2 December 2024

Economic Regulation Authority
Level 4, Albert Facey House
469 Wellington Street, Perth WA 6000

Combined submission from the Expert Consumer Panel to the ERA's consultations on:

- **the draft determination of the 2025 Benchmark Reserve Capacity Price (BRCP) for the 2027/28 capacity year; and the**
- **the second draft Offer Construction Guideline (OCG), issued November 2024**

Dear Mr Edwell,

Thank you for the opportunity to provide submissions to the two Economic Regulation Authority (ERA) consultations above.

The electricity sector in Western Australia exists to provide electricity services to consumers. It is central to electricity production and delivery that the interests of all consumers of those services are served well, and we understand that the ERA aims to achieve this too.

The Expert Consumer Panel (ECP) was established by the Western Australian Government to provide input on policy, rules and other processes across all elements of the energy supply chain. ECP members include representatives from a variety of energy-related backgrounds, all of whom bring a unique customer perspective to the work of the group.

As ECP members, we represent energy consumers on the Market Advisory Committee (MAC) and most of its working groups that have been considering initiatives and market rule changes that affect the Wholesale Electricity Market (WEM) energy, Essential System Services (ESS) and capacity costs.[1]

We are providing a combined submission because the matters being consulted on in the two separate consultations are so interrelated that they should be considered together by the ERA in making its decisions on both. These issues affect the revenue capacity providers receive as a result of the BRCP determination, and the revenue Battery Energy Storage System (BESS) and fuel-limited thermal generator providers receive as a result of their offers into the energy and ESS real-time markets in the WEM.

Both of these ERA-determined price 'guides' ultimately affect the cost of electricity from the WEM to consumers.

[1] ECP members have actively participated in the MAC and its working groups for the Reserve Capacity Mechanism (RCM) review, the Cost Allocation review, the ERA's BRCP procedure review and the WEM Investment Certainty review that are relevant to the content of the two ERA consultations we are responding to.

A number of changes in the WEM in the last few years are causing, and we anticipate will cause, significant increases in WEM costs. These cost escalations come on top of increased fuel prices and at a time when energy costs are a serious concern for consumers from the smallest to largest. It is critical in the current context of a cost-of-living crisis that the essential transition to renewable energy is as efficient as possible to minimise costs passed through to consumers.

As distinct from policy decisions made by others (e.g. EPWA or Government) that affect market outcomes, the ERA is responsible for the following two items:

- The draft Benchmark Reserve Capacity Prices (BRCPs) for Peak and Flexible capacity[2], based on the 'Gross cost of new entry' (Gross CONE) of a 200 MW / 800 MWh battery energy storage system (BESS) as the reference technology decided by EPWA.
- The draft Offer Construction Guideline (OCG) which guides offers made by providers of real-time market energy and ESS.[3]

The outcomes from these are two separate consultations both affect the revenue that service providers receive in the WEM, and in turn costs to consumers.

BRCP Procedure - assumed BESS 15-year economic life

With regard to the draft BRCPs proposed by the ERA, we consider that the assumed 15-year life for the BESS may be shorter than what eventuates, although we note that this is what the finalised BRCP procedure requires. A shorter assumed life increases the annual BRCP by amortising the costs over a shorter period than may be realistic or necessary for a BESS to be viable.

Tilt Renewables, in a BESS Frequently Asked Questions publication released in Jan 2022, gives an expected lifetime for a grid-scale BESS of 15-20 years.[4]

EPWA assumed a 25-year life for a BESS in modelling for determining the BRCP reference technology because replacing cells is the same as replacing critical components of a gas turbine to extend its economic life, and such costs can be recovered via the efficient variable costs allowed by the OCG.

The performance of BESS cells is likely to degrade over time, but cells can be replaced as part of normal maintenance and those costs can be included in energy market offers. It is also likely that BESS will be able to continue to be operated and receive energy and capacity credit revenue beyond 15 years, even if at reduced levels.

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[2] Draft Benchmark Reserve Capacity Price determination, at: https://www.erawa.com.au/cproot/24394/2/BRCP-2025-Draft-Determination-for-publication-clean.PDF

[3] Draft Offer Construction Guideline, at: https://www.erawa.com.au/cproot/24389/2/WEM3-OCG-draft-version-2-1-clean.PDF

[4] Tilt Renewables BESS FAQs, BESS life on page 6: https://www.tiltrenewables.com/documents/904/22007-TILT_BESS-FAQ-FA01_Web.pdf

Technology improvements may mean that replacing a BESS or individual cells with new technologies may not be the preferred option after a while. Rather, new installations are likely to be added to the grid while existing installations continue to operate beyond the 15 years assumed by the ERA.

Supplementary BESS revenue from real-time market energy and ESS

The choice by EPWA to base the BRCPs on the Gross CONE was based on BESS not earning, or needing to earn, significant revenue from energy and other services on top of reserve capacity revenue in order to be viable. If BESS facilities do earn significant "supplementary revenue" from energy and other services, it would justify EPWA choosing Net CONE instead at the next opportunity as the basis for the BRCPs which would result in lower BRCPs to compensate for the supplementary revenue.

The way that energy and ESS offers are constructed, in accordance with the ERA's Offer Construction Guideline (OCG), can have a material effect on the supplementary energy and ESS revenue providers receive, and in turn to electricity costs.

The OCG is a valuable document to provide guidance to market participants preparing their offers and we provide these comments on its drafting with the intent of balancing the needs of both service providers and consumers.

There are two aspects of the draft OCG that we have concerns about, that the ERA is responsible for deciding:

1. The inclusion of runway costs for contingency reserve raise (CRR) in offers; and
2. The inclusion of opportunity costs for BESS and other unexpectedly fuel-limited generators in their offers.

These two items will increase the supplementary revenue BESS receives at the expense of consumers.

Inclusion of runway costs for CRR in offers

We note the strong and detailed reasons in submissions from generation market participants in the previous consultation round for being allowed to include CRR runway costs in offers, as the main reason the ERA has decided to reinstate them in the second OCG draft.

However, as consumer representatives we do not support the inclusion of runway costs in offers and believe that this issue needs further consideration.

The Cost Allocation Review in recent years decided to continue to allocate the runway costs to generators (including BESS because they generate and so create a contingency) because they are a primary cause of the need for CRR ('causer pays') to cover the contingency of them tripping off.

The runway method allocates the greater proportion of CRR cost to the largest generators because they cause the largest contingency(ies) - aside from network contingencies which we understand have the CRR costs allocated amongst the generators on that part of the network.

Allocating CRR costs to generators based on the system's CRR needs provides a cost signal to participants to design their generation facilities and their network connections to limit the size of contingency they create, or pay higher CRR costs over their life.

As an example, a generator or BESS sized at 500 MW output connected to the network through a single network connection would incur a much higher proportion of total CRR costs than the same facility connected via two separate 250 MW network connections would be less likely to trip at the same time. The contingency to be covered by the CRR requirement is based on 500 MW in the former case and 250 MW in the latter.

As in the above example, the CRR runway costs for a facility are primarily determined by the chosen generator size and network connection design and are mostly independent of the amount of energy being generated. We acknowledge that they vary with the operational MW output of the generator in each interval - the argument put forward for them being considered efficient variable costs - but it is primarily the size of the generator and its network connection that determine the total CRR costs caused by that generator. We understand that a combination of smaller generators adding up to the same MW output in total as the large generator will not create the same size of contingency, and so these smaller generators will not incur the same total CRR costs.

Therefore we consider that CRR costs are not really variable costs and so should not be included in the efficient variable costs of energy that the OCG seeks to allow to be included in offers. Runway costs are closer to a fixed cost, like capital costs, since they are primarily (in total) determined up-front when the generation facility is designed and built.

We acknowledge that over time a facility's runway costs will vary depending on its size and connection arrangements compared to those of all other generators in the market, particularly if new larger generators connect.

If CRR runway costs are able to be included in offers, generators no longer in-effect bear the costs and so this removes the cost signal - the costs are just passed on to the market and consumers, and generators are indifferent to the need to contain these costs.

CRR costs are a significant ongoing cost to the market primarily caused by the largest generators and so there needs to be an effective signal borne by large generators to reflect these costs that they cause, and not just passed through to the market.

Inclusion of opportunity costs in offers

In the ERA's second draft OCG, opportunity costs are proposed to be based on estimates (forecasts) by generators and BESS of market clearing prices (revenue) they would miss out on

(foregone revenue) if they are not able to generate at peak times (during BESS Electric Storage Resource (ESR) obligation intervals) due to unexpectedly-limited fuel or BESS state-of-charge.

The accuracy of these forecasts/estimates exposes the market to a risk of the chosen opportunity cost in offers being higher than the actual clearing price that would have otherwise eventuated, and the generator/BESS setting the higher clearing price paid to all generators online in that interval.

With the BRCPs now being based on the BESS reference technology and Gross CONE, BESS facilities do not need to receive significant revenue from the real-time energy and ESS markets in order to be viable. Therefore they do not need to include opportunity costs in offers to be viable. They are likely to earn additional (supplementary) revenue by receiving the actual clearing price decided by other offers, which is likely to be significant without including BESS opportunity costs.

As long as BESS offers in Electric Storage Resource (ESR) obligation intervals cover their normal efficient variable costs (excluding opportunity costs and CRR runway costs)they are likely to earn significant supplementary revenue by being price-takers paid at the clearing energy prices set competitively by others in the ESR obligation intervals. Such variable costs could include their captured charging energy price (which can be a payment when clearing prices are negative rather than a cost), allowance for round-trip charge-discharge energy and large generator certificate (LGC) losses, allowance to cover variable operation and maintenance costs (VOM costs) and any other variable cost.

It appears that the proposal to include opportunity costs in offers has been framed as the way for BESS to limit their generation to zero in intervals outside of the ESR obligation intervals, to preserve their charged energy (state-of-charge) for generating during the obligation intervals when their output is most valuable and needed. This mode of operation is good, but we consider it can be better achieved by limiting offer quantities (MW) rather than indirectly through offer prices in price-quantity offer pairs.

If the BESS facilities output is bid at zero quantity (MW) in offers for intervals outside of the ESR obligation intervals, and then at appropriate quantity levels for different intervals within the ESR obligation window to achieve the desired output profile, this would allow them to preserve their state-of-charge for when it is most needed and valuable.

We make the following observations for the ERA to consider in this regard.

Is it the case that:

1. If opportunity costs, as outlined in the draft OCG, are incorporated into price-quantity offers and the facility ends up setting the clearing price in an interval, has it potentially overestimated the opportunity cost (counterfactual clearing price), thereby resulting in a higher clearing price than what would be considered efficient?

2. If the facility doesn't set the clearing price in an interval then there is no need for it to have included opportunity costs in its offer because if it is dispatched it will get paid the clearing price set by other generators competitively and the price is efficient?
3. If the facility doesn't set the clearing price, then it seems that the main purpose for suggesting that opportunity costs be included in BESS offers is for the facility to avoid being dispatched in non-ESR obligation intervals to conserve their charged energy for use in ESR obligation intervals, and similarly for unexpectedly-fuel-limited thermal generators to preserve fuel for use in intervals when prices are higher?

If question 3 is true, then it appears that avoiding being dispatched - to conserve charged energy or fuel for later intervals - could be better achieved by bidding zero quantity for intervals when they don't want to be dispatched, rather than using price (including opportunity costs) to indirectly try and achieve that.

If there are any barriers in the rules to this ‘quantity-limiting’ approach in forming offers, we suggest that the rules be amended to accommodate using quantity rather than price to reserve BESS energy for the ESR obligation intervals, and similarly for unexpectedly-fuel-limited thermal generators.

Summary

We are concerned that these two proposals included in the ERA’s second draft OCG will result in substantial supplementary revenue for BESS at consumers' cost, over and above what BESS proponents need for them to be viable, since their capital and other fixed costs are covered by the BRCPs based on Gross CONE.

It is important not to overcompensate (at consumers’ expense) capacity, energy and ESS providers through higher than necessary capacity prices due to the chosen BRCPs, and real-time market energy and ESS services revenue allowed by the OCG, than are necessary to ensure the viability of their facilities.

We would be pleased to discuss these matters with the ERA and provide any further information to support this submission.

Yours sincerely,

Expert Consumer Panel