

Amendments to the NSCAS Description and Quantity Procedure

Consultation paper -
Standard consultation for the
National Electricity Market

Published: 5 July 2024

aemo.com.au

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

Australian Energy Market Operator Ltd ABN 94 072 010 327

Explanatory statement and consultation notice

This consultation paper commences the first stage of the standard rules consultation procedure¹ conducted by AEMO to update the Network Support and Control Ancillary Service (**NSCAS**) Description and Quantity Procedure (the **Procedure**) under National Electricity Rules (**NER**) 5.20.2. The standard rules consultation procedure is described in NER 8.9.2.

The Australian Energy Market Commission (**AEMC**) published the *National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024 (Amending Rule)* in March 2024². With effect from 1 December 2024, the Amending Rule will amend the NER definition of an ‘NSCAS need’ to include requirements for inertia network services and system strength services.

AEMO proposes to amend the Procedure by 1 December 2024 to describe inertia network services and system strength services as types of NSCAS, and specify the procedure for determining the required location and quantity of those services. AEMO is also proposing additional changes to the Procedure to improve the accuracy and utility of AEMO’s NSCAS determinations.

The requirements and proposed changes are summarised below. The detailed sections of this paper include more information on the proposal, options, and AEMO’s supporting rationale.

- **Section 3.1 – NER requirement: amend NSCAS description to include inertia network and system strength services**

The Amending Rule includes inertia network services and system strength services in the definition of an ‘NSCAS need’ in specified circumstances. This allows AEMO to declare any shortfall in these requirements as NSCAS gaps where they arise within three years.

AEMO proposes to remove corresponding exclusions in the Procedure, and to include a description of inertia network services and system strength services as types of Reliability and Security Ancillary Service (**RSAS**) within the NSCAS framework.

- **Section 3.2 – NER requirement: quantity of inertia network services and system strength services**

Under NER 5.20.1, the Procedure must set out how the location and quantity of each type of NSCAS is determined. This now includes inertia network services and system strength services.

AEMO proposes to address this requirement by specifying the process and assumptions intended to be used for determining relevant inertia and system strength service quantities in the Procedure.

- **Section 3.3 – Procedure improvement: use of ‘system typical’ conditions for NSCAS studies**

Current NSCAS studies consider a ‘system normal’ configuration where all transmission network equipment is initially in service. Because this is increasingly rare in real time operations, forecast NSCAS gaps based on this assumption are likely to become less reliable over time. Material divergence between a system normal assumption and operational reality will increase the likelihood of security gaps that were not identified by the NSCAS framework needing to be addressed in real time operation.

¹ The standard rules consultation procedure is described in NER 8.9.2.

² At <https://www.aemc.gov.au/sites/default/files/2024-03/ERC0290%20-%20ISF%20final%20determination.pdf>.

AEMO proposes to define the concept of ‘system typical’ for use in NSCAS studies to identify and quantify potential gaps in cases where AEMO has identified credible/typical initial conditions without all network elements in service, which present reasonably foreseeable additional challenges in maintaining power system security or reliability.

- **Section 3.4 – Procedure improvement: consider the impacts of anticipated or actionable projects when screening for NSCAS gaps**

The current Procedure applies to NSCAS other than system strength or inertia requirements, for which the more onerous condition for studies is to consider committed transmission and generation projects only. For inertia and system strength requirements, however, higher projected penetrations of inverter-based resources represent a more onerous condition as they tend to displace synchronous generation and lower the projected levels of inertia or system strength in the system.

AEMO proposes to clarify in the Procedure that the impact of expected network and generation changes should be considered where appropriate to adequately identify or quantify a relevant emerging NSCAS risk or gap. Such changes could include anticipated and ISP actionable projects, or the sensitivity of results to generator connection and withdrawal timings.

AEMO’s review of the Procedure and stakeholder feedback may identify some additional minor corrections and clarifications, which would be specified in the draft report.

Consultation notice

AEMO is now consulting on this proposal and invites written submissions from interested persons on the issues identified in this paper to 2024_security_consultations@aemo.com.au by 5:00 pm (Melbourne time) on **2 August 2024**.

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

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

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

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

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

Contents

Explanatory statement and consultation notice	3
1. Stakeholder consultation process	6
2. Background	7
2.1. Context for this consultation	7
2.2. NER requirements	7
2.3. The national electricity objective	8
3. Proposal discussion	9
3.1. NER requirement: amend NSCAS description to include inertia network and system strength services	9
3.2. NER requirement: quantity of inertia network services and system strength services	10
3.3. Procedure improvement: use of ‘system typical’ conditions for NSCAS studies	13
3.4. Procedure improvement: consider the impacts of anticipated or actionable projects when screening for NSCAS gaps	14
Appendix A. Glossary	16

Tables

Table 1 Expected augmentation inclusion assumptions for specific types of NSCAS studies	15
---	----

Figures

Figure 1 Normal distribution curve with three-sigma from the mean or 99.7 th percentile	11
--	----

1. Stakeholder consultation process

The ‘NSCAS description’ and ‘NSCAS quantity procedure’ are separately identified in clause 5.20.1 of the National Electricity Rules (**NER**). NER 5.20.2 requires AEMO to consult on any proposed amendments in accordance with the rules consultation procedures. For convenience, AEMO has combined the description and quantity procedure in a single document – the Network Support and Control Ancillary Service (**NSCAS**) Description and Quantity Procedure (**Procedure**).

AEMO is now consulting on proposed amendments to the Procedure in accordance with the standard rules consultation procedure in NER 8.9.2.

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

AEMO’s indicative process and timeline for this consultation are outlined below. Future dates may be adjusted and additional steps may be included if necessary, as the consultation progresses.

Consultation steps	Dates
Consultation paper published	5 July 2024
Submissions due on consultation paper	2 August 2024
Draft report and draft Procedure published	Expected 9 September 2024
Submissions due on draft report	Expected 7 October 2024
Final report and final Procedure published	Expected 5 November 2024

2. Background

2.1. Context for this consultation

The Australian Energy Market Commission (**AEMC**) published the *National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024 (Amending Rule)* in March 2024. The Amending Rule will expand the system security procurement frameworks for the National Electricity Market (**NEM**), providing AEMO with new tools to manage power system security in the NEM through the current energy transition.

With effect from 1 December 2024, the Amending Rule will include inertia network services and system strength services in the NSCAS framework (removing the current explicit exclusion of those services). This will provide a regulated procurement mechanism for these security needs in specified circumstances.

Under the inertia and system strength frameworks in the NER, transmission network service providers (**TNSPs**)³ have three years to resolve any forecast shortfall of inertia or system strength from the time AEMO declares them. Where shortfalls emerge within the three year compliance period, AEMO must seek to manage them in real time under its power system security functions. To address these gaps more efficiently, the final rule will allow inertia and system strength gaps to be declared and procured through the NSCAS framework if AEMO forecasts that the relevant minimum requirement will exceed the level a TNSP is required to meet at any time in the next three years.

AEMO has also identified two other aspects of the existing Procedure that would benefit from amendment to improve the accuracy and utility of AEMO's NSCAS Reports.

The Procedure does not cover the new transitional services also introduced by the Amending Rule. Those services are intended to provide a safety net to allow the system to transition through new operating points, while NSCAS addresses known and quantifiable security shortfalls within existing system standards or deliver network capability with net market benefits. Transitional services will be procured under a separate framework, and transitional services guidelines will be consulted on separately.

AEMO is also conducting a separate consultation process on proposed changes to the Inertia Requirements Methodology to implement other aspects of the Amending Rule.

2.2. NER requirements

NER reference	Summary of relevant requirement
5.20.1, 5.20.2	<p>AEMO must develop and publish, and may amend, in accordance with the rules consultation procedures:</p> <ul style="list-style-type: none"> An NSCAS description, defined as a detailed description of each type of NSCAS An NSCAS quantity procedure, defined as a procedure that determines the location and quantity of each type of NSCAS required.
10 - Definition of 'NSCAS' (Amending Rule)	<p>From 1 December 2024, NSCAS is defined as:</p> <p>A service (including an inertia network service or system strength service) with the capability to control the active power or reactive power flow into or out of a transmission network to address an NSCAS need.</p>

³ In their capacity as inertia network service providers or system strength service providers respectively.

NER reference	Summary of relevant requirement
10 - Definition of 'NSCAS need' (Amending Rule)	Definition of NSCAS need is expanded from 1 December 2024 from the existing definition (which becomes paragraph (a)), to include (b) and (c) for inertia and system strength respectively: (a) NSCAS required to: (1) maintain power system security and reliability of supply of the transmission network in accordance with the power system security standards and the reliability standard; and (2) maintain or increase the power transfer capability of that transmission network so as to maximise the present value of net economic benefit. (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).
5.20.3(c1), 5.20.3(c2) (Amending Rule)	If AEMO's annual NSCAS Report identifies an NSCAS gap required to address an NSCAS need for inertia network services or system strength services, the date for the NSCAS need to be addressed must be within three years from the date of the report.

2.3. The national electricity objective

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

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

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) *price, quality, safety, reliability and security of supply of electricity; and*
- (b) *the reliability, safety and security of the national electricity system; and*
- (c) *the achievement of targets set by a participating jurisdiction—*
 - (i) *for reducing Australia's greenhouse gas emissions; or*
 - (ii) *that are likely to contribute to reducing Australia's greenhouse gas emissions.*

3. Proposal discussion

AEMO proposes to amend the Procedure, effective from 1 December 2024, by:

- Including a description of inertia network services and system strength services as NSCAS, where required to meet the applicable minimum requirements, consistent with the revised definition of NSCAS need in the Amending Rule.
- Including new procedures for determining the required location and quantity of inertia network services and system strength services.
- Explicitly allowing for cases to be included in quantity procedure studies where AEMO has identified challenges maintaining power system security or reliability with a given transmission network outage. This allows representation of a 'system typical' condition for improved forecasting of NSCAS gaps, rather than a 'system normal' condition, which assumes all network elements are in service.
- Explicitly allowing for consideration of broader system conditions for some NSCAS studies, including transmission network and generation projects which are well advanced, but not yet committed for some NSCAS studies. This allows more onerous conditions to be considered where appropriate in determining potential inertia and system strength gaps.

AEMO expects that some other minor drafting improvements or corrections to the Procedure may be identified during this consultation.

The amendments considered in this proposal will mostly affect TNSPs, who are responsible for responding to any NSCAS gaps in the first instance, and AEMO, who can procure NSCAS to address Reliability and Security Ancillary Service (**RSAS**) gaps as a last resort. Some Market Participants may be able to provide system strength or inertia network services to resolve a declared NSCAS gap for those services.

The following subsections give more details on AEMO's proposed amendments to the Procedure, including the requirements, issues giving rise to the proposals, and any alternative options considered.

3.1. NER requirement: amend NSCAS description to include inertia network and system strength services

3.1.1. Issue description

The NER glossary definitions of 'NSCAS' and 'NSCAS need' will be updated to include inertia network services and system strength services (previously excluded), but only if AEMO has revised the relevant minimum standard for system security above the level that a TNSP is required to meet at the applicable time. Additional clauses 5.20.3(c1) and 5.20.3(c2) will allow NSCAS gaps to be declared for these requirements if they are forecast to arise within three years (corresponding with the compliance timeframe for TNSPs to meet a declared shortfall). The outlook period for identifying NSCAS gaps for currently defined NSCAS is, and will remain, five years.

3.1.2. Description of proposal

AEMO proposes to describe inertia network services and system strength services as categories of RSAS, as minimum levels of both services are required to maintain power system security in accordance with the power system security standards.

AEMO proposes to include the following types of RSAS in section 2.2.1 of the Procedure:

- **Inertia RSAS** – a requirement for an inertia network service necessary to meet the inertia requirements, if they exceed the binding satisfactory or secure inertia requirements⁴.
- **System strength RSAS** – a requirement for a system strength service necessary to meet the minimum three phase fault level, if it exceeds the minimum three phase fault level specified in the relevant system strength standard specification for any system strength node.
- **Other RSAS** – any other service required to maintain power system security and reliability of supply of the transmission network in accordance with the power system security standards and the reliability standard.

The above definitions of inertia RSAS and system strength RSAS apply when AEMO has revised the corresponding requirements for those services.

3.1.3. Consideration of alternatives

AEMO considered two alternative options to incorporate inertia network and system strength services in the Procedure, but these were not preferred for the reasons described below:

- Describe inertia network services and system strength services as separate types of NSCAS, outside the RSAS umbrella.
 - AEMO considered the Procedure should describe these services in a way that makes clear they are an integral element of the power system security standards.
- Relying on the existing definition of RSAS to cover those services and simply removing wording that previously excluded them.
 - AEMO considered it was necessary to include specific definitions of each new service because each has a different methodology for determining the need, which also differs from other RSAS, and NSCAS gaps for these services are identified for a shorter time horizon.

Questions

- Do you consider the proposed method for describing the additional NSCAS needs is appropriate?
- If not, what specific alternatives or additions might better address the NER requirement, and why?

3.2. NER requirement: quantity of inertia network services and system strength services

3.2.1. Issue description

Consistent with NER 5.20.2, the Procedure must record the process to identify the location and quantity of each type of NSCAS needed. With the introduction of inertia network services and system strength services to the framework, additional corresponding quantity procedures must be described.

⁴ Definitions of 'binding' requirements for inertia are introduced by the Amending Rule, representing the inertia quantities that TNSPs are obliged to procure under the NEM inertia framework at any time.

3.2.2. Description of proposal

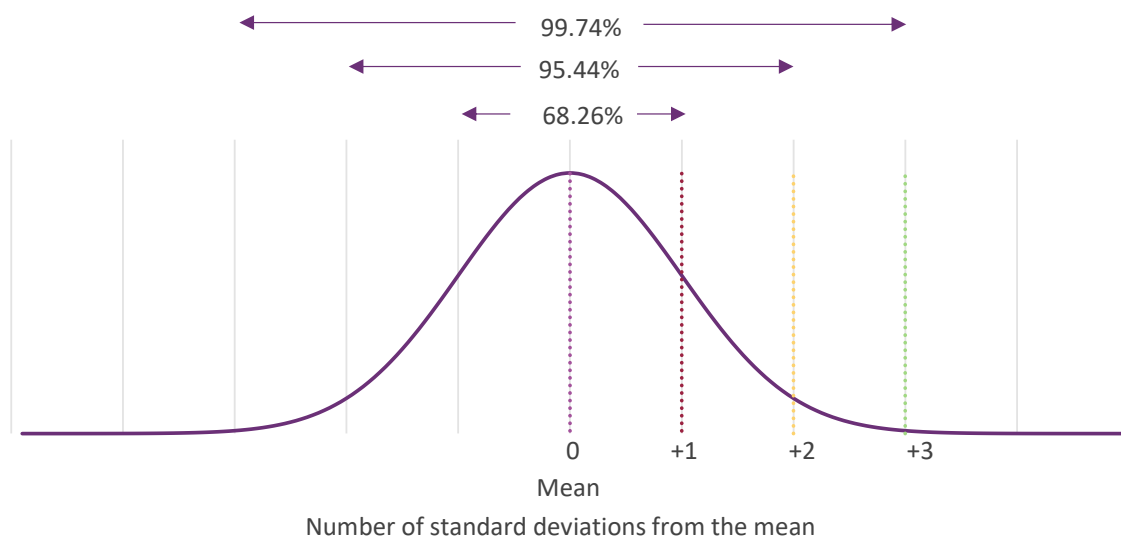
AEMO proposes to amend section 3.2 of the Procedure to describe the process for determining the location and quantity of inertia network services and system strength services required to meet an NSCAS need for those services.

AEMO will identify system strength RSAS gaps or inertia RSAS gaps by comparing projected levels of available system strength and inertia against their respective minimum requirements, as calculated in accordance with the respective system strength and inertia methodology documents (to be referenced in the Procedure)⁵.

To make this assessment, AEMO proposes to determine the projected levels of each service available using a statistically appropriate metric to represent operational uncertainty in the planning timeframe. In particular, AEMO proposes to apply a threshold of three standard deviations from the mean (99.7th percentile, see Figure 1) when considering the quantity of services that can reliably be considered ‘available’ when comparing against the minimum secure requirements for system strength and inertia.

In some cases, the nature of an NSCAS study, the tested system conditions, or the resolution of modelling data may not align with a normal distribution, or may otherwise be inadequately represented by a three-standard-deviation approach. In these cases, AEMO may use and justify an alternative statistical approach as part of the study, on a case by case basis.

Figure 1 Normal distribution curve with three-sigma from the mean or 99.7th percentile



Determining the inertia RSAS needs

To declare an NSCAS gap for inertia RSAS⁶, AEMO will assess inertia projections over a planning horizon of three years, using a statistical approach as described above, and compare the inertia projection results against the binding inertia requirements for each inertia sub-network⁷. AEMO will use this comparison to form its reasonable view of the likelihood of a gap existing in that time horizon.

⁵ Inertia Requirements Methodology, also undergoing consultation here: <https://aemo.com.au/consultations/current-and-closed-consultations/amendments-to-the-inertia-requirements-methodology>

⁶ In accordance with NER 5.20.3(c1).

⁷ Minimum secure and satisfactory levels of inertia determined in accordance with the Inertia Requirements Methodology.

Factors relevant to forming this view include, without limitation, market modelling results, market trends and insights, and relevant government policy announcements.

Determining the system strength RSAS needs

To declare an NSCAS gap for system strength RSAS⁸, AEMO will assess minimum three phase fault level projections over a planning horizon of three years, using a statistical approach as described above, and compare the fault level projection results against the system strength requirements for each system strength node⁹. AEMO will use this comparison to form its reasonable view of the likelihood of the gap existing in that time horizon. Factors relevant to forming this view include, without limitation, market modelling results, market trends and insights, and relevant government policy announcements.

3.2.3. Consideration of alternatives

AEMO considered two alternative options to quantify the need for inertia network and system strength services in the Procedure, but these were not preferred for the reasons described below:

- Use the 99th percentile.
 - While this metric has previously been used for system strength and inertia shortfall declarations, this statistical measure results in planning studies that tolerate forecast deficits for approximately 88 hours per year. An approach using a three-sigma approach lowers this number to approximately 11 hours. AEMO considers that this better meets the NEO to maintain the security and reliability of electricity supply.
- Use the previously defined ‘typical’ level to assess projected levels of inertia or system strength.
 - In the current Inertia Requirements Methodology¹⁰, typical inertia is defined as one standard deviation from the mean (approximately the 84th percentile). This value results in an approach where it is acceptable to have approximately 1390 hours per year below the inertia requirement. AEMO considers that the use of three standard deviations from the mean would more efficiently meet the NEO and intent of the planning frameworks.

Questions

- Do you consider the proposed method for quantifying NSCAS needs and gaps for system strength RSAS and inertia RSAS appropriate?
- If not, what specific alternatives or additions might better address the NER requirement, and why?

⁸ In accordance with NER 5.20.3(c2).

⁹ As currently specified in the system strength standard specification.

¹⁰ Inertia Requirements Methodology, available at: https://aemo.com.au/-/media/files/electricity/nem/security_and_reliability/system-security-market-frameworks-review/2018/inertia_requirements_methodology_published.pdf?la=en.

3.3. Procedure improvement: use of 'system typical' conditions for NSCAS studies

3.3.1. Issue description

NSCAS studies under the current Procedure consider a 'system normal' configuration with all transmission network elements in service¹¹. Because this rarely occurs in real time operation, however, NSCAS gap forecasts based on this assumption are likely to become increasingly less reliable.

As an example, the Lismore static VAR compensator (**SVC**) was unavailable for approximately 59% of the time between 1 August 2018 and 28 February 2019¹². An out-of-service Lismore SVC increases the risk of involuntary load shedding in the Lismore area, impacting power system reliability, and makes managing voltages in the Lismore area more challenging, a power system security issue. The impacts of these outages could not be assessed under the current NSCAS framework because the Procedure considers 'system normal' studies, with this equipment in service. Events such as this require more operational intervention and careful management to maintain the power system in a secure operating state, withstanding the impact of any credible contingency event.

Material divergence between a system normal assumption and operational reality increases the likelihood of security gaps that were not identified by the NSCAS framework needing to be addressed in real time operation. This is typically expected to result in greater or more unpredictable costs, and increased risks to system security and reliability of supply, compared with an NSCAS solution. Changes that are reasonably expected to increase the accuracy of NSCAS forecasts will therefore assist to better meet the NEO.

3.3.2. Description of proposal

AEMO proposes to define the concept of 'system typical' configuration for use in NSCAS studies to identify and quantify NSCAS needs and potential gaps. 'System typical' would be defined as:

"network configurations where AEMO has identified credible or typical pre-contingent operational conditions without all network elements in service, and which present reasonably foreseeable additional challenges in maintaining power system security or reliability".

AEMO proposes to conduct power system analysis for 'system typical' configurations to quantify other NSCAS gaps where reasonably expected outages of particular critical equipment present a risk to power system security or reliability. NSCAS could then be procured based on the conditions studied.

Examples of times when elements would be switched out of service in 'system typical' studies include, but are not limited to:

- AEMO has identified that a critical piece of equipment has previously been out of service and this has posed a risk to power system security or reliability or necessitated the need to issue directions.
- AEMO has identified an element which has had frequent or extended outages.

¹¹ Excluding elements that are out of service as part of the system normal configuration, for example to maintain system security.

¹² See https://www.transgrid.com.au/media/owycnusl/transgrid-pacr_maintaining-a-reliable-static-var-compensator-at-lismore.pdf.

NSCAS system typical studies would still only consider credible contingencies or protected events, consistent with current system normal studies. Non-credible scenarios would be studied in the General Power System Risk Review¹³.

AEMO considers that retaining the current Procedure with only 'system normal' studies, is not preferable for the reasons given above. Appropriate 'system typical' cases are considered more likely to provide a better representation of real time operation. Improved NSCAS forecasts can be expected to produce outcomes that align more closely with the NEO, allowing material risks to power system security and reliability to be identified and addressed more efficiently.

Questions

- Should NSCAS studies consider 'system typical' cases to recognise the impact of extended or more frequent outages of certain critical equipment?
- If so, is the approach described in the consultation paper appropriate?
- If not, what are your concerns, and what specific alternatives might better address the issues?

3.4. Procedure improvement: consider the impacts of anticipated or actionable projects when screening for NSCAS gaps

3.4.1. Issue description

The current Procedure allows for projects that are progressed, but not committed, to be included as a sensitivity in NSCAS studies. Sensitivities are typically used to test the robustness of a previous study, but the Procedure does not make it clear whether NSCAS gaps could be identified and declared on the basis of these scenarios. Excluding anticipated projects is generally a more conservative assumption for voltage-control type studies where new projects may provide additional voltage control capabilities and minimise identified gaps.

However, this approach may underestimate the size of expected shortfalls for system strength and inertia. For these services, the output of anticipated projects may displace existing providers of system strength and inertia services. If these likely developments are not included, shortfalls may not be identified in time, increasing risks for maintaining power system security.

In addition, the requirements for these services are often linked to the outputs of the Integrated System Plan (ISP), which does include future anticipated generation and actionable transmission projects. It is important to use similar assumptions when comparing forecasts against those requirements to ensure appropriate (and internally consistent) gaps can be identified.

3.4.2. Description of proposal

AEMO proposes to amend the Procedure to explicitly allow consideration of expected but uncommitted network and generation changes, where relevant and appropriate to adequately identify or quantify an emerging NSCAS gap. This could include considering the impact of anticipated and ISP actionable projects, or the impact of generator connection and withdrawal timings.

¹³ In accordance with NER 5.20A.

This reflects that different system conditions may represent the most onerous conditions for different types of NSCAS studies. Table 1 presents AEMO’s proposed default set of study types where including non-committed projects may be necessary. However, additional considerations may also be applied when studying specific NSCAS risks.

Table 1 Expected augmentation inclusion assumptions for specific types of NSCAS studies

NSCAS study	Committed projects	Anticipated projects	ISP Actionable	Future ISP
Voltage control	✓	✓*	✓*	X
Inertia	✓	✓	✓	X
System strength	✓	✓	✓	X
Other	✓	As required	As required	X

* Studies may be used to confirm if anticipated projects improve voltage control in a particular region where an NSCAS gap is identified.

In each annual NSCAS report, AEMO will clearly identify which NSCAS studies (if any) have included advanced but not committed projects.

3.4.3. Consideration of alternatives

AEMO considered two alternatives to including the impacts of anticipated or actionable projects when screening for NSCAS gaps, but these were not preferred for the reasons described below:

- No change to Procedure – study only committed projects.
 - If anticipated or actionable transmission and generation projects are not considered, NSCAS studies may not adequately capture the impact of these projects on the behaviour of existing service providers. This could mask expected shortfalls, and subsequently increase risks to maintaining power system security.
- Update Procedure to include anticipated or actionable projects in all cases, with no studies limited only to committed projects.
 - While conservative for some studies (such as system strength and inertia), this assumption would be less conservative for many voltage control studies. This could again mask shortfalls, particularly in cases where anticipated or actionable projects are delayed.

Since both the delivery and the deferment of anticipated/actionable projects are well within the plausible range of future network conditions, AEMO considers that neither of the above options adequately represent the needs of the NSCAS framework.

Instead, AEMO considers it prudent to apply the most onerous plausible assumptions for each given type of NSCAS study. This provides the opportunity for the NSCAS framework to meet these needs more efficiently and predictably, in line with the NEO.

Questions

- Is it appropriate to consider future system investment conditions as part of the NSCAS studies?
- If so, is the approach described in the consultation paper appropriate?
- If not, what are your concerns, and what alternatives might better address the identified issue?

Appendix A. Glossary

This document uses terms defined in the NER, with the same meanings. NER acronyms and some additional terms used in this document are defined here for convenience.

Term or acronym	Meaning
AEMC	Australian Energy Market Commission
Amending Rule	National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024
Committed	As defined in the current System Strength Impact Assessment Guidelines (SSIAG)
ISP	Integrated System Plan
NEM	National Electricity Market
NEO	National Electricity Objective as expressed in section 7 of the National Electricity Law
NER	National Electricity Rules
NSCAS	Network Support and Control Ancillary Service
NSP	Network Service Provider
Procedure	AEMO's NSCAS Description and Quantity Procedure
RSAS	Reliability and Security Ancillary Service, as defined in the Procedure
SVC	static VAR compensator
TNSP	transmission network service provider
VAR	volt-ampere reactive