

25 July 2022

Ms Anna Collyer
Chair
Energy Security Board

Submitted via info@esb.org.au

Dear Ms Collyer,

CAPACITY MECHANISM – HIGH LEVEL DESIGN PAPER

Nexa Advisory welcomes the opportunity to respond to Energy Security Board's Capacity Mechanism High Level Design paper.

A transition to clean energy in Australia is essential to meeting our climate targets and delivering energy securely in a stable market and system. Critically, electricity from low carbon generators controls and reduces the cost-of-living pressures on Australian household and business consumers¹.

While we agree with the Energy Security Board (ESB) that the transition from high carbon to low carbon generation needs to be managed in an orderly way and that an orderly approach involves ensuring there is sufficient capacity to meet consumers' needs, we do not support the proposed design of a capacity mechanism.

The Ministers' statement after their meeting on 8 June 2022 indicated that they collectively agreed as a priority, a mechanism *to bring on renewables and storage to support stability for the national energy market*².

Further, in the original communique agreeing the final package of Post-2025 Market reforms³ the ESB was asked to progress further design work on options that specifically values capacity in the NEM, delivering investment in an efficient mix of variable and firm capacity that meets reliability at lowest cost, enabling jurisdictions to continue to meet their energy and emissions reduction objectives.

The ESB's proposal, as it stands, is counter to the Ministers' requests. The ESB capacity market proposed is an extension of the previous proposal of Physical Retailer Reliability Obligation (PRRO) which was strongly opposed by majority of stakeholders as it likely to add significant new uncertainty and cost, undermining the new investment in storage needed to complement renewable generation.

Nexa Advisory strongly recommends decoupling the mechanism that incentivises the new investment needed in electricity storage and renewable generation and the mechanism to manage reliability as coal generation closes. Governments need to focus on adding the electricity storage as an urgent priority to ensure that by 2030 we have the 15 GW of storage⁴ needed to ensure renewable generation

¹ https://nexaadvisory.com.au/site/wp-content/uploads/2022/06/Report-Modelling-Electricity-bill-impact-due-to-transmission-delay_2022-06-07.pdf

² Energy Ministers Meeting Communique 8 Jun.docx (live.com)

³ <https://www.minister.industry.gov.au/ministers/taylor/media-releases/energy-national-cabinet-reform-committee-2>

⁴ <https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-isp-infographic.pdf?la=en>

is dispatchable. Decoupling investment in renewables and storage from the process to manage coal closures, has the benefit of providing clarity and transparency to support new investment, flexibility for the jurisdictions on their approaches to manage capacity and reliability, while ensuring that consumers are not underwriting unnecessary costs.

Below we set out the structure of the capacity mechanism we believe will meet the required goals. We also explain our serious reservations about the ESB's proposed structure. We have also explained our reasoning behind separating the management of the exit from coal from the capacity mechanism process.

The capacity mechanism we need

Any capacity mechanism should ensure that Australia meets its climate targets and the 82 % renewable generation by 2030 target⁵. Coal generation leaving the system is an appropriate response to the need to reduce the impact of fossil fuels on the climate and is seen in many electricity systems globally⁶. The issue is not that coal will exit the system, but that coal will exit in a disorderly manner since once it concludes a coal plant is uneconomic, the owner is likely to breach the current notice of closure requirement and close earlier than planned, potentially creating a risk to reliability¹³.

Decoupling the need to support investment in new clean generation and storage and the need to address any reliability issues resulting from the closure of coal plants, means that a well-designed capacity mechanism must focus on managing the two key aspects that will underpin Australia meeting climate targets, renewable generation goals and delivering the low carbon electricity system we need:

- A mechanism that will incentivise the rapid addition of new low carbon generation focusing on additional electricity storage capacity; and
- A separate mechanism that effectively manages the orderly closure of Australia's remaining coal generation fleet.

Incentivising new investment in renewable generation and electricity storage

The capacity mechanism should incentivise the connection of new low carbon generation capacity, particularly the addition of storage to existing and new renewable generation developments. This would provide certainty to investors by rewarding projects that create flexible and dispatchable portfolios of low carbon electricity.

Incentives for storage⁷ should focus on supporting a variety of electricity storage technologies, both short- and long-duration, such as batteries and pumped hydro, as well as supporting newer technologies and approaches that will be needed in the future.

In addition to a storage incentive, we believe it will be critical to implement an operating reserve service (ERC0295)⁸ that will incentivise and support new investment to dynamically fill any remaining forecast reliability gaps. To avoid double dipping, generators providing an operating reserve service would be able to provide RERT and/or operating reserves but not participate in the energy market. Developing an operating reserve service and market will be quick to implement and rapidly provide assurance on system reliability.

Reliability mechanism for the closure of coal-fired generation

⁵ <https://keystone-alp.s3-ap-southeast-2.amazonaws.com/prod/61a9693a3f3c53001f975017-PoweringAustralia.pdf>

⁶ https://ieefa.org/wp-content/uploads/2021/08/ESB-Proposal-to-Require-Consumers-to-Pay-Generators-a-Capacity-Payment_August-2021.pdf

⁷ https://www.vepc.org.au/_files/ugd/92a2aa_52e01d31360c467dabe84e87fc51930a.pdf

⁸ [https://www.aemc.gov.au/rule-changes/operating-reserve-market#:~:text=On%2019%20March%202020%2C%20the,ancillary%20services%20\(FCAS\)%20markets.](https://www.aemc.gov.au/rule-changes/operating-reserve-market#:~:text=On%2019%20March%202020%2C%20the,ancillary%20services%20(FCAS)%20markets.)

A reliability mechanism to manage the closure of coal is required to provide transparency on the provisions built into contracts and the timeframe of closures. This will allow robust planning by both AEMO and the jurisdictions for both transmission projects, such as Renewable Energy Zones, and ensures that new capacity can be delivered “in time”. More importantly, it will provide investment certainty for the required renewable generation and battery storage.

The closure process should also consider how to address the issue of the unexpected early departure of coal-fired power plants ahead of schedule by linking directly to the assessment process that determines how much capacity is required under the mechanism that incentivises renewable generation.

Both the incentivising of electricity storage and the coal closure process need to be implemented well-ahead of the current proposed delivery date of 1 July 2025 since delaying the commencement of any capacity mechanism will delay resolving today’s pressing issues in the National Electricity Market.

Managing the impact on customers

The capacity market proposed by the ESB, will result in an increase in consumer bills at a time when energy costs are already high and increasing. Modelling, undertaken prior to the current cost-of-living crisis, showed that a capacity market would add up to \$480 per household⁹. Consumers should not be asked to support subsidies for coal generators, when there is no evidence that the additional “insurance” provided by a capacity mechanism that supports coal is even merited.

Reliability is not yet under threat

It is not clear that a capacity market as described by the ESB is needed. In the Electricity Statement of Opportunities (ESOO)¹⁰ the reliability standard will continue to be met; this is even after the announcement of the closure of Eraring¹¹. If all the renewable generation developments, within the NSW Electricity Infrastructure Investment Act and beyond, are delivered as expected, then there is no capacity shortfall and reliability will be retained even within the interim standard of 0.0006 % USE until beyond 2030⁸.

There are other mechanisms already underway, such as the REZ developments in all regions of NEM, supported by state governments, that will see new clean generation connect to the system. Essential and rapid delivery of new transmission will be facilitated through the Rewiring the Nation policy. Given all these initiatives are underway and that AEMO sees no threat to reliability within the next 10 years, a new mechanism to prolong the life of unreliable coal generation is unwarranted. Additional certainty, such as an incentive for storage¹², would further support investment in dispatchable clean capacity.

Proposed capacity mechanism is not fit-for-purpose

⁹ https://ieefa.org/wp-content/uploads/2021/08/ESB-Proposal-to-Require-Consumers-to-Pay-Generators-a-Capacity-Payment_August-2021.pdf

¹⁰ https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/nem_esoo/2021/2021-nem-esoo.pdf?la=en&hash=D53ED10E2E0D452C79F97812BDD926ED

¹¹ https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/nem_esoo/2022/update-to-2021-electricity-statement-of-opportunities.pdf?la=en

¹² https://www.vepc.org.au/_files/ugd/92a2aa_52e01d31360c467dabe84e87fc51930a.pdf

Industry and key stakeholders strongly opposed the ESB's earlier designs for a capacity mechanism and the current proposal is an extension of the previously proposed PRRO which was directed by the previous Federal Government and rejected outright by industry in 2021¹³.

The mechanism the ESB proposes is a centralised capacity market in which generators hold certificates for a specified level of dispatchability and contract 'firmness' for times of the year when reliability is a concern. To facilitate the transition, AEMO would have to buy and surrender these certificates.

Performance penalties are poor

Without a genuine penalty regime for non-delivery of capacity, the capacity mechanism will reward aging and unreliable coal generators who have recently demonstrated an inability to provide capacity when urgently needed, exacerbating a reliance on undependable coal power generators and prolonging their operation beyond their efficient commercial lifetime.

Impact on markets and competition

The proposed capacity mechanism will impose increased barriers to retail competition and product innovation and it will reduce liquidity in related financial markets.

Will create investment uncertainty

Any capacity mechanism that subsidises coal plant will promote uncertainty for investors in the new clean capacity that is needed to replace aging and unreliable coal generators. Coal generation is now uneconomic and poorly maintained in the justified expectation that retirement is imminent. Consumers should not be expected to fund the repairs that will prolong the life of and high carbon emissions from coal plant. Consumers have made it clear¹⁴ that the transition to a clean electricity system by 2030 is a high priority and any approach that will defer investment in renewable energy generation projects should not be pursued further.

Will be too slow to implement

The proposed capacity mechanism will not be implemented in time to make any meaningful contribution to capacity given the Integrated System Plan (ISP) 2022¹⁵ predicts that 14 GW of coal generation will have left the market by 2030 (Step-change Scenario). Even in the best case of a mechanism that commences on 1 July 2025, this will not be soon enough, and the NEM has a recent record of delaying major reform (e.g., WDRM and 5MS) suggesting the implementation date for any capacity mechanism will be increasingly uncertain.

Further, AEMO¹² indicate an orderly transition can be achieved with adequate notice from coal generators.

Repeated "windfalls" for coal generators

Capacity payments will be an additional 'windfall' to existing generators for doing what they would have done anyway, which is to stay open and be available to generate. Additionally, in 2012 coal generators were granted up \$5.5 billion dollars of support under the Energy Security Fund (ESF) to minimise the impact of a price on carbon¹⁶. In the first year of the fund, nine coal-fired generators

¹³ <https://reneweconomy.com.au/the-prro-is-unpopular-because-there-is-no-clear-evidence-it-is-needed/>

¹⁴ <https://datawrapper.dwcdn.net/xFTVV/1/>

¹⁵ <https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-integrated-system-plan-isp.pdf?la=en>

¹⁶ https://archive.budget.gov.au/2012-13/ministerial_statements/ms_climate_change.pdf, page 30.

received a total of \$1.1 billion, with a further \$1 billion in each subsequent year before repeal in 2014. Most of the coal generators that received benefits under the ESF have now closed and none have repaid the billions of dollars awarded under the scheme.

Not only did these generators receive windfalls from the ESF that boosted profits, but also passed on the price of carbon in electricity prices. In the first 6 months of the carbon price, all coal generators had passed through higher-than-expected costs to customers, representing an increase of 107 % on the expected price¹⁷.

Repeatedly asking customers to fund unreliable coal-fired generators is unfair and unequitable, especially at a time when the costs of living are already causing a crisis and will not achieve long-term clean energy goals.

Other sources of income available to coal plant

New Essential System Services will provide further income streams for coal-fired generators, such as inertia, operating reserve, primary frequency response to name only a few of the services that were previously provided to the system without payment as part of connection requirements¹⁸. It is possible that the ancillary services that thermal plant provide are more important to system security currently than the capacity⁶, but we do need to invest in new approaches that will continue to deliver system security and stability after coal has fully retired.

Transmission build is necessary

As the ESB correctly state in their paper¹⁹, congestion on the grid will limit the ability of any generation to provide capacity. It is essential that building new transmission, as outlined in the ISP, is expedited as any delays in transmission will increase cost for consumers²⁰. The ISP explicitly uses new transmission to provide “insurance” against coal closures and there is no suggestion in the ISP that any capacity shortfall is not manageable based on expected renewable generation deployment and the optimal development path²¹. We hope that many of the roadblocks to new transmission²² can be resolved through the “Rewiring the Nation” policy and rapid implementation.

A regulated closure process for aging coal generators in combination with, a capacity mechanism that incentivises the building of new renewable generation and electricity storage, in combination with rapidly constructing new transmission will ensure that capacity is managed effectively without the need for a capacity market that favours coal. This decoupled approach will ensure that we rapidly transform the grid into a low carbon, low-cost electricity system.

In conclusion, the ESB engagement process, through its various technical working groups, has not been ideal. The process has not been fully collaborative and means that only a very select group of stakeholders within the industry have been able to engage in the design of the capacity mechanism in

¹⁷ http://cmeaustralia.com.au/wp-content/uploads/2013/09/130218-final-report-on-Victorian-generator-compensation-_1.pdf

¹⁸ <https://www.aemc.gov.au/sites/default/files/2022-06/Essential%20system%20services%20and%20inertia%20in%20the%20NEM.pdf>

¹⁹ <https://www.energy.gov.au/sites/default/files/2022-06/Capacity%20mechanism%20high-level%20design%20consultation%20paper.pdf>

²⁰ https://nexaadvisory.com.au/site/wp-content/uploads/2022/06/Report-Modelling-Electricity-bill-impact-due-to-transmission-delay_2022-06-07.pdf

²¹ <https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-integrated-system-plan-isp.pdf?la=en>, page 67.

²² <https://nexaadvisory.com.au/site/wp-content/uploads/2022/04/Removing-transmission-roadblocks-discussion-paper-080422.pdf>

any meaningful way. In fact, Industry and key stakeholders strongly oppose²³ the proposed design of the ESB's capacity mechanism. It is an extension of the previously proposed PRRO which was directed by the previous Federal Government and rejected outright by industry in 2021. We encourage the ESB to review the current engagement arrangements to ensure transparency and open collaboration with all those that will be impacted by any capacity market.

Thank you for the opportunity to provide a submission on this matter. If you would like to discuss any of the issues raised in this submission further, please contact me on stephaniebashir@nexaadvisory.com.au.

Yours sincerely,



Stephanie Bashir
Principal, Nexa Advisory

About Nexa Advisory

Nexa Advisory is a full-service advisory firm. We work with public and private clients including renewable energy developers, investors and climate impact philanthropists to help accelerate efforts towards a clean energy transition. We were established in 2018, with our twenty years' experience in energy policy development and a passion for the successful transformation of Australia's energy markets and system.

²³ <https://www.theaustralian.com.au/business/mining-energy/energy-industry-concerned-over-plan-for-power-reliability-mechanism/news-story/b37fcd317a7126485f3d6a351a1e0470>