Reliability Panel

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AEC Submission to the 2026 Reliability Standard and Settings Review Issues Paper

The Australian Energy Council (AEC) welcomes the opportunity to make a submission in response to the Reliability Panel ("the Panel") on the 2026 Reliability Standard and Settings Review Issues Paper ("the Issues Paper").

The Australian Energy Council is the peak industry body for electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. AEC members generate and sell energy to over 10 million homes and businesses and are major investors in renewable energy generation. The AEC supports reaching net-zero by 2050 as well as a 55 per cent emissions reduction target by 2035 and is committed to delivering the energy transition for the benefit of consumers.

We make some general points about the reliability settings and the 2026 review below and attach an appendix with answers to the specific questions set out in the Issues Paper.

Stability in reliability settings is an important component of a well-functioning NEM

The reliability settings collectively make an important contribution to various aspects of the market:

- Contracts – contract prices and other terms are informed by the price limits imposed by the settings. Equally importantly, maintaining relatively high price caps (MPC, CPT), creates a strong incentive for market customers to enter into hedging contracts, and thus supports contract liquidity. Maintaining contract liquidity is currently a key concern of policymakers.
- Investment - contract prices in turn provide an investment signal to existing and potential new plant. The role of the reliability settings in supporting investment is discussed further below.
- Dispatch and operational efficiency - some components of the reliability settings have more impact on a dispatch and operations timeframe than on an investment timeframe, such as the Administered Price Cap (APC). This review should give weight to the value of being able to minimise market operator intervention by having the settings at an appropriate level.

Given their importance, a well-functioning NEM depends on stable and predictable reliability settings. This is not to suggest that they should never materially change – recent important improvements include an increase in the APC following the market suspension event of 2022 – but that volatility in the settings is best avoided. This periodic review is the right review process in which to consider changes at the margins that can better achieve the National Electricity Objective (NEO), and we support the Reliability Panel "kicking the tyres" on the settings, but we do not consider a material change is warranted to the settings as a whole. We also consider that the primary focus of the review should be to ensure that the reliability settings can deliver the appropriate incentives for the marginal plant to deliver reliable outcomes.

Stability and predictability are also a consideration when considering implementation timeframes for any changes to the settings that arise from this review. While it may appear logical that if a change will better meet the NEO, it should be implemented as soon as possible, this should be balanced against the impacts on the contract market and on participants' operations to manage their contract position.

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Reliability settings and investment

The reliability settings influence investment in the broadest sense – including decisions whether or not to close plant and whether to refurbish plant (to extend its life or allow more flexible operation) as well as greenfield investment in new plant. There is perennial debate around the NEM's ability to support investment without government intervention, however we consider that it's an appropriate goal for the Reliability Panel to implement settings that can support investment. In any case several of the major support schemes currently in operation seek to work in tandem with the market by providing caps and collars rather than completely override price signals (as a standard contract-for-difference policy might) and thus rely themselves on effective reliability settings.

Different types of resources have a different mix of investment drivers and so some types of investment depend more on appropriate and stable reliability settings than others. Specifically, dispatchable plant such as storage (of various types) and gas-powered generation (GPG) are heavily impacted by the settings, given such plant is most likely to be the marginal plant and times of scarcity while variable renewables (VRE) such as wind and solar are less so. They are more impacted by the average price they can achieve and their level of curtailment. Investments in consumer energy resources (CER) are likely to be driven by the retail tariffs and tariff structures that customers face, which do not have a direct link to the reliability settings. Of course, there are consumer tools that do connect to wholesale prices and thus the reliability settings, including virtual power plants (VPPs) and wholesale pass through retail tariffs, but these tools are still only used by a minority of load/CER.

Accordingly, while the Reliability Panel should continue to take a broadly technology neutral approach it is also useful to be cognisant of which resource types are most likely to be impacted by the levels of and changes to the reliability settings.

There are no indications that the standard needs to change

The AEC considers that the standard remains broadly appropriate. While electricity supply remains a critically important service to both businesses and householders, the standard should be considered in the context of most loss of supply events being due to network outages. Of the remainder, some is due to energy security events which the reliability settings are not designed to address or mitigate.

Additionally, the energy transition is driving two trends that are likely to have opposite effects on the value of reliable supply. On the one hand, the increasing penetration of CER may make consumers with CER less dependent on the grid, while on the other hand, increasing electrification (along with other trends) may make consumers more dependent on electricity supply (in whatever combination of CER and grid supply). It's not possible to say which of these effects outweighs the other. It is also possible for consumers to operate their CER to manage exposure to retail energy prices (which may not be fully aligned with wholesale prices), rather than for reliability, which can in turn constrain their ability to use these devices to support reliability. From an equity perspective we observe that the transition is uneven - some customers can't or are yet to invest in CER and similarly, some customers are yet to or face significant barriers to electrification.

To the extent that apparent changes in the value of customer reliability (VCR) provide a signal of which is the stronger trend it is a very ambiguous signal. The AER's 2024 VCR estimation exercise has resulted in some significant changes in outputs from the previous exercise in 2019, with most residential VCRs and one or two business category VCRs materially increasing, while most business VCRs have materially decreased. As the AER noted, the industrial customer VCRs are based on surveys of a relatively small number of respondents and the majority of the respondents are different from 2019. So the changes could be largely attributable to different businesses responding who have different individual VCRs. Ultimately the Reliability Panel's reference point needs to assess the *long-term* interest of consumers, rather than a point in time value. This might be better achieved through averaging VCR across all customer types and all locations, or for an equity driven approach, it could be the VCR of customers who can't access CER (which would presumably be higher than the average). Also, given the MPC continues to be well below the average VCR, the AER's results provide no clear rationale for a change in the settings.

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The modelling approach is broadly appropriate but a wider range of scenarios could be considered

The AEC commends the Reliability Panel for its transparency in setting out its modelling approach and the source of its input assumptions. It's understandable that these should leverage off the extensive analysis done by AEMO, CSIRO and others as inputs to the ISP rather than start with a blank sheet. However, the purpose of the modelling differs from the ISP, and sensitivities should focus on stress-testing the system with plausible alternative inputs and avoiding "blind spots" in the modelling, given that reliability is likely to be tested under more extreme conditions and that's when the reliability settings will bite. Specifically, we think the modelling should consider:

- Realistic timeframes for deployment of generation, storage and transmission. The evidence of recent years is that the limitations on physical deployment, whether due to delays in obtaining social licence, financing or supply chain bottlenecks mean that policy targets are unlikely to be met in the desired timeframes. It should not be seen as criticism of government policy to test realistic scenarios where targets are not met. This similarly applies to emissions reduction, which while desirable should not be modelled as absolute constraints, particularly given the regulatory framework simply requires the Panel to consider trade-offs between the different limbs of the National Electricity Objective (NEO).
- Implications for existing plant of changes to the reliability settings. If existing plant was expected to close earlier than its assumed end of life because of the way changes to the reliability settings flowed through to their expected revenues, then even more new investment would be required to meet the reliability standard. So, it would be useful to consider this eventuality.

Any questions about this submission should be addressed to David.feeney@energycouncil.com.au.

Yours sincerely,

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Appendix: responses to specific questions

Question	Response
Question 1: Large-scale VRE, CER and storage is replacing thermal generation What are the implications of this changing generation mix for the reliability outlook for 2028- 2032?	Thermal plant still plays a large role in the NEM, especially at times of scarcity (i.e. low VRE) when MPC/CPT/APC become especially relevant for reliability. Investment decisions guided by reliability settings and contract pricing include closure and major refurbishment as well as new investment. So the impact of the settings on thermal plant remains highly relevant. While large-scale VRE, CER and storage can displace thermal generation in the provision of bulk energy and intraday shaping, they are limited in their ability to provide firming, particularly for extended periods.
Question 2: CER and demand implications How is the uptake of distributed resources and the growth of electrification going to impact reliability risk? How should the reliability framework manage the uncertainty that these changes create?	Reasonable assumptions (and potentially multiple scenarios) should inform modelling. We caution against CER/demand side as identical to supply side. The supply side's purpose is to supply, but this not the case for load, which exists to provide customers with amenity. Most load and CER is not directly exposed to spot prices and so not sensitive to MPC/MPF. Instead it responds (to the extent it is responsive) to retailer price signals which are quite different to wholesale, and may be used to help consumers manage exposure to higher prices rather than support reliability. There is some price responsive load but this is generally managed as part of the consumers portfolio or through a VPP and other retailer contracts, e.g. customers choosing spot price retail contracts and self-managing, rather than through the WDRM. Even where CER appears to be being used regularly in response to wholesale price signals, it is not being scheduled (except the small amount that utilises the WDRM), and therefore may not be as "firm" as scheduled plant. Non-market resources such as CER may also have the opportunity to participate in AEMO's reserves procurement processes which offers the possibility to earn above the market price cap, especially when availability payments are taken into account. It is important to maintain consumer choice over how their resources are used and recognise the trade-offs they may make between reducing costs and maintaining capacity for reliability. But other reforms underway, e.g. the CER Roadmap, may create tools that are more appropriate for eliciting a CER/demand contribution to reliability.

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Question	Response
Question 3: Impact of government policies on reliability settings What implications do emission reduction policies have for the Panel's assessment of the reliability standard and settings? What are your views on the impact of State and Commonwealth government energy policies on the reliability settings?	See response to question 7.
Question 4: NEM Review *What impact do you consider the NEM review will have on the reliability standard and settings?* How should this process interact with the ongoing review?	This review and the NEM review are two of several moving parts in the energy policy landscape. The Reliability Panel should continue to monitor the NEM review and other relevant processes driving broader investment and operation decisions. Given the signals from the NEM review that one of their areas of focus will be how to ensure the contract market can support new investment at least for several years of a new plant, this points to the value of a stable and predictable approach to this review. As mentioned earlier, it is important that the Reliability Panel remains focused on supporting the marginal plant required to meet the reliability standard. It would also be valuable for the Reliability Panel to seek feedback from the NEM Review Panel as to how the current reliability standard and settings are influencing their thinking about longer term market and policy settings.
Question 5: The level of the Reliability Standard and consideration on VCR Do you consider that there is evidence that a different level of the reliability standard would deliver better overall outcomes for the NEM? During the period 2028 - 2032, the level of CER in the NEM is expected to continue increasing. How would that affect the value consumers place on a reliable electricity supply? How should the Panel account for the 2024 VCR values as part of this RSS review?	As noted above, while consumers' sources of, and need for, electricity are changing, we ultimately do not see that these changes are a driver for a different level of reliability standard. The vast majority of loss of supply events experienced by consumers are network-driven. As discussed above, the outcomes of the AER's 2024 VCR estimation exercise do not provide a compelling case for change in the standard or the settings, particularly given this is a point in time estimate and the Reliability Panel needs to evaluate the long-term interest of consumers.

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Question	Response
Question 6: Other issues the Panel will consider when recommending the appropriate reliability standard? Are there any other issues the Panel should consider for its review of the reliability standard?	N/A
Question 7: Consultation questions on the MPC How effective is the MPC in allowing for the investment of the least-cost mix of generation and storage to meet the reliability standard as the NEM transitions? And what types of generation is it critical to incentivise? What factors or issues regarding spot prices, investment, market participants and/or the predictability and flexibility of the regulatory framework should the Panel pay particular attention to? Do you consider that the introduction and continuation of government investment schemes means that changes to the MPC should be considered? Do you consider that the emergence of new technologies warrants a change in the MPC in order to enable investment to meet the reliability standard in the most cost-effective way? How would you suggest the Panel include the value of emissions reduction as part of this economic assessment? Do you consider that the introduction of new markets or system security enablement approaches would mean a change to the MPC is required?	The MPC and its impact on investment signals such as contract prices is mostly relevant for dispatchable resources that can sustain firming services, including large scale storage and GPG. Notably, GPG does not have access to the various government investment schemes and remains dependent fully on market signals. But recent experience in SA shows that GPG plays a critical role in supporting secure and reliable market operation alongside increasing penetration of renewable generation. The schemes that support storage, such as NSW LTESAs and the Commonwealth CIS are designed to work with the market settings rather than completely override them. Schemes can be curtailed if their fiscal impact is higher than expected. All these factors mean that government investment schemes do not provide a convincing rationale for changes to the MPC. Given the MPC is not calculated based on the cost of any one specific technology, the changing mix is unlikely to provide a rationale for a change in the level. However we will be interested to see the results of the modelling in this respect, including consideration of which technologies can credibly sustain sufficient firming services to support reliability. Interaction with system security arrangements is likely to be limited, as energy revenue is still expected to be the mainstay of new generation. Ancillary revenues are likely to be just that, and may not be sufficiently reliable over the long term to help underwrite investment. New system security investments such as syncons, or grid-forming inverters don't deliver incremental capacity or energy into the market.

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Question	Response
Question 8: Consultation questions on the MFP What role, if any, does the MFP have to play in mitigating the risk of MSL events? Does this role include investment as well as operational considerations? Is the MFP set at the right level, and is it in the right form to drive efficient operational dispatch? In your view, should the Panel consider a negative cumulative price threshold? If so, what factors should be considered when determining the level of a negative CPT? Has the growth of VRE led to 'race-to-the-floor' bidding? If so, how should this inform the level of the MFP?	The MFP plays a limited role in mitigating the risk of MSL events – as noted above, most load is not exposed to spot prices and so not sensitive to the level of the MFP. The exception is likely to be utility-scale storage (and potentially VPP resources). Given MSL events are a matter of system security, they would be better considered through reviews and reforms supporting efficient delivery of system security directly, rather than through market settings supporting reliability. The Reliability Panel should consider the implications of the MFP on each of generation, storage and price-responsive demand. A change in the MFP may provide more support for one type of resource and less support for another, and so the investment trade-off may be complex, especially when considered from a technology-neutral standpoint. This consideration should also include the ways that contracts may or may not protect participants from MFP events. We would like to better understand what impact a negative CPT could have before expressing a view on its merits. But with the material technological, market and regulatory change currently under way it is important that the introduction of any new regulatory mechanism is supported by evidence of material benefits. Both market participants in their commercial contracting and policymakers in the design of their support mechanism have become more aware in recent years of the undesirability of incentivizing VRE to run even when the spot price signal is to curtail. This doesn't fully mitigate race to the floor bidding to be dispatched in a congested area at an RRP well above a generators' MFP bid. Given race to the floor bidding is an outcome of physical constraints and the way that is dealt with in dispatch, the MFP may have little effective role to play in dealing with it. In general it is unclear how the reliability settings can influence behaviour driven by congestion, especially when it means that a participants' bidding strategy is not going to affect the RRP.

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Question	Response
Question 9: Consultation questions on the CPT Should the CPT continue to function as a technology-neutral mechanism in a changing reliability landscape? Should the formulation of the calculation of the CPT be considered to better reflect its purpose? Including the separate APP triggers for energy and market ancillary services. How is the interaction between the CPT in the Energy and FCAS markets changing and what does this mean for this review?	While the CPT should continue to be technologically neutral it should be informed by the changing mix of technologies that provide reliability services in extreme market conditions. The extent of the CPT also influences incentives for contracting. Other factors to bear in mind include: • Batteries (BESS) will typically be able to respond faster than GPG to high price events. GPG thus may not access the full benefits of the cumulative prices that trigger the CPT, and it would be useful for the modelling to consider the materiality of its issue and its implications for the optimum CPT. • If the Reliability Panel is considering changes to the CPT/APC, it could consider a multi-stage cap, with a progressive step down in the maximum price allowed once the initial CPT has been reached. Purely as an example, this could be 10 per cent of the MPC until another cumulative threshold has been reached and then 5 per cent and then the APC. The appropriate parameters would of course need to be informed by the modelling. With respect to the interaction between the Energy and FCAS markets, it's important to avoid distorting incentives for participation in each market. We also note that the role of the CPT is to protect against systemic risk due to persistent elevated prices. The Panel's statement that the CPT should "protect all market participants from prolonged periods of high market prices" could be read as offering protection to individual participants from their failure to adequately hedge against such risks. An individual participant failure does not inherently represent a deficiency of the reliability settings.

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Question	Response
Question 10: Consultation questions on the APC How should the Panel consider setting the APC for technologies such as hydro and utility batteries? Has the typical generator SRMC increased significantly since the previous review period? Or are they expected to do so over the period 2028-2032? Do you consider that the APC remains at an appropriate level to encourage continued participation during times of extended high input costs and market stress? If not, what would be an appropriate level of the administered price cap, why and what is the evidence supporting your view? Is there evidence that the APC is affecting the contract prices and so affecting incentives for new investment? Do you consider that the current APC provides sufficient investment signal for new technologies?	The primary purpose of the APC is to maintain incentives for market participation for all types of plant (and demand side resource) while limiting the cost escalation for consumers. It is not a material driver of investment decisions given its rarity but it does share some similarities with cap contracts given both are intended to value (albeit in different ways) the ability to continue to serve consumers. In the past, the key reference point for the APC was the SRMC of peaking plant such as gas and liquids. The floor price for typical cap contracts was also a useful reference point. The current outlook is more complex given: • Volatility in gas prices now east coast gas is internationally linked • The challenges in deriving a SRMC for storage (or demand side resources) • The evolution of the contract market such that there may not be one obvious reference point (and the historical norm of $300/MWh is definitely too low to support plant participation) • The increasing role of energy limited storage resources that may need to recharge during an APC period in order to be able to subsequently contribute to reliability. However, the APC needs to balance this complexity against the critical need for predictability and stability to enable market participants to understand and respond.
Question 11: Consultation questions on the indexation of the market settings Are there any specific considerations the Panel should take into account for this review, relating to the indexation of the MPC and CPT?	Indexation is a good default approach for the MPC/CPT, in order to preserve the real value of the preferred level.
Question 12: Proposed modelling approach for the 2026 RSSR Do stakeholders support the high-level modelling approach outlined above? If not, what changes do you consider the Panel should make to its approach?	Yes, we support the high level approach. We suggest that if modelling material changes to the settings that potential implications for existing plant be accounted for in order to consider the full picture. One complication is the interaction between storage which will play a growing role in meeting reliability and dispatchable capacity such as gas which can both meet reliability and assist in replenishing storage at times of extended stress (such as renewable droughts). The approach of focusing only on USE outcomes may not fully capture this interaction.

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Question	Response
Question 13: Proposed method of including emissions implications in the modelling Do stakeholders agree with the high-level approach to including emissions in the modelling? Are there any further ways we should be considering emissions?	It's appropriate for the value of emissions reduction to be included in resource costs assessments in the modelling. In practice we would be surprised if emissions was a driving factor in any decisions on reliability standards and settings. However, we do not consider that the modelling should incorporate emissions reductions goals as a hard constraint. Prioritising one limb is not consistent with the regulatory framework which requires all limbs of the national electricity objective (NEO) to be considered to achieve the long term interest of consumers. We also note that storage should not be considered a zero emissions technology. In most cases, the emissions intensity of the NEM is non-zero, and the marginal plant is rarely a zero-emissions plant, so it is unrealistic to assume that storage charges up only on zero emissions electricity.
Question 14: Modelling principles, inputs, assumptions and limitations Do stakeholders agree with the principles, inputs, assumptions and limitations listed in this section? If not, why? Are there any additional principles, inputs, assumptions or limitations that the Panel should consider in this review?	The Reliability Panel should incorporate up to date information as far as possible. For example, we understand that the 2025 ESOO will include higher levels of minimum system load than the 2024 ISP, and to the extent this is the case, the modelling should seek to adopt the former rather than the latter.
Question 15: Feedback on sensitivities Do stakeholders agree with the sensitivities listed above? Are there other sensitivities the Panel should consider for this review?	It's important to consider realistic outcomes whether in the sensitivities or the central scenario. The Reliability Panel should not be constrained by having to assume all policy targets are met, especially where there is already evidence that they may not be.

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