

Consultation paper

National Electricity Amendment (Clarifying Registration for NonGenerating Units Providing System Security Services) Rule

Proponent

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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 all live and work. We pay respect to all Elders past and present and the continuing connection of Aboriginal and Torres Strait Islander peoples to Country. The AEMC office is located on the land traditionally owned by the Gadigal people of the Eora nation.

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Summary

- 1 The National Electricity Market (NEM) is undergoing a transition toward lower carbon emissions. Fossil-fuel-based synchronous generators, such as coal-fired power plants, are gradually exiting the market, primarily replaced by inverter-based renewable generators and batteries. The changing nature of the generation mix in the NEM means we are needing to find new ways of maintaining system security.
- 2 Synchronous condensers are one type of technology that can help provide system security services in the NEM, alongside others. While new synchronous condensers can be installed, retired thermal generators can also be converted into synchronous condensers. This occurs by retaining the generating system's alternator and electrical connection components while removing active power generation elements such as the boiler, turbine, and auxiliary plant systems.
- 3 CS Energy considers that converting retiring synchronous generators to standalone synchronous condensers is a potentially more cost-effective way of providing security services than investing in new synchronous condensers. This is because reusing existing assets, such as the voltage and reactive power control systems, cooling and lubrication systems and electrical assets at the point of connection, increases the speed of deployment and lowers the overall investment required relative to new synchronous condensers.
- 4 CS Energy have identified what it considers to be a barrier in the existing National Electricity Rules (NER) that specifically affects the conversion of synchronous generators into standalone synchronous condensers after generating system retirement. Once retired, a synchronous generator is declassified as a scheduled generating unit, but CS Energy consider it lacks an alternative registration category in the NER to register as a standalone synchronous condenser.
- 5 CS Energy considers that this may preclude a standalone synchronous condenser from providing system security services under the NER system strength and inertia frameworks, which require non-network services to be provided by a Registered Participant.

CS Energy proposes a new registration category

- 6 To address this, CS Energy proposes introducing a new participant registration category, "non-generating system service provider" to Chapter 2 (Registered Participants and Registration) of the NER. This category would apply to participants with non-generating units that provide system security services, including system strength, fault levels, and inertia-related services.
- 7 CS Energy proposes its non-generating system service provider registration category would allow standalone synchronous condensers and other non-generating units providing system services to be appropriately registered as NEM participants, enabling them to provide inertia and system strength services under the relevant frameworks.
- 8 CS Energy considers that its proposal will meet the National Electricity Objective (NEO) by improving power system security outcomes through more efficient use of existing resources to provide system security services, which will lower costs for all consumers in the long run.

We are seeking your views on options for the rule change

- 9 We have identified two options for stakeholder feedback:
 - Option 1: Implement CS Energy's proposal to establish a new participant registration category.
 - Options 2a and 2b: Use the existing Integrated Resource Provider (IRP) registration category:

- Without amendment, by providing clarification in the final determination on the application of the NER to stand-alone synchronous condensers with no accompanying final rule.
- With minimal amendments, to address any gaps in the NER and specify its application to stand-alone synchronous condensers.

10 The Commission is particularly interested in applying the IRP category, with appropriate amendment if necessary, because the IRP registration category was implemented in the AEMC's integrating energy storage systems into the NEM rule change in 2021 to support a technology-neutral approach by avoiding additional technology-specific definitions in the NER.¹ It aligns with the trader-services model under the ESB's proposed Post 2025 reforms, focusing on service-based obligations and may provide scope for the registration of standalone synchronous condensers.²

We are also seeking your views on the Commission's assessment criteria

- 11 Considering the NEO³ and the issues raised in the rule change request, the Commission proposes to assess the rule change request against three assessment criteria.
- **Safety, security, and reliability** - We propose assessing whether the rule change enables reliable, secure, and safe provision of system security services and the efficient operation, use of, and investment in system security services. System security is at the heart of the rule change request and the potential benefits identified by the proponent. CS Energy justifies the proposed change on the basis that it would result in faster and cheaper provision of system security services as the NEM transitions.
 - **Principles of market efficiency** - We propose assessing whether the rule change increases competition for the provision of system security services and reduces barriers to entering and exiting the system security service market. The rule change request is to address a barrier to the entry of new system security service providers. CS Energy claims that addressing this barrier would result in higher competition in the system security services market, with consequently more efficient outcomes for consumers.
 - **Principles of good regulatory practice** - We propose assessing whether the rule change promotes predictability, stability, simplicity, and transparency. CS Energy identified a barrier related to uncertainty regarding the ability to register a standalone synchronous condenser to provide system security services. The final rule should be as simple as possible while also providing necessary transparency for potential investors.

Submissions are due by 3 July 2025

- 12 There are multiple options to provide your feedback throughout the rule change process.
- 13 Written submissions responding to this consultation paper must be lodged with Commission by 3 July 2025 via the Commission's website, www.aemc.gov.au.
- 14 There are other opportunities for you to engage with us, such as one-on-one discussions or industry briefing sessions. See the section of this paper about "How to engage with us" for further instructions and contact details for the project leader.

¹ AEMC, Integrating energy storage systems into the NEM, Rule determination, p. 29.

² Ibid.

³ Section 7 of the NEL.

Full list of consultation questions

Question 1: Is there a substantive problem or evidence of an emerging one?

- Do you agree that existing NER arrangements create a barrier to converting retiring synchronous generators to standalone synchronous condensers to provide system security services post-retirement?
- To the extent there is a barrier, do you consider this barrier to be material to the costs and benefits of maintaining system security over the transition?

Question 2: Questions on the costs and benefits of CS Energy's proposal

- Do you agree with CS Energy's assessment of the costs and benefits of their proposed change?
- Are there any other costs or benefits the Commission should be aware of?

Question 3: Will the proposed solution address the issue raised by the proponent?

- Do you consider CS Energy's proposal will address the identified issue?
- Are you aware of any issues that would be created by adopting CS Energy's proposed solution?

Question 4: What are your views on applying the Integrated Resource Provider registration category to standalone synchronous condensers

What are your views on:

- whether the existing IRP registration category could be applied without amendment, with appropriate clarification provided in the final determination?
- whether a standalone synchronous condenser can be classified as a bi-directional unit for the purposes of IRP registration?
- any other elements of the current NER that may be a barrier to registering a standalone synchronous condenser as an integrated resource system?

Question 5: 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 the Commission by 3 July 2025

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 ERC0402.⁴

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.⁵

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 or defamatory content, or content that is likely to infringe intellectual property rights).⁶

⁴ 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.

⁵ See: <https://www.aemc.gov.au/our-work/changing-energy-rules-unique-process/making-rule-change-request/submission-tips>

⁶ Further information is available here: <https://www.aemc.gov.au/contact-us/lodge-submission>

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1 The context for this rule change request

This consultation paper seeks stakeholder feedback on a rule change request from CS Energy.⁷ The request proposes adding a new participant registration category in the National Electricity Rules (NER) to enable non-generating units, such as stand-alone synchronous condensers, to provide system security services.

This section outlines the context for the rule change. It covers:

- a summary of CS Energy's proposed rule change
- an introduction to synchronous generator to synchronous condenser conversion, and
- an introduction to the NER registration categories, including the integrated resource provider registration category.

1.1 CS Energy has proposed that the rules be changed to introduce a new participant registration category to enable the provision of system security services by non-generating units

CS Energy proposes introducing a new Chapter 2 participant registration category in the NER to address barriers preventing non-generating units, particularly standalone synchronous condensers, from providing system security services under the NER inertia and system strength frameworks.⁸

The identified barrier specifically affects the conversion of synchronous generators into standalone synchronous condensers after generating system retirement. Once retired, a synchronous generator is declassified as a scheduled generating unit, but CS Energy consider it lacks an alternative registration category in the NER to register as a standalone synchronous condenser.⁹

CS Energy identify this as a barrier to providing system security services under the NER system strength and inertia frameworks.¹⁰ To resolve this issue, CS Energy proposes a new registration category for non-generating system service providers. CS Energy believes this new registration category would eliminate ambiguities regarding the ability of non-generating units to offer system services and promote the NEO.¹¹

1.2 Synchronous generators can be converted to stand-alone synchronous condensers to help to provide system security services following the retirement of the generation component

The National Electricity Market (NEM) is currently decarbonising as we move towards net zero. Fossil-fuel-based synchronous generators, such as coal-fired power plants, are gradually exiting the market, primarily replaced by inverter-based renewable generators and batteries. AEMO's step change ISP scenario indicates 90% of coal-fired generation capacity is expected to be withdrawn

⁷ The rule change request can be found at: <https://www.aemc.gov.au/rule-changes/clarifying-registration-non-generating-units-providing-system-security-services>

⁸ CS Energy, rule change request, p. 5.

⁹ CS Energy, rule change request, p. 2.

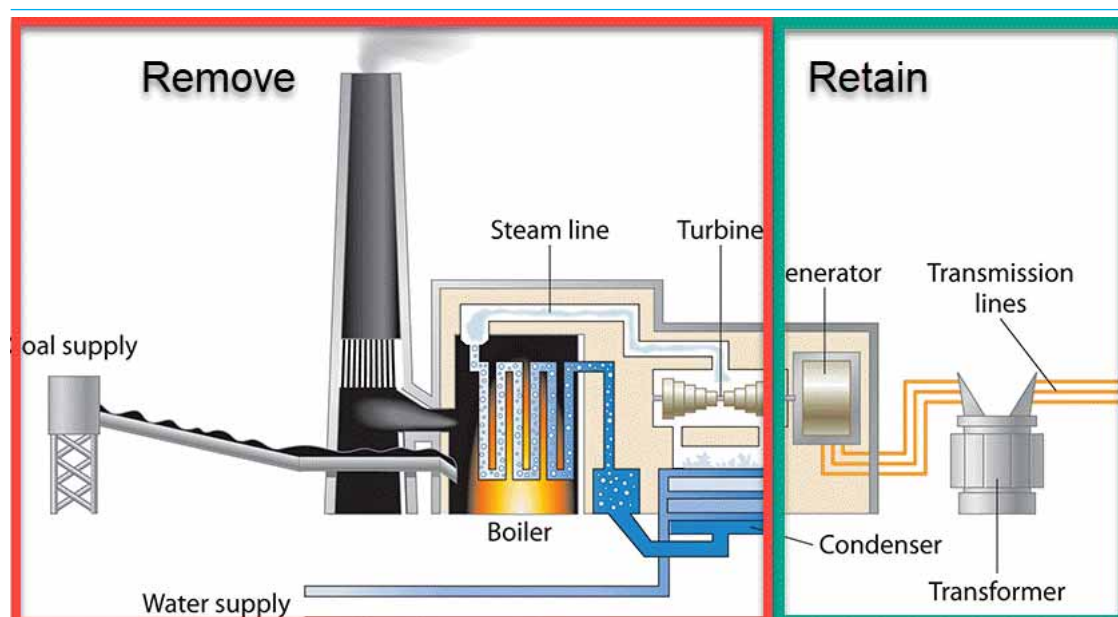
¹⁰ Ibid, p. 6.

¹¹ Ibid p. 7.

by 2035, with all coal-fired generation capacity fully gone from the system by 2040.¹² The changing generation mix in the NEM means we are having to rethink how system security services are provided in the NEM.¹³

One technology that can help maintain system security in this environment is synchronous condensers. These can - and are - being installed new into the system. However, retired thermal generators can also be converted into synchronous condensers. This occurs by retaining the generating system's alternator and electrical connection components while removing active power generation elements such as the boiler, turbine, and auxiliary plant systems. Figure 1.1 illustrates the elements of a synchronous generator that are retired and retained in the conversion process.

Figure 1.1: Thermal coal generator to synchronous condenser conversion.



Source: Fedorova, I. (2018). Alloy development for high Cr martensitic steel.
https://www.researchgate.net/publication/333874333_Alloy_development_for_high_Cr_martensitic_steel

A synchronous condenser can be considered to be a synchronous generator that operates without a prime mover and associated plant but retains the alternator that allows it to provide system security services. Synchronous condensers are one of several technologies that can help with providing system security services, including assisting:

- Voltage stability by regulating reactive power to stabilise voltages in normal operation and during disturbances.
- Frequency stability by providing an inertial response that slows the rate of change of frequency, particularly during a frequency disturbance.
- System strength by delivering high transient fault currents to support protection systems and AC voltage waveform stability.

The NER provides frameworks for inertia and system strength services that may be provided by synchronous condensers. Under these frameworks, AEMO determines the inertia and system strength levels necessary for secure and efficient operation:

¹² AEMO, Integrated System Plan, June 2024.

¹³ See: <https://www.aemc.gov.au/sites/default/files/2025-03/2025.3.14%20ESS%20slides.pdf>

- AEMO sets minimum inertia levels for each inertia sub-network in the NEM.¹⁴ Inertia shortfalls are assessed annually over a 3-year horizon against these minimum levels, with Transmission Network Service Providers (TNSPs),¹⁵ as inertia service providers, required to procure sufficient inertia services to address any identified gap between forecast and minimum levels.^{16 17}
- AEMO sets minimum and efficient system strength levels for each system strength node in the NEM.¹⁸ Minimum system strength levels enable a secure system and reliable protection system operation by obliging the system strength service provider to maintain the minimum three-phase fault level specified by AEMO for each system strength node.¹⁹ Efficient levels of system strength identify the additional system strength required to accommodate future IBR connections near each system strength node. TNSPs, as system strength service providers,²⁰ are required to procure system strength services to address these requirements.^{21 22}

Stakeholders should be aware that the Commission is currently progressing a rule change to introduce operational procurement of inertia in the NEM. A draft determination on this project will be out soon. Further information can be found at <https://www.aemc.gov.au/rule-changes/efficient-provision-inertia>.

1.3 NER registration categories and the integrated resource provider registration category

The NER requires entities to be registered participants to provide system security services under the NEM's inertia and system security frameworks. Chapter 2 of the NER establishes the various registration categories and requirements for each category, including the steps involved in the registration process. The registration categories serve a structural function, as they determine how market and technical obligations are organised within the rules. The registration categories are:

- **Generator:** Owns, controls, or operates a generating system in the NEM.
- **Customer:** Purchases electricity through a transmission or distribution system.
- **Demand Response Service Provider (DRSP):** Delivers demand response services and market ancillary services.
- **Integrated Resource Provider:** Operates an integrated resource system with bidirectional units or generating units.
- **Network Service Provider:** Owns, operates, or controls transmission or distribution networks.

The plant associated with each participant category is then further divided into scheduled, semi-scheduled, and non-scheduled, as well as market and non-market classifications, depending on the size of the system involved and its dispatchability. For further information on the registration categories and process, see [AEMO's participant registration resource](#).

14 NER Clause 5.20B.2.

15 The inertia service provider is either a TNSP for the inertia sub network or the jurisdictional planning body if there is more than one TNSP for the network - NER clause 5.20B.4(a).

16 NER Clause 5.20B.4(a1) and (a2).

17 For further information, see: [AEMO, 2024 Inertia Report, December 2024](#).

18 NER Clause 5.20C.1

19 NER Clause S5.1.14

20 The system strength service provider for a region is the TNSP for that region or the jurisdictional planning body for the region if that body is also a TNSP. NER clause 5.20C.3(a).

21 NER Clause 4.3.4(l).

22 For further information, see: [AEMO, 2024 System Strength Report, February 2024](#).

The Integrated Resource Provider (IRP) category is particularly relevant to this rule change

The IRP is a relatively new market participant registration category in the NEM that allows storage and hybrid systems to register under a single category instead of separate Generator and Customer classifications.²³ Previously, participants exporting and importing energy, such as battery storage systems, had to register under both categories. The IRP registration category was implemented in the AEMC's integrating energy storage systems into the NEM rule change in 2021 to not only address this issue but also support a flexible and technology-neutral approach by avoiding additional technology-specific definitions in the NER.²⁴

The IRP registration category is flexible and designed to allow registration against a wide variety of integrated resource system configurations, which include different elements such as:

- Bi-directional units
- Hybrid system units
- DC-coupled units
- Aggregated portfolios
- Generating units
- Scheduled and retail load (end-user connection points).

Further information on the integrated resource provider registration category can be found at the [integrating energy storage in the NEM rule change project page](#).

1.4 We have started the rule change process

This paper is the first stage of our consultation process.

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 draft rule (if relevant)
- stakeholders lodge submissions on the draft determination and engage through other channels to make their views known to the AEMC project team
- the Commission publishes a final determination and final rule (if relevant).

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.²⁵

To make a decision on this proposal, we seek stakeholder feedback on how we propose to assess the request, the stated problem and the proposed solutions.

²³ See Clause 2.1B.2 of the NER.

²⁴ AEMC, Integrating Storage Rule Change, Final Determination, p. 25.

²⁵ See our website: <https://www.aemc.gov.au/our-work/changing-energy-rules>

2 The problem raised in the rule change request

CS Energy have identified what it considers to be a barrier in existing NER participant registration arrangements applying to standalone synchronous condensers. This chapter sets out the problem identified by CS Energy, in particular:

- The lack of a specific registration category creates barriers to converting synchronous generators into stand-alone synchronous condensers, and
- Existing arrangements will materially increase the costs of keeping the system secure through the transition.

2.1 The lack of a specific registration category creates barriers to converting synchronous generators into stand-alone synchronous condensers

CS Energy has identified a lack of an appropriate registration category for synchronous generators that have been converted into synchronous condensers under the NER.

CS Energy considers this a barrier to the efficient provision of system security services because:

- Standalone synchronous condensers must be linked to a registered participant to participate in the NEM's system strength and inertia frameworks.
- No existing registration category currently applies.

Standalone synchronous condensers must be associated with a registered participant to provide inertia and system strength services under NER frameworks

CS Energy consider that, under the NER inertia and system strength frameworks, TNSPs can only establish system service agreements with NEM Registered Participants. CS Energy notes that this has not been an issue so far, as synchronous condensers in the NEM have either been network assets or part of larger generating systems.²⁶ However, CS Energy considers that when synchronous generators retire, they are declassified as scheduled generating units and become ineligible for system strength and inertia contracts unless they can register under an alternative category.²⁷

The following presents the NER inertia and system strength framework requirements CS Energy identify in support of their view that standalone synchronous condensers must be associated with a registered participant to provide inertia and system strength services under NER frameworks.²⁸

Clause 5.20B.4 (d)-(e) specifies the types of services that qualify to provide inertia:

- For inertia up to the minimum threshold level, a TNSP (as the *Inertia Service Provider*) can procure services:
 - Through investing, installing, commissioning and operating a network based *synchronous condenser*; and

²⁶ Many synchronous condensers have been installed in the NEM as network investments, such as ElectraNet's South Australian condensers, or within generating systems. These installations do not face registration issues, as condensers within generators fall under generator registration, and network assets do not require registration. As a result of package 1 of the AEMC's recent technical standards rule change these plant will face the same technical standards as registered plant. For further information see: <<https://www.aemc.gov.au/rule-changes/improving-nem-access-standards-package-1>>

²⁷ CS Energy, Rule Change Request, p. 5

²⁸ Ibid.

- From a NEM *Registered Participant* that provides services by means of a *synchronous generating unit* or a *synchronous condenser* under an *inertia services agreement*.
- inertia beyond the minimum threshold level and up to the *secure operating level*, a TNSP (as the *Inertia Service Provider*) can procure services:
 - Using the same services used to obtain inertia up to the minimum threshold level;
 - Through investing in its network by means other than a synchronous condenser; and
 - From a NEM Registered Participant under an inertia services agreement by means other than a synchronous generating unit or a synchronous condenser
- These restrictions are reinforced through Clauses 4.4.4 and 4.4.5 which outline that AEMO may enable inertia (system strength) services by giving instructions to:
 - the TNSP (as the Inertia (System Strength) Service Provider); or
 - a NEM registered participant who has agreed with an Inertia (System Strength) Service Provider to supply inertia (system strength) services.

CS Energy consider the lack of a participant registration category that specifically applies to standalone synchronous condensers is a barrier to standalone synchronous condensers providing these services.

CS Energy identifies the requirement for registered participant status to contract with a TNSP for system security services as a barrier for technologies that do not fit into existing Chapter 2 market registration categories.²⁹ This barrier limits the financial return necessary to support the investment needed to convert a retiring generator to a synchronous condenser or invest in a new synchronous condenser. Since these contracts are only available to registered participants, access to this funding is restricted.

CS Energy has considered registering under other participant registration categories available in the NER, including the customer and integrated resource provider categories.³⁰ It considers:

- Registration as an IRP (on the basis of being a market connection point) would likely preclude synchronous condensers from providing their full capacity of market ancillary services, as they may be limited to providing ancillary service load only.³¹ CS Energy are concerned that this would be particularly relevant in the development of a market-based procurement mechanism for inertia.³²
- The Customer registration category may inadvertently exclude synchronous condensers from providing system security services, as such a category is not designed for non-generating technologies.³³

2.2 Existing arrangements will increase costs for keeping the system secure

CS Energy's rule change request highlights the need for investment to maintain system strength and inertia during the transition. They note that AEMO has identified system strength and inertia

²⁹ CS Energy, Rule Change Request, p. 6.

³⁰ The latter would be encapsulated in the registration of the generating system as a Generator, but the former could only potentially satisfy the parameters of the Customer or IRP category, with synchronous condensers drawing a small load from the grid and thus constituting an unscheduled load or a market connection point.

³¹ Ibid, p. 6.

³² Ibid.

³³ Ibid.

gaps in NEM jurisdictions, and a recent system strength shortfall in NSW due to the forced outage of the Eraring coal-fired generator as examples supporting this need.³⁴

CS Energy identifies installing synchronous condensers as one approach to addressing these challenges, as they provide fault current, reactive power, and inertia. However, they consider that relying solely on new synchronous condensers is costly. CS Energy cites Transgrid estimates that up to 21 new synchronous condensers, each rated at 200 MVA, will be needed over the next decade in NSW, costing \$2.2 billion.³⁵ Transgrid noted that a mix of technologies, including converting existing synchronous generators into standalone synchronous condensers, could provide system security services more efficiently and at a lower cost than solely investing in new synchronous condensers.³⁶

CS Energy's submission identified converting retiring synchronous generators into standalone synchronous condensers as a lower-cost and faster option that is not possible under current rule arrangements. This limitation increases reliance on new, more expensive synchronous condenser investments.³⁷

Question 1: Is there a substantive problem or evidence of an emerging one?

- Do you agree that existing NER arrangements create a barrier to converting retiring synchronous generators to standalone synchronous condensers to provide system security services post-retirement?
- To the extent there is a barrier, do you consider this barrier to be material to the costs and benefits of maintaining system security over the transition?

2.3 CS Energy consider that allowing standalone synchronous condensers to register would help promote the NEO

CS Energy consider that its proposal would meet the NEO by improving power system security outcomes through more efficient utilisation of existing resources to provide system security services, which would lower costs for all consumers in the long run.³⁸

An appropriate registration category may further encourage the conversion of existing synchronous generators to stand-alone synchronous condensers, which could provide a viable and potentially more efficient solution to delivering the required system services.³⁹

CS Energy consider converting retiring synchronous generators to standalone synchronous condensers a potentially more cost-effective way of providing security services than investing in new synchronous condensers. This is because reusing existing assets, such as the voltage and reactive power control systems, cooling and lubrication systems and electrical assets at the point of connection, lowers the overall investment required. CS Energy cited an ARENA report that identified conversion costs are expected to be at least 60 per cent of the costs of new standard synchronous condensers.

³⁴ CS Energy, rule change request, p. 4

³⁵ Ibid.

³⁶ Ibid.

³⁷ Ibid.

³⁸ CS Energy, rule change request, p. 7.

³⁹ Ibid, p. 8.

Question 2: Questions on the costs and benefits of CS Energy's proposal

- Do you agree with CS Energy's assessment of the costs and benefits of their proposed change?
- Are there any other costs or benefits the Commission should be aware of?

3 Possible solutions

This chapter outlines possible solutions to the issue identified by CS Energy. Two main options have been identified for stakeholder feedback:

- Option 1: CS Energy’s proposal to establish a new participant registration category.
- Option 2: Using the existing Integrated Resource Provider (IRP) registration category:
 - Without amendment, by providing clarification in the final determination on the application of the NER to stand-alone synchronous condensers with no accompanying final rule, or
 - With minimal amendments, to address any gaps in the NER and specify its application to stand-alone synchronous condensers.

The Commission particularly seeks stakeholder feedback on the issues associated with Options 2a and 2b.

3.1 Option 1- Adopt CS Energy’s proposal for a new participant registration category

CS Energy proposes introducing a new participant registration category, “non-generating system service provider” to Chapter 2 (Registered Participants and Registration) of the NER. This category would apply to participants with non-generating units that provide system security services, including system strength, fault levels, and inertia-related services.⁴⁰

CS Energy proposes:

- Participants providing system security services through generating units, including those with synchronous condenser mode, would continue to be registered as generators under existing NER definitions.⁴¹
- A non-generating system service provider would be defined as an entity that owns, controls, or operates a non-generating facility or system that delivers system security services while connected to the transmission or distribution network.⁴²

3.1.1 Will the new registration category proposed by CS Energy, resolve the problem?

CS Energy proposes its **non-generating system service provider** registration category would allow standalone synchronous condensers and other non-generating units providing system services to be appropriately registered as NEM participants, enabling them to provide inertia and system strength services under the relevant frameworks.⁴³

CS Energy believes this new registration category would eliminate ambiguities and uncertainties regarding the ability of standalone synchronous condensers to enter system strength or inertia service agreements with TNSPs or participate in potential future system service mechanisms.⁴⁴

In the long term, CS Energy note this proposal could also remove barriers to the adoption of emerging non-generating technologies that enhance system security services in the NEM, potentially increasing the overall availability and diversity of these services.⁴⁵

40 CS Energy, rule change request. p. 5.

41 Ibid.

42 Ibid.

43 CS Energy, rule change request, p. 7.

44 Ibid.

45 Ibid.

Question 3: Will the proposed solution address the issue raised by the proponent?

- Do you consider CS Energy's proposal will address the identified issue?
- Are you aware of any issues that would be created by adopting CS Energy's proposed solution?

3.2 Option 2 - The Commission is interested in using the Integrated Resource Provider registration category

The Commission seeks feedback on an alternative approach to addressing the issue raised by CS Energy in its rule change request.

CS Energy's proposal would introduce a new technology-specific registration category. Since participant registration categories are structural elements that organise NER obligations, adding technology-specific classifications would create a more rigid and complex rule structure over time.

The Commission aims to move toward a technology-neutral, service-based approach, which simplifies the rules and allows greater flexibility for future innovation. To align with this goal, the Commission prefers using existing registration categories, such as the Integrated Resource Provider (IRP) category, for registering non-generating systems providing system security services. This aligns with the approach taken in the **Integrating Storage Rule change**, which introduced the IRP category as a step toward a simpler, service-focused framework.⁴⁶

Option 2 is divided into two sub-options outlined below:

- Option 2a – Clarify the application of the IRP registration category in the final determination without NER amendment, or
- Option 2b – Amend the NER to clarify the application of the IRP category to standalone synchronous condensers.

3.2.1 Option 2a - Can the existing IRP registration category be applied with clarification on its application provided in the final determination

This option involves the Commission determining not to make a rule, meaning the existing NER arrangements as they currently stand are retained. The final determination would clarify whether the IRP category applies to the registration of non-generating systems providing system security services.

The Commission is considering this option as a test case for applying the IRP registration category as a flexible, technology-neutral framework for a wider range of assets. Further assessment will determine whether the current IRP registration requirements in clause 2.1B.2 of the NER can be applied without amendment.

The Commission notes that a person must own, control, or operate an integrated resource system in order to be registered as an IRP.⁴⁷ An integrated resource system is a system comprising either one or more generating or bi-directional units.⁴⁸ In this case, a threshold requirement for applying the IRP registration category to a standalone synchronous condenser relies on a synchronous condenser being considered a bi-directional unit.

⁴⁶ AEMC, Integrating Storage Rule Change, Final Determination, p. 25.

⁴⁷ Clause 2.1A.1(b) of the NER.

⁴⁸ Chapter 10 of the NER.

The Commission seeks stakeholder feedback on whether a standalone synchronous condenser can be considered a bidirectional unit on the basis that, from the system's perspective, it consumes electricity to charge the kinetic energy stored in its rotating mass that is released via its inertial response to a power system disturbance.

3.2.2 **Option 2b - What specific amendments are necessary to apply the IRP category to the registration of standalone synchronous condensers?**

The Commission may amend existing arrangements, consistent with its preference for minimal changes, should it be inappropriate to apply the existing IRP registration category to the registration of standalone synchronous condensers.

The Commission is particularly interested in stakeholder feedback on which, if any, specific rule arrangements are currently associated with a non-scheduled integrated resource system that may need to be changed or excluded as appropriate.

Question 4: What are your views on applying the Integrated Resource Provider registration category to standalone synchronous condensers

What are your views on:

- whether the existing IRP registration category could be applied without amendment, with appropriate clarification provided in the final determination?
- whether a standalone synchronous condenser can be classified as a bi-directional unit for the purposes of IRP registration?
- any other elements of the current NER that may be a barrier to registering a standalone synchronous condenser as an integrated resource system?

4 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.

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

The Commission is bound by the National Electricity Law (NEL) to only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national electricity objective.⁴⁹

The NEO is:⁵⁰

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.⁵¹

4.2 We propose to assess the rule change using these criteria

4.2.1 Our regulatory impact analysis methodology

Considering the NEO and the issues raised in the rule change request, the Commission proposes to assess this rule change request against the set of criteria outlined below. These assessment criteria reflect the key potential impacts – costs and benefits – of the rule change request. 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 the regulatory impact analysis methodology as this rule change progresses, including in response to stakeholder submissions.

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.

49 Section 88 of the NEL.

50 Section 7 of the NEL.

51 Section 32A(5) of the NEL.

4.2.2 Assessment criteria and rationale

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

- **Safety, security, and reliability** - We propose assessing whether the rule change enables reliable, secure, and safe energy provision of system security services and the efficient operation, use of, and investment in system security services. System security is at the heart of the rule change request and the potential benefits identified by the proponent. CS Energy justifies the proposed change on the basis that it would result in faster and cheaper provision of system security services as the NEM transitions.
- **Principles of market efficiency** - We propose assessing whether the rule change increases competition for the provision of system security services and reduces barriers to entering and exiting the system security service market. The rule change request is to address a barrier to the entry of new system security service providers. CS Energy claims that addressing this barrier would result in higher competition in the system security services market, with consequently more efficient outcomes for consumers.
- **Principles of good regulatory practice** - We propose assessing whether the rule change promotes predictability, stability, simplicity, and transparency. CS Energy identified a barrier related to uncertainty regarding the ability to register a standalone synchronous condenser to provide system security services. The final rule should be as simple as possible while also providing necessary transparency for potential investors.

Question 5: 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?

4.3 We have three options when making our decision

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

- to make the rule as proposed by the proponent⁵²
- 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.⁵³

⁵² The proponent describes its proposed rule in Chapter 3.

⁵³ Section 91A of the NEL.

4.4 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.⁵⁴

We are considering whether the rule, if made, would apply in the Northern Territory. Currently Chapter 2 of the NER does not apply in the Northern Territory.⁵⁵ However, this rule change may involve amendments to chapters of the NER that do apply in the Northern Territory. For example, Chapter 5 which sets out the technical obligations for participants and Chapter 10 containing the glossary of defined terms.

To the extent that the Commission identifies rule amendments that apply in the Northern Territory, the Commission will assess the proposed rule against additional elements required by Northern Territory legislation:

- *Should the NEO test include the Northern Territory electricity systems?* For this rule change request, the Commission will determine whether the reference to the “national electricity system” in the NEO includes the local electricity systems in the Northern Territory, or just the national electricity system, having regard to the nature, scope or operation of the proposed rule.⁵⁶
- *Should the rule be different in the Northern Territory?* The Commission will consider whether a uniform or differential rule should apply to the Northern Territory, taking into account whether the different physical characteristics of the Northern Territory’s network would affect the operation of the rule in such a way that a differential rule would better contribute to the NEO.⁵⁷

54 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.

55 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>.

56 Clause 14A of Schedule 1 to the NT Act, inserting section 88(2a) into the NEL as it applies in the Northern Territory.

57 Clause 14B of Schedule 1 to the NT Act, inserting section 88AA into the NEL as it applies in the Northern Territory.

Abbreviations and defined terms

| | |
|------------|--|
| AEMC | Australian Energy Market Commission |
| AEMO | Australian Energy Market Operator |
| AER | Australian Energy Regulator |
| Commission | See AEMC |
| IRP | Integrated Resource Provider |
| NEL | National Electricity Law |
| NEM | National Electricity Market |
| NEO | National Electricity Objective |
| NER | National Electricity Rules |
| Proponent | The proponent of the rule change request |