

To energymarkets@dmirs.wa.gov.au
Subject WEM Investment Certainty Review (Initiatives 1 and 2)
Date 14 August 2024

Good Afternoon

Thank you for the opportunity to provide a submission in response to the critical issues addressed in the WEM Investment Certainty Review (Initiatives 1 and 2). The energy transition carries significant risks for customers. Adequate generation and storage capacity must be provided to meet both peak demand and annual energy requirements. This must be provided within a range of weather patterns, both short and longer term. Customers need this to be delivered at the lowest possible cost - just enough generation capacity should be made available but no more than this.

As a significant retailer and investor in the WEM, Perth Energy is keen to ensure that these risks are minimised. We acknowledge the substantial effort that Energy Policy WA is putting into this and the opportunities that have been provided for one-on-one discussions with EPWA staff. We support the general approach proposed in the paper and are happy to provide direct briefings on any matters we raise in this response should that be of assistance.

In this submission we address some general matter and then provide detailed responses to the consultation questions raised for the 10 specific proposals.

General Matters

While Synergy is committing to building substantial new renewable generation and battery electric storage systems (BESS), significant private investment will also be required. This must compensate for Synergy's reduced GWh energy generation capability as well as meet existing and forecast new MW demand. The reserve capacity mechanism (RCM) is critical to ensuring that this private investment is forthcoming.

It is Perth Energy's opinion, however, that significant changes are required. Many of our concerns have been addressed within this Consultation Paper but we do still see some outstanding issues. A downside of the RCM is that the income from capacity credits is so substantial that any risk associated with this income places investment at risk. If investors consider that capacity credit income is uncertain, there is no other revenue stream that can make up the possible shortfall. Any serious issue with the RCM will actively deter investors.

Risks that should be carried by investors

Investors should be required to accept a range of risks which lie within their ability to hedge, or which arise from their initial investment decisions. These are the cost and time risks associated with development, construction and operation of their facility such as:

- securing the requisite local or state government development approvals along with appropriate community commitment;

- selecting the right equipment and site location to deliver the nominated output within the available energy resource, wind or solar;
- negotiating network access and demonstrating that their plant fully complies with all technical requirements;
- selecting and managing all construction contractors including timely delivery of all plant components to site; and
- operating and maintaining the completed facility to comply with all licence obligations and in accordance with market requirements.

These risks lie within the developers responsibility, and it is the management of the project in a way that minimises these which will provide the return on the investment.

Risks that arise from changes to Government policies, reserve requirements and load forecasts are not ones that investors can address or hedge against. Similarly, the community has made the policy, through governments, to base electricity supply on weather driven systems so it is primarily customers that must carry the risks of addressing the resulting uncertainties.

Risk of reductions in capacity credit quantity and price

The future Reserve Capacity Price (RCP) price is determined, in part, by the actual level of excess capacity in that year. This, in turn, is affected by the level of reserve margin determined by AEMO. At present this is equivalent to the three largest generators on the system. As the system moves to renewables, which are likely to have a higher technical availability, and potentially connected in smaller MW blocks, AEMO may determine that the margin can be reduced. Such a change would lead to the system now having excess capacity, leading to a reduction in the RCP.

Reserve capacity revenue is based on the number of capacity credits assigned to a facility which, in turn, depends on the assigned Network Access Quantity (NAQ). In the first year that the facility is offered, there is a mechanism to allow the offer to be withdrawn if the NAQ is below a nominated minimum. However, there is potential for the level of capacity credits to be reduced in a subsequent year if the NAQ is reduced.

Capacity credit levels for renewable facilities are set through the Relevant Level Mechanism. Depending on changes in the wind/solar regime from year to year, the assigned level of credits may change. Perth Energy also notes that the calculation process has had a number of changes in past years which sows doubt in investors' minds.

A key factor in assigning capacity credits to BESS systems is their performance in relation to the Electricity Storage Resource Obligation Duration. This is currently set at four hours but is expected to increase as BESS systems are required to cover more of the evening peak. If it is changed to, say, five hours then the number of capacity credits assigned to the facility is reduced by 20%. A BESS system can secure a guarantee of capacity credits for five years but after this its capacity revenue will be reduced to match the Obligation Duration in place at that time.

Compounding this issue is the fact that capacity credits are currently a small proportion of the total revenue for renewable facilities. As such, the uncertainties associated with future price and quantities have not so far hindered investment to any great extent. This will change as renewables meet demand for a higher percentage of time because real time market prices will tend towards zero and energy income will fall away. Capacity credit payments then become of far greater importance.

A commitment to proceed must be made before reserve capacity prices are known

One issue faced by investors is that for a new generation or storage facility, reserve capacity security must be provided to AEMO in late August in accordance with Market Rule 4.1.14. This is a commitment to proceed, however, the capacity credit price is only published in late September (in accordance with MR 4.1.16A). Investors can develop an estimation of the RCP but, because they do not know what other new capacity will be certified, they cannot determine a firm RCP.

In addition to the lack of *price*, there is also a lack of certainty on the *number* of Capacity Credits that would be allocated until the NAQ process is run. This means that a generator is forced to commit in late August but will not know the volume and price of its key revenue stream until after this commitment. If these figures are less than are required for the project to be economically viable, it is too late to halt.

In addition, project developers are unable to reasonably approximate the NAQ process at present. This means that one of the key purposes of the NAQ, to encourage generation investment in areas of sufficient network capacity, is not achieved due to the inability to test a location for NAQ based network capacity until after an investment decision is required to be made. We strongly recommend that AEMO be required to run the latest NAQ model upon request, with a cost recovery mechanism in place, so that developers can have a first pass view on likely NAQ risk.

Reduced ability to hedge through power purchase contracts

At present, renewable generators can hedge their operating revenue through power purchase agreements (PPA) with retailers or other purchasers. With the current limited capacity of renewable generation on the system, and significant BESS capacity coming into service, large renewables can almost always export all of their output into the grid. In this situation PPAs are an efficient hedging arrangement.

As the system moves towards full reliance on renewables and storage this will change. When thermal generation is withdrawn from the system, renewable and storage systems must be installed that are sufficient to meet demand during adverse weather situations. This may be seasonal, having enough generation to get through a sun-less winter, or longer term, meeting demand in a year when the wind resource is low.

When the renewable resource is strong, output from renewable generation must be constrained as there will be insufficient demand to absorb all generation. As a consequence, how much energy will be delivered from a given renewable energy facility, and when, can only be predicted in general terms and may vary substantially season by season and year by year. Structuring power purchase agreements to accommodate such variations will be challenging and, most likely, unachievable for the full solar and windfarm fleets. Alternative support mechanisms will be required for a significant proportion of these fleets.

Mismatch between financing and revenue capital risk profiles

The benchmark reserve capacity price (BRCP) is based in part on the weighted average cost of capital (WACC). This is set at a level that will provide a return over 10 years equivalent to a low-risk investment such as a government bond. The risk profile faced by investors is significantly higher due to the potential changes to reserve capacity credit quantities and price as outlined above. We have also seen the risks associated with changes to the rules covering certification and the excess capacity versus price equation.

The ability to secure a fixed capacity price for five years is certainly a benefit. However, this is a relatively short time compared to the life of the asset and leaves investors facing significant price risk for the remaining life of a new project.

Balancing risks between investors and electricity customers

As noted above, investors should be carrying the risks associated with development, construction and operation of new generation facilities. Other risks are generally passed through to customers via retailer power purchase agreements, but as renewable penetration increases this will no longer be practical for the full capacity needed to ensure supply reliability.

Interaction between renewable generators and storage

An economic and technical, rather than an investment issue, is that wind farms, solar PV and BESS systems have quite different operating capabilities. Perth Energy suggests that there is probably an optimum balance between the installed capacity of each to provide electricity at the minimum cost to customers. We recommend that modelling be undertaken to identify the optimum balance between these different technologies to determine their relative values to the system. This would show whether it may be appropriate to offer different levels of support to each technology to encourage the appropriate level of investment into each.

Proposals and Consultation Questions

Proposal 1: Set the Peak RCP to 100% of the Peak BRCP if the number of Peak Capacity Credits issued equals the Peak RCT.

Consultation Questions: (1) Do stakeholders support setting the price to the BRCP at the RCT? If you have any concerns, please outline your reasons.

Perth Energy supports this proposal because it reflects the ideal situation where customers receive their desired level of system reliability, and investors receive an appropriate return on their investment.

Proposal 2: Set the Peak RCP to 100% of the Peak BRCP when the number of Peak Capacity Credits provided is between 95% and 105% of the Peak RCT.

Consultation Questions:

(2)(a) Do stakeholders support including a deadband in the Peak RCP curve?

(2)(b) Do stakeholders support the proposed settings for the deadband?

Perth Energy supports including a deadband in the Peak RCP curve as this dissuades investors seeking to avoid a small excess of capacity and ending up delivering a shortage. The 5% band above and below the RCT means that a modest excess or shortfall, some 250-300 MW, can be accommodated.

Proposal 3: Set a maximum Peak RCP at 150% of the Peak BRCP, when the number of Peak Capacity Credits issued is 85% of the Peak RCT.

Consultation Questions: (3) Do stakeholders have any concerns about the proposed parameters for the Peak RCP cap?

Perth Energy supports raising the RCP to encourage investment when there is a shortfall. This will encourage new investment and recognises the significant customer costs associated with any supply shortfall. The incentive is greatly strengthened by the expectation that this higher price will be sustained through the opportunity to secure a 10-year price.

We note that for a developer looking at Peak Capacity, there is no certainty that the high initial price will be sustained for more than a short time. In fact, the whole purpose of the high price is to ensure that a shortage, and hence high prices, will not be sustained. Given that new Flexible Capacity will most likely also provide Peak Capacity, this is probably not an issue at this time.

Proposal 4: Set a minimum Peak RCP at 50% of the Peak BRCP, when the number of Peak Capacity Credits provided is greater than or equal to 115% of the Peak RCT.

Consultation Questions:

(4)(a) Do stakeholders support a non-zero RCP floor?

(4)(b) Do stakeholders consider that a non-zero RCP floor should be recalculated each year or set based on a fixed proportion of the BRCP?

(4)(c) Do stakeholders consider that a non-zero RCP floor should allow for principal repayments, interest payments, or be symmetrical with the RCP cap?

Perth Energy does not support the steep drop in the RCP in response to excess capacity for several reasons.

- Excess capacity is not a problem in itself as it actually provides higher levels of customer reliability; there is no need to drive excess capacity from the market.
- Although the risk of very low capacity prices is seen by investors and financiers as small, the economic consequences are potentially very serious. This is a significant negative when the WEM is competing for investment funds against other locations in Australia and overseas.
- There is a high risk of overcapacity being caused through regulatory or legislative actions by governments. As well as through the execution of energy policies, the Federal government is now directly involved in the WEM through the CIS and the State Government retains considerable influence through control of the dominant gen-tailer.
- A major contributor to the recent capacity shortfall has been the significantly change to the reserve capacity requirement. This is currently high, in part due to the need to protect

against poor performance of large, aging thermal generators. It is reasonable to assume that AEMO may well reduce this once the system is dominated by high reliability renewables and storage.

- Once a facility has been built, investors are not able to respond to changes in capacity prices, nor can they hedge against them. It is economically inefficient to expect investors to carry this significant risk.

We note, too, that several of the curves in the international examples shown in Appendix A appear to be used for a quite different purpose than the WEM RCP curve. They are used to set floor prices in capacity auctions where, presumably, investors are able to hold back their project in the event that prices are too low. This is completely different from the WEM situation where unpredictable low prices are being applied to facilities which have already been constructed and investors are locked in.

In summary, Perth Energy considers that the rapid fall in prices linked to excess capacity is inappropriate and is a key barrier to investment. That said, we consider that a 50% price floor is far better than zero.

In answer to question (4)(b), Perth Energy considers that the floor should be linked to the RCP. No other recalculation mechanism should be considered as this produces more uncertainty.

Proposal 5:

5.1 Allow any new facility that provides Flexible Capacity to receive (on request) a fixed RCP for ten years

5.2 Set a maximum Flexible RCP at 160% of the Flexible BRCP, when the number of Flexible Capacity Credits issued is 85% of the Flexible RCT.

5.3 Set the Flexible RCP to 100% of the Flexible BRCP where the number of Flexible Capacity Credits issued is 100% of the Flexible RCT.

5.4 Set the minimum Flexible RCP on the same basis as the Peak RCP.

Consultation Questions:

(5)(a) Do stakeholders support a higher RCP cap for Flexible Capacity than Peak Capacity?

(5)(b) Do stakeholders consider that the Flexible RCP curve should have a deadband?

(5)(c) Do stakeholders consider that Flexible Capacity should have a non-zero RCP floor?

As noted above, Perth Energy supports the availability of a 10-year price guarantee. We also support a higher RCP for flexible capacity in recognition that this is a more demanding role which will potentially require additional capital investment than a “non-flexible” peaking facility.

We suggest that Flexible Capacity should have a dead band for the same reasons as for the Peak Capacity price.

Flexible Capacity should receive the higher of the Flexible and Peak price curves. This is because it is quite possible that the WEM will simultaneously experience a surfeit of Flexible Capacity and a

shortage of Peak Capacity. If the price curves are applied as shown, the market could be encouraging investors to build new Peaking Capacity while, at the same time, encouraging closure of Flexible Capacity, thereby exacerbating the overall system shortage.

Proposal 6: Include a review of the RCP curves in the Coordinator's regular review of the BRCP reference technology.

Consultation Questions: (6) Do stakeholders agree that the RCP curves should be considered in conjunction with the BRCP reference technology? If you have any concerns, please outline your reasons.

As a general comment, Perth Energy does not favour reviews that change the conditions applying to existing facilities. This creates more uncertainty and effectively raises the risk premium that investors and financiers need to justify investing. If, however, a review is to be undertaken, linking this to the review of the BRCP reference technology is appropriate.

Proposal 7:

7.1 Adjust existing transitional pricing arrangements to include a lookback adjustment for actual inflation.

7.2 There will be no new transitional arrangements for existing facilities not already subject to transitional pricing arrangements.

Consultation Questions:

(7)(a) Do stakeholders agree that existing transitional pricing arrangements should consider actual outcomes in addition to forecasts?

(7)(b) Do stakeholders agree that new transitional pricing arrangements are not necessary?

Perth Energy considers that indexation would be in keeping with the spirit of the arrangement which was to keep existing generators whole after previous changes were made. We agree that new transition arrangements are not necessary at present but such arrangements could possibly still be required in the future if significant further RCP changes are made.

Proposal 8:

8.1 Allow any new facility that provides Flexible Capacity using a renewable energy source to receive (on request) a fixed RCP for ten years.

8.2 Require facilities capable of running on fossil fuels and seeking the ten-year fixed price to provide in each Reserve Capacity Cycle evidence of 100% renewable fuel supply.

Consultation Questions: (8) Do stakeholders support the proposed new fixed price option? If you have any concerns, please outline your reasons.

Perth Energy strongly supports the 10-year fixed price proposal but considers that this should be available for all flexible capacity. It is a sound mechanism to help provide potential investors the level of financial security they need to justify long-term investment decisions. A 10-year fixed price

links to the use of a 10-year bond rate to develop the weighted average cost of capital used for the benchmark reserve capacity price.

Proposal 9: Require a facility requesting the ten-year fixed RCP to provide evidence that it can provide firm output for at least 120% of the prevailing ESR Duration Requirement.

Consultation Questions: (9)(a) Do stakeholders support the proposed duration requirement for the new fixed RCP option? If you have any concerns, please outline your reasons

Perth Energy questions whether this is a workable approach. The BRCP is now set on the costs associated with a battery electric storage system (BESS) which is required to have four-hour storage. If the ESR Duration Requirement for a new BESS facility is now raised by 20%, their capacity credit assignment will be reduced and an investor will not be able to recover sufficient revenue from the RCP to cover the plant capital cost.

This highlights a broader problem with trying to encourage BESS into the WEM which is that anticipated increases in the Duration Requirement directly reduce the facilities capacity certification and capacity income. To keep its investment risk to a level similar to that of other facilities, a BESS needs a guarantee of capacity credit **quantity** as well as price.

Proposal 10: WICRWG proposed longer duration ESR facilities requesting a ten-year fixed RCP together with proposed floating RCP facilities for NAQ purposes.

Consultation Questions: (10) Do stakeholders support the proposed treatment of Facilities with the new fixed RCP option? If you have any concerns, please outline your reasons.

A facility that is offered a five- or 10-year fixed RCP should, all other things being equal, be able to offer a lower price than a floating price facility leading to lower customer prices. For this reason, Perth Energy supports fixed price facilities being included alongside non-fixed price facilities within the NAQ process.

The Commonwealth Capacity Investment Support arrangements

With its CIS arrangements, the Federal Government has ensured that customers' interests are addressed through a tender process, which forces potential investors to compete directly with one another, linked to a sharing mechanism for any "excess" revenue. In addition, customers' need for system security is assured through the targeting of a specific quantity of capacity.

Investors' interests are addressed by a revenue guarantee with a floor below which the commonwealth shares in the economic pain. The investor correctly still carries performance risk associated with efficient operation of the plant in respect to sustaining plant capacity and output.

The initial set up of the CIS Agreements is more complex than the RCM process, but it avoids the need to develop the BRCP and price curves. It carries the same risk as any other auction which is that prices can be pushed up if there are insufficient bidders though this can be addressed by some form of price cap. This does not appear to be an issue in WA given that Western Power is currently assessing network connection applications which far exceed the WEM's future needs.

As the market becomes more dependent on renewables and storage, system costs will potentially be minimised by optimising the balance between the different facility types rather than just seeking MW of capacity. The CIS appears to be able to support such a change by nominating specific quantities of different types of facility.

Perth Energy encourages EPWA to closely monitor the operation of the CIS to determine whether the RCM should be adapted to incorporate a similar fixed term contract-based approach.

Final comments

In summary, Perth Energy generally supports the proposed changes. We consider, however, that investors are still being expected to take on risks that they cannot control and cannot hedge. These relate to:

- The need to commit to a project before the price and quantity of assigned capacity credits are known; and
- The uncertainty in respect to the price, and for storage systems the quantity, of capacity credits after the initial five-year project life.

These issues present a significant risk that insufficient new generating capacity will be brought on-line to meet customers' expectations of system reliability.

Should you have any questions please do not hesitate to contact me at p.peake@perthenergy.com.au or on 0437 209 972. This submission may be made public.

Kind regards

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I am based in the Perth Office and work Tuesday, Wednesday and Thursday