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Reserve Capacity Mechanism Review

The Australian Energy Council (the "**AEC**") welcomes the opportunity to make a submission on the Reserve Capacity Mechanism ("**RCM**") Review Information Paper (Stage 1) and Consultation Paper (Stage 2) ("**Consultation Paper**") published by Energy Policy WA ("**EPWA**").[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.

The AEC will first provide comments on the Information Paper for Stage 1 and then address the Consultation Paper for Stage 2.

Information Paper - Stage 1

Consultation Question (4): Do stakeholders support not amending the Planning Criterion to include consideration of the volatility of intermittent generators?

The Stage 1 consultation asked stakeholders their views on not amending the Planning Criterion to include consideration of the volatility of intermittent generators. The Consultation Paper says that most respondents indicated that they 'support' or generally support the proposal, and then goes on to make the following review outcome:

> *"The RCM Planning Criterion will not include provisions for intermittent output volatility at this time.*
>
> *Facilities holding flexible capacity credits will be required to accredit for all types of Frequency Co-optimised Essential System Services (FCESS) that they are capable of providing, but will not be obligated to offer into the FCESS markets."*[2]

The State 1 consultation paper did not raise the prospect of facilities with flexible capacity credits being required to accredit for all types of FCESS they are capable of providing. This requirement may have significant consequences for these facilities and means that "they could be required to make their flexible capacity available in the relevant FCESS markets."[3]

[1] See Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)
[2] See p31, Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)
[3] See p31, Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)

The obligations on flexible facilities need to balance market requirements with how owners may prefer or need to operate their facilities. Some owners may not want to want to offer into the FCESS markets for operational reasons and this requirement risks disincentivizing flexible facilities from entering the market at a time when they are urgently required. The real-time capacity obligations linked to the flexibility product should also aim to avoid interfering with real time market participation as this could similarly restrict participation.

The requirement to accredit for FCESS is an important issue with significant implications for facility owners. It should have been raised in the Stage 1 consultation paper and the AEC strongly encourages EPWA to:

- Undertake further detailed consultation on this matter before arriving at an outcome; and
- Clarify how it will hard-code that facilities with flexible capacity credits will not be obligated to offer into the FCESS markets.

Consultation Question: 12(c). Do stakeholders support a 5-year fixed price option for proposed flexible capacity facilities?

The Stage 1 consultation paper considered a 5-year fixed price option for flexible capacity facilities. Most stakeholders supported a fixed price option and called for a longer 10 or 15-year fixed price. This is because the volatility in the current Reserve Capacity Price ("**RCP**") does not support long term investment in flexible generation and storage facilities, and a 5-year fixed price is unlikely to be enough to underwrite investment in new flexible generation and storage in the Wholesale Electricity Market ("**WEM**").

Despite the stakeholder feedback, EPWA concluded that "proposed facilities will have the option to seek a fixed price for flexible capacity on the same basis as is available for peak capacity."[4] However, shortly after the release of the Consultation Paper, the State Government published the SWIS Demand Assessment and announced a number of WEM reform initiatives. One of those initiatives is "introducing a 10 year reserve capacity price guarantee for new technologies, such as long-duration storage."[5]

A longer fixed price option is welcomed and it goes some way to assisting investors in underwriting the new flexible capacity that is required as part of the energy transition. Nonetheless, the announcement was brief and the AEC would appreciate further information about:

- The details of the State Government's 10-year price guarantee;
- What facilities would be covered by the price guarantee; and
- Whether the State Government's 10-year price guarantee will now replace EPWA's proposed 5-year fixed price option.

Consultation Question 13(a). Do stakeholders support replacement of the current Availability Classes with Capability Classes?

The AEC addressed this question by noting that it is open minded about treating hybrid facilities as a single entity and acknowledging that this creates a range of challenges. In particular, the AEC queried:

1. How co-located wind and solar projects will be considered for certification purposes and what Capability Class they will be assigned; and
2. The potential unintended consequences of treating hybrid facilities as a single entity.[6]

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[4] See pXII, Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)
[5] SWIS Demand Assessment website accessed on 26 May 2023
[6] See AEC submission on the Reserve Capacity Mechanism Stage 1 Consultation Paper

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EPWA responded by stating that it "acknowledges the concerns raised by AEC and considers that, where a facility is capable of operating in either as a Capability Class 2 or as a Capability Class 3 facility, the participant will be able to opt for the class that best fits the preferred operational profile."[7]

The AEC seeks further information about:

- How EPWA will lock-in the ability for hybrid facilities to self-select their Capability Class; and

- Whether there will be any circumstances where a hybrid facility cannot self-select and instead AEMO determines the hybrid facility's Capability Class?

Consultation Question 13(c). Do stakeholders support retaining the 14-hour fuel requirement, with its practical implementation to be considered in stage 2 of the review, and the all-hours availability requirement for Capability Class 1?

The Stage 1 consultation paper sought views on retaining the 14-hour fuel requirement. The Consultation Paper provided little analysis to support the continuation of the 14-hour fuel requirement but noted that the requirement is still considered valid.[8]

Most stakeholders opposed retaining the 14-hour fuel requirement and many said that it should be replaced with a fuel requirement aligned with the initial intent of 4-5 hours a day. Only AEMO provided general support for keeping the 14-hour fuel requirement but they provided no reasoning for this position.[9]

EPWA responded to the submissions opposing the 14-hour fuel requirement by saying that the "recent changes as part of the Market Power Mitigation Strategy mean that participants now have certainty that the costs of long-term take-or-pay fuel contracts can be reflected in market submissions."[10] However, this is not the case. The final Offer Construction Guideline is yet to be published so there is no certainty that fuel costs can be fully recovered. In fact, the AEC has pointed out that the draft Offer Construction Guideline raises serious concerns that fuel costs will be under-recovered:

> *"The Draft Report implies that fuel costs can only be priced at the opportunity cost of gas. However, this will result in under-recovery because:*
>
> - *Gas-fired generators are required to contract large volumes exceeding their market-based generation needs to meet the 14-hour fuel requirement. Noting that such an excess could inundate the small local market for short-term gas trades in WA, section 4.3.1 would require a generator with excess gas to price their fuel at near zero.*
>
> - *Gas fired generators are also required to contract at least 3 years in advance to receive capacity credits. Customers must typically pay a premium to contract over such long terms, especially as the WA market is likely to continue to tighten (as forecast by the most recent GSOO), exposing them to the risk that their gas cost will be consistently higher than the replacement cost they are limited to in their offers.*
>
> *The Brattle paper commissioned by EPWA notes that WA's domestic gas market is illiquid and concentrated, making it difficult to determine the 'market price' for gas. In such a shallow market, the proposed approach will entrench risk and under-recovery, and create a wide gap in perceptions of opportunity cost between the ERA and Market Participants, increasing ex-ante uncertainty."*[11]

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[7] See p124, Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)
[8] See p37, Reserve Capacity Mechanism Review Stage 1 Consultation Paper
[9] See AEMO submission on Reserve Capacity Mechanism Review Stage 1 Consultation Paper
[10] See p127, Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)
[11] See AEC submission on Draft Offer Construction Guideline

The AEC remains strongly opposed to retaining the 14-hour fuel requirement. All generators are already incentivised to ensure that they have sufficient fuel to operate, satisfy their obligations and earn revenue. An additional requirement to have 14-hours of fuel is totally unnecessary. The additional costs incurred by participants are unlikely to be fully recovered and may result in generators abandoning Capability Class 1 and instead seeking certification in Capability Class 2. This would reduce the level of reliability in the WEM and be counter to one of the key principles of the RCM Review.

Stakeholders have consistently opposed the 14-hour fuel requirement and EPWA is encouraged to replace this obligation with a fuel requirement aligned with the initial intent of having sufficient onsite fuel for 4-5 hours a day over three days.[12]

Review outcome 13

Review outcome 13 considers the certification of facilities providing flexible capacity and states that "the minimum stable loading level is particularly important for the effectiveness of this product, and is likely to be 10% of the facility nameplate capacity or less."[13]

The AEC is concerned that:

- Most gas facilities are not able to reasonably achieve 10% minimum generation. Instead, members advise the AEC that a more realistic minimum stable loading level is approximately 30% of nameplate capacity;

- Gas facilities shouldn't be expected to run through the middle of the day. This has significant implications for the maintenance of the plant and may leave the facility out of money. This was noted by EPWA when it said that "where the generator is required to run at its minimum generation level, it is possible that neither the energy price nor FCESS price compensate the generator for its energy opportunity cost."[14]

The AEC recommends that:

1. The minimum stable loading level is increased to 30% of the facility nameplate capacity;

2. Gas facilities are not obligated to run through the day.

Consultation Paper - Stage 2

Consultation Question 2: Do stakeholders support the proposed interval selection methodology?

The proposed interval selection methodology involves selecting intervening intervals where the peak intervals occurring on each day are not contiguous. The AEC seeks further information about how the methodology would be applied if there is a large gap between peak intervals on a day (for example, there could be a peak in the morning and evening), and whether there would be a limit on using intervening intervals.

Consultation Question 9: Do stakeholders support the proposed DSP CRC allocation method?

The AEC opposes the proposal to allow DSPs to nominate their CRC value on the basis that this would risk disingenuous applications that cause substantial volatility in the RCP and reliability forecast and thereby exacerbate investment uncertainty that is already a critical issue facing the WEM.

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[12] EPWA stated in the Reserve Capacity Mechanism Review Stage 1 Consultation Paper that the "requirement was originally put in place to ensure that liquid fuelled facilities had sufficient onsite fuel to operate for 4-5 hours a day for three days, without resupply."
[13] See p44, Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)
[14] See p37, Market Power Mitigation consultation paper

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The AEC considers that, if implemented, this proposal should be accompanied by stringent accreditation requirements or penalties to prevent or disincentivise applicants from submitting speculative offers that are designed only to meet a capacity test.

Consultation Question 27: Do stakeholders agree with the proposed change to a 0.0002% EUE target in the Planning Criterion?

The AEC does not agree with the proposed changed to a 0.0002% EUE target in the Planning Criterion and opposes to this being included in the RLM as the assumed level of system reliability as it unnecessarily causes the reliability of the fleet of intermittent generators to be based on much fewer intervals, creating a needless risk of substantial volatility and investment uncertainty.

Consultation Question 28: Do stakeholders agree that the Coordinator should determine the reference technology for each of the capacity products?

The AEC considers that there is no benefit in the Coordinator determining the reference technology used in the BRCP methodology. Instead, the AEC considers that the ERA should continue to consider the appropriate reference technology under clause 4.16 of the WEM Rules. The ERA is independent and has the capability to undertake this role.

Consultation Question 29: Do stakeholders agree that the potential adoption of a net CONE approach should be considered with the reference technology?

The AEC does not agree with a net CONE approach and instead supports retaining the gross CONE approach.

The AEC's main concern with the net CONE approach is that it risks creating 'missing money' for generators and this can adversely impact the investment case for flexible generation and storage. Adopting a net Cone approach would mean that:

- The assumptions used to determine net CONE would need to be extremely conservative to ensure that generators are able to recover their efficient costs;
- There may be a requirement for some form of 'top up';
- There would be added complexity; and
- It will create uncertainty and may discourage investment at a time when generation is required.

Given the above, the AEC does not support moving to a net CONE approach.

Financial analysis

The Consultation Paper includes modelling that forecasts the financial viability of new storage and renewable generation projects with the changes proposed under the RCM Review. The AEC commends EPWA for undertaking this analysis and considering the impacts of their proposed changes.

The electricity sector is transitioning quickly 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;

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- 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;

- 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 is other markets and services.

The financial analysis undertaken by EPWA assumed that additional capacity was added to meet the Planning Criterion. EPWA rightly points out that many permutations of assumptions could be used for the analysis, however it's noteworthy that the modelling forecasts:

- No new wind or solar generation until 2030 and thereafter 14,628MW of wind generation and 2,142MW of solar generation is added to the grid; and

- Only two new open cycle gas turbine plants are built over the next 30 years with a total capacity of 350MW.

The financial modelling in the Consultation Paper appears to be positive for battery storage. It forecasts that there is enough revenue to support the entry of new battery storage projects, particularly in the late 2020s when the retirement of several gas facilities pushes up the Reserve Capacity Price for the flexible capacity product. However, this finding appears to contrast with modelling undertaken by the Economic Regulation Authority ("**ERA**") which 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."*[15]

The modelling is far less positive for wind and solar projects. While energy prices are expected to rise slightly in the short-run, they collapse after 2028 and become negative by the late 2040s, meaning that new wind and solar projects will never make a profit over the next 30 years.

Unfortunately, stakeholders are already aware of this situation. Previous financial modelling undertaken by Marsden Jacob Associates[16] ("**MJA**") and the ERA[17] in 2022 showed that most generation types will not earn sufficient revenue in the WEM, and investors are not incentivised to enter the market. Indeed, the ERA stated that:

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[15] See p18, Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper
[16] See Revenue Adequacy for Generators in the WEM
[17] See Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper

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"…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.

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."[18]

This is a serious problem and the publication of the *SWIS Demand Assessment 2023 to 2042*[19] ("**SWISDA**") just a week after the release of the Consultation Paper adds confusion.

The SWISDA is an assessment of potential electricity demand over the next 20 years to meet industry and Government commitments of achieving net zero greenhouse gas emissions by 2050. The Treasury-led taskforce developed four demand scenarios each reflecting different outlooks for major loads connecting to Western Power's transmission network over the next 20 years. They chose to use the 'future ready' scenario for the modelling and forecast that:

- SWIS generation capacity will increase from 5.9GW in 2022 to more than 50GW by 2042;
- Large-scale wind and solar generation capacity will increase from 1.2GW in 2022 to reach 41.8GW in 2042; and
- An additional 3.9GW of new gas generation capacity will come online after 2030 to support renewable generation.

This is a significant increase in generation capacity and at odds with the amount and type of forecast new build that was modelled in the Consultation Paper. The disconnect between the Consultation Paper and the SWISDA raises a number of questions:

- How will investors be incentivised to add the forecast 41.8GW of large-scale wind and solar when the financial modelling in the Consultation Paper says that these projects will never make a profit?
- The SWISDA says that an additional 3.9GW of new gas generation capacity will come online after 2030. It is likely that most of this new gas generation will have to be delivered by private investors because the State Government announced that Synergy would not build any new gas projects after 2030.[20] How will investors be incentivised to build new gas generation when EPWA is assessing options to implement penalties for high emissions technologies that will have the practical impact of reducing the capacity factor and financial viability of those gas generation projects?
- Are there adequate signals to drive investment in new generation?
- Will existing asset owners earn sufficient revenue to stay in the market?
- Will the WEM objective of reliable supply of electricity at the lowest sustainable cost to consumers be achieved in the future if the policy settings discourage new investment in gas generation, and wind and solar projects will never earn a profit?
- Will the level of system reliability currently provided for by the WEM Rules be eroded if new generation does not enter market?

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[18] See p13 and 18, Triennial review of the effectiveness of the Wholesale Electricity Market 2022: Discussion paper
[19] See SWIS Demand Assessment 2023 to 2042
[20] See State-owned coal power stations to be retired by 2030

The financial analysis in the Consultation Paper shows the consequences of progressing reforms in isolation. There have been amendments to the Access Code, changes to the civil penalties framework, the WEM Rules have been updated, there is a new market power mitigation framework, new penalties for high emission generators, and now there are further changes as part of the RCM Review. These new policies have been considered in isolation but, together, these reforms and settings have a substantial impact on generators and their revenues, and modelling from MJA, ERA and now EPWA shows that there is insufficient revenue for new generators.

MJA points out the implications of failing to address revenue adequacy for generators:

> *"…Energy Policy WA and the Economic Regulation Authority are unlikely to fulfill the Wholesale Market Objective to 'promote the economically efficient, safe and reliable production and supply of electricity' or 'encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors'.*
>
> *When establishing policies, price limits and measures, policy makers and regulators should be confirming that there is sufficient revenue in aggregate from all market mechanisms..."*[21]

The AEC strongly encourages EPWA to consider these issues and what changes may be required to ensure there is sufficient revenue to attract efficient investment into the WEM.

Conclusion

The AEC appreciates this opportunity to provide feedback on the Consultation Paper and encourages EPWA 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 0466 631 776 should you wish to discuss this further.

Yours sincerely,

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[21] See p72, Revenue Adequacy for Generators in the WEM

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