

25 July 2022

Ms Anna Collyer  
Chair  
Energy Security Board  
Lodged by email to: [info@esb.org.au](mailto:info@esb.org.au)

Dear Ms Collyer,

**Response to *Capacity Mechanism - High-level Design Paper***

The Clean Energy Investor Group (CEIG) welcomes the opportunity to provide feedback on the Energy Security Board (ESB)'s *Capacity Mechanism - High-level Design Paper* (the CM paper) published on 20 June 2022.

CEIG represents domestic and global renewable energy developers and investors, with more than 11GW of installed renewable energy capacity across more than 70 power stations and a combined portfolio value of around \$24 billion. CEIG members' project pipeline is estimated to be more than 18GW. CEIG strongly advocates for an efficient transition to a clean energy system from the perspective of the stakeholders who will provide the low-cost capital needed to achieve it.

**KEY POINTS**

- CEIG **does not support the ESB's proposed capacity market design** and the rationale used by the ESB in its CM paper - the need for an orderly transition – is not sufficient to make the case for the introduction of a capacity market in the National Electricity Market (NEM).
- Instead, **CEIG supports the design of a more effective capacity mechanism that must incorporate 3 critical design features:**
  - Feature 1: **coal must not be eligible to participate in the mechanism;**
    - There is a risk that coal plants will retire earlier, and orderly retirement of coal plants should be handled outside of the capacity mechanism.
  - Feature 2: the capacity mechanism **must incorporate an emission reduction trajectory** that is consistent with and enables Australia to meet its commitments under the Paris Agreement; and

- Feature 3: the mechanism **must incentivise new investment (particularly in storage) and must be implemented well before 2025**. There should be no delay in incentivising new investment in storage and grid firming technologies.
- **Alternative measures can support new investment earlier than 2025**
  - State governments have started to act through their own incentive programs;
  - The *2022 Reliability Standard and Settings review* currently underway will inform whether the existing form and level of the standard remain appropriate for 2025-28 and will influence incentives for investment in generation or demand response capacity.
  - **CEIG strongly supports the continuation of an ‘LGC-like’ mechanism.** Continuing to value green certificates once the LGC scheme expires in December 2030 will incentivise new investment, encourage long-term contracting for PPAs and will continue to deliver additional renewable energy generation driven by voluntary demand.
    - **This can be achieved by transitioning to the Federal Government’s Guarantee of Origin (GO) scheme** which is proposed to have a module that would certify the provenance of the electricity used as an input into hydrogen production. That module would use the current LGC frameworks for trading certificates and showing provenance which are trusted and well-known.
    - **CEIG encourages the Federal Government to introduce legislation for the GO scheme into the federal Parliament as soon as practicable** to provide immediate policy support for clean energy investment.
  - Investment underwriting and storage targets can also provide useful support.
- CEIG supports the development of a capacity mechanism:
  - to deliver improved incentives for investment in storage capacity; and
  - to future-proof market design for the long-run in a NEM that will be characterised by near 100% variable renewable energy with near-zero short-run marginal cost and where the energy-only market may not provide sufficient revenue certainty.
- CEIG **supports the ESB seeking guidance on an emission reduction trajectory** and recognises that there is a need for better integration of climate and energy policies.
  - This continues to demonstrate that a simple consideration of the National Electricity Objective (NEO) as it is written today is no longer sufficient to guide energy market design;
  - CEIG continues to argue that **an environmental objective should be added to the NEO**.
- The recent energy crisis would not have been avoided if a capacity market had been in place.
- CEIG encourages Ministers to work towards a national framework but understands the need for flexibility to account for jurisdictional characteristics.

- While CEIG does not support the ESB’s proposed capacity market design, CEIG also notes its least-regret design features, including a preference to provide support for new investment only and the need to ensure robust de-rating methodologies that allow fair participation for wind, solar and storage.

## **SUPPORT FOR A CAPACITY MECHANISM THAT MUST INCORPORATE 3 CRITICAL DESIGN FEATURES**

### **CEIG does not support the ESB’s proposed capacity market design**

CEIG does not support the current design for a capacity market as proposed by the ESB in its June 2022 paper.

CEIG believes that the main rationale used by the ESB in its CM paper - the need for an orderly transition – is not sufficient to make the case for the introduction of a capacity market in the NEM. Although CEIG agrees with the problem definition and the need to improve certainty around an orderly transition, it is unclear that a capacity market is the right solution to achieve this. Instead, we propose later in this submission that orderly coal retirements should be treated separately from this instrument.

CEIG is also concerned about a number of detailed design features proposed by the ESB which are detailed further in this submission.

### **Instead, CEIG supports the design of a more effective capacity mechanism that must incorporate 3 critical design features**

CEIG supports the design of a more effective capacity mechanism that must incorporate 3 critical design features:

- Feature 1: coal must not be eligible to participate in the mechanism;
- Feature 2: the capacity mechanism must incorporate an emission reduction trajectory that is consistent with and enables Australia to meet its commitments under the Paris Agreement; and
- Feature 3: the mechanism must incentivise new investment (particularly in storage) and must be implemented well before 2025.

We elaborate on our position and those 3 design features in subsequent sections.

### **Rationale for supporting a capacity mechanism**

#### Need for improved incentives for investment in storage capacity

CEIG was pleased to see that the ESB rightly assessed that

*“The uncertainties facing investors have never been greater. Demand uncertainties include the speed of post-covid recovery, the longevity of major users such as smelters, and the timing and scale of trends like electrification of gas and transport. On the supply side, investors are grappling with the disruptions and uncertainties in the supply chain due to the pandemic, and now war in Ukraine. More fundamentally, despite notice of closure provisions, the exact closure timing of the large, thermal plant closure is uncertain.”*

In addition, CEIG Members report that obtaining finance for storage assets remains difficult as bankers make conservative assessments of business cases for storage assets due to the uncertainty around future revenue streams. While firms with a larger balance sheet may be better able to finance storage assets on their own terms, finance remains difficult to secure for most firms, and the cost of finance provided can be prohibitively high since assets that suffer from excessive risks attract a higher cost of capital. This is particularly true of longer duration assets (e.g. 4-hour or 8-hour storage) which remain more expensive.

#### Future-proofing market design for the long-run

While not a consideration yet, rewarding capacity could be a useful market design feature to ensure revenue adequacy in a grid with 100% variable renewable energy (VRE).

In their *Rethink the open access regime Report*<sup>1</sup> for CEIG, Castalia detail the vision for the NEM once the energy transition is complete:

*“...by around 2040, Australia can expect to have an energy system with no baseload thermal generation and only a small amount of thermal generation remaining for providing firming and peaking capacity.”*

In this near 100% VRE grid, generation is dominated by VRE with near-zero short-run marginal cost (SRMC). Castalia point out that as a result, the nature of competition for dispatch in an energy-only market and the resulting pricing outcomes for generators will dramatically change.

In this near-zero SRMC environment, there will be many periods where all bidders have near-zero SRMC and so there is no social benefit to dispatching any particular unit ahead of another. In an energy-only market, generators can expect the market to remunerate them closer to their marginal cost, hence the need for greater revenue certainty and the greater importance of contracted revenue.

Energy storage providers will also see their business model shift:

*“...it is likely that, energy storage will eventually eliminate price arbitrage between time periods. The key factor here is that storage has the same near-zero SRMC characteristics as RE. The current view is that investors in storage can make money by charging at low or zero cost during periods when RE units are generating—since REs will bid at zero or below in order to be dispatched—and then selling energy once REs are not generating (e.g., after dark).*

*However, once there is enough storage in the system and storage providers compete for the opportunity to dispatch, they too will have an incentive to bid at zero or below in order to be dispatched. Overall, with sufficient storage, prices between time periods will become equalized as price differences are arbitrated away. In this context, energy storage will no longer be able to make money by buying electricity at low-cost time periods and selling at high-cost time periods.*

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<sup>1</sup> Rethink the open access regime, Castalia (Feb-22) <https://ceig.org.au/wp-content/uploads/2022/02/2022-02-23-Report-on-Transmission-Access-Reform.pdf>

*Instead, energy storage will derive value from providing infrastructure services: Time-shifting for generators: For example, the cost of shifting a kWh between periods through a battery is fixed and is equal to the LCOE of the battery. Hence, it is likely that as growth in battery storage itself eliminates price arbitrage, batteries would tend to be remunerated through a flat fee for each kWh shifted between periods; (...).”*

## FEATURE 1: COAL SHOULD NOT BE ELIGIBLE IN A CAPACITY MECHANISM

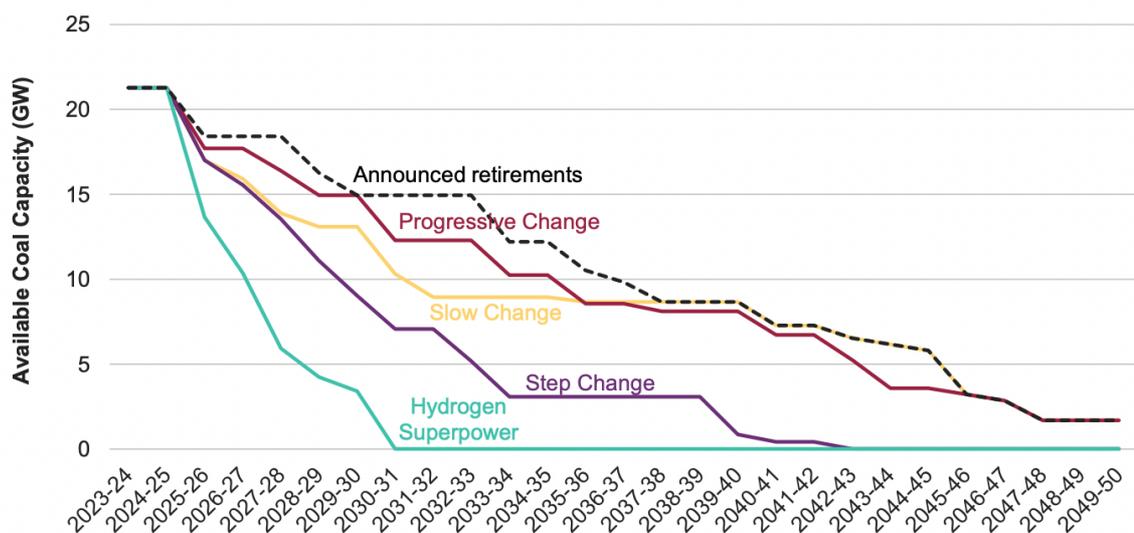
### Risk that coal retires earlier

AEMO has highlighted in their 2022 ISP that forecasting when existing coal plants will reduce generation, temporarily withdraw units from the NEM, or shut down was a major complexity.

*“Owners of coal-fired generators have already either brought forward their announced retirements or indicated that they would, citing market, financial and operating pressures from the rise in renewable generation. The future of remaining thermal generation will become increasingly uncertain, particularly for older coal-fired generation that is less able to deliver the flexible dispatchable capacity needed to firm renewables. Significant plant refurbishments may also be harder to justify under this uncertainty, potentially resulting in declining plant reliability.”<sup>2</sup>*

Under each of the scenarios in the ISP, the chart below shows coal retires faster than the current announced retirements. In line with Australia’s recently updated National Determined Contribution, Australia is on track to achieve the Step Change scenario which suggests an accelerated coal retirement from the NEM starting in 2026-27. However, if the energy market shifts towards the Hydrogen Superpower scenario, coal retirements would start earlier from 2025-26 with a complete exit from the market by 2030.

**Figure 19 Forecast coal retirements, all scenarios versus announced retirements**



Source: AEMO, 2022 ISP

<sup>2</sup> 2022 Integrated System Plan, AEMO (Jun-22)

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## Orderly retirement of coal plants should be handled outside of the capacity mechanism

CEIG agrees with the ESB that the transition away from ageing fossil fuel plants needs to be managed carefully. However, CEIG suggests that the orderly retirement of coal plants should be managed through separate policy mechanisms, not as part of the capacity mechanism.

Two market mechanisms have been proposed to manage the orderly exit of coal fired generators from the NEM:

- **Regulated Power Plant Closure:** The Australian National University has proposed that generators bid into an auction the amount of capacity to withdraw from the market. The total capacity to withdraw from the market at each auction would be determined to ensure the orderly transition away from emissions intensive generators. Remaining generators would pay the plant(s) that leave the market in line with their emissions intensity.<sup>3</sup>
- **Coal-Generation Phasedown Mechanism:** The Blueprint Institute has proposed that generators bid into an auction to secure an emissions budget where the total budget would be set in line with electricity sector emission reduction targets leading to the withdrawal of fossil fuel generators in an orderly manner.<sup>4</sup>

Other options to manage the orderly transition away from the ageing fleet of coal-fired generators may include strengthening penalties for not providing adequate notice of closure or through bilateral deals as a last resort. If bilateral deals were to be realised, these must be transparent so the market has visibility over the timing and performance measures agreed for the market to determine what supply gaps will need to be filled.

A mechanism that supports the orderly retirement of coal plants will provide the market with transparency and knowledge of timing of retirement which will provide signals as to the energy supply and system services that will be required to ensure the security and reliability of the grid.

Without this knowledge, it is more difficult to make an investment case until the retirement schedule is known because there are currently insufficient incentives to build new plants until there is a shortfall.

## FEATURE 2: THE CAPACITY MECHANISM MUST INCORPORATE AN EMISSION REDUCTION TRAJECTORY

### Support for Ministerial Principles

CEIG acknowledges the *Principles to guide Capacity Mechanism development* (the Ministers' Principles) issued by Energy Ministers to the ESB in 2021. The Ministers' Principles provide a useful set of guardrails to help the ESB design an effective capacity mechanism.

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<sup>3</sup> [Jotzo & Mazouz \(2015\) 'Brown coal exit: A market mechanism for regulated closure of highly emissions intensive power stations'. \*Economic Analysis and Policy\*, p.74.](#)

<sup>4</sup> [Beal, E., D'Hotman, D., Hamilton, S., Heeney, L., Steinhert, J. \(2020\) \*Phasing down gracefully: Halving electricity emissions this decade\*. Blueprint Institute.](#)

CEIG is pleased to see that the Ministers' Principles focus on continuing to reduce the emissions of the electricity supply: considering the urgent need to decarbonise the electricity supply, CEIG agrees that focus should be on incentivising investment in zero-emission technologies in the NEM.

### **CEIG supports adding an environmental objective into the NEO**

The need for Ministers to include emission reduction objectives as part of their Principles and for the ESB to seek guidance on an emission reduction trajectory demonstrates that a simple consideration of the NEO as it is written today is no longer sufficient to guide energy market design.

In its *Clean Energy Investor Principles*<sup>5</sup>, CEIG has noted that the need for consistency with the Paris climate Agreement must cascade down through the work programs of the market bodies.

An environmental objective should be added to the NEO to recognise the need to reduce carbon emissions in the pursuit of efficient investment in, and operation, of electricity services. It would allow the market bodies to then revise the assessment criteria they use to inform policy and regulatory decisions.

### **Support ESB seeking guidance on an emission reduction trajectory**

CEIG supports the ESB seeking guidance on emissions reductions and recognises that there is a need for better integration of climate and energy policies.

*"The ESB seeks guidance from Energy Ministers on sectoral emissions reduction in the context of net zero and the operationalisation of such guidance in the capacity market design.*

*The existing NEM framework does not provide guidance to draw upon on this matter as it currently does not include emissions abatement in the objective, nor a sector specific carbon emissions target or abatement trajectory given the economy-wide emissions abatement."*

As highlighted above, the orderly retirement of coal plants should be handled by a policy mechanism outside of the capacity mechanism. Beyond this, the emission reduction trajectory could be used as an explicit guide for auction eligibility within the capacity mechanism: only participants who would not go beyond the carbon budget would be eligible to participate.

## **FEATURE 3: THE CAPACITY MECHANISM MUST INCENTIVISE NEW INVESTMENT IN STORAGE AND GRID FIRING TECHNOLOGIES EARLIER**

### **There should be no delay in incentivising new investment**

CEIG notes the ESB has suggested the capacity market will need to be operational by 1 July 2025 to keep pace with the speed of the transition. CEIG has reservations as to whether this start date can be achieved considering the complexities involved in designing

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<sup>5</sup> [Clean Energy Investor Principles, CEIG \(Aug-21\)](#)

and implementing the proposed capacity market. This suggests that the market will not be signalled to invest in additional capacity until at least 2025.

As highlighted in Feature 1 above, there is a risk that coal generation may retire earlier than expected, stressing the urgency for governments to support new investment in storage and grid firming technologies before these generators retire.

### **Alternative measures can support new investment**

#### State and Territory government have started to act

State and Territory governments in the NEM have already sent various regional investment signals to the market that will support investment in the technologies required to support the grid's transition away from thermal generation.

This includes the NSW Government's plan to deliver 3 GW of firm capacity by 2030 as part of its Electricity Infrastructure Roadmap and the Victorian Government's recent announcement of Australia's first offshore wind targets which aim to accelerate the rollout of offshore wind generation projects with the first power expected to come online progressively from 2028.

#### The Reliability Panel's 2022 Reliability Standard and Settings review

The 2022 Reliability Standard and Settings review currently underway will inform whether the existing form and level of the standard remain appropriate for 2025-28. This will influence incentives for investment in generation or demand response capacity.

#### Support for valuing green certificates using the Federal Government's Guarantee of Origin (GO) scheme

The Clean Energy Regulator (CER) has administered the Large-scale Generation Certificate (LGC) scheme and the Large-scale Renewable Energy Target (LRET), both of which have played an important role in Australia achieving 20 per cent renewable energy by 2020, as well as supporting the development of supply chains and installer businesses.

CEIG Members have reported that the expiry of the LGC scheme in 2030 is discouraging long-term contracting for power purchase agreements (PPAs) because there is no market to value the 'green' component of contracts post 2030.

Because of the construction timelines for new wind and solar projects, this often means corporate customers who sign an offtake now with new projects are only contracting for just 5 years, at a premium to what could be achieved with a 10-15 year contract. In many cases, customers simply abandon attempts to contract and take high-priced short-term contracts.

Without government action, this has the potential to increasingly negatively impact on project financing, it could place the sizeable Australian power purchase agreements (PPA) market at risk, and it could slow the energy transition by limiting future voluntary demand for green certificates.

Continuing to value green certificates once the LGC scheme expires in December 2030 will incentivise new investment, encourage long-term contracting for PPAs and will continue to deliver additional renewable energy generation driven by voluntary demand.

CEIG strongly supports the continuation of an 'LGC-like' mechanism. This can be achieved by transitioning to the GO scheme proposed by the federal Department of Industry, Science and Resources (DISR) and the CER. The GO scheme is part of DISR's and the CER's work on a Hydrogen certification scheme and is proposed to have a module that would certify the provenance of the electricity used as an input into hydrogen production. The current LGC frameworks for trading certificates and showing provenance are trusted and well-known and their credibility can be expected to be carried through to the GO scheme.

CEIG encourages the Federal Government to introduce legislation for the GO scheme into the federal Parliament as soon as practicable to provide immediate policy support for clean energy investment.

#### Investment underwriting and storage target

Furthermore, the Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC) have played an integral role in the development of Australia renewable energy industry leading to the development, and rollout, of new innovative technologies that will support Australia's decarbonisation objectives; underwriting of new investment could continue to play a useful role.

Finally, the Victorian Energy Policy Centre has proposed the Federal Government establishes a Renewable Energy Storage Target similar to the LRET administered by the CER.<sup>6</sup> A scheme such as this would be quicker to implement as it can be established through Commonwealth legislation rather than under the National Electricity Law.

## **GENERAL COMMENTS**

### **The recent energy crisis would not have been avoided if a capacity market had been in place**

The recent spikes in wholesale prices have largely occurred due to the higher coal and gas prices, driven by the Russia/Ukraine conflict, and coal fired power stations being unavailable due to maintenance and breakdowns.<sup>7</sup> It is important to note that the recent energy crisis (June 2022) would not have been avoided if a capacity market had been in place.

### **Coal is not a transition fuel: a capacity mechanism must be forward-looking**

Including coal generators in a capacity mechanism is likely to disincentive the types of new capacity (such as batteries and other long duration storage technologies) the market needs to support the orderly transition away from the fleet of ageing coal-fired

<sup>6</sup> [Mountain, B.R., Harris, P.N., Woodley, T., Sheehan, P. \(2022\). "Electricity storage: the critical electricity policy challenge for our new government". Victoria Energy Policy Centre, Victoria University, Melbourne.](#)

<sup>7</sup> [Why including coal in a new capacity mechanism will make Australia's energy crisis worse, Jun-22](#)

generators, in favour of contracts to unreliable coal generators that may not be able to deliver capacity when they are needed.

Rather than looking backwards to ‘protect and preserve’, there is an opportunity to design a framework that is forward-looking to provide investment certainty for new capacity to enter the market that can accelerate Australia’s emissions reductions.

### **CEIG encourages Ministers to work towards a national framework but understands the need for flexibility for jurisdictions**

CEIG’s preference is for a national framework that supports deep emissions cuts. The recent lack of policy leadership at the federal level to accelerate the decarbonisation of the economy has led to a regional patchwork of interim emission reduction targets on the path to achieve net-zero emissions by 2050.

Considering this, CEIG prefers a national framework and encourages Ministers to agree to as many common principles as possible in the design of a capacity mechanism. However, CEIG understands the need for jurisdictions to have flexibility in how a capacity mechanism applies in their region, for example, how a capacity mechanism would work with their current schemes. Therefore, CEIG supports the following Ministerial Principles:

*11a. Jurisdictions must be able to determine, via their regulation, provided for in the National Electricity Law framework, which technologies are eligible for participation in a capacity mechanism in their region*

*13. enable jurisdictions to opt out, via the National Electricity Law framework*

*14. enable jurisdictions to opt in, through triggered thresholds for the mechanism*

When Ministers consider how a capacity mechanism applies in their region, CEIG encourage Ministers to ensure that coal generation is not eligible, that emission reduction trajectories are in line with Australia’s commitments under the Paris Agreement and that the mechanism can incentivise new investment be implemented well before 2025 as highlighted in our three design features above.

CEIG also encourages Ministers to design a framework that is forward-looking. By focusing on incentivising new investment in storage and firming technologies, more jurisdictions are likely to opt-in to the mechanism resulting in a more effective policy. However, if the mechanism is designed as a mitigation strategy for retiring coal, the risk of dislocation is high as jurisdictions will elect to opt-out. As a result, CEIG recommends a mitigation strategy for retiring coal to be dealt with separately as highlighted in Feature 1 above.

### **By using different approaches across its P2025 workstreams, the ESB risks creating contradictory mechanisms**

CEIG agrees with the ESB that there are important linkages across the various workstreams of the Post-2025 Market Design reform program (P2025 program).

The ESB notes that

*“Capacity within the power system will only provide benefits to reliability where the transmission system has the ability to deliver that capacity to customers. There are then important linkages between the capacity and energy markets and both the development and utilisation of the transmission system.”*

CEIG is however concerned that the ESB’s thinking on the capacity mechanism workstream does not align with the work underway in the Transmission Access Reform workstream.

While the CM paper acknowledges the need for a physical planning overlay for the spot market, the ESB’s work on dealing with transmission constraints (in the Transmission Access Reform workstream) continues to preference a spot market-based solution, referred to as a congestion management mechanism (CMM), to incentivise generators to locate in areas of the grid where there is spare transmission capacity.

The two workstreams of the P2025 program are at risk of creating contradictory mechanisms. With respect to the capacity market, the ESB is proposing greater central planning to ensure that the right capacity is available in the right place, but with respect to transmission system congestion – which is the flip side of the same reliability coin – it appears sceptical of an equally obvious planning overlay which is being proposed by the industry.

We strongly urge the ESB to integrate the planning processes and models needed to coordinate both transmission and generation capacity in the NEM and ensure that the P2025 program produces a coherent set of solutions pulling in the same direction.

### **CAPACITY MARKET: LEAST-REGRET DESIGN FEATURES**

Commentary in the sections below applies to the proposed features for a capacity market. While CEIG does not support the ESB’s design, CEIG provides information on its least-regret design features should the ESB progress its capacity market design.

#### **Support for new investment only**

CEIG understands the ESB’s position that including existing plants may offer better grid forward planning by placing requirements on existing plants to be available. However, in practice, existing plants would start receiving payments as soon as the scheme is in place (e.g. 2025), whereas new plants would need to wait for many years to receive payments (e.g. 4 years based on the proposed T-4 schedule of auctions). Making existing plants eligible for payments would then mean that existing plants would benefit quicker than new plants. Although the ESB’s argument may have merit in theory, it does not support the key objective of incentivising new investment. CEIG therefore supports eligibility being opened to new investment only.

CEIG agrees with the ESB’s assessment that

*“existing capacity faces sunk costs, while new investors require sufficient certainty that their capital costs, as well as their operating costs, will be recovered”*

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and supports the ESB's proposal for longer contracts:

*“the ESB intends that the mechanism will consider the challenges faced by new capacity and provide it with additional support. This may take the form of longer-tenure contracts, like those in the Great Britain market, and potentially different auction participation rules.”*

CEIG recommends the use of 15-year contracts to ensure that the mechanism delivers sufficient revenue certainty for new investments to secure financing.

To incentive the right mix of new investment, the ESB could also propose higher payments to those technologies that are forecast to be of greater need in future. For example payments could incentivise specific duration requirements (e.g. 4-hour or 8-hour duration storage) or incentivise flexibility (e.g. favour plants with a quick ramp rate).

If existing plants must be included (which CEIG does not support), auction design must ensure that those plants are not paid to stay longer than necessary:

- mechanisms could prevent polluting assets from being subsidised; the emission reduction trajectory can play a crucial role here; and
- mechanisms could also prevent ageing and risky assets from undermining the investment case for new assets (e.g. sunset period, use of shorter contracts, need to re-bid regularly).

### **Technology eligibility**

CEIG does not support coal being eligible for a capacity mechanism

CEIG understands the ESB was guided by Ministerial Principle 11 – to be technology neutral – however, CEIG does not support coal being eligible for a capacity mechanism.

The decarbonisation of the NEM and not extending the economic life of thermal plants will result in significant benefits to consumers. For example, Baringa have modelled the benefits associated with the greater decarbonisation achieved under an On-time Transition scenario compared to a Delayed Transition scenario which assumed a 3-year delay in the transmission buildout detailed in the 2022 draft ISP's Step Change scenario.<sup>8</sup>

Baringa's modelling shows that the On-time Transition scenario yields benefits to Australian consumers, and society overall, of up to \$5.4 billion from FY2022 to FY2055.<sup>9</sup> The requirement to be technology neutral will not be sufficient to decrease the risk that a capacity market may unnecessarily extend the economic life of thermal plants. To reduce the risk that coal is included in a capacity mechanism, CEIG supports Ministerial Principle 11a which broadens the requirement for the scheme to be technology neutral:

*“Jurisdictions must be able to determine, via their regulation, provided for in the National Electricity Law framework, which technologies are eligible for participation in a capacity mechanism in their region”*

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<sup>8</sup> See Baringa's *Transmission planning and investment for clean electricity* Report (Aug-22) on the [CEIG website](#)

<sup>9</sup> The decarbonisation benefits to consumers were estimated using the social cost of carbon used by the ACT Government in its *2020-21 Budget*, of \$20/tonne of CO<sub>2</sub>-e for 2022 and extrapolated over the period.

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The Victorian Government have already noted that coal would not be included within their jurisdiction, arguing that incentives should only be directed towards zero-emissions technology.<sup>10</sup>

The simplest solution may be to separate the issue of orderly coal retirement from this mechanism, so it has a simple, future-focused objective which is to support the transition from coal, by bringing in new, clean resources.

#### Eligibility for gas in a capacity mechanism

CEIG recognises that gas generation has a role to play in the transition towards a decarbonised electricity grid as highlighted by AEMO in their 2022 ISP. CEIG expects that the transition away from gas could be dealt with through emission reduction trajectories, whereby gas becomes less and less eligible as carbon budgets decrease.

CEIG expects that gas generators are likely to continue to be available when capacity is needed in the NEM to take advantage of peak pricing as this is core to their business model. It is therefore unlikely that capacity payments would be required to incentivise gas plants not to be ‘mothballed’ as the market already incentivises peaking plants to remain active participants in the NEM.

If gas was to be included in a capacity mechanism, the eligibility of gas generators to bid in auctions could be based on regular reviews into the need for gas technologies in the grid through AEMO’s ISP and/or could be subject to careful contract and auction design to ensure that decarbonisation objectives can be met.

#### CEIG supports the inclusion of technologies that decarbonise the grid

CEIG supports the inclusion of renewable energy generators to be eligible to participate in a capacity mechanism. CEIG recognises the importance of de-rating methodologies to ensure renewable energy and storage technologies can participate at their maximum de-rating factor (more on this below).

CEIG supports the inclusion of distributed energy resources (DER) in a capacity mechanism and supports Tesla’s definition of scale:

*“Scale neutral provided technical capability and service standards can be met – i.e. DER and VPPs should be eligible and encouraged, noting capacity mechanisms typically have a bias to centralised assets, with additional uncertainty or barriers for aggregated, distributed assets, when this will form the bulk of flexible storage by 2050.”<sup>11</sup>*

Emerging technologies, such as electrolysers, should be included within the design of a capacity mechanism as these technologies are likely to become more common place in the NEM.

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<sup>10</sup> [Victorian Government have ruled out coal from a capacity mechanism](#)

<sup>11</sup> [Tesla Response to Capacity Mechanism Project Initiation Paper](#)

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## Centralised vs decentralised capacity forecasting

CEIG supports centralised forecasting and agrees with the ESB that:

*“1) This aligns with AEMO’s existing forecasting role and will ensure that the capacity mechanism is aligned to the reliability outlook contained in the NEM Electricity Statement of Opportunities (ESOO);*

*2) AEMO is likely to be better positioned to forecast system demand over the long-term.”*

However, CEIG understands consumer concerns around potential ‘over-procurement’ by AEMO since it is in its interest to take a more conservative approach. Therefore, it may be useful to also have a decentralised ‘check’ in place whereby retailers, who are best placed to understand demand from the bottom up, could factor that ‘check’ in at one of the later auction stages.

## How to establish capacity zones

To minimise the procurement of generation that will be constrained, CEIG suggests using a more granular set of reliability/ capacity zones than NEM regions. Interconnectors only represent one type of transmission constraint and are only a relatively small subset of the total constraints, where reliability is driven by all constraints across the NEM.

This approach has the potential to align and coordinate generation and transmission planning to minimise constraints. A capacity market would need to answer the same questions around constraints in capacity market auctions as would be answered by the transmission queue model which was developed by Castalia for CEIG as an alternative grid access reform.<sup>12</sup>

The transmission queue model, which develops a system of capacity zones, could be used to verify relative firm ability in the auction process.

## Defining ‘at risk’ periods

CEIG has a preference to ensure that there is flexibility around how to define a benchmark period over time and suggests regular review points are considered. For example, peak periods may change over time from a summer peak to a winter peak as the market brings on more solar generation and shifts away from gas generators. This observation was also raised by the ESB:

*“Over time, as coal generators retire, the risk of unserved energy will shift from summer to winter. This is because, with the exception of Queensland, most energy in the NEM is consumed in winter. This is likely to increase with the electrification of gas and transport.”*

Furthermore, CEIG wishes to ensure the ESB considers additionality in determining ‘at risk’ periods, in the context of avoiding making ‘windfall’ payments to plants that would

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<sup>12</sup> [CEIG’s Alternative Grid Access Reform](#)

have been available anyway (e.g. gas peaker plants whose business model is to be available at peak times).

### **Developing de-rating factors for different technologies**

#### RE and battery storage methodology

The methodology approach decided upon must not be so conservative that it disincentivises participation of VRE and batteries.

CEIG believes that it is critically important that the methodology decided upon allows fair participation for storage, wind and solar.

Using a pre-defined period may be too simplistic an approach and may not make the best use of RE resources due to its lack of sophistication. CEIG encourages the ESB to consider more elaborate approaches such as modelling based on the occurrence of a reliability event. The ESB should consider useful learnings from overseas markets as appropriate.

#### Thermal generator methodology

As highlighted in Feature 2 above, coal generators have proven to be unreliable in times of energy crisis. As such, CEIG does not support the ESB's comments that suggest thermal generators will not schedule planned outages during the 'at-risk' times, further justifying thermal generators not be included in a capacity mechanism:

*"Here, it is assumed that the operator will not schedule planned outages during the at-risk times and will have the required fuel and workforce available to be able to operate at its full capacity."*

### **Centralised vs. decentralised procurement**

Under a centralised procurement market, there is a risk that large firms can exert market power. Reviews of the Western Australian market have shown that centralised capacity procurement may not encourage sufficient flexible generation, with a small number of generators benefiting instead. CEIG recommends that the ESB carefully assesses experiences learnt from other markets.

### **Nature of obligation placed on capacity providers**

Under current contracting practice, when a generator cannot deliver on their obligations, they generally have to "make good" to their customer. CEIG believes that the ESB's proposed system of 'incentives only' is not sufficient. The ESB should also impose additional penalties (e.g. financial penalties and/or the potential withdrawal of future contracts in cases of extreme breaches).



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CEIG thanks the ESB for the opportunity to provide feedback on the CM paper and looks forward to continued engagement on those issues. Our Policy Director Ms. Marilyne Crestias can be contacted at [marilyne.crestias@ceig.org.au](mailto:marilyne.crestias@ceig.org.au) if you would like to further discuss any elements of this submission.

Yours sincerely,

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