
25 JULY 2022

ACF Submission to the Energy Security Board on the Capacity Mechanism High-level Design Paper

The Australian Conservation Foundation (ACF) welcomes the opportunity to comment on the Energy Security Board's Capacity Mechanism high-level design paper.

Introduction

ACF is Australia's national environment organisation. We are over 700,000 people who speak out for the air we breathe, the water we drink, and the places and wildlife we love. We are proudly independent, non-partisan and funded by donations from our community.

ACF believes Australia and the world face an unprecedented climate and mass extinction crisis caused first and foremost by digging up and burning fossil fuels like coal, oil, and gas.

Australia needs a national approach to reduce climate emissions in line with the science-based temperature goals that Australia committed to under the Paris Agreement.

Transitioning Australia's electricity sector to a clean, reliable renewable energy-based system is a critical element of Australia's transition to net zero emissions and economy-wide action on climate change. All reforms made to the National Electricity Market (NEM) should strongly support Australia's clean energy transition and achievement of a zero-emission electricity grid as soon as possible.

The Energy Security Board's Capacity Mechanism Project High-level Design Paper follows an earlier proposal by the ESB for a Physical Retailer Reliability Obligation (PRRO) as part a post 2025 NEM



reform Options Paper (Part A¹ and Part B²). The PRRO was a straw proposal for a capacity mechanism that was intended to be achieved through physical certificates. Its key design features were intended to change the nature of the current obligation so that liable entities (retailers, large customers and other customers who opt in) would be required to hold sufficient qualifying capacity certificates rather than sufficient qualifying financial contracts to cover their share of actual peak electricity demand.

In effect, a capacity market would provide a new revenue stream to generators in the form of capacity payments. Electricity retailers would have to pay generators (directly or indirectly) for being available to generate or supply energy in peak demand periods – but not necessarily for turning on plants and generating electricity.

While the recent Energy Ministers’ meeting indicated that there is support for continued work on a capacity mechanism, there are different views on what it should include, its detailed design, and whether it should be implemented. Notably, there appears to be significant disagreement about whether it should include coal and/or gas, and whether it will address issues such as unplanned coal exit.

Support for including coal and gas in the proposed mechanism has come mainly from fossil fuel generators, while many industry players and independent stakeholders have supported other alternatives.³

The current federal government has made clear that energy reform must support decarbonisation. They have committed to an energy transition that will achieve at least 82% renewable energy by 2030 and are seeking to legislate climate targets of at least 43% emissions reduction by 2030 and net zero emissions by 2050.

There is a disconnect between federal, state and territory government emissions reduction commitments, and development of a new capacity market that would provide an extra payment – or payments -- to existing coal and gas generators and encourage investment in old plants.

¹ <https://esb-post2025-market-design.aemc.gov.au/32572/1619564199-part-a-p2025-march-paper-esb-final-for-publication-30-april-2021.pdf>

² <https://esb-post2025-market-design.aemc.gov.au/32572/1619564172-part-b-p2025-march-paper-appendices-esb-final-for-publication-30-april-2021.pdf>

³ <https://www.theaustralian.com.au/business/mining-energy/energy-industry-concerned-over-plan-for-power-reliability-mechanism/news-story/b37fcd317a7126485f3d6a351a1e0470>



There are serious concerns about the impact such a mechanism could have on extending the life of coal-fired power plants, which in addition to being heavy polluters are becoming increasingly uncompetitive, unreliable, and uneconomic. It is ironic that as Australia has recently experienced an energy crisis with critical supply curtailed in the NEM due to unavailable coal generation, that one of the answers to ensure electricity reliability includes additional payment to these same unreliable generators.

It is also a concern that despite years of encouragement to achieve cohesive national climate and energy policy, the model being suggested encourages inconsistency across the NEM as each state and territory would opt in or out of various technologies.

Depending on its design, a capacity mechanism could undermine Australia's renewable energy transition, compromise emissions reduction from the electricity sector and add to consumer costs. Optimal design could help drive investment in new capacity, which is a critical goal, but even an optimally designed capacity mechanism is unlikely to address the growing concerns related to early, unplanned coal exit or provide a near-term investment signal since it would take years for a new mechanism to be established.

As noted above, ACF has concerns about the currently proposed form of the Capacity Mechanism. Our key recommendations, which are further explained in this submission are summarised below.

Summary position

ACF does not support the capacity mechanism as proposed. We would encourage consideration of more targeted measures to achieve the objectives set out for the new mechanism. More detailed comments and recommendations are provided below.

Who is eligible?

ACF recommends that any mechanism that moves forward does not provide additional payments to existing fossil fuel generators and that other measures be considered to manage coal exit and incentivise new investment in clean, flexible capacity in advance of coal exit. In effect, this would mean excluding existing generators and focusing the capacity mechanism, or its replacement, on enabling new flexible, dispatchable, clean capacity that is consistent with both state and federal government commitments to decarbonise the electricity grid.

The inclusion of existing generators is treated as a foregone conclusion in the Design Paper. It is noted that in the ESB's view, the capacity mechanism should not exclude existing resources so the mechanism can: access the most efficient mix of resources to ensure reliability; avoid over-building new capacity before it is required; and discourage premature exit of existing capacity before alternative resources are



in place. It is further acknowledged that existing and new capacity could be addressed differently, with auction design considering separate contract duration eligibility for new capacity.

While these points are noted, using a capacity mechanism to address each of these issues has other consequences including delaying Australia's energy transition and the related emissions reductions and increasing consumer costs.

As covered further below, relying on aging generators by discouraging exit is not a reliable path to securing capacity when it is needed, or providing greater predictability for coal exit.

AEMO's Step Change scenario estimates that approximately 122 GW of new wind and solar firmed by approximately 45 GW of new dispatchable storage capacity, 7 GW of existing dispatchable hydro and 9 GW of gas-fired generation will be required by 2050 to meet demand as coal-fired generation withdraws.

Given the new capacity needed, enabling new clean, flexible capacity with strong investment signals and policy certainty should be a priority.

Need for an opt out provision creates inconsistency across the NEM

Despite years of encouragement to achieve cohesive national climate and energy policy, the model being suggested, by design, would create a lack of consistency by encouraging each state and territory to opt in or out of various technologies. This feature stems from the view that all technologies must be included in the mechanism.

An opt out option for specific technologies is clearly required by jurisdictions that want to avoid extra payments to coal and/or gas generators and want a mechanism that supports their emissions reduction goals.

It would be a better solution to exclude the concerning generators from the design of the mechanism, or any replacement mechanism, and seek to achieve a nationally consistent policy.

Further, while all states have renewable energy and zero emissions targets, allowing states to decide on which technologies are included could further have the effect of creating a race to the bottom. Some jurisdictions -- Queensland, for example -- would likely support inclusion of fossil fuel generators, while other states have indicated their clear intention to exclude them. Again, this would create inconsistencies and inefficiencies across the market.



Actions are needed that help create certainty for renewable energy and storage investors to build replacement capacity and support transmission and storage. The threat of a capacity mechanism that includes coal and gas could have a dampening effect on this investment.

ACF recommendations:

- Factor emissions reduction prominently into the ESB’s design process as a key objective. It is noted that the Energy Ministers’ principles provided to guide development include ‘continued emissions reduction of electricity supply.’ The ESB’s own criteria (in addition to the National Electricity Objective (NEO)) include:

“Emissions reduction: a mechanism should be compatible with emissions reduction targets set out by state and federal governments.”

Despite this, emissions reduction is not evident in the design that is currently under consultation. Further, it is stated that the intention is not to prolong the life of aged coal plants, however it is likely to have this result.

- Ensure existing coal and gas generators (especially non-peaking gas) are not eligible for new payments. Their climate impact and federal/state commitments to reduce emissions point to the need to incentivise new clean capacity to achieve capacity goals rather than existing fossil fuel generation.
- At minimum, embed emissions reduction into design and apply a strong emissions intensity cap to all contracts that relate to capacity auctions. The cap should exclude high emitting generators at the outset (i.e., be set well under the NEM average emissions intensity and be phased down rapidly and predictably each year to result in capacity payments only to zero emissions facilities or sources). Predictable phase-down will provide certainty and assist investor decision making. Adding emission-intensity criteria to all contracts that would be concluded as part of a capacity mechanism would provide technology neutrality and while supporting decarbonisation objectives.
- Design of a capacity mechanism - or any energy reform mechanism –should support the trajectory to at least 82% renewable energy by 2030. It should also support state/territory emissions reduction and renewable energy targets and assist in lifting those targets. It should not reduce them to the lowest common denominator, as could happen through devolving opt in/opt out power to states regarding participation of fossil fuel generators.



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- Give flexible supply more prominence in the design of the capacity mechanism. Australia is clearly on a path to a renewable energy-based grid, and this has already impacted generators that cannot flexibly respond to fluctuating energy demand. While the capacity mechanism seeks to ensure capacity at times of energy risk, it is not designed to encourage flexible supply. The need for flexibility will grow. This should be embedded in the design of any mechanism set to incentivise new supply – and/or demand response.
 - Provide transparency by publishing Energy Ministers’ recommendations and the outcomes of discussions with the Technical Working Group. The ESB has requested guidance from Energy Ministers on sectoral emissions reduction to achieve net zero and the operationalisation of such guidance in the capacity market design. The ESB has previously met with the Technical Working group behind closed doors and have met with them during the current consultation process. Stakeholders should have access to outcomes of these discussions in forming their opinions.

Coal unreliability and coal exit are key issues that need to be directly targeted

Certainty is needed to ensure that replacement capacity is built in advance of coal exits. However, as proposed, the capacity mechanism will not address the need to manage coal closure or provide coal exit certainty.

The most significant issues causing reliability concerns in the NEM relate to the unreliability of Australia’s aging coal fleet and the potential for unplanned, early closure of coal-fired power plants. The Energy Ministers provided principles to guide capacity mechanism development and they included providing greater certainty around closure dates of existing generation, mitigating reliability risks presented by unexpected closures of existing capacity, and encouraging the timely replacement of existing capacity.

Obtaining certainty around closure dates is key to ensuring that replacement capacity can be built in advance of closures. As noted by analysts at IEEFA, “the most effective way to do this would be by introducing a legally enforceable framework of incentives and penalties that locks in coal closure dates and removes uncertainty and risk around early closure.”⁴ Additional options are outlined in the recommendations below.

⁴ <https://ieefa.org/ieefa-australia-esb-reform-of-electricity-system-needs-to-plan-for-a-zero-emissions-future/>



Further, a capacity mechanism that keeps coal-fired power plants in the market longer, would not prevent coal-generator failures and breakdowns, which add unreliability to the system. Much of Australia's coal fleet is past its design life and becoming prone to breakdown as they age. The fire and outage at Callide C power station, for example, one of Australia's newer coal-fired generators, and the numerous coal outages Australia has experienced in recent weeks and months (with around 25 percent of coal generator capacity offline in June 2022), has had serious impacts on the broader electricity system. Coal has been at the centre of the recent energy crisis, whether due to coal supply, generator breakdown or unscheduled maintenance.

Increasingly, during extreme weather events such as heatwaves, coal-fired power plants are struggling to maintain capacity, and this is set to get worse due to climate change and age. The solution is not to keep them open longer, it is to replace them as quickly as possible with clean, flexible, dispatchable energy sources, more energy efficiency and demand management.

To manage coal exit and the growing unreliability of old plant, additional work is needed on a national coal closure plan and targeted policy. There are some useful examples that have been recommended over recent years – including *Brown Coal Exit: A Market Mechanism for Regulated Closure of Highly Emissions Intensive Power Stations* by Frank Jotzo and Salim Mazouz⁵ and the Coal Generation Phase down Mechanism outlined by Blueprint Institute.⁶

Also needed is a fair and just transition plan for impacted communities and a new Energy Transition Authority to assist impacted communities with planning, re-skilling, retraining, worker redeployment, and economic diversification.

ACF recommendations:

- Rather than using a capacity mechanism as a means of managing coal exits and providing greater certainty around closure, state and federal governments should instead commit to the development of a national coal closure plan that provides a predictable time frame for coal exits supported by a targeted, legally enforceable coal closure policy mechanism. There are a range of models to consider that have been recommended by various policy experts (as noted above).

⁵ <https://ccep.crawford.anu.edu.au/publication/ccep-working-paper/6775/brown-coal-exit-market-mechanism-regulated-closure-highly>

⁶ https://www.blueprintinstitute.org.au/powering_the_next_boom_part_1_phasing_down_gracefully



ACF also recommends consideration of IEEFA's proposals for more orderly coal exits, which include:

- **Reliability bonds:** Operators of large ageing coal-fired power generators can opt in. They are party to a financial surety or reliability bond that covers their next 24 months of operation. If they fail to meet the reliability requirements, they forfeit a portion of the bond. If they close within 42 months' notice they would forfeit the entire bond.
- **Bilateral contracts with government:** Coal-fired generators can opt in. They would agree to close after replacement capacity is built. They would be paid for maintaining availability until closure – with payments that only ensure they remain cash-flow neutral. Contracts would be transparent, with well-defined terms set in advance and made public.
- ACF also recommends establishment of a new Energy Transition Authority and commitment to fair and just transition plans for impacted communities.

Timing concerns and interim measures

The timeframe for development of a capacity mechanism will require a minimum of 3 years. It is noted in the ESB's design paper that the capacity mechanism will need to be operational by 1 July 2025, but with design finalised for auctions in 2024.

That seems a rushed timeframe for a complex new energy market mechanism, but equally 2-3 years is a long time given the pace of the transition and the unreliability of many old generators. Since it would be a new mechanism, a capacity mechanism – if created – would require a further settling in period for investors to understand its market impacts and factor it into investment decisions. During this time, there will be uncertainty for renewable energy investors.

Timing concerns including the unavoidable delays inherent in creating a new market within the NEM, point to the need to re-consider targeted measures that could be rolled out more quickly to replace the proposed capacity mechanism. Even if some form of a capacity mechanism is to proceed, consideration should also be given to interim measures.

These include greater encouragement and support for energy efficiency upgrades, especially for big energy users; greater support for demand response; and a mechanism to support large and small-scale energy storage as well as short-term, medium-term, and long-term storage beyond the Frequency Control Ancillary Services (FCAS) market.

A renewable electricity storage target is an interim or alternative measure that should be considered. Electricity storage capable of providing long-duration supply is considered essential to replace coal-fired power. A renewable electricity storage target using the architecture of the existing Renewable Energy Target (RET) could be set to help drive the investment that is needed. For example, as an interim



measure, consideration should be given to adding storage to the existing RET. With architecture already in place, that could be a relatively quick solution to spur investment. It would, however, need to be combined with measures to protect vulnerable households from added costs.

ACF recommendations:

- Consider replacing the capacity mechanism with a Renewable Energy Storage Target or adding storage to the existing RET as an interim measure to incentivise large and small-scale storage, as well as short, medium, and long-term storage.
- Integrate the timing of investment signals for medium and long-term storage into a national coal closure plan to pre-empt coal closure.

Emissions reduction must be embedded as a key objective of any NEM reform measure - the NEO needs an update

One of the serious flaws in the NEM is that the National Electricity Objective (NEO) fails to set any environmental or emissions reduction objective for the market. That gap shows up in the capacity mechanism discussion paper where the Energy Security Board (ESB) references the NEO as the 'anchor point' and 'the pole star' for their work. Like the NEO, the proposed capacity mechanism does not include consideration of climate change/emissions reduction and therefore misses the mark as a reform proposal to help achieve Australia's clean energy transition consistent with climate commitments.

There are useful examples in other jurisdictions where emissions have been addressed in a capacity market. For example, the UK capacity market includes a carbon intensity limit for capacity credits at roughly the limit of a gas turbine's emissions. That limit effectively prohibits coal and diesel from participating in capacity auctions⁷. Where there is not a means of prohibiting fossil fuels, overseas examples of capacity mechanisms demonstrate that existing fossil fuelled generation accounts for most of the uptake.⁸

Stakeholders right across the spectrum from consumer groups, environment groups, industry players and experts have all called repeatedly for climate change and emissions reductions considerations to be addressed alongside, or within, any policy development to address energy.

⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004874/capacity-markets-emissions-guidance.pdf

⁸ <https://ieefa.org/resources/planning-exit-coal-rather-delaying-inevitable-through-capacity-market>



ACF recommendation:

- Federal and state governments should be encouraged to initiate the process to update the National Electricity Objective -- with an added environmental/emissions reduction objective -- at the next COAG Energy Council meeting.

Kind regards,

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Climate Change and Energy Policy Advisers

