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21 April 2026

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

Reference: ERC0424

Dear Ms Collyer,

AEMO submission to consultation paper – Enhancing Security Frameworks

AEMO appreciates the opportunity to comment on the AEMC's consultation paper and acknowledges the AEMC's work to combine issues and proposed amendments across both the AEMO and AEC CEC rule change proposals.

AEMO supports the need for a fit for purpose planning and procurement framework that supports the future system, market and consumer needs. The timely delivery of resources that provide the required system security for transition points is essential to enable the energy system and market to continue to support the needs of consumers.

Sequence of rule change considerations

AEMO appreciates that the discussion paper is wide ranging in its considerations ranging from targeted enhancements to broader framework re-design. AEMO sees benefits in the AEMC rule change process considering broader improvements to the framework in its entirety, rather than assessing individual components in isolation. Given the breadth of issues included in the consultation paper, the AEMC may wish to consider how to progress various packages of work to ensure timely delivery of any proposed enhancements.

1) Where there are any discrete, no regrets, and clear changes that could deliver improved outcomes these could be progressed for completion quicker – for example, changes to NSCAS timeframes and gap declaration.
2) Progress in parallel, holistic consideration of issues set out in both the AEMO and AEC CEC rule change proposal including the design of new fit-for-purpose planning and procurement framework and the associated roles and responsibilities.

Appropriate market signals and lead times

Efficiency of power system development depends on the ability of both TNSPs and market participants to assess and invest in system security capability with enough lead time to meet requirements. AEMO acknowledges the importance of providing appropriate and timely signals to support investment decisions. A key focus for the Transmission Plan for System Security (TPSS) is to continue to provide improved forward-looking planning information to inform system needs. In response to stakeholder comments, the TPSS released in December 2025 extended the outlook from the previous two years to a 10-year period, together with deeper and enhanced information on the jurisdictional level needs at key transition points.

AEMO supports this rule change assessing the role of market signals to support efficient investment, including the co-optimisation of system security capability with energy investment, as part of any consideration of the roles and responsibilities of the framework.

AEMO acknowledges the questions set out in the consultation paper considering changes relating to actionability of system security investments, including in the TPSS or ISP and notes that these questions may also be considered through the ISP Review and its broader consideration of the ISP's role in system planning. To the extent that actionability is considered through this rule change process, AEMO recommends the AEMC clarify and define 'actionability' and the associated role for AEMO or any other body that is designating needs or projects as actionable.

Fit for purpose planning and procurement framework in the context of future system need

As noted previously, the timely delivery of resources that provide the required system security for transition points is essential to achieve the energy transition. System security services, particularly system strength, are mandatory operating conditions with hard time constraints. The Regulatory Investment Tests for Transmission (RIT-Ts) for system security have been completed, and while for some aspects of system security (for example voltage control) the process has been successful, experience to date indicates that it is not the right investment test particularly for system strength. Accordingly, AEMO considers a key objective for this process is to confirm the fit for purpose framework design for planning and procuring different types of system security services, including system strength, that:

- is tailored to deliver required investment with a process that is proportionate to future system needs and technology capabilities;
- enables non-network options to effectively participate in tender processes;
- accommodates flexible solutions for co-investment where investment timing decisions may not be perfectly aligned with need identification;
- balances the management of long lead times with evolving technology capabilities;
- provides transparency and visibility to ensure any procurement decisions are prudent and efficient, delivering outcomes that are in the long-term interests of consumers.

Acknowledging the range of parties involved who have differing issues and touchpoints across the planning and procurement framework, AEMO recommends the AEMC consider the use of a co-design process throughout this rule change to facilitate collaboration on detailed design issues and ensure the framework adapts effectively to future market developments.

Core framework should be the focus with supplementary measures that can manage dynamic change

While the rule change process's primary aim should be to enhance the core planning and procurement framework, it also important to have supplementary measures that can manage transition risk and support urgent, time-critical investments. These measures are essential through the energy transition to manage where (1) the core framework has not delivered as expected or (2) a significant and/or unexpected step change has unexpectedly changed system needs. Any such measures must have appropriate regulatory oversight and transparency over the decision-making, circumstances and justifications leading to their use to ensure it they only used for legitimate and unavoidable reasons.

Clarification of key roles and responsibilities in framework

Clear roles and responsibilities are critical to ensuring the efficient and timely delivery of system security services. AEMO supports the AEMC providing greater clarity of roles and responsibilities under the current framework, including transparency and consistency in planning methodologies, procurement processes and

the role of the AER and the framework for regulatory oversight. In considering where appropriate roles and responsibilities sit within the various elements of the framework, the AEMC needs to be guided by which entity carries the risk and responsibilities, understanding of the network conditions and technology, the required relevant expertise and the incentives aligned to seek non-network options. The key will be to ensure we avoid duplication and complexity.

This rule change provides an opportunity to verify that both the primary responsibilities and roles of other parties involved in the process are functioning as expected to deliver timely, efficient and prudent investment.

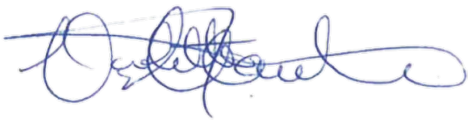
Key additional items for consideration

In addition to addressing broad issues identified in the consultation paper, AEMO has also included in this submission specific key items where clarification or refinement of the existing framework would support the timely and efficient delivery of system security resources. AEMO considers these issues, such as the ongoing role of transitional services, strongly align with the scope of the rule consultation and this presents as an opportunity to provide clarity on key risks and pain points within the existing framework.

Additional supplementary information is provided in the enclosed attachment.

Should you wish to discuss any aspect of our submission please contact Hannah Heath, Group Manager, Strategic Market Reform (Hannah.Heath@aemo.com.au).

Yours sincerely,



Violette Mouchaileh
Executive General Manager, Policy and Corporate Affairs

ATTACHMENT – Detailed submission

1. AEMO supports a rule change process that will deliver enhancements by the time TNSPs initiate planning for remaining system strength needs

As set out in both the AEMO and AEC/CEC rule change proposals, the timely delivery of resources that provide the required system security for transition points is essential to achieve the energy transition. If limited or insufficient resources are available, AEMO may be required to intervene in market operations to maintain a secure operating state,[1] limit the connection and dispatch of inverter-based resources at an increased cost to consumers, and in extreme cases, re-configure and de-energise large parts of the network. For example, limitations on resources that provide system strength can create growing challenges for outage scheduling and coordination, with AEMO forecasting a potential increased need for market intervention.

As the current suite of completed RIT-Ts for system strength address planning needs to around 2033,[2] this rule change process seeks to:

1. ensure enhancements are in place for the next tranche of system strength RIT-Ts;
2. position the framework to better manage sudden, unexpected changes to the current forward planning horizon; and
3. Ensure clarity in roles and responsibilities such that the governance of the framework is not limiting the effectiveness and timeliness of investment.

There are benefits to considering improvements to the framework in its entirety, rather than assessing individual components in isolation. However, where this consultation identifies clear and discrete changes that could deliver improved outcomes for consumers in time for the next round of RIT-Ts for system strength, AEMO supports pursuing those quicker but in parallel to the broader design of a new fit-for-purpose framework.

2. AEMO supports an alternative dynamic planning and procurement process, which should be co-designed between the market bodies, industry and consumer representatives

2.1. Need for a fit-for-purpose planning and procurement framework

Recent outcomes have shown applying the RIT-T in its current form for system strength does not appropriately align with the characteristics and timeframes associated with meeting system strength needs even if treated as a reliability corrective action RIT-T. Accordingly, and in the context of ongoing future system strength requirements, AEMO supports exploring a different planning and procurement process for system strength specifically. While acknowledging the RIT-T has successfully delivered outcomes to meet other system security requirements, AEMO considers the combination of: (1) the complexity of system strength requirements (including locational needs), (2) the ongoing system need and (3) evolving technologies that may be able to these requirements, warrants exploring alternative investment tests or a modified version of the RIT-T that could better deliver cost efficient, timely and inclusive outcomes to meet future system strength requirements.

While the RIT-T can accommodate mandatory investments (such as system strength) in principle, in practice its modelling approach, timeframes and re-run triggers are poorly suited to dynamic time-compressed and critical system strength needs in an environment where the technology for meeting these requirements continues to evolve.

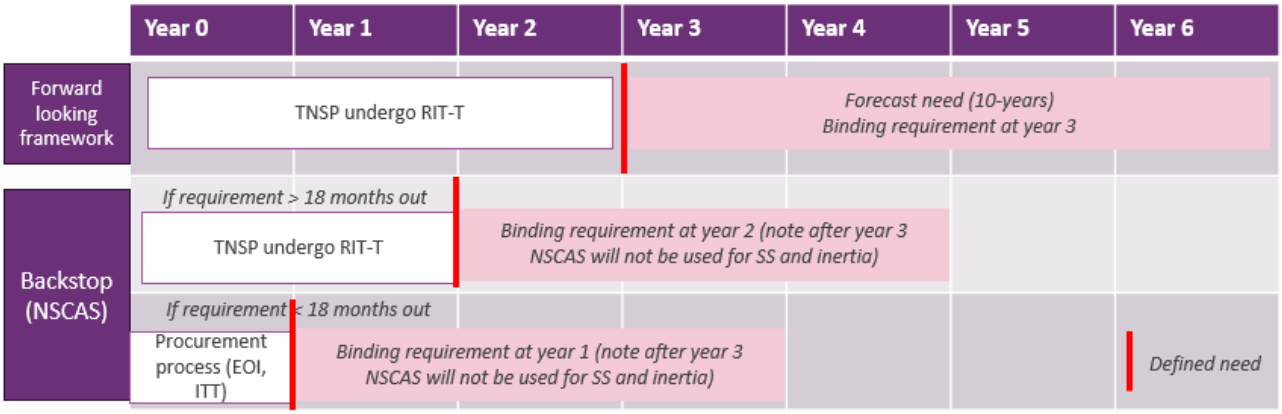
[1] NER 4.8.9
[2] Varies by TNSP and noting contingent project applications are still required

2.2. Limitations of the current framework

At a high level, the current framework for planning and procurement to meet system security needs considers:

- A forward-looking planning and procurement framework via the RIT-T
- A backstop framework via NSCAS.

Figure 1 Existing planning frameworks (high-level)



While AEMO considers this split remains appropriate in principle, both elements of the framework have limitations that can limit effective procurement of system strength investments.

Forward-looking framework (RIT-T)

AEMO has heard from stakeholders that there are both process and methodology issues in the RIT-T, particularly as it is applied to system strength assessments. These challenges were experienced first-hand when AEMO Victorian Planning undertook the Victorian system strength requirement RIT-T in Victoria between 2023 and 2025. When reviewing the methodology, the AEMC may wish to consider whether the modelling requirements are fit for purpose and proportionate to the network investment that may be required. For example, for system strength, the level of network investment expected in future planning cycles is likely to diminish, with an increasing focus on procurement of non-network options for voltage waveform stability.

Regarding the process, the time required to complete a RIT-T process, including preparation of the Project Specification Consultation Report (PSCR), Project Assessment Draft Report (PADR) and Project Assessment Conclusion Report (PACR) does not align with the requirements to meet dynamically changing needs.

The RIT-T itself was designed for transmission investment or where system needs and credible options are relatively stable over time. In contrast, system strength investments are driven by dynamic factors with failures that can instantly collapse system operability. As such, AEMO considers that the application of the RIT-T to system strength investment is not equivalent to its primary use case nor on the basis for which it was designed. .

AEMO understands that changes in the dynamic factors that drive system strength investments, such as generator and load entries and exists, supply chain constraints and development pipeline delays can result in repeated Material Change in Circumstances (MCC) during a RIT-T process, requiring TNSPs to complete updated modelling and consultation. This creates a feedback loop risk that can delay investment decisions, even when the need for investment is driven by urgent minimum security requirements.

Another challenge is the ability for non-network proponents to make alternative options available. The RIT-T processes as applied to system strength investments can be difficult for non-network proponents to engage with as process, timeframes and modelling assumptions may not be well understood or transparent to potential investors. As complex, regulated processes that are not run on a recurring basis, these RIT-Ts are

not inviting or accessible to alternative service providers. This barrier to entry can reduce participation in these processes and therefore the availability of non-network options.

Backstop framework (NSCAS)

NSCAS Gaps for system strength and inertia can currently only be declared where AEMO has revised the requirements and can only be declared for the requirement less than 3 years out. If the gap is between 18 months and 3 years out, the RIT-T framework still applies. If the gap is less than 18 months out, the NSCAS framework allows either TNSPs (as the system security provider) or AEMO as a last resort to procure to meet these minimum requirements without application of the RIT-T. The usefulness of the NSCAS framework in its current form as a backstop for system strength through transition points is therefore limited in practice. This is due to its inability to support investment in new resources, the time required to deliver network solutions and the absence of forward-looking price signals and revenue certainty that can influence non-network options under development.

2.3. Alternate planning and procurement approaches for consideration

At a high-level, AEMO considers the existing split between the forward-looking planning and procurement framework, and a mechanism which provides a further streamlined process to enable time-critical system strength investments could be maintained. This would enable a fit-for-purpose forward-looking planning framework to act as the primary tool, while the backstop framework is expanded to enable time-critical and targeted investment to be subject to a streamlined investment test. AEMO recommends this rule change proposal assess the benefits of retaining the two-tiered framework and if this approach best balances the need for streamlined procurement with cost efficiencies and modelling requirements.

AEMO strongly supports the AEMC conducting targeted workshops and engagement with stakeholders specifically on the limitations set out above to collaborate on what an alternative process could look like, with participation from the market bodies, industry and consumer representatives. Below are some discussion points regarding issues that could be considered through the targeted design process regarding consumer safeguards/representation along with potential options for an alternative process.

2.3.1. Consumer representations and outcomes

In both a streamlined process that enables time critical investments and a fit-for-purpose process that aims to meet forward planning requirements, it is essential consumer interests are appropriately represented, and consumers are given confidence planning decisions are cost effective. This means ensuring planning decisions can be effectively scrutinised (from a technical, commercial and social licence perspective) and engagement occurs at points in time and through channels where effective representations can be made.

AEMO suggests consideration be given to how this could be done in a more dynamic way than occurs in the current RIT-T process that could enable a faster investment test process while preserving consumer safeguards. For the forward planning framework, this could include engagement through the initial needs identification and assessment, followed by ongoing engagement through the assessment and procurement process. For time critical investments, this could include demonstrating assessment of needs and value for money and a justification of why the need was not addressed through the forward planning process. For both time critical investments and the forward-looking framework, existing network consumer committees provide model precedents that the AEMC could consider for these purposes.

2.3.2. Options for alternative planning and procurement process

AEMO has included the below suggested options for an alternative planning and procurement process that could be considered through a co-design process and applied for the forward-looking framework for system strength.

- **Straight to tender in defined circumstances** - In some circumstances, it may be appropriate to proceed directly to a competitive tender process, particularly where the technical requirement and system need is clearly defined. Setting out the requirement in the procurement process may enable this to progress immediately following ex-ante application to the AER for opex. This approach is analogous to current tenders process for NSCAS gaps <18 months that can fall to AEMO to administer within the existing framework.[3] Having said that, AEMO understands that part of the complexity in the market modelling of the RIT-T is calculating the trade-off across the range of options including contracting with an existing generator to run more often vs. building a new syncon, adding a clutch to an existing gas unit or contracting with plant with grid forming inverter capability. Using an approach that progresses straight to tender may therefore be difficult to appropriately compare available solutions. AEMO encourages the AEMC to co-design a process that enables a tender process to appropriately compare alternative solutions and/ or identify situations where this option may be able to be applied. Considerations could include assessing contracts with existing generation as available so there is no need to consider multiple combinations of existing generators as credible options. Alternatively, the tender process could be applied with a RIT-T that only considers new options, not currently providing the service as a by-product of generation. If the tender reveals alternatives that can offer the same service at lower cost, TNSPs could be required to contract with them.
- **Equivalent economic assessment** – instead of requiring the RIT-T to act as the contingent project trigger for TNSPs, an equivalent economic assessment approach could be used to replace the RIT-T in its entirety. This is analogous to the assessment undertaken by ElectraNet in 2017 for system strength requirements that was approved by the AER.[4] In this option, a streamlined single report was produced, with no formal publishable consultation, only one scenario and two options – defined network option and a non-network option. While no publishable consultation could be required, direct consultation between the TNSP and market would be required to be demonstrated within the report. Under the ElectraNet example, the AER then assessed this economic assessment for equivalency and robustness compared to a RIT-T, and a contingent project assessment was still required to determine if the costs of the preferred solution were prudent and efficient. While this process has been previously applied, AEMO recommends the AEMC consider whether this be embedded in the rules as an alternative investment test process for system strength.
- **Rolling updates to the PACR** – a further option could be to allow rolling updates to existing RIT-T assessments rather than requiring a new RIT-T process where system conditions change. For example, where a PACR has already been completed for a system strength investment, updated information on costs, project timing or system needs could be incorporated through an update process rather than restarting the full RIT-T process. This streamlined approach could be tasked with demonstrating that the preferred RIT-T solution still delivers benefits to consumers, rather than needing to reconsider all alternative options. This approach could be particularly useful to manage material change of circumstances (MCC) challenges or where urgent investments are driven by updated forecasts, including IBR developments or earlier generator retirements. The hurdle for the MCC trigger could also be reconsidered as part of this process.

3. AEMO supports a streamlined process that applies to urgent time-critical investments and sees that as an essential outcome of rule change process

[3] EOI for NSCAS services in South Australia for voltage control 2024 - https://www.aemo.com.au/consultations/tenders/nscas-procurement
[4] AER, Electranet economic valuation 2017 - https://www.aer.gov.au/industry/networks/contingent-projects/electranet-economic-evaluation-main-grid-system-strength-project-contingent-project-trigger

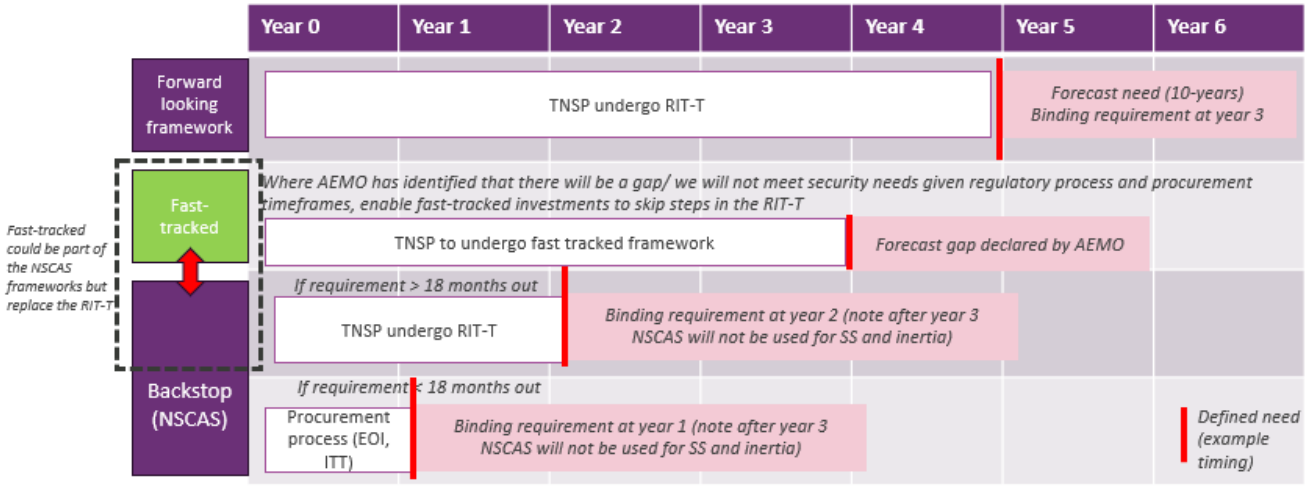
The forward-looking planning framework applies a high standard of rigour in its planning and assessment of options. However, given material changes can occur dynamically, there may be times when the forward planning framework does not deliver resources by the time of need. In those circumstances, there are benefits to last resort planning measures that can likewise respond more dynamically.

To ensure an amended approach is in consumers' interest, it is important to note the risk asymmetry that exists in system strength investments. System strength services are provided to meet mandatory operating conditions with hard time constraints. As such, where there may be earlier costs of an investments under an anticipatory framework, this should be weighed against the value of mitigating the significant risk to consumers of late delivery resulting in operational measures or interrupted power system operations.

The framework currently provides for an 18-month window for the RIT-T exemption (NER 5.16.3(10)). However, this is not enough lead time to commission new resources across the range of system security needs. This could either be extended to match the lead time for resource entry, or the NSCAS framework could be amended to extend the timeframe for declaring system strength and inertia gaps and apply an alternative streamlined investment test.

Figure 2 below shows a simplified version of where this streamlined procurement framework fits under this model.

Figure 2 Fast track procurement framework



The process for a streamlined investment test could also consider the options set out in section 2.3.2 above but considered for their use as the streamlined investment test. A key element of this framework would be the role and rigour around AEMO's identification that a gap will not meet security needs and ensuring appropriate incentives are enabled such that all procurement does not default or wait until the fast-track process kicks in. As such, AEMO encourages the AEMC to consider amendments to the last resort process to:

1. assess cost effective solutions;
2. be transparent and subject to independent review with regulatory incentives to ensure appropriate use of the fast-tracked framework and not over-use;
3. be subject to stage gates, with accompanying justification of why the core framework has not delivered the required resources and the last resort measures are being used.

3.1. Limitations of planning processes

Despite best intentions to design planning processes to manage changes in system needs, planning processes will always have limitations and cannot perfectly manage unexpected step changes that can occur with less notice than the lead time for replacement resources (e.g. unexpected coal plant or large load exits).

Accordingly, AEMO recommends the AEMC consider measures that enable commitment to strategic investments that provide system security head room/readiness, essentially operating as insurance to manage foreseeable risks through the transition.[5] This will seek to address the risk symmetry of not meeting operational transition points.

The framework currently plans to the ISP Step Change scenario, with TNSPs and AEMO applying high probabilistic scenario standards to evaluate procurement needs. The AEMC could consider whether the current planning approach (ISP Step Change scenario, AEMO's NSCAS Quantity Procedure and individual TNSP approaches) appropriately manages transition risk and whether earlier commitments to strategic investments are justified. This could be considered in conjunction with the rule change options that would extend notice period only of the closure obligation and the ability to plan to an earlier date than the nominated or anticipated coal plant exit date.

4. AEMO recommends considering if there are opportunities to improve market signals and address challenges with procurement timing

Related to the procurement frameworks, AEMO notes that the efficiency of power system development in the NEM also depends on the ability of market participants to incorporate system security capability in investment decisions for new projects. The ability to co-optimise system security capability with energy investment will increasingly be an important driver of efficient outcomes for consumers. As such, the TPSS will continue to provide an important role in providing clear information to the market on the types of plant and technical capabilities to meet system security requirements and locations where new plant would support system security outcomes.

AEMO notes that where clear system security requirements have been established, this has influenced investment decision by market participants. For example, the introduction of system strength remediation requirements created incentives for connecting plant to incorporate grid-forming inverters. This enabled some system strength needs to be met through co-optimised plant capability rather than through dedicated network investments.

AEMO supports this rule change considering this dynamic. That is, where there are benefits in plant investment decisions supporting system security as well as energy, the framework could better provide these signals, values or requirements to the market. This could include improving the transparency of requirements and increased consistency of procurement process, alongside improved planning signals. A key focus of the TPSS is to continue to provide improved information on plant that can meet system strength requirements, and AEMO's Enhanced Locational Information report seeks to identify locations that would be supported by plant development and gaps or limitations that may arise without efficient planning.

Forward-looking signals could support co-investment decisions and procurement processes, providing a platform for market participants to have system security services valued as part of their investment decisions. In practice, this could be achieved either through amendments to the system security frameworks[6] or under the NEM Review's proposed secondary contracting for ESS through the ESEM.

5. AEMO supports clearly defining the TNSP role as responsible for planning and procurement for system strength and inertia coupled with independent oversight that monitors for resource adequacy and economic efficiency

[5] For example, if there is a credible risk of smelter closures driving the need for additional reactors, it may be prudent to procure network spares in advance.
[6] This could occur through enabling TNSP procurement out of investment test/revenue period cycles, e.g. the AER's guidance on fly wheel additions to synchronous condensers.

Clear roles and responsibilities are critical to ensuring the efficient and timely delivery of system security services. Unclear and overlapping responsibilities can lead to delays, duplication of effort or uncertainty for investors and service providers. This rule change process provides an opportunity to clarify key roles and responsibilities, removing any uncertainty in the delineation of roles.

When considering where appropriate roles and responsibilities sit within the various elements of the framework, the AEMC should be guided by which entity carriers the risk and responsibilities, the understanding of network conditions, the required relevant expertise and with the appropriate incentives aligned to seek non-network options. For example, the planning and procurement for security services requires t resources, technical and commercial expertise and understanding of local network conditions and technology to effectively plan for, assess and procure services.

AEMO provides the following commentary for the AEMC's consideration regarding these principles for system strength and how actionability could apply for system security.

5.1. Minimum three phase fault levels (system strength)

For minimum system strength levels, under the current framework TNSPs decide on the appropriate level of investment to meet requirements set by AEMO and considering network settings, market conditions and contracting information. TNSP's undertake probabilistic modelling to assess the amount of time requirements are met through ordinary dispatch outcomes or where additional system strength is requirement.

To define the requirements and assess whether there are gaps, AEMO applies the process as set out in the NSCAS Quantity Procedure[7,8]. In doing so, AEMO's system security reports for NSCAS, system strength and inertia effectively act as a check and balance on TNSP decision making to ensure adequate resources are available in applicable timeframes. This role could be enhanced by amendments to enable AEMO to declare NSCAS gaps through this rule change (as discussed in Section 3), which would in effect align TNSPs to the same approach as applied in AEMO's NSCAS Quantity Procedure.

5.2. Stable voltage waveform (system strength)

For stable voltage waveform, AEMO supports a single decision maker in determining efficient levels. TNSPs have in-depth knowledge of network conditions and connecting generation and are therefore best placed to do this. The consultation paper questions if there is a role for an independent party to set efficient levels. While AEMO welcomes further engagement on this question, it is not immediately clear how an independent party would perform the required analysis to inform decision making or oversight. Setting a single metric/volume of waveform stability is not like fault current for minimum levels and depends on PSCAD studies to test performance in specific temporal circumstances.

However, AEMO considers transparency and the resolution of some ambiguities in the current framework could support its effective functioning. For example:

- AER oversight of TNSP forward plans and rationale for planned procurement volumes
- consistency in methodology for how procurement for efficient levels could be evaluated/capped
- clarifying whether TNSPs must procure to IBR forecast level or just those paying the SSUC.
- development of standardised service definitions or specifications.

Regarding the last point, AEMO notes that standards can take up to several years to develop and can inadvertently rule out options that may be technically and commercially sound for a given location.

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[7] [7] This is set at the 99.87th percentile that includes coincidence outages for coal plant

[8] AEMO NSCAS Quantity Procedure - https://www.aemo.com.au/-/media/files/electricity/nem/security_and_reliability/system_security_planning/nscas-description-and-quantity-procedure-v3-0.pdf?rev=79c63a4d0979453384d4ab16493f23da&sc_lang=en

Accordingly, AEMO recommends the development of any standards should not delay current planned procurement and only set minimum requirements.

5.3. Regulatory oversight of the AER

Regulatory oversight by the AER plays a critical role in ensuring TNSPs' decisions are transparent, prudent and justified. Regulatory oversight should work to support delivery of required forward plans, including promoting consistency and accountability in how efficient procurement levels are determined. Where regulatory oversight is found to promulgate ambiguities or impact investor confidence, that indicates a need and opportunity to clarify roles and responsibilities so they can effectively facilitate and deliver outcomes consistent with framework objectives. For example, clear regulatory guidance from the AER on how efficient procurement levels are determined may help resolve ambiguities and foster confidence among stakeholders that procurement aligns with both technical requirements and broader market objectives.

5.4. Actionability of AEMO's planning role (e.g., via the TPSS)

Page 27 of the AEMC's Consultation Paper includes potential options to streamline the investment test, including options that change the approach for assessment in the RIT-T and proposing AEMO potentially sets the needs and credible solutions, or AEMO identifying credible solutions and selecting investments for TNSPs to the procure. These options are similar to the high-level approach included in the AEC CEC rule change that proposes actionability of the TPSS.

AEMO notes any consideration of changes relating to actionability that is given effect through the ISP should be addressed through the ISP Review and its broader consideration of the ISP's role in system planning. To the extent that actionability is considered through this rule change process, AEMO notes it is important to clarify and define 'actionability' and the associated role for AEMO or any other body that is designating needs or projects as actionable. For example:

- **Actionability in terms of ISP-style actionability (AEMO defining solutions)** – The TPSS seeks to set out where possible the technical capabilities of solutions to meet security requirements. Therefore, the uplift on this option would be on mapping specific options to needs and determining the 'best' option, the actionability of the framework and a supplementary alternative procurement process. Elevating the TPSS or AEMO's system security planning documents to create actionability that is like the ISP actionability framework would essentially shift the first stages of the RIT-T (PSCR) to AEMO. This could require significant modelling uplift for AEMO to assess and define credible options, including non-network options, that can feasibly meet the identified need, and complete the first stage of modelling required. In AEMO defining credible options as per the ISP, this would not include assessment of non-network options from a cost perspective. To determine which options should be progressed would require market engagement and certainty on costs that are received through a tender process. The ISP framework recognises this dynamic by requiring AEMO to assess whether non-network options can feasibly meet the need, not whether they should be progressed. AEMO is open to the investigation of the merits of a similar approach for system security investments as part of this rule change noting that credible options would need to be developed in conjunction with the TNSPs.

  However, AEMO notes there are issues with this type of actionability that would limit its effectiveness at supporting timely delivery of resources:

  - if mirroring the approach under the ISP, it would still require the completion of a RIT-T, providing limited benefits for accelerating delivery of new resources beyond allowing for early works expenditure;

- it would create a need to duplicate resourcing, data and expertise within AEMO that currently sits within TNSPs including the potential for significant modelling uplift;
- TNSPs are better placed than AEMO to plan for and synthesize network conditions, services required and locational issues for their own networks;
- splitting of responsibilities can cause confusion or delays.

- **Actionability in terms of defining a need and accelerating the subsequent procurement process** - as an alternative to ISP-style actionability, the rule change process could consider actionability of AEMO's system security planning documents, identifying needs that may not be met in time or via the forward-looking framework. The analysis presented in the latest TPSS that combined AEMO's system security reporting already provides for this by setting requirements 10-years prior and identifying shortfalls.

  Therefore, the change for the existing framework could be such that for the forward-looking framework, the RIT-T (or equivalent streamlined process) could be 'actionable' by the TNSPs to commence within a specified period after gap identification. In addition, for urgent/ time-critical investments, NSCAS Gaps that are identified could be declared 'actionable' for TNSPs (i.e. TNSPs obligated to address the need) and be subject to a streamlined investment test process. In defining any actionability requirement, the AEMC will need to consider the risk/ benefits of potentially extending the effective binding obligation date, for example actionability could only be triggered as the deadline for new investment required to address the gap approaches.

  This is essentially what is proposed in AEMO's rule change request to expand the NSCAS Gap framework, with the key difference that TNSPs would be obliged to address the Gaps and a streamlined investment approval process would apply. This approach aligns with retaining the split of a two-tiered forward looking and urgent/ time-critical framework however with updated timelines as discussed in Section 4 above.

6. AEMO supports this rule change resolving additional issues that impact effective functioning of the framework

AEMO considers there are additional key items where clarification or refinement of the existing framework would support the timely and efficient delivery of system security resources and recommends the AEMC consider these issues through this rule change process.

6.1. Clarification of a mechanism following the sunset of transitional services

AEMO currently contracts for Minimum System Load (MSL) services under Type 1 Transitional Services, which are set to expire in 2028. While Type 2 contracts are longer dated, they only apply to new technologies or new ways of operating existing technology. AEMO recommends the rule change consider what amendments may be necessary to the framework (for example inclusion under the NSCAS framework) will allow greater flexibility for AEMO to continue contract for MSL services and other novel system security issues moving forward. This will provide the efficiency and transparency benefit of contracting for system security rather than relying on directions.

6.2. Clarification on the use of contracting versus directions and reasonable contracting costs

Under the current framework, AEMO and TNSPs have limited guidance on when it is appropriate to contract for security services and what level of premium is reasonable to pay compared to the cost of operational directions. AEMO suggests increased clarity could be provided for in the Rules and/or guidelines, which would outline factors that should be considered when assessing contracting costs. This would promote increased consistency and transparency in contracting and procurement decisions.

6.3. Re-tuning plant

The current S5.2.2 process allows NSP to request changes to plant settings but only if it is required to comply with performance standards or to maintain or restore an inter-regional or intra-regional power transfer capability. When connecting, inverter-based resources are demonstrating the ability to tune down to a low short circuit ratio, so they are not required to self-remediate or pay the SSUC. However, they tune to the current network conditions to comply to performance standards, resulting in the consumption of available system strength. When subsequent IBR connect, the depleted or partially used system strength could be rectified by re-tuning existing generator. S5.2.2 could be amended to include system strength, which would allow for more cost-efficient management of system strength needs.

6.4. Timing of system strength remediation nomination

AEMO has previously raised concerns to the AEMC about the requirement for a connection applicant to make an irrevocable election under 5.3.4B(b1) before a Full Impact Assessment (FIA) had been undertaken. AEMO noted that this approach was problematic because it required applicants to decide whether to rely on prescribed transmission services before need, cost or feasibility of self-remediation was known, and before wide area PSCAD modelling had been completed.

The AEMC retained the binding nature of the election in the final rule as the Commission was concerned that allowing flexibility in the election could create uncertainty for coordinated system strength procurement and investment planning by TNSPs. However, AEMO requests this be reconsidered considering experience to date, testing views with TNSPs on how a later decision affects planning certainty and proponent experience with making a binding nomination early in the connection process. Particularly where there may be instances of connection applications having to be resubmitted, or proponents needing to accept the earlier nomination despite connection studies indicating an alternative course of action was more efficient.

6.5. Application of the framework to loads

AEMO considers that it may also be appropriate for the AEMC to consider the application of the system strength framework to loads. Currently the system strength framework for connecting loads mirrors that of generation and bi-directional plant. However, this approach has been criticised in submissions to the AEMC's Consultation paper on the Improving the NEM access standards Package 2 rule change – with submissions stating that the short circuit ratio (SCR) methodology is not fit-for-purpose for load connections.[9] AEMO has also identified issues with the calculation of SCR for loads.[10] Clarifying the system strength requirements for loads would promote transparency and accountability and support efficient investment to maintain system security.

[9] Improving the NEM access standards – Package 2 | AEMC
[10] AEMO | System Strength Withstand SCR Methodology Review