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Design of the Capacity Investment Scheme in WA

The Australian Energy Council (the “AEC”) welcomes the opportunity to make a submission on the Western Australian Design Paper: Capacity Investment Scheme (“**Design Paper**”) published by the Department of Climate Change, Energy, the Environment and Water (“DCCEEW”).¹

The AEC is the peak industry body for electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. Our members collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to millions of homes and businesses, and are major investors in renewable energy generation. The AEC supports reaching net-zero by 2050 as well as a 55 percent emissions reduction target by 2035, and is part of the Australian Climate Roundtable promoting climate ambition.

Background

The electricity sector is quickly transitioning towards more intermittent and low-emission generation as a result of State Government commitments and policies, and an increasing focus on decarbonisation from the private sector. To facilitate this, adequate revenue must be available to keep existing generators in the market and incentivise a substantial amount of new investment in intermittent and dispatchable generation to maintain future supply reliability. Failing to do so will have significant consequences, including:

- Inadequate supply to meet demand;
- The WEM objectives may not be met;
- Increased prospects of unserved energy in some trading intervals due to inflexible plant not ramping up sufficiently to meet demand;
- Increased negative price events when renewable output is high and there is not enough battery storage to store the low value energy;
- Energy and ESS prices may increase when inflexible plant exits and it is not replaced with sufficient generation or flexible generation and battery storage;
- Market failure;
- Intervention by regulators;

¹ See [Western Australian Design Paper: Capacity Investment Scheme](#)

- The uncertainty in the market may impede the financing of projects and require investors to receive a higher rate of return; and
- Uncertainty in the energy market may impact proposed investment in other markets and services.

The AEC engaged Marsden Jacob Associates (“**MJA**”) in early 2022 to produce an independent report on revenue sufficiency for generators in the Wholesale Electricity Market (“**WEM**”).² The Economic Regulation Authority (“**ERA**”) also engaged FTI Consulting to inform its *Triennial review of the effectiveness of the Wholesale Electricity Market 2022*.³ While the extent of revenue adequacy varies slightly between MJA and FTI Consulting due to the assumptions used, the conclusion is consistent and clear: most generation types do not and will not earn sufficient revenue, and investors are not incentivised to enter under the current market settings in the WEM. Indeed, FTI Consulting states that “...Prices in the WEM will not be high enough to support revenue sufficiency for wind, solar and battery storage facilities as more solar, wind and storage facilities enter the WEM, and coal and gas generators exit the market.”⁴

A key recommendation in both the MJA and FTI Consulting reports is the need to give investors long-term certainty. With highly variable capacity prices, and arbitrage and ESS revenue opportunities expected to reduce as more dispatchable generation enters the market, FTI Consulting concludes that “to invest in long-life, long lead-time assets, there needs to be clear and reliable revenue opportunities to produce a strong business case for investment.”⁵

Given the highly variable and insufficient revenue facing new and existing generators in the WEM, the AEC broadly welcomes the Capacity Investment Scheme (“**CIS**”) as a revenue underwriting mechanism that provides certainty for renewable investors and, ultimately, cheaper energy for consumers. The proposed CIS scheme will play an important role in de-risking investment in the WEM and potentially lowering the cost of capital, facilitating the entry of new renewable and storage projects and limiting the capacity shortfall forecast by AEMO.

The Design Paper notes that the CIS is expected to facilitate the entry of 6.5 TWh of VRE and 1.1 GW of four-hour equivalent (4.4 GWh) dispatchable capacity in the WEM over the period to 2030.⁶ This is a substantial amount of new generation, however such an amount of new generation entering the grid could have a major impact on the market and so it’s imperative that:

- The potential impact on the WEM is fully understood;
- The scheme complements the current (and any future) market design;
- It does not inadvertently encourage existing generators to exit the market early or avoid participating in the contracts market;
- It minimises market distortions; and
- The tender process is transparent.

This submission makes the following comments on the Design Paper.

² See [Revenue adequacy for generators in the WEM](#)

³ See [Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper](#)

⁴ See p13 [Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper](#)

⁵ See p142, [Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper](#)

⁶ See p4, [Reserve Capacity Mechanism Review Information Paper \(Stage 1\) and Consultation Paper \(Stage 2\)](#)

CIS may encourage existing generators to exit

While the CIS will provide welcomed support for new generators, the prospects are far more challenging for existing generators who are excluded from the CIS. Without the underwritten revenue, these generators remain exposed to market prices that are widely predicted to fall in the coming years and the sheer scale of new projects that will come online as a result of the CIS scheme will likely further exacerbate this situation. For instance, modelling undertaken by the ERA showed that a battery's profitability is dependent on its ESS revenue and this drops sharply as new storage projects suppress ESS prices:

*"The modelling demonstrates that the revenues from the ESS and balancing markets greatly decrease as more battery storage capacity enters the market. This indicates that the revenue opportunities from these markets are shallow, and the entry of a few competitors greatly affects expected forecast revenues. Importantly, ESS markets are a significant revenue source for batteries. However as more battery storage capacity enters the market, the revenue greatly diminishes."*⁷

The prospects are perhaps even worse for existing wind and solar projects. Indeed, the ERA stated that:

*"The extent of the gap between the revenue received and the revenue required by these renewable energy facilities grows as more of them replace thermal generation. This is because as more solar and wind generators with negligible operational costs enter the market, they set the energy market price at or close to zero more frequently. As a result, all generators in the WEM will face lower and lower prices, which do not allow them to recover their initial investment costs."*⁸

Coal generators – who are required in the short-term to support the energy transition – will be even more impacted by the introduction of new renewable generation. Coal generators have seen sales being eroded by intermittent generation and they are especially sensitive to small reductions in revenue caused by an increased number of starts and a higher cost for starts. The MJA report found that revenue is already well below costs for coal generators and the RCM alone may not be sufficient to keep coal in the WEM.⁹ The State Government has already committed to the closure of Synergy's coal fired plant but there has been no public announcement about the closure of the privately owned Bluewaters power station. Closure of this station within the same timeframe as Synergy's plant would create significant tightness in the energy market.

In short, as a raft of new battery storage and renewable projects come online with the assistance of the CIS scheme, existing generators will face the prospect of even lower prices and reduced revenue without the back-up of a contract for difference arrangement like the CIS. This creates a perverse situation where existing generators are undermined just for having entered the market prior to the CIS. The AEC acknowledges that the WEM Investment Certainty Review Working Group led by the Department of Energy, Mines, Industry Regulation and Safety is now contemplating this issue. However, without a mechanism in place there is no certainty of any outcome, and there is a real potential that existing generators may not be able to earn sufficient revenue to remain viable. This could result in generators prematurely exiting the market or unnecessarily upgrading existing plant so that they can participate in the CIS.

While the AEC broadly supports the CIS as a revenue underwriting mechanism that provides certainty for new generators, DCCEE is also encouraged to consider the impact of the proposed CIS scheme on existing generators and what mechanisms could be adopted to support the current fleet of generators.

Potential to distort the market

The CIS scheme is expected to facilitate the entry of 6.5 TWh of VRE and 1.1 GW of four-hour equivalent (4.4 GWh) dispatchable capacity in the WEM over the period to 2030. This is a significant amount of new generation and given its scale and timing, integrating the CIS into the current market framework will need to be carefully managed. The AEC considers that an effective CIS design should complement the existing market and have an appropriate level of risk allocation between the Federal Government and project

⁷ See p18, [Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper](#)

⁸ See p13 and 18, [Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper](#)

⁹ See [Revenue adequacy for generators in the WEM](#)

proponents. Achieving this balance, however, is inherently challenging and there are concerns that the CIS design could distort the market because:

1. It could become a de facto contract for difference scheme

The collar arrangement could encourage proponents to bid their Levelised Cost of Energy for the CISA floor. In this case, the collar floor would become a de facto contract for difference and be highly distortionary, compromising efficient wholesale market operations and diminishing contract market liquidity.

2. It discourages projects from participating in the contract market

The CIS may insulate projects from an appropriate level of market risk. This is because by safeguarding against the downside risk of low market returns and shoring up project financing, the CIS can reduce incentives and/or negate the need for projects to contract with third parties such as retailers.

Reduced incentives for projects to be active participants in secondary markets will reduce the ability of smaller retailers to manage market risk, which could lead to retailers exiting the market, an increase in concentration, and consequent increase in prices consumers pay.

3. The collar cap could have unintended consequences

The CISA price collar could also have the effect of limiting the upside to market participation. We consider that by limiting the potential upside proponents can gain from projects the collar structure will:

- Reduce the number of participants willing to participate in the CIS;
- Result in participants requiring higher revenue floors to off-set the lost potential upside; and
- Lead to less efficient commercial and operational decisions as participants are disincentivised from earning revenue above the ceiling.

To address the potential distortionary impacts of the CIS, DCCEEW could consider options including:

- A less complex floor-only scheme similar to the New South Wales roadmap's Long-term Energy Service Agreement floor structure. This would eliminate the need for bidders to have a higher floor to off-set the lost upside and still incentivise proponents to make commercial and operational decisions that maximises revenue; or
- The fixed competitive grants model previously suggested by the AEC. The fixed competitive grants would be paid upon completion or paid progressively according to availability. Under this model, the government would have no trailing liabilities, and, after completion, all ongoing market risks would be retained by the capacity. This remains a viable path to ensuring wholesale contracts market participation.

Section 3.5.1 - Special Purpose Vehicle requirement

The Design Paper states that:

*"The Project Operator must be a SPV and must own the project, including all assets and legal rights and permissions reasonably required to undertake the project. The SPV must be the registered electricity market participant and receive all economic value associated with the Project. The SPV must be the counterparty to all revenue contracts associated with the Project. The SPV must not carry on any other business other than the Project."*¹⁰

¹⁰ See p24, [Western Australian Design Paper: Capacity Investment Scheme](#)

The AEC considers this to be an onerous requirement that will restrict the participation of some projects. Investors setup their internal structures to address a range of issues and in some cases a SPV arrangement is not preferred. Similarly, tolling arrangements, where the power purchaser directs how the plant is to be operated and dispatched would be precluded. While the AEC appreciates the intent of the SPV arrangements to allow for arm's length reporting of relevant revenues, care needs to be taken that efficient portfolio-based risk management practices are not impacted. Instead, the AEC suggests that the required transparency could be delivered by requiring the SPV to be the Project Operator, but not requiring the Project Operator to be a market participant, but rather an intermediary with appropriate accounting to drive transparency.

Section 3.5.3 - Expected development status of connection approvals

The design paper states that:

"It is expected that projects will have made progress towards obtaining connection approval upon application to participate in the CIS. To be regarded as having made such progress, the proponent for the relevant projects must: have received a response to a connection enquiry, or have entered into an access contract, or be seeking to modify an existing access contract."¹¹

The AEC supports the concept of having minimum standards to participate in the CIS tender. However, having a response to a connection enquiry is a very low bar to reach and is also open to interpretation. The AEC suggests that projects participating in the CIS should have made more substantive progress towards an access contract, such as having reached the project scoping phase of a connection enquiry.

Section 3.6 - Tender merit assessment

The Design Paper states that project bids will be assessed over two stages, with the first stage focusing on the technical, commercial, social licence and reliability merit and the second stage considering a project's contribution to reliability at the lowest cost to taxpayers.

The AEC suggests that the merit assessment process should be prescriptive with clear guidance on how projects will be assessed against each criteria. There is a risk that the items listed in the Design Paper are broad, open to interpretation and could give rise to the perception of "picking winners". For example, how much capacity and track record is required to demonstrate a proponent's capability? And, how will the 'quality of engagement' with supply chains, local communities and First Nations people be objectively assessed and ranked?

DCCEEW is encouraged to provide a detailed set of criteria about how projects will be assessed well before the first tender. Elements of the assessment that are subject to interpretation, such as the Stage A requirements in relation to supply chain, community and First Nations Engagement could be codified, with a minimum standard made transparent to proponents. Given best practice in these areas is evolving, and the requirement to accelerate deployment via the CIS, codification offers the prospect of lifting performance across all proponents, with detailed assessment of bids focusing on the Stage B bids.

The AEC also notes that the Design Paper does not address how the CIS will promote diversity in project locations across the South-West Interconnected System ("**SWIS**") or how projects will be assessed on their location. The AEC requests that DCCEEW:

- Provide more information about how it will promote the entry of new generation in different locations across the SWIS to avoid one generation type being all located in the same area; and
- Outline before the first tender how projects will be assessed and ranked on:
 - Their ability to access existing grid availability;

¹¹ See p17, [Western Australian Design Paper: Capacity Investment Scheme](#)

- Being located in areas that are reliant on transmission capacity being built or augmented, and how unforeseen delays in Western Power’s construction activities would impact the assessment; and
- Forecast levels of MLFs and grid constraints.

Section 3.8.2 – Support term

The Design Paper notes that the CISA commences on 1 October of the first year after CISA award for which a project holds Capacity Credits. However, aligning the commencement of CISA payments with the reserve capacity cycle could create a perverse incentive for a project to delay its commercial operation if it does not receive both the CIS and Capacity Credit payments for a period of time. Instead, the AEC suggests that if the CIS gives investors enough confidence to fast-track projects and bring new generation online quicker then project owners should be able to receive CISA payments up to one year prior to the commencement of the reserve capacity cycle. In this scenario, the CIS would have achieved its objective of bringing forward investment in new projects, and the CISA payment would still act as an underwriting mechanism rather than a subsidy.

Section 3.8.2 - Negative prices

The Design Paper notes that the underwriting mechanism will be based on a project’s net revenue. It states that “other operating costs, taxes, fines and penalties, payments made through the AEMO settlement process arising as a result of prices below \$0/MWh, and debt financing interest and other costs are excluded from the calculation of net revenue.”¹² However, the Design Paper does not address how projects should participate in the market when prices are below \$0/MWh. There may be instances where a project is contracted to deliver output even during negative price intervals, or a project may seek to participate in the market when prices are below \$0/MWh to capture Large-Scale Generation Certificates, or it may be optimal for a generator to ride through a few negative-price intervals and remain online, especially in a 5-minute market, rather than being forced to shut down for an extended period. The AEC seeks further guidance from DCCEEW on whether projects will be able to participate in the market when prices are below \$0/MWh.

Confidential information

The AEC expects that project owners will need to provide a substantial amount of information to DCCEEW to verify revenue and costs. This may involve providing details of Power Purchase Agreement terms and bidding strategies, which is highly sensitive information for project owners. The AEC encourages DCCEEW to keep any information provided by a project owner confidential at all times and not be made available for others to view.

¹² See p23, [Western Australian Design Paper: Capacity Investment Scheme](#)

Conclusion

The AEC appreciates this opportunity to provide feedback on the Design Paper and encourages DCCEEW to consider the issues raised above.

Please do not hesitate to contact Graham Pearson, Western Australia Policy Manager by email on graham.pearson@energycouncil.com.au or by telephone on 0455 233 346 should you wish to discuss this further.

Yours sincerely,

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