

AEMO Draft 2026 General Power System Risk report consultation

30 June 2026

Justice and Equity Centre
ABN 77 002 773 524
www.jec.org.au

Gadigal Country
Level 5, 175 Liverpool St
Sydney NSW 2000
Phone + 61 2 8898 6500
Email contact@jec.org.au



About the Justice and Equity Centre

The Justice and Equity Centre stands for a society that is fair and free from discrimination and disadvantage. Established in 1982 as the Public Interest Advocacy Centre (PIAC), we use the law and policy advocacy to challenge injustice and inequality. We do this through:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change to deliver social justice.

Energy and Water Justice

Our Energy and Water Justice work improves regulation and policy so all people can access the sustainable, dependable and affordable energy and water they need. We ensure consumer protections improve equity and limit disadvantage and support communities to play a meaningful role in decision-making. We help to accelerate a transition away from fossil fuels that also improves outcomes for people. We work collaboratively with community and consumer groups across the country, and our work receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

Contact

Craig Memery
The Justice and Equity Centre
Gadigal Country
Level 5, 175 Liverpool St
Sydney NSW 2000

T: +61 2 8898 6500

E: cmemery@jec.org.au

Website: www.jec.org.au

The Justice and Equity Centre acknowledges and pays respects to the Gadigal as the Traditional Owners of the land on which our office stands.

Contents

1.	Introduction	1
2.	Systems strength services should be disaggregated.....	2
3.	Syncons should not be the default solution	2
3.1	The state of play	2
3.2	A more appropriate response rapid changes in the transition.....	3
3.2	Re-evaluation of existing responses	4
4.	Developing alternative system strength technologies	4
5.	Conclusion	5

1. Introduction

The Justice and Equity Centre (JEC) welcomes the opportunity to respond to the Australian Energy Market Operators (AEMO) consultation on the Draft 2026 General Power System Risk Review (GPSRR) report. As the energy system transition progresses, processes for ensuring ongoing power system strength must evolve to ensure they are both efficient and effective at best managing risks in consumers interests.

Accordingly, the JEC supports AEMO's ongoing efforts to undertake regular detailed analysis on system strength, including gap analysis, consideration of solutions, and exploring technologies which can provide system strength. This work is increasingly critical to ensuring the approach to system strength continues to evolve with the transitioning energy system. The overarching objective must be to seek solutions and ensure settings which are most efficient, and effective at maintaining system strength parameters at lowest cost to consumers.

In this context, the JEC notes that:

- Synchronous condensers (syncons) have to date been the default solution to address issues of system strength.
- Some recently installed syncons - such as those in South Australia - were prudent, low regret investments based in the best evidence at the time they were committed.
- There is longer list of proposed syncons in varying stages of development. These projects have been subject to substantial delays and cost escalations.
- The default option of syncons in response to issues related to system strength is increasingly questioned by energy experts, particularly in the face of more nuanced understanding of aspects of system strength, the development of a wider range of options to deal with aspects of system strength, and developments in understanding of the potential of battery technology to address system strength.

In this submission we explore:

- The importance of more nuanced understanding of system strength and the need to disaggregate system strength services - including inertia, fault current tolerance and voltage waveform – in considering the most efficient solutions.
- Why the default of resorting to deployment of synchronized condensers to address issues of system strength no longer best promotes the long-term interest of consumers.
- The importance of timely research and analysis on alternative to synchronous condensers, including clutches, batteries, and pumped hydro.

2. Systems strength services should be disaggregated

A updated approach to system strength should involve disaggregation of the consideration and analysis of system strength services into its key components – including inertia, fault current tolerance and voltage waveform. The most efficient responses, and lower overall systems cost, will be achieved by separately analysing each of these disaggregated services, and matching the technologies available to best provide them.

Aggregating all services under a single analysis framework misses important nuances. While many technologies can provide more than one service, undertaking analysis under a single aggregated category of ‘systems strength’ leads to inefficiencies and ‘sub-optimal’ solutions. These inefficiencies ultimately lead to high consumer electricity bills.

We support the submission to this process by SMA, particularly their analysis and recommendations in relation to this issue. They argue for disaggregation and clear definitions of the resulting individual services. We support their argument that this will lead to better understanding of system requirements, and better comparison of the capabilities (and costs) of competing technologies.

We recommend AEMO progress consideration of disaggregated system strength components, either as part of the 2026 GPSRR, and no later than the 2027 GPSRR.

3. Syncons should not be the default solution

It is no longer appropriate to regard deployment of syncons as the default solution for identified system strength issues. It is increasingly true that alternative solutions will be more efficient and better promote the long-term interests of consumers. It is critical that consideration of system strength responses be updated accordingly.

3.1 The state of play

Analysis on system strength and responding to identified issues has in large part been deferred to transmission businesses who have broadly regarded syncons as the default response. There are currently a number of syncon projects in varying stages of development though many face growing questions regarding their necessity. The current state of play demonstrates a number of issues which must be considered:

- Syncons are favoured by transmission businesses – alongside other capital expenditure - because the capital cost can be recovered with a ROI via the RAB. This is likely to have some influence over their identification and selection of solutions.
- The supply chain for syncons is extremely constrained relative to burgeoning international demand. This is driving up both lead times and cost and eroding - in whole or in part – any assessed benefit they may have had over alternatives at the time responses were considered. This places further pressure on the initial assessment, response selection, and cost control by proponents.

- Transmission businesses lack a strong incentive to minimise the capital costs associated with system strength projects due to the way the current regulatory framework operates in practice.
- The relatively high (and rising) cost of syncons, the long lead time of their deployment, and the inflexibility of their response to future circumstances raises serious concerns over their continued treatment as a default solution for system strength problems.
- Alternative solutions to system strength issues, including a combination of condensing clutches on generators, emerging and established IBR services, use of pumped hydro, and updating protection control gear are increasingly capable of meeting anticipated system strength gaps for the foreseeable future. These solutions are likely to be lower cost able to be deployed much more quickly and in a more targeted manner, than syncons.
- There is an unacceptable and growing risk that expenditure on syncons is inefficient and unnecessary in many cases. Syncons under consideration, and many in the process of being deployed face a growing, and unavoidable risk of underutilisation – if not stranding - well before the end of their asset life. This presents further cost risk to consumers.

These issues have been well documented and raised by energy experts in recent explorations of system strength¹. In any case these issues warrant reconsideration of the current approach to system strength and the default assumption that syncons are the most appropriate response.

3.2 A more appropriate response rapid changes in the transition

Maintaining a securely operating energy system through the transition from a largely mechanically driven energy system one to one characterised by reliance on power electronics, is a challenge for NSPs, market institutions and governments.

Ad-hoc thermal generator retirements and diminishing system load are resulting in unpredictable and stepwise gaps in aspects of system strength. But, as we have noted, the lead-time for syncons to be identified and enacted means ‘just-in-time’ investment decisions on solutions would leave consumers and markets exposed to unacceptable risk.

However, there are equally significant risks to consumers from locking in inflexible, costly solutions with long asset lives and diminishing utility.

Decisions on system strength solutions should seek to ensure syncons are deployed only where a critical and long-term need can be robustly established. This should also only occur where alternatives have been sought and assessed.

¹ See <https://theenergy.co/article/expensive-redundant-assets-syncon-scrutiny-as-transgrid-seeks-to-pass-on-400m-cost>; <https://theenergy.co/article/fresh-bid-for-market-solution-to-system-security-threat>; <https://theenergy.co/article/keeping-the-lights-on-for-social-licence>; <https://theenergy.co/article/2025-transition-plan-for-system-security>; <https://theenergy.co/article/australias-giant-syncon-bet>; <https://theenergy.co/article/nsw-green-bank-joins-push-for-project-fast-tracking>; <https://www.decarbonhub.au/securing-the-grid-for-a-renewable-future/>.

3.2 Re-evaluation of existing responses

The JEC strongly encourages close scrutiny of the system strength responses to date, with a focus on those yet to be deployed. The focus should be to ensure all prudent action has been taken by transmission businesses to robustly demonstrate the need for syncons, assess alternatives, and where alternatives are not suitable, manage any costs and potential risks to consumers arising from the deployment of syncons.

The delayed retirement of coal generation materially impacts considerations of system strength risks and has deferred the gaps in system strength previously identified. This should trigger a re-evaluation or, at the very least afford more time to reassess the efficiency of solutions and where prudent, reduce dependence on expensive, long-lived mechanical options which are likely to be redundant in the long term.

This re-evaluation of the existing pipeline of syncons, and the wider framework for determining the appropriateness of syncons as responses to system strength issues, would ideally occur as part of the 2026 GPSRR. In any case it should happen no later than the 2027 GPSRR.

4. Developing alternative system strength technologies

Developing understanding of alternative responses to system strength and establishing them as viable responses is a critical enabler of the consumer interest. The importance of timely research and analysis on the use of clutches, batteries, and pumped hydro in response to system strength issues cannot be over emphasised. The JEC urge prioritisation of this work with sufficient resources are provided for its timely completion.

Work on alternative technologies stands to save consumers billions of dollars and improve emissions reduction responses through:

- reduced system strength costs,
- earlier investment in, and lower curtailment of, renewables, and
- earlier closure of coal power stations.

In the immediate to medium term, the faster and most cost-effective mechanical option for providing system strength is likely to be adding clutches to existing synchronous generators, enabling them to operate in condensing mode, alongside use of pumped hydro.

Within a decade, the quantum and maturity of battery energy storage systems and other inverter-based resources will almost certainly render them the most effective option for new system security services. Indeed, it is possible - as with large thermal generators - that these services will be able to be procured almost as a byproduct of operation or with relatively trivial marginal cost.

In JEC's view, market-based measures will by then be a more effective and lower cost means of procuring (any amount of) system strength. This assessment has – or should have - implications for system strength decisions now. At the very least, decisions now should minimise long-term commitments in syncons to retain scope for flexibility.

Timely analysis of the capability and cost of deploying alternative technologies to syncons will help identify the most efficient way to meet system strength needs in the longer term. As noted above systems strength services should be disaggregated. Analysis of alternative technologies should be undertaken with respect to disaggregated services – including inertia, fault current tolerance and voltage waveform.

Analysis of competing technologies and their costs and capabilities, in respect of responding to responding to disaggregated system strength services, should be completed as a priority and incorporated into the analysis in the 2027 GPSRR.

5. Conclusion

The JEC encourages AEMO to utilise the GPSRR process to fundamentally update the approach to system strength to ensure it best supports promotion of the consumer interest.

The JEC specifically recommends:

- **Recommendation 1**
That system strength is disaggregated and considered in its component parts including inertia, fault current tolerance and voltage waveform.
- **Recommendation 2**
That alternatives to transmission business responsibility for inertia are considered as part of measures to improve the efficiency of response to system strength.
- **Recommendation 3**
That the least-cost combination of options for providing system strength should be the default consideration to meet any identified system strength gaps. For syncons to be chosen, they should be demonstrably competitive and lower risk over the short and long terms.
- **Recommendation 4**
That AEMO / AERNA / industry analysis of alternative technologies be fast tracked with the intent of ensuring the most efficient response to system strength issues over the medium-long term.
- **Recommendation 5**
That AEMO rely more on independent analysis of system strength issues and consideration of responses to ensure the assumptions and information about options other than syncons is balanced, complete and contemporaneous.

We would welcome the opportunity to meet with the AEMO team and other stakeholders to discuss these and other related issues in more depth. Please contact Craig Memery at cmemery@jec.org.au regarding any further inquiries.