right timeframes to enable timely procurement? If not, why not?
- Are planning lead times too short, such that we miss out on additional options or opportunities for co-optimising procurement?
- How material are these issues?

Question 2: What are your views on the characterisation and materiality of issues relating to the assessment and procurement processes for system security investments?

- Is the length and complexity of the assessment process justified given the urgency for investment in system security solutions? Do the frameworks strike the right balance between ensuring sufficient oversight of network spending, selecting low-cost solutions and enabling timely investment?
- Are there barriers related to assessment and procurement processes that restrict non-network proponents participating in the provision of system security? If so, what are these barriers?

Question 3: What are your views on the issues raised with the NSCAS framework as a backstop mechanism for system strength and inertia requirements?

- Do stakeholders agree with AEMO's view that the NSCAS framework has limitations that prevent its effectiveness as a backstop mechanism for system strength and inertia?
- Are there any other limitations or issues with procuring system strength or inertia services through the NSCAS framework that could be addressed through this rule change process?

Question 4: What are your views on governance and transparency in the security frameworks?

- Do you agree with the Commission's characterisation of the issues raised in the AEC & CEC rule change request?
- Are there further issues related to governance and transparency in the security frameworks that are not captured above? Please provide evidence where possible.
- How material are these issues?

Question 5: What are your views on the proposed solutions from both proponents?

- Do the proposed solutions address the problems raised in the rule change requests?
- How effective are the proposed solutions, either combined or in isolation, at addressing the problems raised?
- Are there alternative solutions to address the problems raised in the rule change requests?

Question 6: What are your views on the costs and benefits of the proposed solutions?

- What do you consider will be the benefits and costs of the proposed solutions?
- Do you have any quantitative evidence, examples or estimates that can assist the Commission in assessing the costs and benefits of the solutions?
- Do the solutions strike the right balance between costs and benefits?
- Is there anything the Commission could do in designing the rule that would help to minimise the costs and maximise the benefits?

Question 7: What are stakeholder views on the timing, coordination and implementation factors relating to the rule change requests?

- Do you agree with the Commission's characterisation of the timing, coordination and implementation factors and how they relate to the security frameworks rule change requests?
- Are the additional contextual/timing factors that the Commission should account for when considering how to progress the two rule change requests?

Question 8: What are your views on the assessment framework?

- Do you agree with the proposed assessment criteria?
- Are there additional criteria that the Commission should consider or criteria included here that are not relevant?

How to make a submission

We encourage you to make a submission

Stakeholders can help shape the solutions by participating in the rule change process. Engaging with stakeholders helps us understand the potential impacts of our decisions and, in so doing, contributes to well-informed, high quality rule changes.

We have included questions in each chapter to guide feedback, and the full list of questions is above. However, you are welcome to provide feedback on any additional matters that may assist the Commission in making its decision.

How to make a written submission

Due date: Written submissions responding to this consultation paper must be lodged with Commission by **Thursday, 16 April 2026**.

How to make a submission: Go to the Commission's website, www.aemc.gov.au, find the "lodge a submission" function under the "Contact Us" tab, and select the project reference code ERC0424 or ERC0428.[1]

You may, but are not required to, use the stakeholder submission form published with this consultation paper.

Tips for making submissions are available on our website.[2]

Publication: The Commission publishes submissions on its website. However, we will not publish parts of a submission that we agree are confidential, or that we consider inappropriate (for example offensive, defamatory, vexatious or irrelevant content, or content that is likely to infringe intellectual property rights).[3]

Other opportunities for engagement

There are other opportunities for you to engage with us, such as one-on-one discussions or industry briefing sessions. Please reach out to the project team if you would like to arrange a discussion. We will consider technical working group sessions as the rule change processes progress.

For more information, you can contact us

Please contact us with questions or feedback at any stage, noting the project code.

Email:	aemc@aemc.gov.au
Telephone:	(02) 8296 7800

1 If you are not able to lodge a submission online, please contact us and we will provide instructions for alternative methods to lodge the submission.
2 See: https://www.aemc.gov.au/our-work/changing-energy-rules-unique-process/making-rule-change-request/submission-tips
3 Further information is available here: https://www.aemc.gov.au/contact-us/lodge-submission

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1 The context for the rule change requests

Australia's power system is undergoing a rapid and far-reaching transformation. Large, synchronous generation is progressively exiting the system, while inverter-based resources (IBR), distributed energy resources and variable renewable generation are connecting at scale. This transition is central to delivering a lower-emissions electricity system and presents a significant opportunity to reduce long-term consumer costs.

High penetrations of renewable generation, supported by batteries and flexible demand, offer the prospect of a power system with lower operating costs, reduced fuel price exposure and improved resilience. Australia is particularly well-placed to capture these benefits, given its world-leading uptake of rooftop solar, growing deployment of storage and strong pipeline of renewable investment. To realise these benefits, we must be able to keep the system secure through unprecedented change, which means ensuring that we have the critical security services available, and understand the technical capabilities of new technologies to provide them.

The transition, therefore, represents not only a technical challenge but a substantial opportunity. Realising this opportunity depends on ensuring that the power system can continue to operate securely as the generation mix changes.

1.1 We have received two rule change requests seeking changes to the system security frameworks

The Australian Energy Market Commission (AEMC or Commission) has received two rule change requests seeking changes to the National Electricity Market's (NEM's) system security procurement frameworks.

1.1.1 The AEMO request focuses on timeframes and flexibility

The Australian Energy Market Operator (AEMO) has submitted a rule change request seeking enhancements to the system strength, inertia and network support and control ancillary services (NSCAS) frameworks, with associated changes proposed to the regulatory investment test for transmission (RIT-T) process and notice of closure for generators.[4] AEMO considers that changes may be required to ensure the frameworks provide sufficient time and flexibility to respond to the range of variables that can alter system conditions and the resources available to maintain system security. Specifically, the AEMO rule change request identifies:

- problems with procuring essential system services in time to meet security needs under the current framework
- issues related to the notice we receive for significant transition points associated with generator exits
- issues related to the underlying procurement assessment process
- limitations with the current backstop procurement mechanism.

AEMO suggests several revisions to the frameworks to ensure that security services are delivered when and where they are required, including:

- extending the binding requirements for transmission network service providers (TNSPs) to meet system security needs from three to five years to align with supply chain constraints and the time required to receive regulatory approval

4 The AEMO rule change request is available on the AEMC's website: aemc.gov.au/rule-changes/security-framework-enhancements

- an extension of notice of closure arrangements to five years to ensure the system is prepared for the retirement of critical units
- a streamlined regulatory approval approach for system security investments in recognition of the critical need for such investment
- amendments to the NSCAS procurement framework to increase its effectiveness as a backstop procurement mechanism.

1.1.2 The AEC & CEC request focuses on governance and transparency

The Australian Energy Council (AEC) and the Clean Energy Council (CEC) have submitted a complementary rule change request.[5] This request builds on the AEMO rule change request and seeks to improve governance and transparency in system security planning and provision, with a focus on ensuring that investment signals are clear, consistent and timely.

While the requests are distinct, they address related issues and are directed at the effective operation of the system security frameworks during a period of rapid change in the power system. The AEC and CEC consider that the current frameworks suffer from governance and transparency issues that hinder the efficient and timely delivery of security services, including:

- unclear accountability for delivering the security services when and where they are needed and a lack of NEM-wide investment targets, which complicates investment by market participants
- current forward planning signals for system security do not provide enough lead time or promote efficient investment
- insufficient consistency across the NEM in technical security specifications and procurement processes.

The proponents believe that these governance and transparency issues lead to inefficient and potentially duplicated investments, as well as risks to system security. As such, they recommend:

- improved governance arrangements and transparency when determining the 'efficient' procured level of security services to ensure customers do not incur more costs than required
- extra guidance in the transition plan for system security (TPSS) obligations in the National Electricity Rules (NER or Rules) to clarify emerging system security needs and critical decarbonisation milestones to ensure the system is prepared
- improved standardisation of system security service definitions and procurement approaches across the NEM to improve certainty for investors.

1.1.3 We have held initial discussions with stakeholders

In preparation for the formal consultation process, we have held discussions with the proponents and key stakeholders to inform our understanding of the rule change requests. Stakeholders have emphasised the importance of ensuring the effective, efficient and timely delivery of essential system services to promote the long-term interests of consumers by enabling thermal units to retire securely.

5 The AEC & CEC rule change request is available on the AEMC's website: aemc.gov.au/rule-changes/clarity-and-transparency-security-frameworks

1.2 Experience in implementing the security frameworks has highlighted practical challenges and the sector's evolving understanding of security

The current system security frameworks, including those relating to system strength and inertia, aim to support secure operation of the power system during the transition. These frameworks are forward-looking and intended to help manage risks by identifying needs in advance and supporting timely investment. Further detail on the design and operation of these frameworks is set out in chapter 2 and appendix A.

The current frameworks reflect a number of changes, particularly made over the last five years (refer to appendix A.3 for a summary of these changes). Experience with their implementation has provided valuable insights. The rule change requests reflect the perspectives of the system operator and industry participants on how the frameworks operate in practice and the inherent tensions associated with planning and delivering security services amid uncertainty.

Understanding of new technologies is evolving. Developments such as grid-forming inverter capabilities and trials are increasing confidence in the ability of IBR to provide security services, although experience with - and confidence in - these technologies at scale is still developing.

Implementation experience has also highlighted challenges associated with timing and processes, including longer-than-expected equipment lead times and interactions with existing regulatory approval processes. While these processes are intended to protect customers from undue costs by applying rigorous regulatory oversight, they may also hinder the ability to deliver assets on the ground within required timeframes.

At the same time, investors are seeking greater clarity about future security needs and planning outcomes in an increasingly uncertain environment to support long-term investment and development strategies.

These issues are discussed further in chapter 2.

1.3 We are considering these requests in the context of recently updated security frameworks and a number of other relevant work programs

1.3.1 These rule change requests seek updates - rather than broad reform - to the recently updated planning-timeframe security frameworks

As discussed above, the system security frameworks were relatively recently updated, and some aspects of the frameworks are still being embedded. The proponents are seeking enhancements to the current frameworks through the two rule change requests, with a strong focus on the planning and investment components of the current frameworks to ensure that appropriate resources are available within operational timeframes and are delivered efficiently. Given the requests, and the recency of reform, we expect that this rule change process is likely to focus on evolving the existing frameworks, recognising that they are still being implemented and that learnings from recent experience can inform targeted enhancements, rather than fundamental redesign of the frameworks.

Given the rule change requests focus on the planning timeframe frameworks for managing system security, the Commission is unlikely to consider operational measures for maintaining security through these processes, including the inertia procurement approach, which was recently

confirmed. As outlined in the inertia final determination,[6] the Reliability Panel will continue monitoring factors related to inertia procurement.

1.3.2 We need to ensure consistency with other related work programs

There are a number of work programs (either ongoing or soon-to-be-initiated) which also touch on issues related to the timely and efficient delivery of security. We will need to ensure consistency with these work programs, which are further explored in chapter 4, and include:

- the AEMC's Electricity Network Regulation Review[7]
- the AEMC's Review of the Integrated System Plan (ISP) Framework[8]
- the Review of AEMO Governance[9]
- potential further work on the Electricity Services Entry Mechanism (ESEM), recommended in the NEM wholesale market settings review.[10]

The AEMC has been working collaboratively with the other market bodies and the Federal Government to progress a National System Security Action Plan since mid-2025.[11] The plan is aiming 'to ensure the power systems remain strong and stable as energy systems transitions to higher penetrations of renewable energy', and was discussed in December 2025 by the Energy and Climate Change Ministerial Council (ECMC). The AEMC's progression of the issues contained in this paper will support this plan.

1.3.3 The Commission is seeking views on timing, coordination and implementation considerations to inform our approach to the rule change requests

Given the recency of updates to the security frameworks and the span of related work, the Commission is seeking stakeholder views on the timing, coordination and implementation factors outlined in chapter 4. This will inform our consideration of how to progress the issues raised in the rule change requests.

Our preliminary view is that issues related to procurement timing, procurement assessment processes, and procurement backstop mechanisms could be considered first, as these issues are already playing out in heightened risks to our ability to achieve system security in the near- to medium-term. There may be benefits in promptly progressing consideration of solutions that can address these near-term challenges, and aiming to implement them as soon as practicable.

Progressing and aiming to complete the AEMO rule change request in 2026 may be an avenue to achieve this, subject to the materiality and complexity of issues raised in consultation.

Issues related to broader governance issues may be better considered over a longer timeframe, in conjunction with other ongoing work programs. This would allow us to gain further experience in how the security frameworks are playing out, and allowing us to consider and coordinate with the outcomes of other work.

This could be progressed through dedicated consideration of the CEC & AEC rule change request after the AEMO request is completed.

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6 AEMC, Efficient provision of inertia, Rule determination, 9 October 2025, p.i.

7 Refer to: aemc.gov.au/market-reviews-advice/electricity-network-regulation-review

8 Refer to: aemc.gov.au/market-reviews-advice/review-integrated-system-plan-framework

9 The terms of reference for the review is available at: energy.gov.au/energy-and-climate-change-ministerial-council/working-groups/energy-transformation-working-group/review-aemo-governance. A discussion paper for the review was released in February, and consultation closed on 6 March 2026: consult.dcceew.gov.au/aemo-governance-review

10 Refer to: energy.gov.au/sites/default/files/2025-12/national-electricity-market-wholesale-market-settings-review-final-report.pdf

11 for further information, refer to the Energy and Climate Change Ministerial Council (ECMC) Comminque,16 December 2025, p. 3.

We note that the timing for progressing the rule change requests would ultimately be subject to each rule change request separately passing the test for extension.

1.4 We have started the rule change processes

This paper is the first stage of the AEMC's consultation process on each of the two rule changes. It seeks stakeholder feedback on:

- the problems raised in the rule change requests (Chapter 2)
- the proposed solutions (Chapter 3), and
- timing, coordination and implementation considerations for the rule changes (Chapter 4), and
- our proposed assessment criteria (Chapter 5).

A standard rule change request includes the following formal stages:

- a proponent submits a rule change request
- the Commission commences the rule change process by publishing a consultation paper and seeking stakeholder feedback
- stakeholders lodge submissions on the consultation paper and engage through other channels to make their views known to the AEMC project team
- the Commission publishes a draft determination and, if relevant, draft rule
- stakeholders lodge submissions on the draft rule determination and engage through other channels to make their views known to the AEMC project team
- the Commission publishes a final determination and, if relevant, final rule.

Information on how to provide your submission and other opportunities for engagement is set out at the front of this document. You can find more information on the rule change process on our website. We will consider technical working group meetings as appropriate through the course of the rule change process.

2 The problems raised in the rule change requests

This chapter seeks stakeholder feedback on the problems identified in the rule change requests – whether they are or will soon become problems and if so, the scale and impact of the problems.

In this chapter:

- Section 2.1 frames that the problems raised in the rule change requests focus on enhancements to the current frameworks for system security
- Section 2.2 sets out the proponents' views of issues related to procurement timing for security investments
- Section 2.2.3 sets out the proponents' views of issues related to the options assessment processes for security investment
- Section 2.3 sets out the proponents' views of the limitations with the backstop mechanisms for procurement
- Section 2.4 sets out the proponents' views on issues related to governance and transparency in the frameworks.

2.1 The rule change requests focus on enhancements to the current system security frameworks

The rule change requests from AEMO and the AEC & CEC focus on the current frameworks for system security - specifically, the components which were set up to forecast and deliver security proactively.

Both proponents discuss the importance of timely and efficient procurement of security services, to ensure that security services are in place when and where they are needed, ahead of key transition points. Promoting efficient investment in security services helps ensure that both risks and costs are ultimately managed in the interests of consumers. To achieve this, AEMO discusses the trade-offs that the frameworks (and the processes applied under those frameworks) need to balance:[12]

- risks of over- and under-procurement. AEMO notes there is an asymmetry of risk in considering this balance - over-procurement can lead to additional costs for consumers, but the risks and costs of under procurement (for example, procurement that is too late) are much higher, because this can mean the system is insecure.
- the need to gain further confidence with new ways of providing system security, with some solutions requiring further trials and testing before they can be deployed at scale for the provision of security services.
- the need to analyse and assess the cost options with some level of certainty, and provide oversight for spending.
- the urgency to deploy solutions to meet security requirements, and particularly timing this with future transition points (as per the discussion in section 2.2).

The current frameworks for system security have undergone a series of changes over the last five years that have aimed to ensure timely and efficient procurement ahead of system security issues arising, and encourage innovation in the provision of security services (refer to appendix A.3 for further details on recent changes to the frameworks for system strength, inertia and NSCAS).

12 Refer to section 2 and section 3 of the AEMO rule change request.

The problems raised by both proponents in this chapter consider experiences implementing many of these changes, and identify specific issues with their effectiveness and efficiency in delivering security services on time.

From AEMO's rule change request:[13]

> The planning frameworks for system strength and inertia in their current form do not provide sufficient time or the flexibility needed to respond to the range of variables that can materially alter system operating conditions through the transition and the resources available to AEMO to keep the system secure.

From the AEC & CEC rule change request:[14]

> We have considered the existing rules and identified some gaps that have created issues in the process, transparency and accountability of the essential system services (ESS) frameworks. Improvements to the existing transitional frameworks are not only crucial to facilitate an orderly energy transition but also to lay down the foundation for an enduring and efficient market in the longer term.

Despite being closely related in seeking to enable more effective and efficient delivery of security services, the rule change requests focus on different parts of the overarching framework, as illustrated in Figure 2.1.

Figure 2.1: The rule change proposals relate to steps across the system security planning and procurement process

They key features of these stages of the security frameworks are outlined in Box 1 below.

Box 1: Key features of the current system strength, inertia and NSCAS frameworks

The system strength and inertia frameworks place an obligation on TNSPs or regional jurisdictional planners (that are System Strength Service Providers (SSSPs) and Inertia Service Providers under the NER) to ensure that minimum levels of system strength and inertia are continuously available. NSCAS operates as a backstop mechanism to ensure that voltage, system strength and inertia gaps are identified and resolved in the near term. Under NSCAS, procurement is primarily undertaken by the relevant TNSP or jurisdictional planner, with AEMO able to procure when required.

Forecasting & specifying security requirements

AEMO's annual TPSS outlines the long-term approach to meeting system security requirements as thermal generators are progressively replaced by variable renewable energy. For system strength and inertia requirements:

- AEMO forecasts the requirements for the following 10 years, and
- the SSSP or Inertia Service Provider must determine what services they need to procure to meet AEMO's forecasts.

13 AEMO rule change request, p. 4.
14 AEC & CEC rule change request, p. 1.

For NSCAS, AEMO identifies any NSCAS gaps within a minimum time horizon of five years, with TNSPs obligated to make resources available to meet those gaps for the years in which they are declared. AEMO can use NSCAS to increase short-term system strength and inertia needsif unexpected or unforeseen changes result in system security shortfalls, but only within a time horizon of three years.

Assessment of procurement options

SSSPs or Inertia Service Providers meet system security requirements by either investing in new network infrastructure, such as synchronous condensers, or contracting with other providers, such as existing synchronous generators or grid-forming batteries. Where applicable, TNSPs apply the RIT-T to decide which investments should be pursued to meet security requirements. These frameworks are now more proactive and forward-looking; unlike the previous frameworks, they no longer rely on AEMO declaring 'shortfalls' for TNSPs to commence procurement, but rather require TNSPs to meet ongoing requirements.

Under the NSCAS framework, if short-term system strength or inertia needs are identified within 18 months of their required start date, the relevant TNSP is exempt from undertaking the RIT-T process to ensure the services can be delivered in time.

Procurement process

Following the RIT-T assessment of different options, the relevant SSSP or Inertia Service Provider procure the optimal mix of network and non-network solutions to meet the rolling system strength and inertia requirements. Under the rules, these services must remain continuously available to AEMO to meet minimum system security requirements and to ensure stable voltage waveforms when the projected level of IBR is online.

Backstop procurement mechanism

There may be a need to take near-term or rapid action for unforeseen needs; for example, when AEMO determines that more security services are needed in the near-term (that is, in the next three years) than previously forecast, possibly due to an unexpected retirement, outage or new power system requirements.

The *Improving Security Frameworks* rule widened the scope of the NSCAS framework to serve as a backstop in cases of unforeseen increases in minimum system strength or inertia requirements within a three-year window. AEMO can declare an NSCAS gap to effectively increase the binding levels of system strength and inertia that SSSPs or Inertia Service Providers must meet. If, in AEMO's view, the solution proposed by the TNSPs is insufficient, AEMO can directly procure services to meet urgent system security needs.

More information on the frameworks in their current form can be found in appendix A.

Note: 1: AEMC, Improving security frameworks for the energy transition (ISF), Final Determination, 28 March 2024, p. 38.

2.2 The proponents consider there is a misalignment in timing of planning and procurement against transition points

Both proponents raise issues related to lengthy timelines for identification, procurement, and subsequent investment in security services, which can delay provision of security services and contribute to market uncertainty. The proponents' concerns span across to two stages of the security planning and procurement process:

- forecasting & specifying security requirements - these issues are explored in section 2.2.1 and section 2.2.2
- assessment of procurement options - these issues are explored in section 2.2.3

The cost to consumers of delays can be high given the risks of not meeting security requirements (set out in chapter 1), as well as the potential for investment duplication.

2.2.1 AEMO considers that there is a misalignment between system step changes emerging and the time needed for security responses

Figure 2.2: AEMO considers there is a misalignment between the timelines for setting security requirements and obligations to act

AEMO's rule change request identifies that system 'step changes' can occur in relatively short timeframes, whereas longer timeframes are currently required for approval, procurement and commissioning of security solutions to ensure the system can operate securely after the change.[15]

Currently, TNSPs have three years from the publication of system security reports to ensure that sufficient system strength and inertia is available in their networks. For system strength, this timeframe was established under the *Efficient management of system strength on the power system rule* in 2021 and for inertia, under the *Improving security frameworks* rule in 2024. At the time of the system strength determination, three years was considered sufficient for the SSSP to plan and procure the necessary solutions.[16]

However, AEMO considers that the current settings in the planning frameworks do not provide enough time or flexibility to respond to security requirements. In supporting this view, AEMO makes observations on how the current frameworks are playing out (including the experiences of TNSPs performing their first round of RIT-Ts and procuring solutions for system strength), and identifies various factors that are likely to be contributing to this timeframe misalignment:[17]

- TNSP assessment and investment approval through the RIT-T process requires significant time and resources, leaving little time for procurement activities within the three-year window.
- some of the solutions that TNSPs are seeking to procure have long lead times (for example synchronous condensers), and timeframes are increasing due to international competition for these resources. Procurement and commissioning of these resources alone can take approximately three to four years.[18]
- TNSPs do not have incentives to procure and commission solutions, or begin early works, ahead of their binding compliance dates.
- current generator notice of closure requirements, which provide information on when system step changes will occur and therefore when security resources will be needed, provide only 3.5 years' notice
- TNSPs do not procure security services early enough to provide efficient price signals to the market. The current timing of TNSP procurement can result in missed opportunities for low-cost investment in security services - for example, missing opportunities for low-cost system

15 AEMO rule change request, p. 13.
16 Refer to AEMC, Efficient management of system strength on the power system rule, 2021, p. 42.
17 AEMO rule change request, pp. 13-16.
18 AEMO rule change request, p. 5.

security capabilities to be included in an energy resource. The AEC and CEC also identify this as a key issue in their rule change request section 2.4.2.

AEMO identifies some ways in which the current system security frameworks may be contributing to this timing misalignment. In particular, see section 2.2.3 for further discussion of the issues that AEMO identifies relating to the RIT-T process for system security, and section 2.2.2 for more discussion on notice of closure requirements.

AEMO also identifies that there may be opportunities in the Rules to increase the incentives on TNSPs to commit to efficient system security procurement decisions ahead of the three-year binding requirement. The Commission is interested in views on this. We note that there is a 'reasonable endeavours' obligation on TNSPs to meet their security procurement requirements,[19] issues such as asset lead times should be accounted for in meeting these obligations.

Other factors leading to the timing misalignment are external to the system security frameworks. For example, the frameworks can only accommodate (but not change) international supply chain lead times, and the lead times required to provide efficient investment signals and take advantage of co-investment opportunities.

This timing misalignment risks late delivery of security services such as inertia and system strength. AEMO outlines the substantial risks and costs of late procurement of security services, which can ultimately prevent the progress of the system transition.[20] Specifically, the costs and impacts to consumers of late security service delivery include:

- unserved load, and in extreme cases, system blackouts
- higher wholesale market costs if a lack of security services constrains low-cost generation
- higher emissions if renewable generation is constrained
- uncertain conditions for new investment, and duplicate or inefficient investment due to poorly coordinated investment in security resources.

In summary, these issues identified by AEMO could compromise the effective and timely delivery of network and non-network system security solutions, leading to operational system security shortfalls or delays in the retirement of existing - and increasingly unreliable - thermal plant.

We are interested in stakeholder views on whether TNSP timeframes for security procurement obligations are too short, and whether there is a lack of incentives for TNSPs to begin procurement activities before their binding dates.

2.2.2 AEMO considers that information on generator closure is not provided in sufficient time to plan for investment in security

Figure 2.3: AEMO considers that information on generator closure does not allow for sufficient time for investment in security services

19 For system strength, the standard in Schedule 5.1 of the Rules requires a TNSP (who is a SSSP) to use reasonable endeavours to plan, design, operate and maintain its transmission network in order to meet network performance requirements at the locations on its network (known as system strength nodes) and the amounts of IBR as forecast by AEMO.
For inertia, clause 5.20B.4(a2) of the Rules specifies that an Inertia Service Provider for an inertia sub-network must use reasonable endeavours to make the inertia network services available by the commencement of the inertia year up to the binding inertia sub-network allocation.

20 AEMO rule change request, pp. 4-5.

One factor that AEMO identifies contributing to the 'fundamental mismatch' discussed in section 2.2.1 is that the minimum 3.5 year notice of closure for retiring plant may not give enough time for:[21]

- AEMO and TNSPs to identify, assess and procure options to replace security service provision
- Investors to know and be able to depend on market needs to improve revenue certainty to secure financing and deliver large-scale investments.

Generator notice of closure requirements were first introduced in the AEMC's *Generator three year notice of closure rule*, made in 2018. The requirements were intended to manage the market impacts of thermal retirements, such as material increases in wholesale prices, as well as reliability concerns due to the reduction in supply.[22] Generators are required to give at least 42 months' notice of their intention to close, unless the Australian Energy Regulator (AER) has granted an exemption.

However, AEMO considers that the timeframe does not account for the time to plan and build new assets for security, due to the factors described in section 2.2.1.

The Commission is interested in views on whether the current notice of closure timeframes are too short, and the impacts of this.

The timely provision of the right information to support investment is also a key theme in the AEC & CEC rule change request

The AEC and CEC reflect similar issues to those raised by AEMO as described in this section and section 2.2.1. The AEC and CEC consider that there is insufficient "lead time" in planning cycles for investors to factor in security requirements and the need for potential/additional capabilities.[23] The AEC & CEC rule change request notes that this may mean that incoming projects miss out on commercial opportunities to negotiate and sign contracts with TNSPs, including contracts for co-optimised solutions, such that consumers potentially miss out on lower-cost solutions (for example, clutched gas turbines or grid forming batteries). To the extent that these solutions could be installed more quickly and at a lower cost than other solutions (for example, if additional investment commitments can be made up front in the project development cycles, rather than after commissioning has occurred) they may be of greater benefit to system security.

The AEC & CEC rule change request also raises the need for provision of information on security requirements in advance of when services are required. However, the AEC and CEC go beyond the generator notice of closure requirements and explore issues relating to the certainty or transparency for investors and the broader market of future requirements, referring specifically to the TPSS and security reports. The AEC & CEC concerns are discussed further in section 2.4 below.

We are interested in further information from stakeholders related to timelines for planning and procurement and how this impacts investors. This will assist us to understand the views raised in the AEC & CEC rule change request and help consider these issues alongside the procurement timing issues raised in the AEMO rule change request.

21 AEMO rule change request, p. 5.
22 AEMC, Generator three year notice of closure, Rule determination, 8 November 2018, p. i.
23 AEC & CEC rule change request, p. 1.

Question 1: What are your views on the issues relating to the timing of system security procurement against transition points?

- Are the timelines for TNSP obligations and incentives (or lack thereof) to commit ahead of requirements limiting the ability of TNSPs to procure and commission system security solutions ahead of transition points? If so, in what way?
- Is the right information provided in the right timeframes to enable timely procurement? If not, why not?
- Are planning lead times too short, such that we miss out on additional options or opportunities for co-optimising procurement?
- How material are these issues?

2.2.3 AEMO considers that the RIT-T assessment process does not facilitate efficient and timely investment in security

After system security requirements are forecast and the procurement levels for each TNSP are identified, it is important that TNSPs assess their procurement options to identify the most efficient options to provide the required services at the right time, at the lowest costs for consumers.TNSPs use the RIT-T process to assess their options for security procurement.

However, AEMO considers that the RIT-T process is lengthy and complex, and that this may mean this process is not suited to assessing options for system security where prompt investment can be required to address changing system conditions.[24]

The factors that AEMO identifies in its rule change request are explored in the subsections below, as are similar themes raised in the AEC & CEC rule change request.

Figure 2.4: AEMO's rule change request identifies concerns with the regulatory approval process for system security investments

AEMO considers that the RIT-T assessment processes may be too complex, given the nature of security requirements and existing guardrails

AEMO considers that the assessment process for system security investments is lengthy and complex (as explored in section 2.2.1), requiring significant time and resources.[25] Broadly, AEMO sets security requirements for each TNSP through its annual security reports,[26] according to the Rules and AEMO's methodologies for determining the required quantities of services (in mega volt-amperes (MVA) for system strength and in megawatt seconds (MWs) for inertia).

TNSPs then use the RIT-T to assess options to provide the required levels of security. This includes three stages of consultation (Project Specification Consultation Report (PSCR), Project Assessment Draft Report (PADR), Project Assessment Conclusion Report (PACR)), and detailed

24 AEMO rule change request, p. 13.
25 AEMO rule change request, p. 13.
26 Refer to Appendix A for further information on the processes.

market modelling to assess network-wide market benefits. They may then need to submit a Contingent Project Application (CPA) to the AER to adjust their revenue to fund security investments. Further information on the RIT-T process is set out in appendix A.2.4.

This assessment process is intended to provide sufficient oversight of network expenditure and ensure the proposed services maximise net benefits (noting these can be negative net benefits).[27] The use of the RIT-T was implemented for system strength investments through the final rule, to address concerns with the previous 'slow and reactive framework'.[28]

Following the RIT-T process, another round of negotiations is undertaken with the lowest *cost* technologies to determine the *price* the TNSP will be required to pay. TNSPs can apply to the AER to seek an ex-ante determination that the price will be deemed prudent and efficient as per the network cost recovery arrangements. Under these arrangements, as identified in AEMO's rule change request, the actual costs customers are liable to pay are not directly considered in the RIT-T assessment:[29]

> Payments made to synchronous generators are treated as wealth transfers, so the assessment of credible options at the time of the RIT-T does not reflect the costs consumers would incur from non-network contracts procured from synchronous generators.

AEMO identifies that these first three steps (PSCR, PADR, PACR) have taken two to three years in the first round of system strength RIT-Ts, as shown in Box 2 below.

The complexity of analysis and modelling required for system security RIT-Ts is a contributing factor that AEMO identifies for these timeframes.[30]TNSPs assess network-wide market benefits through extensive analysis and modelling. This is particularly complicated for system strength, where the option of non-network contracts and the widespread and locational system strength requirements have led TNSPs to evaluate granular dispatch outcomes and estimate contracting costs through market modelling.

AEMO queries whether this complex analysis and modelling approach is warranted, given that the security requirements are necessary to support minimum requirements for secure operation throughout the transition. AEMO considers that the primary consideration in this case should not be whether there is a net market benefit, but whether a proposed solution is cost effective for consumers.[31] Further, AEMO notes that the usefulness of this complex modelling may be reduced because the costs of these non-network options (NNOs) are indicative estimates based on short run marginal costs and wholesale price outcomes[32] and the actual payments made to providers are treated as wealth transfers and not included in the estimated costs. This means the modelled outcomes may not reflect the actual costs passed on to consumers of these non-network contracts.[33]

To manage the complexity of these RIT-Ts and the associated costs, AEMO observes that TNSPs have used a 'portfolio approach' to assessing options. Under this approach, TNSPs assess combinations of solutions across their whole networks over many years, rather than assessing

27 Refer to AEMC, Efficient management of system strength on the power system, Rule determination, 21 October 2021, p. 109.
28 Ibid., p. 15.
29 AEMO rule change request, p. 14.
30 AEMO rule change request, p. 14.
31 Ibid.
32 Ibid.
33 Ibid.

short-term needs iteratively. AEMO also considers that this 'portfolio approach' can defer investment decisions while assessing solutions across the whole network, and does not lend itself to assessing urgent investments, which can be required at short notice given the rapidly evolving transition.[34]

Further issues relating to consideration of NNOs are discussed below.

AEMO queries whether this level of complexity in the RIT-T is warranted, given the nature of security investments (as discussed above), and also given the existing guardrails in the broader TNSP economic regulatory framework and incentives that TNSPs face. These also aim to test for prudent and efficient expenditure, and create efficiency incentives to benefit consumers. They include:

- the AER's five-year revenue determinations and assessment of CPAs, which test the efficiency of forecast expenditure
- TNSP incentives to invest efficiently under the CESS, as they are allowed to retain a proportion of under spends compared with their expenditure forecasts
- AER ex-post assessments of capital expenditure overspends.

We are interested in stakeholder views on the length and complexity of the RIT-T, and whether the process strikes an appropriate balance between providing sufficient oversight of network spending, selecting low-cost solutions and enabling timely investment.

Box 2: Timelines for key process steps in the first round of TNSP RIT-Ts

TNSPs completed the first round of RIT-Ts for system strength, ahead of the binding requirement on 2 December 2025. AEMO set out timelines for each step in the process in its rule change request:

Table 2.1: Regulatory investment timeframes and application

	Transgrid	AVP[2]	Powerlink	Tas Networks
Project Specification Consultation Report (PSCR)	Dec 2022	Jul 2023	Mar 2023	Aug 2023
Project Assessment Draft Report (PADR)	Jun 2024	Apr 2025	Nov 2024	Nov 2024
Project Assessment Conclusions Report (PACR)	July 2025[1]	Aug 2025	Jun 2025	Jun 2025

Source: AEMO rule change request, p. 14.

Note: 1: AEMO notes that Transgrid's PACR was subject to dispute. On 23 December 2025, following its review of the dispute, the AER published a determination that Transgrid would not be required to amend its Meeting system strength requirements in NSW PACR. For further information, refer to: aer.gov.au/about/aer/dispute-resolution/rit-t-and-rit-d-disputes/meeting-system-strength-requirements-nsw-rit-t-dispute

Note: 2: AVP refers to AEMO Victoria Planning.

34 Ibid.

AEMO's analysis in its rule change request determined that the steps in the RIT-T process could take up to three years. This is ahead of the TNSPs submitting a CPA to the AER in order to fund system strength investments, which also takes time, as well as then procuring the assets themselves.

The predominant technology for meeting minimum fault current requirements proposed through these RIT-Ts is synchronous condensers, with TNSPs generally proposing installation of grid-forming batteries to meet stable voltage waveform requirements (the 'efficient level').

Refer to appendix A.2.4 for further background to the RIT-T process for system security investments.

The process may create barriers to considering efficient or lower-cost solutions

The AEC and CEC also refer to several issues in their rule change request regarding assessment and procurement processes, which may discourage participation by NNOs by increasing procurement complexity and not providing the revenue certainty required to finance large-scale and capital-intensive investments. The rule change proposal states that:[35]

> The current arrangements for ESS [essential system services] generate material uncertainty around the volume, timing, and specifics of necessary investment to support further investment in ESS.

Our understanding is that these may include, but are not limited to, issues related to:

- the length and complexity of the assessment process, including the many process steps (as explored above)
- different approaches by TNSPs to determining the appropriate and cost-effective technology mix, after AEMO has identified security requirements
- the different/inconsistent approaches used, and underlying technical capability requirements, by each TNSP to seek expression of interests from NNOs in the RIT-T process/tender for NNOs.

We understand that each of these may act as deterrents to non-network proponents engaging in TNSP processes by increasing the complexity of the underlying technical requirements in each individual region, increasing uncertainty about future revenue from delivered investment, and resulting in significant administrative burdens. This ultimately inhibits the ability of the frameworks to incentivise providers to offer services at least cost to consumers.

We are interested in stakeholder views and examples of how these factors in the assessment process may have acted as deterrents to participation from non-network proponents in the assessment and procurement processes for security investments. We note also that the issues raised by the AEC and CEC are explored in more detail in section 2.4.

Question 2: What are your views on the characterisation and materiality of issues relating to the assessment and procurement processes for system security investments?

- Is the length and complexity of the assessment process justified given the urgency for investment in system security solutions? Do the frameworks strike the right balance between

35 AEC & CEC rule change request, p. 4.

ensuring sufficient oversight of network spending, selecting low-cost solutions and enabling timely investment?

- Are there barriers related to assessment and procurement processes that restrict non-network proponents participating in the provision of system security? If so, what are these barriers?

2.3 AEMO considers that there are limitations with the NSCAS framework for addressing short-term security gaps

In its rule change request, AEMO identifies that an effective backstop procurement mechanism is necessary, as unexpected security gaps could arise at short notice (for example, due to earlier-than-expected plant closures).[36] Unexpected events may also affect TNSPs' abilities to meet their binding NER obligations to provide inertia and system strength.

Figure 2.5: AEMO considers that the backstop NSCAS procurement mechanism has limitations

The NSCAS framework fulfils this 'backstop' function in the NEM. The objective of the NSCAS framework is to procure services that allow AEMO to maintain power system security and the reliability of supply.[37] Under the NSCAS framework, AEMO can declare an NSCAS gap in the next three years where the requirements for the minimum levels of system strength (i.e. three phase fault current) or inertia have increased.[38] TNSPs have primary responsibility for meeting this gap, but in certain circumstances, AEMO can also tender for NSCAS to meet a declared NSCAS gap.[39] As described in NER clause 3.11.3, following the declaration of an NSCAS gap:

- AEMO requests the TNSP to advise on the details of the arrangements to address the NSCAS gap, or explain why the NSCAS gap won't be met - see clause 3.11.3(a).
- The TNSP has 30 days to respond, after which AEMO may procure NSCAS in accordance with its tender guidelines - see NER clause 3.11.3(c).

However, AEMO notes that there are limitations on its use of the NSCAS framework to identify and manage security shortfalls in shorter timeframes.[40] It considers that these limitations may reduce the effectiveness of the NSCAS frameworks as a 'last-resort' or backstop mechanism.[41]

2.3.1 AEMO can only declare an NSCAS gap if it has revised the underlying security requirement

In its rule change request, AEMO noted that a key limitation of the NSCAS framework as a last resort mechanism for system strength and inertia is that it can only be used if it has increased the system strength or inertia requirements.[42] This is because part of the NER glossary definition for

36 AEMO rule change request, p. 16.
37 AEMO, NSCAS Description and Quantity Procedure, p. 4.
38 Definition of NSCAS gap under the NER.
39 AEMC, Network Support and Control Ancillary Services, Final Determination, 7 April 2011, p.30.
40 AEMO rule change request, pp. 16-17.
41 Ibid., p. 6.
42 AEMO rule change request, p. 17.

NSCAS need is directly linked to whether AEMO has revised the underlying system strength and inertia requirements - see below (emphasis added).

> *NSCAS need*
>
> (b) A requirement for an *inertia network service* necessary to meet the *inertia requirements* **where *AEMO* has revised the *inertia requirements* in accordance with clause 5.20B.2(f)** such that the revised *inertia requirements* exceed one or more of the binding *inertia requirements* (as applicable).
>
> (c) A requirement for a *system strength service* necessary to meet the *system strength requirements* to maintain the *minimum three phase fault level* **where *AEMO* has revised the *minimum three phase fault level* in accordance with clause 5.20C.1(e)** such that the revised *minimum three phase fault level* exceeds the *minimum three phase fault level* specified in the system strength standard specification (as defined in clause S5.1.14).

If AEMO has determined that the underlying security requirements have not increased, but it considers there is a risk that the security requirement will not be met, then it cannot declare an NSCAS gap to trigger NSCAS procurement. AEMO considers that this constraint unnecessarily hampers its ability to leverage NSCAS as an urgent backstop tool to deliver critical investment. For example, were TNSPs to encounter difficulties in procurement withoutan increase in the total need for security services, AEMO would not be able to rely on NSCAS to procure system strength or inertia services to meet these security requirements.

2.3.2 AEMO cannot declare NSCAS gaps to achieve stable voltage waveforms

Under the NSCAS framework, inertia and system strength can be procured to ensure minimum security requirements are met.[43] This means that, under NSCAS:

- inertia can be procured up to the relevant level — the floor or the secure level — that applies to the inertia sub-network
- system strength can only be procured up to the three-phase fault level, which is the minimum required for security (the 'minimum' level). NSCAS cannot be used to procure up to the higher 'efficient' level to support the stable voltage waveform, as this is not a minimum security requirement. Refer to Box 3 for further details.

However, AEMO's rule change request notes that it is essential that the backstop mechanism can identify and address shortfalls in all system strength components. AEMO notes that for the backstop to be effective, it requires security resources and capabilities to be available on the system in operational timeframes - and that this includes resources to support the stable voltage waveform, without which it is not possible to support the pace of investment in new generation to achieve sustainability targets under the National Electricity Objective (NEO).[44]

Box 3: The 'minimum' and 'efficient' levels of system strength

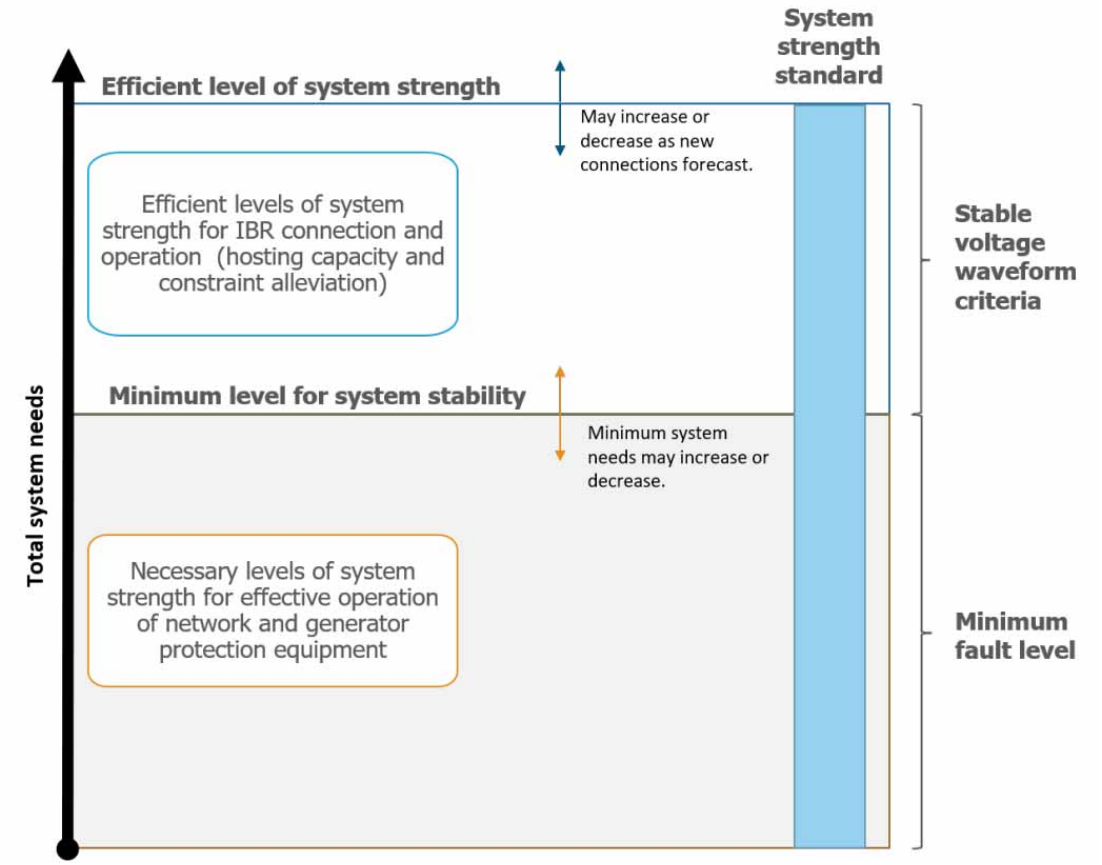
Conceptually, the efficient level of system strength can be thought of as the amount of system strength that would be required to avoid constraining down IBR for stability reasons, which may otherwise have increased consumer benefits through cheaper generation being part of the merit

43 Definition of NSCAS need under the NER.

44 AEMO rule change request, pp. 16-18.

order. See Figure 2.6 for a conceptual figure that outlines the 'minimum' and 'efficient' levels of system strength.

Figure 2.6: Illustration of levels of system strength



Source: AEMC

Note that the NER does not use the terminology in the figure above. Instead, the 'minimum level' corresponds to minimum *three phase fault levels* that must be maintained by NSPs, pursuant to clause S5.1.14(b)(1); while the 'efficient level' corresponds to achieving stable voltage waveforms for the level and type of *inverter based resources and schedule 5.3a plant* projected by AEMO, pursuant to clause S5.1.14(b)(2).

2.3.3 AEMO cannot declare NSCAS gaps for system strength and inertia more than three years ahead of time

AEMO considers that the NSCAS procurement powers for system strength and inertia may be too short for it to act as an efficient backstop procurement mechanism.[45]

The current three-year restriction on procuring system strength and inertia through NSCAS ensures that NSCAS gaps for these services do not overlap with the binding requirement obligations from the primary security frameworks.

However, as discussed in section 2.2.3, AEMO considers that the three-year binding requirement timeline may be too short to enable efficient investment and commissioning of plant that may be needed for system strength and inertia.

45 Ibid.

Specifically, the NSCAS framework may encounter some of the same timing issues as the primary procurement frameworks. This suggests that the backstop mechanism timeframes may also be too short. For example, for security gaps that may unexpectedly arise over the next three years, especially those driven by the early closure of thermal units, the only credible solutions may involve installing and commissioning new resources or plant. Investments to meet NSCAS gaps may still be subject to the RIT-T process, which given the numerous rounds of consultation that must occur, can increase the risk of not meeting security requirements in time.[46] Although AEMO procurement of NSCAS is possible in certain circumstances and would not be subject to the RIT-T, there could still be a heightened risk of security requirements not being met due to supply chain issues, contractual complexities, and installation and commissioning timelines.

Question 3: What are your views on the issues raised with the NSCAS framework as a backstop mechanism for system strength and inertia requirements?

- Do stakeholders agree with AEMO's view that the NSCAS framework has limitations that prevent its effectiveness as a backstop mechanism for system strength and inertia?
- Are there any other limitations or issues with procuring system strength or inertia services through the NSCAS framework that could be addressed through this rule change process?

2.4 The AEC and CEC consider that the efficient delivery of security services is limited by issues with governance and transparency

The AEC and CEC consider that governance gaps in the current frameworks raise accountability and transparency concerns, compromising the efficient and timely delivery of new services and skewing investment towards network solutions.

The proponents identify a number of detailed issues:[47]

- There is uncertainty about when and where investment in security will be delivered because there is no single party that is accountable for the successful deployment of essential system services (ESS)
- Forward planning signals do not provide sufficient lead time for investment in ESS or cooptimisation with procurement of other resources, increasing the risk of investment duplication and additional consumer costs.
- There is a lack of clarity and standardisation across regions in ESS procurement processes, which limits commercial appetite to provide non-network security options.
- There is also uncertainty and risk for potential providers of ESS (particularly in innovative technologies like batteries) arising from the lack of clearly defined:
  - investment targets for ESS, and
  - specific service definitions, technical standards, and ESS technological specifications.

These issues identified by the AEC and CEC focus on the core problem of uncertainty for investors in security services, caused by a lack of clarity on roles, security requirements, and procurement processes across the security frameworks - which are all aspects of the governance of the frameworks.

46 If AEMO has declared an NSCAS gap that is less than 18 months from the date of its declaration, then TNSP investments are not subject to a RIT-T. Clause 5.16.3(a)(10) of the NER.

47 AEC & CEC rule change request, p.1.

The proponents consider that because these roles and processes are unclear, the forward-planning signals for security services are weak, and the frameworks therefore do not provide sufficient incentives or lead times for new investments to provide security capabilities. The proponents consider that this leads to:

- **inefficient outcomes** for system security, potential duplication of investment, and higher costs to consumers, because the frameworks are not able to fully incentivise co-optimised investment in multi-service investment (for example, procuring security services in parallel with energy)
- **security risks** because if investors are not provided clear and timely incentives to provide security capabilities when and where they are needed, this can lead to critical services not being available when and where they are needed, and creates the potential for suboptimal outcomes like delayed closure of synchronous plant and market interventions.

The rule change request seeks improvements across each step of the process for security planning and procurement, focusing on three key areas of governance, as explained in section 2.4.1, section 2.4.2 and section 2.4.3 below.

Figure 2.7: The AEC and CEC seek improvements to the overall process

2.4.1 The AEC and CEC consider that unclear accountability for delivering security services and a lack of investment targets create investment uncertainty

The AEC & CEC consider that there is uncertainty about when and where investment in security will be delivered because:

- there is no single party that is accountable for the successful deployment of ESS, and
- there is no clear investment target for procuring security services across the NEM.[48]

Figure 2.8: The AEC and CEC discuss accountability and investment targets as they relate to the specification of future needs and how this flows through to the use of the backstop mechanism

Under the current rules, broadly the roles and responsibilities for delivering security are as follows:

- AEMO sets the required levels of security services through its annual forecasting process, which forecasts requirements over the following 10 years.
- There is then an obligation on the relevant SSSP or Inertia Service Provider (typically the TNSP or the jurisdictional planner in the region) to make these security services available.[49]
- AEMO is able to activate a near-term backstop through NSCAS procurement

48 AEC & CEC rule change request, p. 1.

49 Clauses 5.20B.4(a2) and S5.1.14(b) of the Rules outline the obligations with respect to inertia and system strength, respectively.

- AEMO retains the ultimate responsibility to maintain system security in the operational timeframe, by enabling TNSP procured resources or relying on inefficient market interventions such as directions to ensure the power system remains within its technical operating envelope.

The Commission is interested in stakeholder views on whether the overall governance arrangements for setting security requirements for the NEM create investment uncertainty - and any specific examples of how current roles and responsibilities might be contributing to inefficient outcomes.

2.4.2 The AEC and CEC consider that current forward planning signals for security do not provide enough lead time or promote efficient investment

The AEC and CEC consider that the current annual planning obligations do not provide enough clarity on when and where investment in security will be delivered or when a backstop mechanism will be triggered.

Figure 2.9: The AEC and CEC discuss timing and clarity for security planning

The rule change request considers that current planning processes do not provide a sufficiently firm and long investment signal to underwrite investments in capital intensive new developments:[50]

> Forward planning signals do not provide sufficient lead time for investment in ESS or co-optimisation with procurement of other resources, increasing the risk of investment duplication and additional consumer costs

The current annual planning process is led by AEMO, which publishes the annual:

- TPSS, which sets out its forward plan for managing system security, and
- security reports (inertia, system strength and NSCAS) which set TNSP procurement requirements in the forward years.

In developing these products, AEMO draws on input from the TNSPs and it has also sought feedback from stakeholders on both releases of the TPSS.

The Commission is interested in views on whether, and how, the current TPSS and security reports may not be providing sufficient lead time for investors and therefore creating inefficient investment.

50 Ibid.

2.4.3 The AEC and CEC consider that there is not enough consistency across the NEM in security specifications or procurement processes

Figure 2.10: The AEC and CEC discuss concerns related to the assessment of procurement options and procurement processes

Missing technical specifications in the rules reduce alignment across regions

The proponents highlight that the NER do not currently include formal technical specifications for the identified ESS. Service definitions and technical criteria can vary by region, and there is no uniform investment target for industry to work toward. The AEC and CEC rule change requests notes that:[51]

> This creates uncertainty and material risk that both new and existing technologies may not meet adequate standards (especially in high growth innovative technologies like batteries and other energy storage).

In other words, there is no clear, rule-based definition of the capabilities a service provider must deliver, thereby creating uncertainty (and risk) for new technologies, which may invest in capabilities only to find they do not meet an undefined standard. This absence of clear goals makes it hard to efficiently plan and coordinate investments across the market. It also makes it harder to hold anyone accountable for service quality in the absence of agreed specifications.

The Commission notes that the NER requires AEMO to set out an inertia methodology. The current methodology clearly sets out the technical requirements for non-synchronous inertia services.[52] However, there is not a similar specification for system strength capabilities required to meet the minimum three-phase fault level.

Opaque procurement processes reduce competition and increase costs for consumers

According to the AEC & CEC rule change request, there is no defined and specific process in the rules for how security services are to be procured:

> There is no defined procurement process for ESS. This lack of clarity, transparency and standardisation can limit commercial appetite for suitable non-network assets to provide ESS, and/or to locate in areas where those services are most needed.

The AEC and CEC consider that this lack of a transparent, standardised procurement framework means participants are often unsure how AEMO or network companies will source the required services. This uncertainty can dampen investor appetite, with providers of new technology or non-network solutions less likely to invest or offer their services without a clear, predictable and long-term procurement method.

51 Ibid.

52 Refer to: aemo.com.au/-/media/files/electricity/nem/security_and_reliability/system_security_planning/inertia-requirements-methodology-v2-0

2.4.4 The proponents consider that these gaps will result in inefficient outcomes, last-minute solutions and duplicated investment

The AEC and CEC consider these governance and transparency issues have real consequences for the market. Because roles and processes are unclear, the forward-planning signals for ESS are weak, providing insufficient lead time for new investments. It is uncertain when and where new ESS investments should occur, which can lead to inefficient outcomes, such as last-minute solutions or duplicated investments.

Overall, the lack of clear governance and accountability is seen as limiting the efficiency of ESS delivery and creating industry uncertainty about whether necessary security services will be in place in time. The proponents warn that without fixes, there is a risk that:[53]

> Insufficient or inadequate ESS will be available when required, leading to market disruptions and higher costs to consumers.

We are particularly interested in stakeholder information and evidence to help us understand the problems raised and show where our previous assumptions may not have played out in practice. This will assist us to refine the problems and find solutions that appreciate where we have come alongside industry, and where we still need to go.

Question 4: What are your views on governance and transparency in the security frameworks?

- Do you agree with the Commission's characterisation of the issues raised in the AEC & CEC rule change request?
- Are there further issues related to governance and transparency in the security frameworks that are not captured above? Please provide evidence where possible.
- How material are these issues?

53 AEC & CEC rule change request, p. 2.

3 The package of proposed solutions

In this chapter:

- Section 3.1 notes that we are seeking stakeholder feedback to further develop the solutions proposed by the proponents
- Section 3.2 sets out the solutions proposed to encourage on-time and efficient procurement of security services.
- Section 3.3 sets out the solutions proposed to address limitations with the procurement backstop.
- Section 3.4 sets out the solutions proposed to address governance and transparency issues.
- Section 3.5 outlines the costs and benefits of the proposed solutions.

3.1 There is a wide range of proposed solutions to the problems raised

This chapter sets out the range of solutions proposed by the proponents, with some additional detail on potential options or additional solutions. In its rule change request, AEMO notes that 'there are a range of options that could achieve the intended outcomes'.[54] The AEC and CEC also set out high-level descriptions of potential solutions to the problems identified in both rule change requests.

We are seeking stakeholder views to further develop these options and propose other options, drawing on examples from stakeholder experiences implementing the frameworks. We are also interested in views on whether the full suite of proposals in the rule change requests is required to address the issues raised. Some proposals may target the same issues as others or may be duplicative, and it may not be worthwhile to pursue all solutions.

Chapter 4 sets out our view of the timing, coordination and implementation considerations for progressing our assessment of the problems and solutions.

3.2 Solutions to encourage on-time and efficient procurement

Section 2.2 describes the problems identified by the proponents with respect to:

- lengthy timelines for system security procurement, and subsequent investment, which can delay provision of security services and contribute to market uncertainty.
- the assessment and procurement processes for system security, which may not be set up to adequately encompass consideration of all possible solutions to meet system security requirements, including potential future innovations.

This section outlines the range of proposed solutions to address these problems.

3.2.1 AEMO proposes extending the binding timeframe for meeting system security requirements to five years

Currently, AEMO sets requirements for system strength and inertia in December each year as part of its annual system strength and inertia reports (in 2025, these were included as part of the 2025 TPSS). The requirement for the year three years out (the relevant year)[55] from each reporting year becomes the binding requirement that the relevant TNSPs must meet for that relevant year.[56]

54 AEMO rule change request, p. 1.

55 Clause S5.1.14(a) defines the "relevant year" as each period of 12 months commencing 2 December.

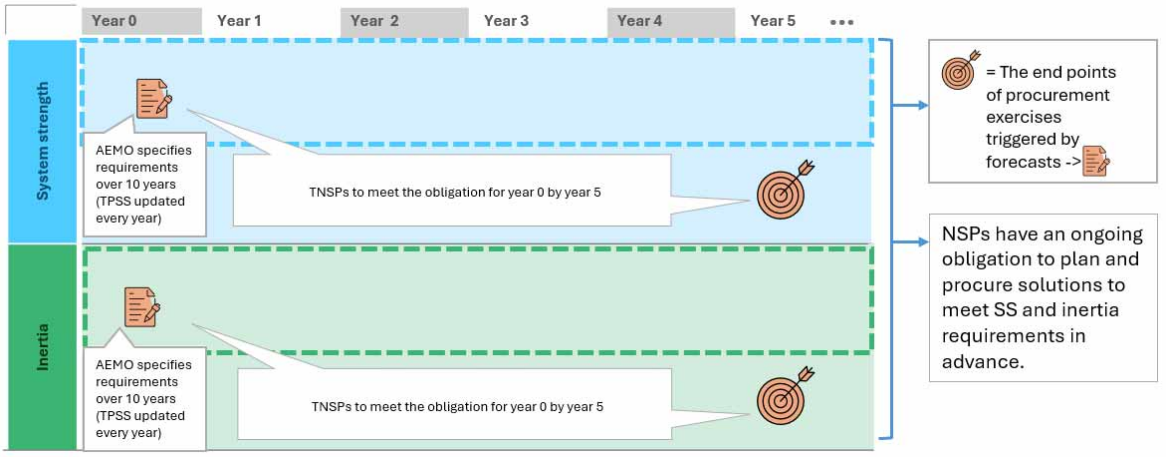
56 Appendix A outlines more detail on the system strength and inertia frameworks in their current form. In particular, Figure A.1 in appendix A illustrates

AEMO proposes to extend the period between reporting and the beginning of the compliance year from three years to five years.

AEMO considers that this would improve industry certainty on when resources are required for security and help ensure those resources would be in place in sufficient time before the need arises, particularly by allowing sufficient time to procure assets with longer lead times and providing earlier certainty to the market for the purpose of making investment decisions.[57] For example, recent experience suggests that synchronous condensers (a system strength asset being procured through the latest round of TNSP RIT-Ts) may take three years or longer to procure (see section 2.2). Having more time between forecast requirements and the compliance year may help ensure assets can be procured in time for when they are needed.

Figure 3.1 illustrates the proposed change.

Figure 3.1: Proposed change to binding timeframe



Source: AEMC

The proposed change would be made in NER S5.1.14 – Definition of 'system strength standard specification' and 5.20B.2(g)-(h) – Binding inertia requirements, by replacing references to "three years" with references to "five years". In effect, this would mean that, for example, the December 2026 security reports would set the binding requirement to be met for the one-year period from December 2031 to December 2032.

The Commission is interested in stakeholder feedback on the effectiveness of this proposal to address the problems raised in the AEMO rule change request - and if so, whether five years is the appropriate forward timeframe for procuring the range of asset classes that provide security services - including those beyond synchronous condensers. We are also interested in views on whether this proposal may help provide greater certainty for investment purposes, and more efficient incentives for investment in security, potentially addressing issues raised in the AEC & CEC rule change request.

We are also interested in views on the transitional arrangements that would be required to implement this change. For example, if this rule change were implemented ahead of December 2026, the TNSP compliance year for the requirements forecast in 2026 would be 2031/32, rather than 2029/30 as per the current rules. However, there would still be a need to meet the

the cadence of reporting and binding requirements.

57 AEMO rule change request, p. 19.

requirements for 2029/30 and 2030/31, which would not have been accounted for, given the extended timeline. This means the binding requirements for the interim years would need to be based on another forecast (for example, based on the requirements set in December 2025 or 2026).

3.2.2 AEMO proposes extending notice of closure obligations to five years

The current notice of closure period for exiting plant in the NER is 3.5 years (42 months).[58] AEMO proposes that extending the notice of closure obligations to five years would provide greater certainty and longer notice of plant exit, giving AEMO, TNSPs and the market more notice of when new resources need to be on the system to meet system security requirements. The timeframe is also intended to align with the timeframe for commissioning replacement resources for system security, making sure there is sufficient time to act on the notice.[59]

The proposed change would be made in clause 2.10.1(c2) of the Rules, which states that a Scheduled Generator, Semi-Scheduled Generator or Integrated Resource Provider must not specify a closure date of a unit that is earlier than 42 months from the notice date (except where granted an AER exemption). If implemented, there may also be a need to amend surrounding clauses or paragraphs. For example, clause 2.10.1(c3), relating to amended notices of closure, could be subject to the same timeline.

We are interested in stakeholder views on this proposal, including whether it addresses the problems related to system security identified in both rule change requests, and any impacts or unintended consequences that may arise from the proposed change.[60]

The Commission is also interested in complementary or other opportunities for information provision that would assist with better considering plant exits when planning for system security needs (as outlined in section 2.2.2). We note that the most recent TPSS tracks security requirements against 'transition points', including generator exits, and that solutions related to the provision of planning information are also raised in the AEC & CEC rule change request (refer to section 3.4 for further discussion of the solutions raised in the AEC & CEC rule change request).

3.2.3 AEMO proposes a streamlined or alternative RIT-T process for system security investments

Section 2.2.3 sets out the steps in the RIT-T process in its current form for assessing system security investments based on net market benefits (which may be negative net market benefits). AEMO considers that there may be a more suitable process than the RIT-T for "supporting rapid investment in a quickly evolving and globally competitive market".[61]

AEMO proposes that:[62]

> The primary issue for meeting an obligation with an asymmetric risk profile should not be whether there is a net market benefit, but whether a proposed solution is cost effective for consumers.

58 Clause 2.10.1(c2) of the NER.

59 AEMO, rule change request, p. 19.

60 We note that a separate rule change request related to generator notice of closure arrangements has been submitted to the AEMC. As it identifies broader issues than the impact of plant closure notices on system security, that rule change will be considered through a separate process to the AEMO and AEC & CEC rule change requests.

61 AEMO rule change request, p. 13.

62 AEMO rule change request, p. 14.

AEMO does not propose specific changes; rather, it proposes a set of principles for a redesigned or alternative process to assess system security investments. AEMO states that the updated process should achieve the following results :[63]

1. provides consumers with assurance that proposed expenditure is cost effective
2. appropriately incentivises both network and non-network solutions
3. provides price signals to the market for services procured

The Commission is interested in stakeholder views on these principles and the spectrum of options available to address the problems raised (including if any of these options may also address the problems raised by the AEC and CEC). Some potential options to amend the RIT-T and related processes for system security investments include, but may not be limited to:

- **Removing one or multiple steps in the RIT-T process.** For example, the PSCR could be removed, which would be similar to the approach for actionable projects identified in the ISP.
- **Changing the approach for the assessment in the RIT-T.** For example, the assessment in the RIT-T could be based on identifying the least-cost investment option, potentially with AEMO setting needs and credible solutions through its annual security reports.
- **Carving out urgent investments for a more streamlined assessment process**.
- **Removing the RIT-T completely.** This option could rely on security reporting to identify and select investments that TNSPs then procure.
- **Pursuing other incentives for rapid procurement.** For example, access to early works funding for system security investments may speed up investments by providing greater certainty to TNSPs on recovering the cost of undertaking early works, and therefore incentivise TNSPs to begin procurement processes earlier.[64]
- **Maintaining the RIT-T in its current form.** This would maintain each of the same consultation steps (PSCR, PADR and PACR) and assessment to determine investment options that achieve the maximum economic benefit, while allowing for negative net economic benefits.

As AEMO identifies in its rule change request, it will be important that any changes to the RIT-T process strike an appropriate balance between sufficient spending oversight, consultation and joint planning, while allowing for the efficient and timely provision of services required to keep the system secure.[65] We note that the RIT-T does not operate in isolation - and existing components of regulatory frameworks also contribute to these checks and balances, including annual reporting processes (that is, system strength and inertia reporting, and/or TNSP annual planning reports) as the first step in identifying potential system security investments, and processes where the AER approves or reviews TNSP efficient and prudent investments.[66] AEMO also observes that there are other components of the economic regulatory framework for network investment that check for prudent expenditure and create efficiency incentives, including revenue determinations.

Some of the options raised above are similar to those considered in the AEMC's Transmission Planning and Investment Review (TPIR) with respect to bringing investments forward for ISP

63 AEMO rule change request, p. 20.

64 The *Bringing early works forward to improve transmission planning* 2024 rule implemented an early works CPA process for ISP projects, which enables TNSPs to seek cost recovery for early works without having completed a RIT-T (or pass the ISP "feedback loop"). This was implemented off the back of the AEMC's Transmission Planning and Investment Review recommendations.

65 AEMO rule change request, p. 13.

66 These processes include the AER's revenue determinations, the contingent project application process, for network solutions; the Capital Expenditure Sharing Scheme, the AER's ex-post assessments of capital expenditure overspends, and the ex-ante AER review process for a proposed system security contract, introduced by the ISF rule (see System Security Network Support Payment Guideline | Australian Energy Regulator (AER) for more information).

projects.[6768] It will be important through the AEMO rule change process to consider how security investments differ from other network investments. For example, the TPIR recommendations considered overcoming delays with planning/approvals/social license for transmission projects, which is not one of the issues identified in the rule change requests.[69]

The Commission notes that, now that all TNSPs have completed their RIT-Ts, the process to address a 'material change in circumstances' could, in some instances, provide a faster regulatory pathway than a full new RIT-T to address changing system strength needs - without any changes to the current framework. The identified needs of the recent system strength RIT-Ts were for TNSPs to meet their system strength obligations indefinitely.[70] If a 'material change in circumstance' (MCC) occurs, then a TNSP may be required to reapply part or all of the RIT-T.[71] If the TNSP is only required to reapply part of the RIT-T, this can be a simpler or more contained exercise than a full new RIT-T and could, in theory, allow for a quicker regulatory process to address an unexpected security need in the future, without any changes to the current framework.

On the other hand, this pathway may not always be available or provide timing benefits. Some changes in security needs may require a full re-application of the RIT-T. Further, reapplications could also delay the commissioning or execution of both network and non-network solutions - especially where a TNSP may be required to reapply part or all of the RIT-T prior to the commissioning of any solutions. Therefore, there is a need to weigh up whether changes to the RIT-T framework for security projects, which would take time to implement and embed, could nevertheless provide benefits in future, given the range of circumstances that may need to be newly addressed. We explore implementation timing considerations in further detail in chapter 4.

3.3 Solutions to address limitations of NSCAS for addressing short-term security gaps

As described in section 2.3, AEMO has identified issues with its ability to address short-term security gaps through the NSCAS framework; for example, due to unexpected or unforeseen increases in the system strength or inertia requirements. Some of its proposed solutions are discussed below, but we welcome stakeholder feedback on whether there may be other ways to improve the effectiveness of the NSCAS framework, or other solutions to address this issue.

3.3.1 AEMO proposes removing the requirement for inertia or system strength requirements to be revised before an NSCAS gap can be declared

AEMO considers that it should have the ability to declare NSCAS gaps, without the condition for the underlying security requirements to have changed.[72] This would require amending the NER glossary definition of *NSCAS need*.

This change would give AEMO flexibility to declare NSCAS gaps in more circumstances. For example, if coal plant closure dates unexpectedly change, or if it appears that a TNSP will not be

67 Refer to AEMC, Transmission planning and investment review, Stage 3, Final report, 4 May 2023, Chapter 2.

68 The AEMC's Review of the ISP framework may also explore related considerations, as discussed in Chapter 4.

69 We also note that Energy Networks Australia has recently submitted a rule change request to tailor the application of the RIT-T process. This does not specifically discuss investments in system security. Refer to: aemc.gov.au/rule-changes/tailoring-application-regulatory-investment-test-transmission

70 AEMO Victorian Planning, Victorian System Strength Requirement - Regulatory Investment Test for Transmission – Project Assessment Conclusions Report, 1 August 2025, p. 4; Powerlink Queensland, Addressing System Strength Requirements in Queensland – Project Assessment Conclusions Report, 30 June 2025, p. 8; Transgrid, Meeting system strength requirements in NSW, RIT-T Project Assessment Conclusions Report, 14 July 2025, p. 22; ElectraNet, Meeting System Strength Requirements in SA, Project Assessment Conclusions Report, p. 13; TasNetworks, Meeting the System Strength Standard in Tasmania from December 2025 onward, Project Assessment Conclusions Report, p. 8. Although the modelling horizons differed between each RIT-T (from 10 years to 20 years), all of their identified needs were to meet their system strength obligations indefinitely.

71 Refer to appendix A.2.4.

72 AEMO, rule change request, pp. 18-19.

able to meet their binding requirement due to delays in commissioning timelines, then AEMO could declare an NSCAS gap even if the underlying security requirements have not changed.

This change could ensure that the NSCAS framework can always be used as a backstop mechanism to meet security gaps, irrespective of the contributing reasons for those security gaps.

3.3.2 AEMO proposes allowing the NSCAS framework to procure system strength to achieve stable voltage waveforms

The *Improving security frameworks for the energy transition (ISF) rule* 2024 did not allow the NSCAS framework to procure system strength for stable voltage waveforms (also known as 'efficient levels of system strength'), as it is not a minimum security requirement. However, AEMO proposes that the NSCAS framework should be able to procure efficient levels of system strength, where there are needs that may arise in the three-year horizon.[73]

Although the 'efficient' level of system strength is not strictly necessary to maintain secure operation, the increasing proportion of IBR in the NEM means that, at any point in time, IBR cannot be constrained indefinitely. Otherwise, the reliability standard would be breached, and AEMO may need to commence load shedding or perform other interventions, which are costly for consumers. In the long term, the lack of an 'efficient' level of system strength would also be detrimental to system security, as there would be insufficient generation and storage to rely upon for bulk energy supply, frequency control and voltage control. Additionally, AEMO considers that maintaining adequate efficient levels of system strength is essential to ensure that the pace of investment in new generation can achieve emissions reduction targets under the NEO.[74]

Therefore, to be consistent with the NER requirement on TNSPs to make available the entire amount of system strength (up to the 'efficient' level),[75] AEMO considers that the NSCAS framework should allow the procurement of both elements of system strength - that is, both the 'minimum' and 'efficient' level (refer to section 2.3 for an explanation of the 'minimum' and 'efficient' levels).[76] By expanding NSCAS to cover efficient levels of system strength, AEMO considers that this would reduce the likelihood of operating the power system in a severely constrained manner, thereby reducing potential costs for consumers.[77]

3.3.3 AEMO proposes extending the time period for which an NSCAS gap can be declared

The NSCAS framework currently only allows AEMO to declare NSCAS gaps within the next three years. However, if the binding period is lengthened to five years or some other longer period (see section 3.2.1), then it would follow that the NSCAS framework (in respect of its use for system strength and inertia) should be extended to align with the longer period. AEMO proposes to do this by amending the definition of *NSCAS gap* in Chapter 10 of the NER.[78]

Aligning timeframes between the primary mechanisms and the NSCAS framework, wherever possible, would ensure that security requirements or relevant gaps can be captured in either framework. Otherwise, there could be unacceptable scenarios where there may be foreseeable security requirements, but no formal method for AEMO or TNSPs to address them.

73 Refer to AEMC, ISF, Rule determination, 28 March 2024, p. 35.
74 AEMO, rule change request, p. 19.
75 NER clause S5.1.14(b).
76 AEMO, rule change request, pp. 14, 15, 19.
77 Ibid., pp 22-23.
78 AEMO rule change request, p. 19.

Extending the NSCAS timeframe would also provide TNSPs and AEMO with more lead time to procure, commission and install necessary equipment and plant.[79]

3.3.4 AEMO proposes that system strength and inertia NSCAS should be subject to a streamlined investment approval process and have access to early works funding

In its rule change request, AEMO proposes that system strength and inertia procurement under the NSCAS framework for near-term gaps could also be subject to a streamlined regulatory process, with access to early works funding (if required). This would be achieved by inserting a new provision into the NER.[80] AEMO considers that this may help improve the NSCAS framework's timeliness in either facilitating new plant to be commissioned, or contracting with existing registered participants.

Currently, TNSP arrangements to meet an NSCAS gap are only excluded from being subject to the RIT-T if the NSCAS gap is less than 18 months from the date of AEMO's declaration.[81] However, for an NSCAS gap arising between 18 months and three years from AEMO's declaration, the length of the RIT-T plus a typical procurement process means there is an increased risk that the NSCAS gap will not be met in time, leading to insecure outcomes and increased costs for consumers. As noted by AEMO and discussed in section 2.2.3, system strength RIT-Ts can take two to three years to complete, after which procurement, installation, and commissioning may still be required.[82]

Any of the potential solutions described in section 3.2.2 to streamline the primary procurement frameworks may be appropriate to be extended or adopted for the NSCAS framework. However, the approach taken to streamline the NSCAS framework would not need to be identical to the approach taken for the primary procurement frameworks. For example, if the RIT-T were to be shortened for the primary frameworks, then any NSCAS gaps could be excluded from being subject to the RIT-T entirely.

3.4 Solutions to address governance and transparency concerns

To resolve the issues identified in section 2.4, the AEC and CEC have proposed a suite of solutions to improve governance arrangements and increase transparency in the planning and procurement of security services.

The AEC and CEC's proposed solutions seek to address the current uncertainty that is slowing investment by clearly assigning responsibilities, potentially involving an expert panel for oversight, improving long-term planning, and standardising how services are defined and procured.

The AEC and CEC state that these measures are intended to complement and be additional to AEMO's proposal. The AEC and CEC expect that, with their proposed changes, the NEM can more efficiently and proactively procure the right security services, supporting a secure transition at least cost to consumers.

Key elements of the AEC and CEC's proposed solutions are outlined in the following sub-sections.

79 AEMO, rule change request, p 21.
80 AEMO, rule change request, p 19.
81 NER, clause 5.16.3(a)(10).
82 AEMO, rule change request, p. 14.

3.4.1 The AEC and CEC propose that the rules specify a party, potentially an independent panel, that is responsible for determining the 'efficient' level of ESS to be procured

The AEC and CEC propose that the Rules would 'specify who is responsible for determining the efficient level of ESS to be procured, and the factors that should be considered.'[83] The AEC & CEC rule change request proposes that this could be done by an industry and consumer panel, similar to the current process for the review of the market settings.[84]

The AEC and CEC propose that the responsible party would be required to consider factors including (but not limited to):

- what scenarios should be planned for through forward investment vs operational management (for example, delays to asset delivery, weather events, seasonal operation of synchronous plants, or changes in the delivery of IBR)
- the level of risk to be maintained
- lead times for investment, and
- the available backstop mechanism(s) to address gaps.[85]

Currently, AEMO determines security requirements in the planning (or investment) timeframe by considering all credible contingencies (and any protected events). It calculates the amount of system strength or inertia that is required to maintain secure operation through the most onerous credible contingencies (and any protected events) on the system.[86] These requirements are published annually as 10-year forecasts, with the forecasts for the third year becoming the 'binding' requirements that each TNSP must meet. See appendix A for more information on the operation of the current security frameworks.

The AEC and CEC proposal contrasts with the current security frameworks by:

- having a body other than AEMO set procurement levels
- allowing for different or multiple scenarios to be considered when determining security requirements
- potentially being more flexible to allow for different lead times (through potentially specifying different procurement timeframes for different assets to meet security requirements).

The AEC and CEC consider that such an industry or consumer panel would improve certainty about when and where investment will be delivered or when a backstop mechanism will be triggered, provide clearer investment targets, and assist with more consistent technical standards (which is discussed further in section 3.4.3).[87]

Determining this new framework for setting security procurement requirements would be a complex task

The key aspects of how this proposed approach works in practice need to be further defined in order to assess its merits, and whether it is the best solution to the issues identified by the AEC and CEC.

Defining the approach would require, for example, the following elements:

- **Responsible body**: There are various options for the body responsible for setting procurement targets:

83 AEC & CEC rule change request, p. 3.
84 Ibid.
85 Ibid.
86 AEMO, System strength requirements methodology, pp. 16-19; Inertia requirements methodology, pp. 19-22.
87 AEC & CEC rule change request, pp 1, 3.

- Independent panel of industry and/or consumer representatives, as proposed by the AEC and CEC. Under this approach, we would need to determine the expertise, representation and composition on this panel; as well as how it would it be accountable and to whom.
- An existing body, for example, the Reliability Panel. We would need to determine if the current constitution and accountability of an existing body is appropriate for this new responsibility.
- AEMO, another option is for the security procurement requirements in the NER to be amended so that AEMO adjusts its determination of security requirements to take the proposed factors into account.

- **Overall procurement objective**: An overall procurement objective would need to be defined.
  - The proposal refers to the 'efficient' level of security. However there are many aspects of efficiency, and ultimately, procurement also needs to ensure that security services are available to keep the system secure with an acceptable level of risk. In determining a procurement objective, we would need to answer: what would procurement be trying to achieve in terms of efficiency and security, and how is this different to the current procurement objectives?
  - Procurement objectives are usually defined in the Rules, as they are central to the efficacy and efficiency of a procurement scheme.
- **Form of security requirements**: This would also need to be defined by the responsible body.
  - Would procurement targets or security requirements be expressed in terms of the levels of security services required in each region or location (as they are currently), or in terms of the technologies that could provide them?
- **Factors to be considered**: The list of factors would need to be defined.
  - The AEC and CEC have proposed a non-exhaustive list of four factors. We would need to consider whether these are the right factors, whether the list should be exhaustive or non-exhaustive, and how much discretion there would be to interpret and apply the factors in determining the 'efficient level'.
  - For these or other factors, the NER, or the body charged with determining the 'efficient level', or some other party, would need to specify or interpret the desirable level or state of each factor. For example:
    - What scenarios should be considered? Are delays to asset delivery, weather events, seasonal operation of synchronous plant, or changes to IBR delivery the right and most important scenarios to assess? What flexibility would there be for scenarios to change over time?
    - What level of risk should be maintained?
    - What investment lead times should be accommodated?
    - What should the role of a backstop mechanism be? How much should we be relying on it - should it be a true 'backstop', with a strong focus on forward procurement and having assets in place in time for system transition points, or should we rely more on procurement closer-to-time and accept the risks that accompany that approach? If so, how should we define the balance between forward procurement and using the 'backstop' mechanism?
    - How would concepts of efficiency influence the factors?
  - The factors could be defined in the NER, defined by the body determining the 'efficient level' or a combination of both (as proposed by the AEC and CEC, where the independent

Panel can consider additional factors to those in the list). Defining the factors in the NER would provide more clarity over what needs to be considered, and how, in determining the efficient level, but provides less flexibility. Allowing another body to define all or some of the factors could provide more flexibility but also introduce significant discretion into how security procurement requirements are determined - which affects costs paid by consumers for the services and the level of risk to system security.

- **Access to advice and inputs**:
  - We would also need to determine how advice and inputs from AEMO, TNSPs and others would be obtained, and the role of these in the decision on the efficient level - that is, would the body be able to make a decision counter to the inputs and advice?
  - We consider that an industry or consumer panel defining the 'efficient' level of security services would likely require the expertise and close collaboration with AEMO and NSPs. It may be difficult for such a panel to go against the advice of AEMO or NSPs in determining an acceptable level of risk for security planning, which could erode some of the value of having a separate body determining 'efficient' system security levels.
- **Interaction with the TPSS and other planning documents:**
  - The AEC and CEC also propose that the TPSS should outline actionable and fully investible plans at least 10 years into the future (see section 3.4.2 below). The approach to setting the efficient level of security services would need to define how the two processes interact - would the TPSS's actionable plans be an input to determining the efficient level of services, or vice versa? Similarly, interactions with other planning documents - and how they need to be taken into account - would need to be defined.
- **Flow-on implications for NER frameworks and responsibilities:**
  - Changes to how security requirements are defined would have flow-on implications throughout the security frameworks in the NER, which would need to be worked through.

The Commission is interested in stakeholder views on how these aspects of the proposal could operate in practice in order to best serve the long-term interests of consumers.

This proposal would constitute a significant change in how security procurement requirements are determined

The AEC and CEC's proposal for an independent panel to set security procurement requirements based on consideration of the 'efficient level' is fundamentally different to how security procurement requirements are currently set by AEMO. It would require changes to security roles and responsibilities, clarity on how various factors are to be balanced and how relevant expert parties should be involved, and potentially significant flow-on changes to the current NER frameworks for security.

The current process is as follows:

- **Responsible body:** AEMO is responsible for defining security requirements through the annual security reporting process.
- **Overall procurement objective:** The NER defines the system security requirements as:
  - For system strength:[88]
    - the minimum three phase fault level for each system strength node

88 Refer to NER clause 5.20C.1(c).

  - the level at each node required to achieve stable voltage waveforms to support the projected level of inverter based resources.
- For inertia:[89]
  - the minimum level of inertia required in each region to continuously operate the power system in a secure operating state
  - in addition, where a region is at risk of islanding, the minimum levels of inertia required to operate that region in a satisfactory and secure operating state (taking into account both interconnected operations and regions at risk of islanding)
- NSCAS required to:[90]
  - maintain security and reliability in accordance with the power system security standards and the reliability standard (this includes any inertia and system strength requirements over the next three years)
  - maintain or increase transmission network transfer capability to maximise net economic benefits.

- **Procurement targets:**
  - AEMO forecasts system strength and inertia requirements for each region annually over the following 10 years, and declares any NSCAS gaps over the following 5 years. These forecasts essentially set procurement targets for TNSPs.
  - The NER sets out that TNSPs have an obligation to:
    - make available the required levels of system strength and inertia, as forecast three years in advance
    - advise AEMO when they will meet any NSCAS gap, or provide reasons why the TNSP will not meet the NSCAS gap (with AEMO having the power to procure this NSCAS if the TNSP will not meet the NSCAS gap).
- **Factors that AEMO considers:**
  - AEMO determines the methodology it will use to set the requirements for each security service. These are published and consulted on.
  - Beyond meeting minimum security requirements, AEMO is not required under the NER to take into account other factors such as specific scenarios, 'efficient' levels (efficiency of procurement is managed through the TNSP process), investment lead times (which are taken into account by the advance three-year TNSP obligations), or the use of backstop mechanisms. However, we note that:
    - in determining system strength and inertia requirements, AEMO uses projections of the future system based on the ESOO and ISP - this is analogous to being a 'scenario' being planned for.
    - in determining the security requirements, AEMO uses analysis of credible contingencies, which could be thought of as a 'level of risk to be maintained' - that is, within the projections of the system used, this determines which risks (contingencies) to protect ourselves against (see Box 4).
    - AEMO uses a proactive approach to procuring system strength and inertia to manage risks to consumers - and generally prefers to procure slightly too much, or too early, of

89 Refer to NER clause 5.20B.2.

90 Refer to NER Chapter 10 for the glossary definition of *NSCAS need* and clause 5.20.3.

these services because the costs of doing so are lower than the costs of procuring too little.

- **Access to advice and inputs:**
  - AEMO works with TNSPs to obtain technical advice as inputs into this process.

We are interested in stakeholder views on the benefits of this proposal, or potential alternative solutions

Given the scale of the changes proposed, it is important to understand the specific ways in which this proposal addresses the issues identified by the AEC and CEC, and its benefits and costs to consumers. We are particularly interested in stakeholder views on why each specific feature of the proposal would be necessary to achieve improved outcomes for consumers - for example, what are the benefits for consumers if we change the body who is responsible for setting the efficient level?

We are also interested in views and ideas for alternative solutions to address the problems identified.

Box 4: The role of the credible contingency framework in setting security requirements and determining the acceptable level of system security 'risk' that consumers and the market incur

As noted above, the current frameworks require AEMO to consider all possible credible contingency events,[1] when determining the system strength or inertia requirements over the next ten years. This can include the different sets of credible contingency events across different network development scenarios, as shown in AEMO's most recent TPSS.[2]

The security frameworks require sufficient security services to be procured so that the system can remain secure through credible contingencies. Implicitly, we therefore accept that a non-credible contingency event could cause the power system to be insecure for a short period of time, in exchange for avoiding greater costs of procuring additional security services to cover some non-credible contingency events.

In contrast to this approach, procuring a greater level of security services could be deemed to be more 'efficient' if we determine that the extra costs of procuring those services is outweighed by the benefits of being protected against certain non-credible contingency events - for example, if we think those events are reasonably likely to occur (or are likely to be reclassified as credible, in operational timeframes). On the other hand, procuring a higher level of security services could increase the risk of over-procurement, especially if the likelihood of certain non-credible contingencies is hard to ascertain many years in advance. It may be very difficult for an industry or consumer panel to determine the precise system risks AEMO must consider in its assessments to determine 'efficient' amounts of security services, given that planning and forecasting will always involve some degree of uncertainty.

AEMO's 2025 General Power System Risk Review highlights the increasing risks, higher probability, and greater impacts of non-credible contingencies in the future. AEMO flagged that determining the appropriate methods to manage non-credible contingencies will require further consultation with stakeholders and key industry bodies.[3]

Note: 1: The definition of a credible contingency event is set out in NER clause 4.2.3(b).

Note: 2: For example, AEMO considered the scenario of a second or third coal station (other than Eraring) being offline in NSW from as early as July 2028; see the TPSS, pp. 60-69.

Note: 3: AEMO, General Power System Risk Review, Chapter 3, pp. 37-43

3.4.2 The AEC and CEC propose including extra Rules guidance on the TPSS to include specific actionable plans

The AEC and CEC propose changes to the NER to provide greater guidance to AEMO on the information required in AEMO's TPSS.

To achieve this, the proponents suggest embedding principles in the NER to guide what the TPSS must cover.[91] Another body (for example the Reliability Panel) would then develop guidelines or procedures to guide AEMO in actioning these principles as it develops the TPSS.

As part of this, the AEC and CEC propose that the NER should require that the TPSS include 'specific actionable plans', which would be 'fully developed and actionable 10 years ahead of the earliest potential occurrence of the relevant identified need'.[92]

The AEC and CEC propose that in developing the TPSS, AEMO would be required to 'identify new ways of how ESS may be provided (by one or multiple service providers jointly)'.[93] The actionable plans would then provide a fully operational, dispatchable, and investable plan for operating the grid with limited to no synchronous units online or when such units are unavailable due to a combination of planned maintenance and unplanned outages.'[94]

The plans would continue to be reassessed by AEMO annually.

The AEC and CEC consider that these NER principles and obligations for AEMO's TPSS would improve accountability for the successful deployment of security services and provide clearer forward planning signals to the market, thereby supporting security at least cost for energy consumers and contributing to the NEO.[95]

We are interested in better understanding the proposal for the TPSS to include 'actionable plans'

Under the current security frameworks, AEMO does not prescribe or determine the least-cost mix of technology types that can provide the required security services. AEMO only determines the 'demand' for each security service over the next ten years (through its determination of the *inertia requirements* and *system strength requirements*, pursuant to NER clauses 5.20B.2(b) and 5.20C.1(c)). The specific mix and timing of resources that would meet these requirements is determined by TNSPs through their RIT-T and procurement processes to meet their binding obligations - see appendix A for more information.

While AEMO has included forecasts of security supply for each region in its most recent TPSS based on information from its Electricity Statement of Opportunities and knowledge of committed projects,[96] these forecasts are not intended to 'lock-in' a specific set of solutions or technologies to meet all security requirements over the next ten years that must be adhered to.

We have interpreted the AEC and CEC's use of the phrase 'actionable plans' to mean that the TPSS should specify the precise technology mix, specific timings and locations of assets that AEMO considers would meet security requirements at least cost; and that this would then trigger procurement processes. There are many ways this plan could be arrived at. Some potential options to consider include:

91 AEC & CEC rule change request, pp 2-3.
92 AEC & CEC rule change request, p. 3.
93 Ibid. p. 2.
94 Ibid.
95 Ibid., pp. 1-3.
96 AEMO, TPSS, Part B: Regional transition plans; and Appendix A2 Network Requirements, where there are numerous duration curves for fault levels and inertia under different planning scenarios.

- AEMO could be required to perform a detailed cost-benefit analysis to determine the least-cost mix of specific assets under a range of different scenarios. This analysis could be similar to what is already done through the ISP. We note that the ISP is already security-constrained and takes into account security requirements as specified in the Inputs, Assumptions and Scenarios Report.,[97] so it would be important to define how the two processes interact.
- Drawing on the ISP actionability framework, a TPSS 'actionable plan' could allow TNSPs to skip a PSCR, the first step in the RIT-T process. This would recognise the cost-benefit analysis that AEMO would have already undertaken in developing the 'actionable plan'.
- An 'actionable plan' could also trigger a new, prescribed procurement process, or some alternative regulatory process to the RIT-T, as proposed by AEMO. We welcome stakeholder suggestions for how to increase the effectiveness of a potential 'actionable plan' in the TPSS.

We are interested in stakeholder views as to how an actionable plan in the TPSS would differ from the ISP process.

We are interested in views on what else the TPSS principles would entail

We note that the NER includes a range of requirements for the TPSS (see Box 5), which were established in March 2024 by the ISF rule change. We also note that the Reliability Panel already has several existing functions related to system security, one of which is:[98]

> for the purposes of *contingency event* management, develop and *publish* principles and guidelines that determine how *AEMO* should maintain *power system security* while taking into account the costs and benefits to the extent practicable.

To date, the Panel has not determined a need for any principles or guidelines for maintaining power system security[99] but could do so if it deemed necessary.

We also note that the 2025 TPSS provides extensive information and analysis on forward system security needs and risks. The AEC & CEC rule change request commented that the 2025 TPSS includes 'a lot more of what [the proponents] believe is required' than the 2024 TPSS - but that the 'key elements of the TPSS should be defined in the NER to support investment certainty'.[100]

Given these existing requirements, and the extensiveness of the 2025 TPSS, we are interested in feedback from stakeholders on what else the TPSS guiding principles would need to capture (beyond the proposal for 'actionable plans' outlined above) - and how this would help support investment certainty or address the other issues identified in the rule change request.

Box 5: NER requirements on the content AEMO must include in its TPSS

The overarching purpose and objective of the TPSS is for AEMO to make available its analysis of:

- how it plans to maintain power system security through the transition to a low- or zero-emissions power system
- AEMO's current technical understanding of what is needed to achieve power system security in the future power system

97 For example, see AEMO, 2025 Inputs Assumptions and Scenarios Report, section 3.11, which details how system strength and inertia requirements will constrain the outputs of the 2026 ISP.

98 NER, clause 8.8.1(a)(2A).

99 AEMC, Reliability Panel Responsibilities and obligations.

100 AEC & CEC rule change request, p. 3.

- the work that AEMO is undertaking to improve this understanding and to specify the range of services that will be required in the future power system.

In its report, AEMO must include:

- an outline of AEMO's current understanding of system security services and any current or planned work towards refining the specifications for system security services
- any operational metrics AEMO uses, or is developing, to manage power system security
- a detailed description of AEMO's plan to manage power system security through the transition to a low- or zero-emissions power system, including the work AEMO is doing to address the challenges of transitioning to a low- or zero-emissions power system
- the proposed number of ancillary services agreements that AEMO is likely to enter into for the following two-year period in respect of Type 1 and Type 2 transitional services
- information on how AEMO intends to move away from using Type 1 transitional services to manage power system security
- a description of known capabilities of any particular resources or equipment that could participate in managing power system security
- the outcomes, actions and learnings from the trials conducted through Type 2 transitional services and how the trials are contributing to maintaining and achieving power system security
- the technical priorities AEMO seeks to investigate through procuring Type 2 transitional services
- any trends in the use of directions
- a copy of any written commentary provided by the Reliability Panel.

While these are the minimum requirements for what AEMO must include in its annual TPSS, AEMO is not limited by these requirements and can choose to report on other related aspects of system security. For example, AEMO published detailed regional assessments of minimum system load risks as an appendix to the TPSS titled 'MSL Regional Assessments'. AEMO also chose to include its NSCAS, inertia and system strength reports (as required by NER clauses 5.20.3, 5.20.5 and 5.20.7, respectively) together in an appendix titled 'Network Requirements', to better consolidate these related reports.

As noted through our final determinations for the ISF and the Efficient provision of inertia rule changes (sections 8.4 and 4.1, respectively), we consider that the TPSS will continually evolve each year through AEMO's collaboration with industry and formal Panel consultation on how the next iteration of the TPSS can be improved.

Source: NER, clause 5.20.8.

3.4.3 The AEC and CEC propose standardising security service definitions and procurement processes

A core part of the AEC and CEC's proposal is to create a uniform, transparent procurement framework for security services across the NEM. This involves two separate components:

- **NEM-wide service definitions**: the rules would establish clear technical requirements for each security service (such as system strength) that would apply consistently across the NEM.
- **Consistent and transparent procurement methods**: The NER would provide clarity on how TNSPs should:
  - determine the 'appropriate and lowest-cost technology mix' after AEMO identifies the security need

- procure the security services, including: who oversees procurement, the assessment and approval approach, whether procurement would be through tenders or bilateral contracts, and standard terms and conditions for contracts with ESS providers including tenor.

The rule change request also proposes reviewing the procurement process every two years to ensure it stays fit for purpose as the market evolves.[101]

We understand that this proposal may also extend to specifications for any future new security services. This may include services currently being trialled (such as the Type 2 MSL transitional services) or future transitional services.[102]

By standardising these elements of the process, the proponents aim to increase transparency and investor confidence by providing clarity and certainty. The AEC and CEC consider that consistency in the minimum technical requirements across the NEM would provide more clarity, transparency and standardisation, which would increase commercial appetite for suitable non-network assets to provide security services. The proponents expect that a more prescribed and predictable process would attract more competitors (including non-network providers) and better incentivise original equipment manufacturers to offer innovative solutions, which would drive more efficient outcomes and lower costs for consumers.

There is a NEM-wide technical specification for inertia, but not for system strength

The ISF rule introduced an *inertia network service specification*, which sets out the minimum requirements for any plant (both synchronous and asynchronous) to be considered by AEMO as an acceptable source of inertia.[103] Inertia Service Providers (currently equivalent to TNSPs) may request that AEMO assess whether a particular type of equipment (for example, a specific inverter model) can safely provide inertia.[104] The inertia network service specification promotes consistency across the NEM for approving asynchronous plant to be used as a source of synthetic inertia.

There is currently no NEM-wide technical specification for system strength. TNSPs have each developed their own specifications to assess potential non-network providers of system strength in their recent RIT-Ts.[105]

The proposal could be implemented in a number of ways, for example, the Rules could include:

- strengthened joint planning arrangements
- further details on what should be provided through AER or AEMO guidelines, procedures or methodology documents, or
- a specific requirement for a consistent system strength specification.

We are interested in stakeholder views about whether a system strength specification would be desirable, and any suggestions about how the Rules relating to the inertia specification (or any technical specifications) could be improved.

The NER does not currently prescribe how a TNSP must run its procurement processes for non-network

101 AEC & CEC rule change request, p. 4.

102 See AEMO | Transitional Services - Type 2 Services for a list of all current Type 2 transitional services being currently being procured by AEMO.

103 NER, clause 5.20.4(f).

104 NER, clause 5.20.4(g).

105 For example, see Table E.1 from Powerlink's PACR, summarising the positions of SSSPs in relation to the viability of grid-forming BESS providing minimum fault level. Powerlink's own 'specification' for grid-forming BESS to provide stable voltage waveform support is located in Appendix J of its PACR.

options

While there is no specific or prescribed process in the NER for a TNSP to conduct its procurement for non-network options, related documents affect the TNSP's process and actions. For example:

- AEMO's Security Enablement Procedures and its requirements will naturally limit the financial structure and commercial arrangements that TNSPs will negotiate, as any security contract must meet its minimum requirements[106]
- The AER's RIT-T application guidelines specify the consultation with non-network providers that must occur prior to any procurement or tender process.[107]
- The AER's guideline for system security network support payments, which explains how the AER assesses the TNSP's actions for prudency and efficiency, when the TNSP seeks an ex-ante determination on a non-network contract.[108]

Broadly, the proposal for greater consistency could be implemented in a number of ways through the Rules, for example:

- principles for consistent procurement between jurisdictions,
- further details on what should be provided through AER or AEMO guidelines, procedures or methodology documents, or
- specific and more prescriptive requirements for procurement processes and contracting terms.

The Commission is interested in stakeholder views on any procurement issues encountered to date, and specific changes to the Rules that would be required to deliver additional consistency.

For example:

- What specific aspects of the procurement process would need to be codified, or made more consistent or transparent?
- Besides the proponent and the TNSP, should the AER be involved in such a procurement process, and if so, how? Should AEMO also be formally involved to advise on any necessary technical considerations?
- Aside from any new Rules, are guidelines necessary for the effective operation of a standardised procurement process? If so, what party or body should be in charge of developing this guideline?
- Is there a need for a dispute resolution mechanism, or can the existing resolution mechanisms in the Rules apply to this new process?
- How do we ensure that a new procurement process is timely and efficient, and does not lead to the same problems and potential delays that AEMO has described in its rule change request about the RIT-T process?

For both proposals - to standardise technical specifications and standardise procurement processes - we note that the Rules need to strike a balance between prescription and flexibility. They need to:

- allow for clarity on system needs while maintaining appropriate scope to alter approaches where technical requirements may genuinely differ across regions

106 For example, the Security Enablement Procedures require security contracts to include, at a minimum, a usage payment in $/hr, an activation payment in $/activation, and the amount of energy revenue that would be transferred between the TNSP and a security service provider when enabled - see page 25.

107 Refer to: aer.gov.au/industry/registers/resources/guidelines/regulatory-investment-test-transmission-application-guidelines/current-rit-t-application-guidelines

108 Refer to: aer.gov.au/industry/registers/resources/guidelines/system-security-network-support-payment-guideline

- provide enough clarity and consistency on procurement processes to incentivise competition and reduce transaction costs, while remaining flexible to accommodate differing commercial needs across projects.

To inform the Commission's consideration of this issue and proposed solutions, further details from stakeholders on specific experiences where a lack of consistency in security service specifications or procurement processes has been problematic would be helpful.

Question 5: What are your views on the proposed solutions from both proponents?

- Do the proposed solutions address the problems raised in the rule change requests?
- How effective are the proposed solutions, either combined or in isolation, at addressing the problems raised?
- Are there alternative solutions to address the problems raised in the rule change requests?

3.5 What are the costs and benefits of the proposed solutions?

The changes proposed by AEMO and the AEC and CEC aim to improve how the power system identifies, plans for, and delivers essential system services through the transition.

3.5.1 AEMO considers its proposals have benefits for system security and efficiency

AEMO expects that its proposals would support the procurement of an efficient level of security services so that security resources are available when they are needed through the transition. This would support both system security in operational timeframes, and the pace of investment in the future system.

AEMO's rule change proposal discusses the asymmetric nature of investment in system security, which means that delivering security services in a forward-looking way can help avoid higher system costs in the long-run. While investing in security services too early or at too high a level may lead to some temporary inefficiencies and near-term costs for consumers, delaying action can result in more significant costs to consumers and the system as a whole - including delays to the system transition. AEMO considers that by addressing the current issues with timely security investment its proposals would achieve the following benefits for consumers:

- enabling more efficient and cost-effective procurement by more closely aligning procurement processes with investment timeframes
- encouraging greater competition in the procurement process
- less frequent curtailment of low-cost renewable energy due to security constraints, and therefore lower overall costs to consumers, as system security resources are more likely to be available to relieve constraints
- reduced costs for emergency interventions (such as directions) and short-term urgent procurement.
- reduced costs of the RIT-T process to TNSPs through streamlining measures to reduce the effort and time taken, while maintaining appropriate controls for prudent and efficient investment
- reduced likelihood of unserved energy and the risk of blackouts due to security shortages
- supporting timely coal exit and increased entry of renewable generation, which lowers the emissions intensity of energy in the NEM

- avoiding sustained reliance on ageing thermal units to provide security that are no longer efficient and increasingly unreliable, and may require Minimum System Load intervention.

3.5.2 AEMO's proposals could result in some over-procurement, with implementation costs expected to be minimal

AEMO discusses that the potential costs of its proposals stem primarily from the risk that security services could be procured earlier than required. This can cause higher costs to consumers, because:

- we might forecast a higher-than-required security needs, resulting in 'over-procurement' compared with the costs of procuring a theoretical 'ideal' level of security services
- we might commit to security technologies early whose costs reduce over time, or forego the opportunity of later investment in emerging cheaper technologies.

AEMO notes that these risks already exist in the current frameworks, and are one side of the asymmetric risk inherent in security procurement. However, AEMO's description of the problem in its rule change request highlights that the risks and costs associated with under procurement (or procurement that is too late) appear to be more likely to materialise at present, given practical experience implementing the frameworks.

AEMO considers that the implementation costs of its proposals would be minimal as they primarily vary existing processes, including:

- the existing joint planning processes by AEMO and TNSPs
- TNSPs' existing economic assessment processes for security options.

The Commission notes that implementation costs would likely include administrative costs - such as updating business processes and guidelines - for TNSPs, AEMO, the AER and registered market participants to:

- adjust to a new, but more streamlined, RIT-T assessment approach
- transition to an extended timeframe for security procurement
- reflect an updated approach to the NSCAS procurement backstop
- register and record notices of closure for a longer period than is currently required, and keep these updated.

3.5.3 The AEC and CEC also consider their proposals would support improved security and more efficient investment

The AEC and CEC consider that the potential benefits of their proposed reforms include:

- supporting system security through the transition by ensuring security services are available when they are needed - through:
  - early development of system security plans
  - improved investment signals for system security
  - flexibility to allow for earlier expenditure on system security.
- improved efficiency in security procurement and therefore lower costs to consumers, through facilitating co-optimised investment which reduces the risk of duplicating security investments
- encouraging competition in the provision of security services, thus lowering costs for consumers, through:
  - enhanced certainty on security needs

  - standardising procurement processes across jurisdictions.
- enhanced certainty that synchronous plant exit will not be delayed and security interventions will not be required, avoiding reliance on higher-emissions plant that may be more costly when operated beyond their economic life.
- reduced costs arising from security constraints and directions for security, through improved forward planning signals.

3.5.4 The AEC and CEC proposals would also have costs associated with implementation and be subject to asymmetric risk

The AEC and CEC consider that 'the costs of the proposed rule change are likely to be mainly administrative in nature, and likely to fall on AEMO to implement'.[109]

We consider that implementation costs of the proposals in the rule change request could include:

- annual costs for AEMO to develop actionable investment plans in the TPSS - including costs of any required modelling, analysis and consultation
- costs for TNSPs - likely once-off - to develop and implement standard procurement processes
- costs for AEMO to develop any additional technical service specifications, consult on these and keep them up to date
- the costs of establishing and providing ongoing support to an independent panel that is tasked with determining efficient levels of security procurement

The Commission also notes that the same asymmetric risk considerations and potential costs apply to the AEC and CEC proposals as for AEMO's proposal. This is because both proposals maintain a proactive procurement approach for system security. The AEC and CEC's proposals would allow proactive procurement over a range of different forward timeframes, with the relative costs of this approach dependent on design details which are yet to be worked through.

Question 6: What are your views on the costs and benefits of the proposed solutions?

- What do you consider will be the benefits and costs of the proposed solutions?
- Do you have any quantitative evidence, examples or estimates that can assist the Commission in assessing the costs and benefits of the solutions?
- Do the solutions strike the right balance between costs and benefits?
- Is there anything the Commission could do in designing the rule that would help to minimise the costs and maximise the benefits?

109 AEC & CEC rule change request, p. 5.

4 We are seeking your views on timing, coordination and implementation considerations

This chapter discusses timing, coordination and implementation considerations for two rule change requests from AEMO and the AEC and CEC.

In this chapter:

- Section 4.1 seeks stakeholder views on the factors that may impact the optimal timing for progressing the rule change requests.
- Section 4.2 sets out our preliminary considerations with respect to consolidating the rule change requests or progressing them separately.

4.1 A number of timing, coordination and implementation factors may impact how we consider the rule change requests

The rule change requests raise a broad set of problems and proposed solutions, spanning across all components of the existing procurement frameworks for security services. Given the breadth of proposals and the fact that the frameworks were reformed recently, the Commission is considering various factors to determine the best approach for progressing the rule change requests. There are a number of factors that may impact how we ultimately consider the issues raised in the rule change requests and progress potential solutions.

1. **Some of the issues identified in the requests are resulting in risks to achieving system security in the near- to medium-term**. The requests identify that current lead times for security procurement may not provide enough time for assessment and procurement of security solutions so that they are in place for when they are needed, contributing to system security risks. AEMO's TPSS points to a number of pressing transition points coming up over the next five to 10 years,[110] which means timely investment in security solutions is critical. This means there may be benefits in promptly progressing consideration of solutions that can address these near-term challenges.
2. **The frameworks in their current form were relatively recently implemented.** Section 2.1 and appendix A.3 note that the current frameworks for system security have undergone a series of rule changes over the last five years that have aimed to ensure timely procurement ahead of system security issues arising, and encourage innovation in the provision of security services. The recency of these reforms means that some aspects of the frameworks may still be being embedded and familiarity with the frameworks among market participants is still developing. There may be benefits in gathering more information about how the frameworks are playing out in practice before progressing some issues and solutions. Given that the frameworks are so recently updated, the Commission also considers that changes made, at least in the near- to medium-term (the next two to five years) should be incremental, rather than wholesale changes, to mitigate risks of further uncertainty in a transitioning system.
3. **The first round of TNSP RIT-Ts has been completed and procurement/investment is being progressed.** This means that changes made in the near-term are likely to have little to no impact on current procurement. However, the TPSS highlights the need to have solutions in place ahead of time, which may put pressure on any future rounds of procurement to be progressed more quickly (as noted above). We are interested in views and information from

110 Refer to AEMO, 2025 TPSS, December 2025, p. 8. Note: Origin Energy has extended the operations of Eraring Power Station to 2029 since the publication of the 2025 TPSS. Refer to Origin extends Eraring Power Station operations to 2029, 20 January 2026 for more details.

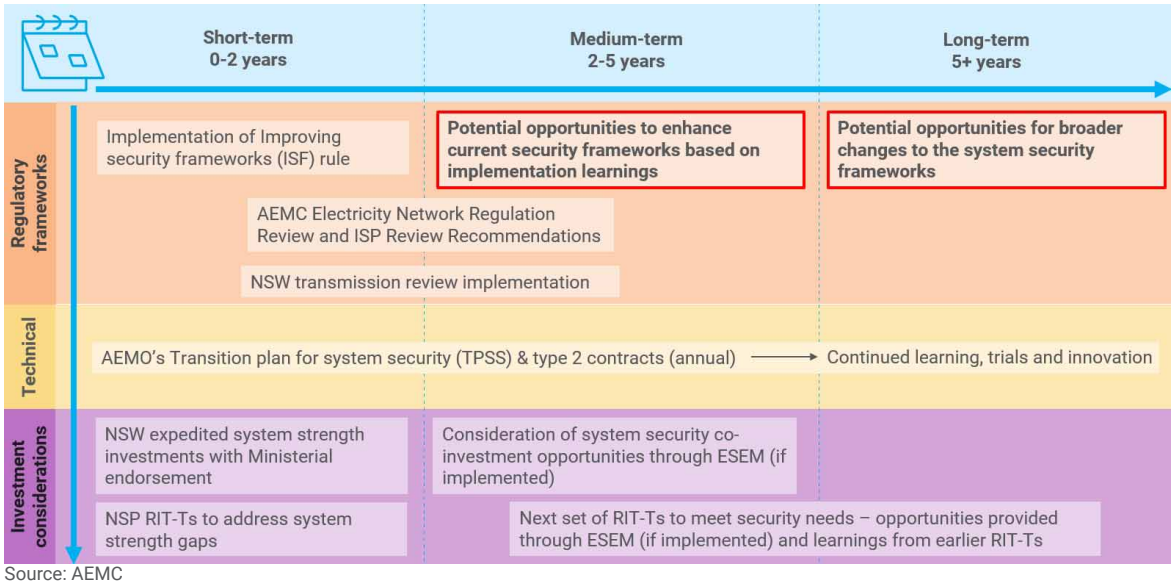
TNSPs, AEMO and other stakeholders on whether and how any changes made in the near-term would impact future rounds of procurement.

4. **System security reports (for system strength, inertia and NSCAS) are released annually in December, with the next round due on 1 December 2026.** The system security reports set the binding requirements and gaps, which will dictate if there are any further activities (for example, new RIT-Ts) that TNSPs need to undertake to meet their obligations under the frameworks. We are interested in views and information on how the rule change proposals could, or should, interact with the timing of these reporting cycles - for example, whether there are any proposals which would be practical and beneficial to implement for the next reporting cycle.
5. **There are a number of work programs (either ongoing or soon-to-be-initiated) that consider adjacent topics.** We will need to ensure coordination and consistency. There may be benefit in aligning the consideration of some of the solutions proposed in the rule change requests with these broader processes. In Figure 4.1 we set out our view of how and when potential future evolutions to the security frameworks could align with other work programs. Among these are:
    a. the AEMC's Electricity Network Regulation Review, which is due to commence in July 2026. This review will consider the evolving nature of services that electricity networks provide and how they should be incentivised and compensated to best achieve positive consumer outcomes. While this is not specifically a system security review, there may be some related considerations between the work programs, given the role of transmission network businesses in system security investments. The draft terms of reference for this review are published on the AEMC's website: aemc.gov.au/market-reviews-advice/electricity-network-regulation-review
    b. the AEMC's Review of the Integrated System Plan (ISP) framework, which commenced in late 2025. This is not specifically related to system security. However, among the key aspects raised for consultation is the economic assessment process for actionable ISP projects, which includes the application of the RIT-T to those projects.[111] There may be some related considerations between the work programs, especially as the security frameworks rule change requests also raise issues with the RIT-T process for system security investments. More information on this review is available on the AEMC's website: aemc.gov.au/market-reviews-advice/review-integrated-system-plan-framework
    c. the Review of AEMO Governance: On 5 February 2026, the Minister for Climate Change and Energy announced a review of AEMO's governance arrangements. As the AEC & CEC rule change request has a governance focus - albeit specifically related to governance of the security frameworks within the Rules - it may be worthwhile considering the outcomes of this broader governance review in considering the issues and solutions related to governance in the rule change requests. The final report of the review is expected to be provided to Energy Ministers in May 2026. The terms of reference for the review is available at: energy.gov.au/energy-and-climate-change-ministerial-council/working-groups/energy-transformation-working-group/review-aemo-governance. A discussion paper for the review was released in February, and consultation closed on 6 March 2026: consult.dcceew.gov.au/aemo-governance-review
    d. potential further work on the ESEM: The NEM wholesale market settings review, completed in December 2025, recommended that Energy Ministers should establish an ESEM within the National Electricity Law (NEL) and NER to facilitate investment in the NEM.[112] Part of

111 AEMC, Review of the ISP framework, Consultation paper, 18 December 2025, Section 2.5, p. 19.
112 Refer to the final report: Recommendation 10, p. 174.

this recommendation was that, "where cost-effective, projects facilitated through the ESEM should also be able to provide ESS".[113] Accordingly, the design of the ESEM, if implemented, is likely to be relevant to considerations in the security frameworks rule change requests, as AEMO and the AEC and CEC raise issues and suggestions related to co-optimised investment in security services. The final report is available at: energy.gov.au/sites/default/files/2025-12/national-electricity-market-wholesale-market-settings-review-final-report.pdf

Figure 4.1: Evolutions to the security frameworks over time



Source: AEMC

Question 7: What are stakeholder views on the timing, coordination and implementation factors relating to the rule change requests?

- Do you agree with the Commission's characterisation of the timing, coordination and implementation factors and how they relate to the security frameworks rule change requests?
- Are the additional contextual/timing factors that the Commission should account for when considering how to progress the two rule change requests?

4.2 We are considering how to progress the rule change requests

The rule change requests raise a broad and complex range of issues and solutions. There are further details to test and work through to understand the magnitude of the problems, the potential design of the proposed solutions, potential alternative solutions, and the costs and benefits of the different options.

We are considering whether to consolidate the rule change requests, or progress issues that are creating near-term security risks, or have been more thoroughly detailed or tested, in advance of other issues that require further testing or evidencing through experience with the new frameworks. Timing would ultimately be subject to each rule change request separately passing

113 Refer to the final report: Recommendation 10B, p. 208.

the test for extension.[114] We propose our preliminary view of how the requests could be staged below, and are interested in stakeholder feedback on this approach.

It is important to note that progressing one rule change request ahead of the other would not mean that the issues would be considered in a vacuum. That is, if the Commission progressed consideration of the AEMO rule change request ahead of the AEC & CEC rule change request, the issues and solutions raised in the AEC & CEC rule change request could still form part of our consideration (similar to any other issues and solutions raised in formal submissions to a consultation paper or draft determination), providing they are in scope of the AEMO rule change request, and vice versa. We agree with the AEC and CEC that the two rule change requests are complementary and that there are overlaps in the problems identified as well as some aspects of solutions (as explored in chapter 2 and chapter 3 of this paper).

In considering the rule change requests, the Commission will also draw on recent work by the AEMC or others where this can inform our approaches to the problems and solutions identified. This may include, for example, our previous work on improving the cost recovery arrangements for transmission non-network options,[115] and the current review of the ESS Framework in Western Australia's Wholesale Electricity Market.[116]

4.2.1 Issues relating to procurement timing, procurement processes and backstops could be considered first

As discussed in section 4.1, some of the issues identified in the requests are already playing out in heightened risks to our ability to achieve system security in the near- to medium-term. It is critical that the frameworks provide enough lead time so that security services are available in time for the key transition points when they are needed, and that backstop mechanisms can operate effectively in the near-term to fill any gaps. This means there may be benefits in promptly progressing consideration of solutions that can address these near-term challenges, and aiming to implement them as soon as practicable.

Accordingly, to provide confidence on how TNSPs can meet their obligations (and if there are any changes), it may be worthwhile to progress early consideration of issues related to:

- procurement timing (see section 2.2)
- procurement assessment processes (see section 2.2), and
- the procurement backstop mechanisms (see section 2.3).

We consider that any changes should focus on incremental change that can be effective quickly, given the imperative for system security investments while also acknowledging that the frameworks in their current form were relatively recently implemented. Progressing and aiming to complete the AEMO rule change request in 2026 may be a good avenue to achieve this, subject to the materiality and complexity of issues raised in consultation.

4.2.2 Consideration of broader governance issues and solutions could benefit from more implementation experience

We also discuss in section 4.1 that the frameworks in their current form were relatively recently implemented and there are a number of work programs (either ongoing or soon-to-be-initiated)

114 The AEMC may extend the statutory timeframes for making a draft or final determination under Section 107 of the National Electricity Law (NEL) if the rule change request raises issues of sufficient complexity or difficulty or there is a material change in circumstances.

115 Refer to AEMC, Improving the cost recovery arrangements for transmission non-network options, Rule determination,13 March 2025.

116 Refer to: wa.gov.au/government/document-collections/essential-system-services-framework-review

that may touch on adjacent topics. More wholesale changes should be carefully considered while the frameworks are embedded and other work programs play out.

Accordingly, issues relating to improved governance, accountability and transparency arrangements (see section 2.4) may be worth considering over a longer timeframe. This would allow us to gain further experience in how the security frameworks are playing out, and allowing us to consider and coordinate with the outcomes of other work. Progressing and aiming to complete the AEC & CEC rule change request in 2027 may be a good avenue to achieve this - subject to any extension of the process meeting the statutory test for extension. We are interested in stakeholder views on this.

5 Making our decision

When considering a rule change proposal, the Commission considers a range of factors.

This chapter outlines:

- issues the Commission must take into account
- the proposed assessment framework
- decisions the Commission can make
- rule-making for the Northern Territory.

We would like your feedback on the proposed assessment framework.

5.1 The Commission must act in the long-term interests of consumers

The Commission is bound by the NEL to only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NEO.[117]

The NEO is:[118]

> 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.

The targets statement, available on the AEMC website, lists the emissions reduction targets to be considered, as a minimum, in having regard to the NEO.[119]

5.2 We propose to assess the rule change using these four criteria

5.2.1 Our methods to analyse the proposed rule

Considering the NEO and the issues raised in the rule change requests, the Commission proposes to assess these rule change requests against the set of criteria outlined below. These assessment criteria reflect the key potential impacts – costs and benefits – of the rule change requests. We consider these impacts within the framework of the NEO.

The Commission's regulatory impact analysis may use qualitative and/or quantitative methodologies. The depth of analysis will be commensurate with the potential impacts of the proposed rule change. We may refine these methodologies as this rule change progresses, including in response to stakeholder submissions.

117 Section 88 of the NEL.
118 Section 7 of the NEL.
119 Section 32A(5) of the NEL.

Consistent with good regulatory practice, we also assess other viable policy options – including not making the proposed rule (a business-as-usual scenario) and making a more preferable rule – using the same set of assessment criteria and impact analysis methodology where feasible.

5.2.2 Assessment criteria and rationale

The proposed assessment criteria and rationale for each is as follows:

- **Safety, security and reliability** - Solutions should promote robust security frameworks that can maintain system security through the transition as thermal plant retire, and the capabilities of new types of assets are evolving. Solutions should ensure security services are in place in a timely manner, and that there is transparency and accountability in meeting future security needs.
- **Principles of market efficiency** - Solutions should promote efficiency in providing and procuring security services - including procuring an efficient level of services, incentivising efficient investment in security capabilities, supporting competition and reducing barriers to entry for new security services technologies.
- **Innovation and flexibility -** Solutions should capture a mix of current and future resources that can provide security services (for example, synchronous condensers, grid forming batteries, clutched turbines). Barriers to investment in all types of assets would be counter to providing benefit to consumers.
- **Implementation considerations** - Solutions should be able to be implemented in a timely manner, given the timing imperative for new system strength assets and because procurement rounds are ongoing. We note that the frameworks are only early in their implementation – wholesale changes should be avoided where they would impact participant certainty.

Question 8: What are your views on the assessment framework?

- Do you agree with the proposed assessment criteria?
- Are there additional criteria that the Commission should consider or criteria included here that are not relevant?

5.3 We have three options when making our decision

After using the assessment framework to consider each rule change request, the Commission may decide:

- to make the rule as proposed by its respective proponent[120]
- to make a rule that is different to the proposed rule (a more preferable rule), as discussed below, or
- not to make a rule.

The Commission may make a more preferable rule (which may be materially different to the proposed rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule is likely to better contribute to the achievement of the NEO.[121]

120 AEMO describes its proposed rule in section 4, pp. 18-19, of its rule change request. The AEC and CEC describe their proposed rule on pp. 3-5 of their rule change request.

121 Section 91A of the NEL.

5.4 We may make a different rule to apply in the Northern Territory

Parts of the NER, as amended from time to time, apply in the Northern Territory, subject to modifications set out in regulations made under the Northern Territory legislation adopting the NEL.[122]

The proposed rule would amend provisions in NER chapters 5 and 10 that apply in the Northern Territory.[123]

The Commission is able to make different rules for the Northern Territory (including making no rule), taking into account the different characteristics of the Northern Territory electricity systems. For this rule change, the Commission will consider whether to:

- make a uniform rule that applies to both the Northern Territory systems and the national electricity system
- make a different rule for the Northern Territory, or
- make no rule for the Northern Territory.

122 National Electricity (Northern Territory) (National Uniform Legislation) Act 2015 (**NT Act**). The regulations under the NT Act are the National Electricity (Northern Territory) (National Uniform Legislation) (Modification) Regulations 2016.

123 Under the NT Act and its regulations, only certain parts of the NER have been adopted in the Northern Territory. The version of the NER that applies in the Northern Territory is available on the AEMC website at: https://energy-rules.aemc.gov.au/ntner.

A System security frameworks

This appendix provides background and context for the rule change requests and discusses:

- power system services and their contributions to security (appendix A.1)
- the current frameworks for delivering system strength, inertia and NSCAS in the NEM (appendix A.2)
- recent rule changes related to system strength and inertia (appendix A.3)

A.1 Power system services and their contributions to security

Historically, many system security services have been supplied as a byproduct of traditional thermal generation, such as coal-fired power stations or open-cycle gas turbines. As more inverter-based resources connect to the grid and coal units retire, AEMO continues to deepen its understanding of the security capabilities of the new generation mix, enabling it to implement new approaches to ensure system security.[124]

The AEMO and AEC & CEC rule change requests discuss the challenges associated with maintaining system strength and inertia in a transitioning power system. They also mention the NSCAS framework, which is currently used as a backstop mechanism for procuring these services.

As background to the issues raised, we define and explain some key concepts below: security, reliability, system strength, frequency and inertia.[125] Each of these services contributes to maintaining a secure power system.

- **Security.** Power system security broadly refers to the stability of the power system, including its ability to withstand disturbances and operate within defined technical limits.
- **Reliability.** Reliability refers to the power system having sufficient capacity to generate and transport electricity to meet customer demand. For a power system to be reliable, a secure operating state must be maintained. However, they are two distinct concepts. A reliable power system maintains a continuous balance between supply and demand over days or weeks, whereas a secure power system can continue operating in a stable state despite disturbances in the supply-demand balance over short timeframes.[126]
- **System strength.** A key factor in the power system's ability to respond to such disturbances is system strength. System strength is a core component in ensuring the power system remains secure. The term refers to the power system's ability to maintain and control the voltage waveform at any location, both during normal operating conditions and after a disturbance.[127] The framework for procuring and ensuring sufficient system strength is discussed in more detail in appendix A.2.1.
- **Frequency.** Maintaining a stable frequency is an important part of achieving a secure and reliable power system. Frequency control and ancillary services (FCAS) aim to restore and maintain the system frequency at 50 Hz by balancing supply and demand in real time. There are 10 FCAS markets in the NEM.[128] [129]

124 AEMC, Improving security frameworks for the energy transition (ISF), rule determination, 28 March 2024.

125 AEMO, TPSS, 1 December 2025, p. 18.

126 For more details on reliability, see AEMC, 2026 Reliability Standard and Settings Review, Draft report, 27 November 2025, Appendix A.

127 AEMO, TPSS, 1 December 2025, p. 4.

128 These include two regulation FCAS markets and eight contingency FCAS markets. For more information, see AEMO, Guide to Frequency Control Ancillary Services, 17 September 2025, p. 7.

129 There are also other frequency management tools in the NEM, such as primary frequency response.

- **Inertia.** Inertia impacts the system's dynamic performance, especially frequency stability, by reducing the rate of change of frequency (RoCoF) following a contingency event. The inertia of the power system relies on the physical inertia of spinning masses inside synchronous machines and on any synthetic inertial responses that IBR may be programmed to produce.[130] The inertia framework is discussed in more detail in appendix A.2.2.
- **NSCAS** refers to network support and control ancillary services, and are defined in the NER as non-market ancillary services 'with the capability to control the active or reactive power flow into or out of a transmission network to address an NSCAS need'.[131] These services may be delivered to maintain power system security and reliability of supply or to maintain or increase the power transfer capability of the transmission network.[132] The NSCAS framework is discussed in more detail in the following section (appendix A.2.3.).

A.2 The current frameworks for delivering system strength, inertia and NSCAS in the NEM

The system strength, inertia and NSCAS frameworks work together to maintain the power system in a secure operating state. Figure A.1 shows the interactions between TNSP obligations across the three frameworks.

Further explanations of the frameworks focusing on planning and procurement obligations are discussed in the following subsections:

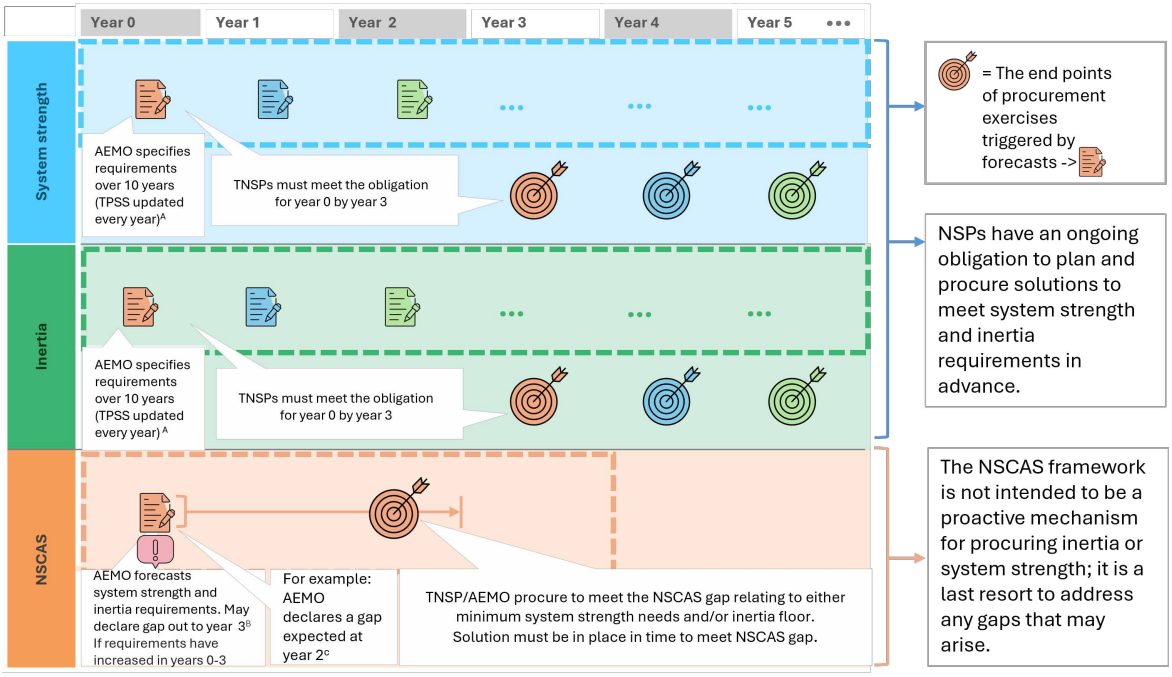
- System strength framework (appendix A.2.1)
- Inertia framework (appendix A.2.2)
- NSCAS framework (appendix A.2.3)
- The RIT-T process (appendix A.2.4)

130 For more information on the difference between power system inertia, synchronous inertial response and synthetic inertia, see AEMO, Inertia in the NEM explained, March 2023.

131 NER, NSCAS Glossary definition.

132 AEMO, Network Support and Control Ancillary Services (NSCAS) Description and Quantity Procedure, 1 December 2024, p. 4.

Figure A.1: TNSP obligations for system strength and inertia (and an example NSCAS gap)



Source: AEMC

Note: A: As of 1 December 2025, system security reports on system strength and inertia are now included in the TPSS.

Note: B: AEMO can declare and procure shortfall services via its NSCAS last resort functions only if requirements have been revised to a level that exceeds the system strength or inertia requirements. This gap is an example only to illustrate NSCAS gap filling.

Note: C: AEMO can declare NSCAS gaps for system strength and inertia if the forecast shortfall is expected to arise within less than three years. For illustrative purposes, NSCAS other than for system strength and inertia have been excluded from this figure.

A.2.1 System strength framework

The system strength framework outlines AEMO's and TNSPs' obligations for planning and procuring system strength services, as well as the system strength obligations of connecting parties.

The framework aims to maintain a secure operating state of the power system by ensuring that minimum fault levels and stable voltage waveforms are sustained.[133] More broadly, the framework also provides a forward-looking, centralised solution for the supply and demand of system strength in the NEM.[134]

This appendix focuses on the 'supply side' of the system strength framework, which is the focus of the rule change requests. For more details on the provisions relating to access standards and the system strength charging regime, see the *Efficient management of system strength rule* 2021.[135]

133 Established under the *National Electricity Amendment (managing power system fault levels) rule* 2017, the *Efficient management of system strength on power system rule* 2021 and *ISF rule* 2024.

134 The system strength framework evolved under the *Efficient management of system strength on the power system rule* 2021. See section A.3.1 for more details.

135 Available at: aemc.gov.au/rule-changes/efficient-management-system-strength-power-system

Supply side requirements

To support its objective, the framework sets out two supply-side requirements for meeting the 'minimum' and 'efficient' levels of system strength.[136] Together, these form the *system strength requirements*. In the NER, these requirements are defined as:[137] [138]

(i) the *minimum three phase fault level* applicable at the *system strength node* for the purposes of clause S5.1.14(b)(1); and

(ii) the level and type of *inverter based resources* and *schedule 5.3a plant* projected by *AEMO* for the *system strength node* for the purposes of clause S5.1.14(b)(2)

These *system strength requirements* inform the *system strength standard specification,*[139] which is the SSSP's requirement to ensure there is sufficient system strength available at their system strength node.[140] In any given year, TNSPs must meet the requirements specified in the System Strength Report published three years prior. This is discussed in more detail below.

Planning obligations

AEMO forecasts system strength requirements across ten years within its System Strength Report, which must be published by 1 December each year. [141] In December 2025, the System Strength Report was published as part of the TPSS.

The System Strength Requirements Methodology details how AEMO determines this forecast and how AEMO considers what is meant by 'stable voltage waveforms' (the second component of the *system strength requirements*, as explained above). [142] This document is published in accordance with the *rules consultation procedures* and may be amended by AEMO in line with those procedures.

Procurement obligations

Beyond long-term planning, the framework specifies procurement obligations for System Strength Service Providers (SSSPs).[143] SSSPs must use reasonable endeavours to procure and make system strength services available to AEMO to meet system strength requirements in each compliance year.[144] As noted in Figure A.1 and the discussion on supply side requirements above, in any given year, SSSPs must meet the requirements specified in the System Strength Report published three years ago. This obligation is ongoing, with SSSPs expected to procure solutions in advance to meet requirements and in accordance with any updated forecasts in the following TPSS. SSSPs therefore are expected to proactively plan to meet their system strength and inertia

136 AEMO, TPSS, 1 December 2025, Appendix A2.1.3.1.

137 NER clause 5.20C.1(c)(2).

138 Schedule 5.3a plant are defined as a system comprising high voltage direct current technology with a power transfer capability of 5 MW of more, used to transfer electricity to, from or between one or more alternating current networks (or parts of an alternating current network) of a network service provider.

139 NER, rule S5.1.14(a).

140 Under the NER, clause 5.20C.1(a), A *system strength node* is defined as a location on the transmission network that AEMO must determine system strength requirements and apply those requirements for power system security purposes.

141 For an illustrative example of the system strength requirements that apply to the standard for each year, see AEMC, Efficient management of system strength on the power system, Final determination, 21 October 2021, p. 104.

142 For more information, see: AEMO, System Strength Requirements Methodology, 1 December 2025.

143 System System Strength Service Providers are defined in clause 5.20C.3(a) of the NER as either the Transmission Network Service Provider for the region, or where there is more than one TNSP for a region, they are the jurisdictional planning body for that region. If the jurisdictional planning body is not a TNSP, then the coordinating TNSP for that region will be the SSSP for the region.

144 NER, clause S5.1.14(b)

obligations on an ongoing basis. SSSPs report on how obligations will be met and the technical requirements of these options in the Transmission Annual Planning Report.[145]

To meet these obligations, SSSPs apply the RIT-T[146] to procure a portfolio of solutions,[147] which must include consideration of both network and NNOs. The ability for network service providers to procure both network solutions and NNOs for system strength was contemplated by the *Efficient management of system strength on the power system rule* (2021).[148] AEMO can then enable these contracts to meet minimum operational requirements for system strength in operational timeframes (see below).[149]

A critical element of this is the joint planning process between SSSPs, AEMO and other network service providers to forecast requirements.[150] SSSPs conduct joint planning with network service providers for their connected transmission and distribution networks and AEMO if there are material changes that would impact the three-phase fault level at a *system strength node*.[151]

A.2.2 Inertia framework

The inertia framework aims to ensure the power system has sufficient inertia to prevent overly rapid frequency changes following disturbances.[152] To achieve this objective, the framework sets out a series of planning and procurement obligations for AEMO and TNSPs.

Planning obligations

Under the inertia framework, AEMO must annually determine, for the next ten years, the *inertia requirements.* These are the:[153]

- *system-wide inertia level,* which is the minimum amount of inertia required to continuously operate the power system securely when the entire mainland NEM is interconnected
- each region's *inertia sub-network allocation,* which is the minimum amount of inertia require for that region to securely operate, when there is no mainland NEM region that is islanded
- each region's *satisfactory inertia level,* which is the minimum amount of inertia required for that region to maintain a satisfactory operating state, when it is islanded
- each region's *secure inertia level,* which is the minimum amount of inertia required for that region to securely operate, when it is islanded
- each region's risk of becoming islanded, which determines whether a TNSP must make available either its *inertia sub-network allocation* (if it is not at a credible risk of islanding), or its *secure inertia level* (if it has a credible risk of islanding).[154]

Each year, AEMO forecasts these inertia requirements in the inertia report. In 2025, AEMO published the annual inertia report as part of the TPSS.[155]

145 NER, clause, 5.12.2(c)(8).

146 The RIT-T applies if the estimated capital cost of the investment option exceeds $8 million. This threshold encompasses most system strength investment, therefore proposed system strength investments will generally be subject to a RIT-T.

147 NER, clause 5.16.3.

148 The *Efficient management of system strength on the power system rule* 2021 also introduced joint planning obligations with the aim of improving opportunities for proponents of non-network solutions to participate.

149 AEMC, ISF, Directions paper, 2023, p. 121.

150 NER, rule 5.20C.3(f1).

151 AEMO, System Strength Requirements Methodology, 1 December 2025, pp.15-16.

152 The framework to ensure the availability of minimum inertia levels was initially established under the *Managing the rate of change of the power system frequency rule* 2017.

153 NER, clause 5.20B.2(b). The inertia requirements were previously projected over five years and had different components; they were updated under the *ISF rule* 2024.

154 NER, clause 5.20B.4(a1)-(c).

155 For an illustrative example of TNSP inertia procurement targets, see AEMC, ISF, Rule determination, 28 March 2024, p. 33.

In forecasting the inertia requirements, AEMO must adhere to the Frequency Operating Standard[156] and its Inertia Requirements Methodology.[157]

These documents work together as follows.

AEMO manages the power system frequency in accordance with the Frequency Operating Standard and specifies the maximum rate of change of frequency (RoCoF) for a credible contingency event within these standards.[158]

The calculations and modelling to determine the inertia requirements are published in AEMO's 2024 Inertia Requirements Methodology.[159] The Frequency Operating Standard informs AEMO's calculation of inertia requirements.

Procurement obligations

These planning responsibilities underpin the procurement obligations placed on Inertia Service Providers, which, at the time of writing, are equivalent to TNSPs.[160]

Inertia Service Providers are required to procure inertia or inertia support activities[161] to ensure that there will be sufficient inertia available to meet their binding inertia levels, as determined by AEMO in its annual inertia reports. The obligation is to make available either its *inertia sub-network allocation* (if it is not at a credible risk of islanding), or its *secure inertia level* (if it has a credible risk of islanding).[162]

Under amendments made from the ISF *Rule 2024*, TNSPs are required to ensure they make available sufficient inertia to meet their binding inertia levels from 1 December 2027. As displayed in Figure A.1, binding requirements are set three years in advance, with the 2027 levels set in AEMO's 2024 inertia forecasts.[163] [164] This aligns with system strength procurement timeline in order to make inertia procurement more proactive and allow for greater TNSP investment coordination.[165]

Any proposed investments to provide inertia network services and any proposed inertia service payments to proponents of non-network solutions are subject to the RIT-T process.[166][167] To deliver these requirements, TNSPs may invest in network or non-network solutions, subject to the RIT-T.

A.2.3 NSCAS framework

The NSCAS framework covers the procurement of non-market ancillary services with the capability to control active and reactive power flow into or out of the transmission network. Services under the NSCAS framework address a broad set of requirements, otherwise known as

156 Reliability Panel AEMC, Frequency Operating Standard, 9 October 2023.

157 AEMO, Inertia Requirements Methodology, 29 November 2024.

158 A revised standard came into effect in October 2023, following the Reliability Panel's 2022 review of the FOS.

159 AEMO, Inertia Requirements Methodology, 29 November 2024.

160 Under the NER, rule 5.20B.4(a) an *Inertia Service Provider* for an *inertia sub-network* is the *TNSP* for the *inertia sub-network*; or if there is more than one *TNSP* for the *inertia sub-network*, the *jurisdictional planning body* for the *participating jurisdiction* in which the *inertia sub-network* is located.

161 Defined under NER, 5.20B.5(a) as activities approved by AEMO under the NER which adjust the binding inertia levels but are not strictly inertia network services.

162 NER, clause 5.20B.4(a1)-(c).

163 AEMC, ISF, Rule determination, 28 March 2024, p. 18.

164 Existing shortfalls (those declared prior to 1 December 2024) still remain, and TNSPs are expected to continue meeting those levels up until the new 1 December 2027 requirements.

165 For more information see Chapter 3 of the AEMC, ISF, Rule determination, 28 March 2024.

166 The RIT-T applies if the estimated capital cost of the investment option exceeds $8 million. This threshold encompasses most system strength investment, therefore proposed system strength investments will generally be subject to a RIT-T.

167 AEMC, ISF, Directions paper, 24 August 2023, p. 121.

NSCAS needs.[168] The NSCAS framework also acts as a backstop procurement mechanism for system strength and inertia in the near-term, when the other frameworks do not apply.[169]

NSCAS are acquired under bilateral contracts and are split into two categories: Reliability and Security Ancillary Service (RSAS), and Market Benefit Ancillary Service (MBAS)[170] The three subtypes of RSAS are Inertia, system strength and 'other RSAS,'[171] which can be procured under the NSCAS framework to ensure the power system remains in a secure operating state, whilst reducing the need for intervention.

Planning obligations

To identify when NSCAS may be required, AEMO undertakes several planning and forecasting activities. In 2025 the NSCAS report, which covers the assessment of NSCAS needs, was included in AEMO's TPSS. [172]

AEMO may declare an NSCAS gap for most RSAS and MBAS when it forecasts that an NSCAS need will arise within five years, following the publication of the NSCAS report.[173]

However, as displayed in Figure A.1, inertia and system strength RSAS are assessed against a three-year horizon. This means that AEMO can only declare NSCAS gaps for inertia RSAS or system strength RSAS if:

- AEMO has revised the minimum fault level or inertia requirements within a three-year window and;
- the updated inertia or system strength service requirements exceed the level of those being procured by TNSPs within the next three years. [174]

In its 2025 security reports, AEMO highlighted an 'inertia deficit' or 'system strength deficit' in cases where AEMO identified a potential future supply shortfall of inertia or system strength, but where it has not revised the underlying Inertia or System Strength RSAS requirements, or where the gap arises outside the three-year window. These 'deficits' do not carry the same obligations as an NSCAS gap and were reported for visibility purposes only.[175]

Procurement obligations

If an NSCAS gap is declared, procurement obligations then apply. Under the ISF rule change, inertia and system strength can be procured through the NSCAS framework if minimum security requirements are not projected to be met in the three-year procurement period, but only if AEMO has revised the underlying inertia or system strength requirements.[176]

If AEMO declares a system strength or inertia gap in the TPSS, TNSPs may procure or provide services to address this gap. Where a TNSP does not address the declared gap, AEMO can

168 For more details on NSCAS needs, see AEMO, Network Support and Control Ancillary Services (NSCAS) Description and Quantity Procedure, 1 December 2024, p. 4.

169 AEMC, ISF, Directions paper, 24 August 2023, p. 121.

170 MBAS are procured to increase the power transfer capability of the transmission network to maximise present value net economic benefit; AEMO, Network Support and Control Ancillary Services (NSCAS) Description and Quantity Procedure, 1 December 2024.

171 An example of 'other RSAS' is upgrading network elements to expand their secure operating envelope. Refer to AEMO, Network Support and Control Ancillary Services (NSCAS) Description and Quantity Procedure, 1 December 2024, p. 6.

172 AEMO, TPSS, 1 December 2025, p. 16.

173 AEMO, Network Support and Control Ancillary Services (NSCAS) Description and Quantity Procedure, 1 December 2024

174 Ibid.

175 AEMO, TPSS, Appendix A2 - Network requirements, 1 December 2025, pp. 14-17.

176 AEMC, ISF, Rule Determination, 28 March 2024, p. 19.

acquire NSCAS for security and reliability purposes. AEMO may only acquire NSCAS if the TNSP's proposed arrangements indicate that the gap will remain.[177]

Operational obligations

Beyond long-term planning and procurement, AEMO manages the operational scheduling of system security services. The *Improving security frameworks for the energy transition* (*ISF*) *rule* established this obligation, with the obligation commencing on 2 December 2025.[178] [179]

A.2.4 The RIT-T process

In accordance with rule 5.16 of the NER, RIT-T proponents must apply the RIT-T to assess the economic efficiency of their proposed investment options. The application of the RIT-T process in accordance with the RIT-T application guidelines is outlined below:

- Ahead of the RIT-T, TNSPs plan to meet their system strength and inertia obligations, as must be reported through their Transmission Annual Planning Reports.[180] RIT-T proponents then must:
  - identify a need for the investment, known as the identified need[181]
  - identify a set of credible options to address the identified need
  - characterise the base case which the credible options are to be compared against
  - identify inputs to be included in the cost benefit analysis
  - quantify the expected costs of each credible option
  - identify what classes of market benefits to quantify
  - quantify the expected market benefits of each credible option
  - quantify the expected net economic benefit of each credible option and identify the preferred option as the credible option with the highest expected net economic benefit.'[182]
- After the RIT-T, TNSPs may need to submit a contingent project application to the AER to approve further expenditure, outside of the regulatory determination cycle.

RIT-T assessment and consultation process

When applying the RIT-T proponents must:

- publish a consultation report (the PSCR)
- consult on the report for 12 weeks minimum
  - For projects less than $54m, a conclusions report can be published within 12 months of publishing the consultation report if conditions under NER clause 5.16.4(z1) are met[183]
  - For projects greater than $54m, a PADR must be published within 12 months after the consultation period
- consult on the draft PADR for a minimum of six weeks

177 NER, clause 3.11.3(c) and clause 3.11.5.

178 AEMC, ISF, Rule determination, 28 March 2024.

179 AEMO, Security Enablement Procedures, 18 August 2025, Section 3.

180 NER, clauses 5.12.2(c)(8)(ii), 5.20B.4 and 5.20C.3; AEMC, Efficient management of system strength on the power system, Rule determination, 21 October 2021, p. 91.

181 The provision of inertia network services required under NER clause 5.20B.4 or the provision of system strength services required under NER clause 5.20C.3.

182 AER, Regulatory Investment Test for Transmission application guidelines, November 2024, p. 13.

183 These conditions include but are not limited to the preferred option being identified in the consultation report and submissions to the consultation report not identifying additional credible options that could deliver market benefits.

- publish a PACR as soon as practicable after the end of the consultation period on the draft report.[184]

Within 30 days of the PACR publication, parties may provide notice to the AER to dispute the RIT-T application.

Material change in circumstances (MCC) and re-application of the RIT-T

Under the NER, a MCC can include, but is not limited to:

- a change in key assumptions used to ascertain the identified need in the PACR
- one or more RIT-T reopening triggers being activated (for projects under clause 5.16.4(k)(10) of the NER), or
- a change in circumstances which the proponent considers makes the preferred option identified no longer the preferred option.

Six months after the publication of the PACR, TNSPs assess if there has been a MCC. If there has been a MCC, the TNSP has published a PACR and still wishes to undertake the RIT-T project to address the identified need,[185] TSNPs must notify the AER with a proposed course of action to determine whether the preferred option remains the most net beneficial. This must include at a minimum:

- publishing a statement that the preferred option remains the preferred option with supporting evidence, or
- publishing a statement that the preferred option is no longer the preferred option and identifying an alternate pathway with a timeframe and supporting analysis.

In addition to the minimum actions, proponents may also undertake stakeholder engagement providing a summary of views when updating the AER or desktop analysis. If this analysis indicates that the ranking of credible options remain the same, further analysis may not be required.[186]

Following a notification from TNSPs that an MCC has occurred, the AER has 40 days to either approve, reject or modify the RIT-T proponents' proposed course of action[187]. In making this decision, the AER considers whether the RIT-T proponent has had regard to the costs and delay likely to be incurred in reapplying the RIT-T.[188]

A reapplication in part or in full[189] of the RIT-T process is considered appropriate in complex circumstances where multiple assumptions have changed and the preferred option is no longer the most net-beneficial. The AER considers it may be appropriate that proponents engage with stakeholders prior to reapplying the RIT-T process.[190]

Reopening triggers aim to guide the proponent on possible instances where a MCC may have occurred

A reopening trigger is defined as:[191]

> the events, factors, or circumstances which, if they occur or eventuate would mean

184 AER, Regulatory Investment Test for Transmission application guidelines, November 2024, pp. 65-72.

185 NER, clause 5.16.4(z3).

186 AER, Regulatory Investment Test for Transmission application guidelines, November 2024, pp. 116-117.

187 NER, rule 5.16B(d)

188 AER, Regulatory Investment Test for Transmission application guidelines, November 2024, p. 73.

189 Reapplication in part refers to re-running certain aspects of the assessment with updated assumptions. A full re-run refers to completing the entire RIT-T process again.

190 AER, Regulatory Investment Test for Transmission application guidelines, November 2024, p. 118.

191 NER, Chapter 10, glossary definition of *RIT reopening trigger*.

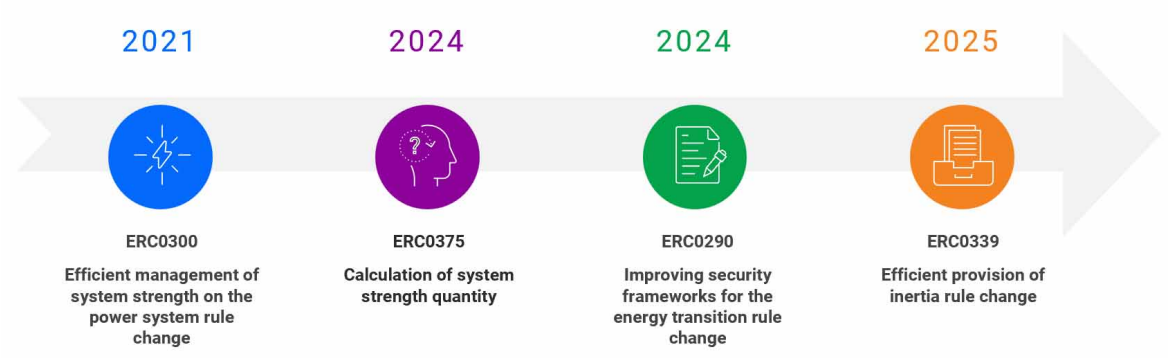
that the preferred option for a RIT-T project contemplated by clause 5.16.4(k)(1) or clause 5.16A.4(D)(9) may no longer be the preferred option, and may include a change in the key assumptions used in identifying or ranking the credible options for that project.

For projects where the estimated capital cost of the preferred option is greater than $100 million and AEMO is not the sole RIT-T proponent, reopening triggers must be provided.[192]

A.3 Recent rule changes related to the system strength, inertia and NSCAS frameworks in the NEM

This section provides a brief overview of recent rule changes to the system strength and inertia frameworks in the NEM, outlined in Figure A.2.

Figure A.2: Summary of recent rule changes relating to system strength and inertia frameworks



Source: AEMC

A.3.1 Efficient management of system strength on the power system rule change

The system strength framework was updated in 2021 under the *Efficient management of system strength rule change*. The changes were implemented by December 2025.[193]

The rule introduced three key components relating to the supply, demand and coordination of system strength. These elements were designed to build on and strengthen the previous system strength framework.

Aspects of the rule focused on maximising the supply of system strength (system strength standard)

The rule introduced several obligations aimed at increasing the available supply of system strength:

- an obligation on a subset of TNSPs called SSSPs, which includes TasNetworks, Transgrid, AEMO Victorian Planning (now transferred to VicGrid), Powerlink and ElectraNet, to use reasonable endeavours to meet system strength standards.(see appendix A.2.1 for more details on these obligations)
- established AEMO's role to determine the efficient level of system strength at each system strength node, informed by the System Strength Requirements Methodology

192 NER clause 5.16.4(k)(10) and clause 5.16A.4(d)(9).

193 AEMC, ISF, Rule determination, 28 March 2024, section 6.2.2.

- SSSPs to determine the services needed to meet the standard, including options such as new network infrastructure or contracting with existing synchronous condensers.
- the obligation on SSSPs to make system strength available are based on a three-year compliance timeframe.

These arrangements were introduced to support the efficient connection of new generation, address the reactive nature of the prior framework and strengthen coordination of system strength provision.[194]

Aspects of the rule focused on minimising demand for system strength (access standards)

The rule introduced two access standards for generators and one for market network service providers (HVDC links) and certain loads connected to the grid under Chapter 5 of the NER:

1. a minimum short circuit ratio access standard in clause S5.2.5.15(b) of the NER
2. a minimum voltage phase shift access standard in clause S5.2.5.8 of the NER. [195]

The minimum short circuit ratio standard requires all new inverter-based resources to demonstrate the capability to withstand low system strength conditions, represented by a short circuit ratio of 3.0. This created a mandated baseline capability for new inverters connecting to the NEM and underpinned the basis of the system strength charge introduced under the rule.

The voltage phase shift access standard applies only to IBR. It aims to prevent protection or control systems from operating for any phase angle changes below 20 degrees at the plant's connection point, improving the network's resilience to disturbances under low system strength conditions.[196]

Aspects of the rule focused on the coordination of supply and demand (system strength mitigation requirement)

The rule also changed how system strength is coordinated between connecting parties and the broader power system. The rule introduced a new way of charging for system strength, where connecting parties who have an adverse system strength impact are given the choice to pay (a system strength charge) to use system strength services offered by SSSPs (and avoid undergoing a full impact assessment), or to provide their own system strength (commonly known as self-remediation).

These reforms were designed to ensure connecting parties pay for the system strength impacts they impose, while incentivising remediation or location decisions that minimise system strength costs. The approach aimed to enable faster connections and deliver long-term savings for consumers.[197]

A.3.2 Calculation of system strength quantity rule change

Following the 2021 rule change, the calculation of system strength quantity was updated in 2024.

The *Calculation of system strength quantity rule* 2024 changed the way the system strength quantity component of the system strength charge is calculated to align the two options of self-remediation and paying a charge, so the assessment of system strength impact under both is broadly the same.[198]

194 AEMC, ISF, Rule determination, 28 March 2024.
195 These requirements were originally included in S.5.2.5.16 of the NER, prior to the *Improving the NEM Access Standards - Package 1* 2025 Rule.
196 Ibid.
197 Ibid.
198 For more information see AEMC, Calculation of system strength quantity, Rule determination, 29 February 2024.

A.3.3 Improving security frameworks for the energy transition rule change

The ISF rule evolved the existing frameworks with the aim of ensuring that sufficient security services can be provided whilst the power system transitions to higher penetrations of IBR by[199]:

- aligning system strength and inertia framework procurement timelines (Chapter 3 of the final determination)
- removing the exclusion of procuring inertia and system strength under the NSCAS framework (Chapter 3 of the final determination)
- adjusting TNSP cost recovery procedures for non-network security options (Chapter 4 of the final determination)
- empowering AEMO to schedule security services with a whole-of-NEM perspective (Chapter 6 of the final determination)
- improving directions transparency (Chapter 7 of the final determination)
- introducing the TPSS reporting requirement on AEMO (Chapter 8 of the final determination).

The ISF rule introduced three key changes to the inertia framework:

- aligned the existing inertia and system strength frameworks procurement timeframes
- introduced a NEM-wide inertia floor for interconnected operation, alongside a modified framework to ensure security under islanded conditions
- allowed TNSPs to procure synthetic inertia to meet minimum thresholds, subject to AEMO's approval of the sources of synthetic inertia. Previously, only synchronous sources of inertia could be procured to meet these requirements.

The Commission's ISF rule also introduced a framework for transitional services, for services which fall outside the main frameworks.[200] This framework established two types of transitional services that AEMO can procure to address system security needs: Type 1 contracts and Type 2 contracts.

- Type 1 contracts can be used where security services cannot be procured through an existing framework and where an immediate and critical need for the power system exists. These contracts can run for a maximum of three years, and the overall procurement power expires after five years, on 1 December 2029.
- Type 2 contracts aim to support AEMO in building confidence in how it can manage security in a low- or zero-emissions system. These contracts allow AEMO to trial new technologies or the new application of existing technologies. Type 2 contracts can run for up to ten years, with the entire framework ceasing after 15 years in 2039.[201]

A.3.4 Efficient provision of inertia rule change

The Efficient provision of inertia final determination was to not implement a new real-time market for inertia. The Commission found that the benefits of operationally procuring inertia would be outweighed by the costs of implementing a new inertia market.

The rule change noted that time was needed to allow the benefits of the ISF rule change to unfold before making any significant changes to the existing frameworks.

Despite no rule being made, the Commission amended the Terms of Reference for the Reliability Panel's annual Reliability and Security Report so that the Panel may monitor inertia-related metrics

199 AEMC, ISF, Rule determination, 28 March 2024.
200 For more information see Chapter 5 of the AEMC, ISF, Rule determination, 28 March 2024.
201 AEMC, ISF, Rule determination, 28 March 2024, p. 56.

to identify when operational procurement of inertia could become beneficial.[202] This ensures that any potential future benefits of the operational procurement of inertia are not missed.[203]

202 AEMC, Reliability & Security Report AEMC Terms of Reference to the Reliability Panel, 3 December 2025, p. 3.

203 For more information, see: AEMC, Efficient provision of inertia, final determination, 9 October 2025.

Abbreviations and defined terms

AEC	Australian Energy Council
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AVP	AEMO Victorian Planning
CEC	Clean Energy Council
Commission	See AEMC
CPA	Contingent Project Application
ECMC	Energy and Climate Change Ministerial Council
ESEM	Electricity Services Entry Mechanism
ESS	Essential System Services
FCAS	Frequency Control Ancillary Services
IBR	Inverter-based resource
ISF	Improving Security Frameworks for the Energy Transition
ISP	Integrated System Plan
MCC	Material Change in Circumstance
MBAS	Market Benefit Ancillary Service
MVA	Mega Volt-ampere
MW	Mega Watt
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NNOs	Non-network Options
NSCAS	Network Support and Control Ancillary Services
PACR	Project Assessment Conclusion Report
PADR	Project Assessment Draft Report
Proponent	The proponent of the rule change request
PSCR	Project Specification Consultation Report
RIT-T	Regulatory Investment Test for Transmission
RSAS	Reliability and Security Ancillary Service
Rules	See NER
SSSP	System Strength Service Provider
TNSP	Transmission Network Service Provider
TPSS	Transition Plan for System Security