



6 June 2023

Energy Policy WA
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Dear Energy Policy WA,

RE: Reserve Capacity Mechanism Review Consultation Paper – Stage 2

Shell Energy Australia Pty Ltd (Shell Energy) welcomes the opportunity to respond to Energy Policy WA's (EPWA's) Reserve Capacity Mechanism (RCM) Stage 2 Consultation Paper (the Consultation Paper), released on 3 May 2023. The Consultation Paper has been developed to include outcomes of how the Stage 1 proposals will impact the operation of parts of the RCM. The RCM Review is being undertaken under clause 2.2D.1 of the Wholesale Electricity Market (WEM) Rules. Shell Energy understands that feedback from this consultation will be used to inform the development of a detailed design at Stage 3 which will include proposed rule change amendments anticipated for July 2023.

About Shell Energy in Australia

Shell Energy is Shell's renewables and energy solutions business in Australia, helping its customers to decarbonise and reduce their environmental footprint.

Shell Energy delivers business energy solutions and innovation across a portfolio of electricity, gas, environmental products and energy productivity for commercial and industrial customers, while our residential energy retailing business Powershop, acquired in 2022, serves households and small business customers in Australia.

As the second largest electricity provider to commercial and industrial businesses in Australia¹, Shell Energy offers integrated solutions and market-leading² customer satisfaction, built on industry expertise and personalised relationships. The company's generation assets include 662 megawatts of gas-fired peaking power stations in Western Australia and Queensland, supporting the transition to renewables, and the 120 megawatt Gangarri solar energy development in Queensland.

Shell Energy has recently acquired a 50% share of Kondinin Energy Pty Ltd (Kondinin) which will be our first West Australian renewables development. The centrepiece of the Kondinin project is the Kondinin Wind Farm, a wind development which would generate approximately 230MWs, across two stages, into the SWIS. Kondinin also holds approvals to develop an 80MW solar farm and ~60MW Battery Energy Storage System (BESS) which comprise stages three and four of the Kondinin project.

Shell Energy Australia Pty Ltd and its subsidiaries trade as Shell Energy, while Powershop Australia Pty Ltd trades as Powershop. Further information about Shell Energy and our operations can be found on our website [here](#).

Introduction

Shell Energy supports the majority of the package of reforms to the RCM set out in the Consultation Paper. The proposed changes should improve the efficiency and effectiveness of the RCM over a difficult transitional period in

¹By load, based on Shell Energy analysis of publicly available data.

² Utility Market Intelligence (UMI) survey of large commercial and industrial electricity customers of major electricity retailers, including ERM Power (now known as Shell Energy) by independent research company NTF Group in 2011-2021.

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which high emissions, high-cost legacy facilities providing RCM services will retire and be replaced by new facilities, including new technologies such as grid-connected BESS, amongst others.

Shell Energy will firstly address feedback provided by EPWA on the stakeholder comments received for the Stage 1 Information Paper and will then focus on the Consultation Paper's proposal to alter the recycling of capacity refunds from capacity suppliers to capacity purchasers (outlined in Proposal S). The submission comments on the adequacy of the process and analysis and evidence supporting the proposed change. Further, this submission will assess the merits of this proposed change against the WEM objectives³, taking into account other aspects of the proposed RCM reforms, alongside the wider context for the operation of the RCM.

Feedback response to the Stage 1 Information Paper

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?

We note that of the feedback EPWA received, only two submissions supported the retainment of the 14-hour fuel requirement and the majority were unresponsive. However in response to this feedback, EPWA does not provide any further rationale or willingness to undertake further analysis (as requested). Shell Energy are concerned with the decision that the requirement is still valid and the basis for this which EPWA stated is due to the implementation of the Market Power Mitigation Strategy, whereby participants would now have certainty that the costs of long-term take or pay fuel contracts can be reflected in Participant's market submissions.

We are yet to see the final published Offer Construction Guideline that forms the main part of the Market Power Mitigation framework. As a result, Market Participants do not have any certainty around whether fuel costs are able to be fully recovered. We strongly suggest that EPWA reconsider this decision as the current requirement is excessive and replace this obligation with a fuel requirement aligned with the initial intent of having sufficient fuel on site for 4-5 hours a day.

Stage 2 Consultation Paper - Position on Proposal S

In Shell Energy's view, the case for change has not been established and the level of scrutiny of Proposal S has been insufficient. Consultation and assessment at both the Reserve Capacity Mechanism Review Working Group (RCMRWG) and the Market Advisory Committee (MAC) was not sufficient and there has been no assessment of the merits of the proposed change. The future impact of the proposed change is not quantified, and the economic efficiency impacts were not assessed. Upon examination, Proposal S appears inconsistent with both the WEM objectives and the broader changes to the RCM.

Supporting analysis

The 'case for change' in the Consultation Paper

Under the current Rules, collected capacity refunds are distributed ("recycled") to other capacity providers who provided energy and met their capacity obligations during the relevant period. This arrangement has been in place since October 2017. Previously, capacity refunds had been recycled to retailers. Under Proposal S, the arrangements in place since 2017 would be reversed and collected capacity refunds would again be recycled to retailers.

The stated rationale for the proposed change is that this arrangement is considered more "equitable" than the current function, given that (according to AEMO) the WEM is now projected to have a capacity shortfall, resulting in

³ The objectives of the market are:

- (a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;
- (b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;
- (c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;
- (d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and
- (e) to encourage the taking of measures to manage the amount of electricity used and when it is used.



the procurement of both Supplementary Reserve Capacity (SRC) and Non-co-optimised Essential System Services (NCESS) to ensure the reliability standard is maintained in the WEM. If AEMO procured SRC and NCESS and the current capacity recycling arrangements continued, EPWA suggested consumers would be paying more to receive the same level of reliability.

An alternative would be to redistribute collected capacity refunds toward the cost of procurement and operation of SRC and NCESS. This option was not favoured because it would require complex intermediate settlement arrangements.

The benefits of change have not been explained to Market Participants

No evidence or analysis has been provided in the Consultation Paper to support the conclusion that retailers would allocate capacity credit recycled funds back into the purchase of other wholesale market services, such as SRC or NCESS. Additionally, in discussion at the RCMRWG and the MAC, insufficient information was provided to support a rationale for change. We suggest that EPWA demonstrate a strong change rationale for Proposal S, including outlining any behavioural or cost benefits for the end consumer.

Significance of RCM refund recycling

The Consultation Paper does not attempt to estimate the extent of funds that may be subject to capacity refund recycling. As shown at Table 1 below, an estimation has been provided for annual capacity refunds in total and for a hypothetical new entrant 300 MW scheduled generator. This modelling ascertains that in most years capacity refunds are between 3.65 to 5.05% of total capacity credit payments. Due to the sustained outage of Collie Power Station in the 2023 CY, capacity refunds increased to almost 17% of total capacity credit payments. These payments are significant and represent 3.73 and 5.2% of expected capacity credit payments received by a new entrant scheduled generator (exclude 2023 CY which is an outlier).

Table 1: Estimated Capacity Refunds and Forced Outage Rates

Capacity Year Ending	Maximum Available Capacity Credits (MW)	Average Forced Outage (MW)	Forced Outage Rate (%)
2019	4,819	116	2.40%
2020	4,888	128	2.62%
2021	4,966	112	2.25%
2022	4,925	213	4.33%
2023 (a)	4,807	505	10.50%
Capacity Year Ending	Maximum Capacity Credit Payments (\$)	Capacity Refunds (\$)	Capacity Refunds as % of Capacity Credit Payments
2019	668,690,899	33,783,394	5.05%
2020	619,225,001	26,947,701	4.35%
2021	566,738,943	20,662,372	3.65%
2022	386,961,629	18,195,832	4.70%
2023 (a)	231,413,845	39,019,538	16.86%
Capacity Year Ending	Expected Capacity Credit Payments to New Entrant 300 MW Generator (\$)	Capacity Recycling to New Entrant 300 MW Generator (\$)	Capacity Refunds as % of Capacity Credit Payments
2019	41,628,117	2,154,774	5.18%
2020	38,005,041	1,698,337	4.47%
2021	34,240,245	1,277,055	3.73%
2022	23,571,999	1,158,608	4.92%
2023 (a)	25,588,257	2,720,671	10.63%

Note (a) Period ending 24 May 2023



Source: AEMO Market Data & Marsden Jacob 2023

The introduction of a new flexible capacity product, alongside the current peak capacity product, is expected to increase the total RCM revenue. In addition, facilities holding flexible capacity credits will be required to be accredited for the provision of Frequency Co-optimised Essential System Services (FCESS). Capacity refunds from both peak and flexible RCM products will form a single pool of capacity and refunds for flexible capacity will be capped at a set proportion of total capacity revenues (Proposal P). Capacity refunds for Demand Side Participants (DSP) will also continue to form part of the recycling pool.

We demonstrate below that, if Forced Outages were factored into the determination of Reserve Capacity Prices (RCP), then RCPs would be substantially higher (for example, reflecting higher value of capacity due to Forced Outages). However, the RCP determination process does not factor in Forced Outages, therefore, capacity refund recycling is acting as the de facto mechanism for compensating available generators for the higher value of capacity credits when Forced Outages occur.

RCM recycling and tender for SRC

On 22 September 2022, AEMO sought additional RCM volumes through an SRC tender to offset a potential shortfall of approximately 174MW over the period 1 December 2022 to 1 April 2023.⁴ This shortfall reflected several factors including:⁵

- Increased forecast demand compared with AEMO forecasts when RCM requirements for the period were set by AEMO;
- Extended generation outages (Pinjar unit 10);
- Fuel supply constraints (coal shortages);
- Earlier than forecast retirement of the Kwinana co-generation plant; and
- Delays to new power generation and storage projects.

It appears that EPWA is concerned that consumers have been required to fund the cost of the SRC tender when at least part of this cost arises from eligible RCM suppliers that are not meeting their obligations and are required to make capacity refunds. EPWA has so far not identified the extent to which the cost of the SRC is attributable to the non-availability of eligible capacity and the extent to which the associated refund pool could offset the cost of the incremental cost of triggering the SRC.

It is anticipated that SRC will be triggered for 2023/24 CY. If SRC were triggered, it would reflect higher peak demand forecasts rather than expected plant outages. This highlights that the link between SRC and plant outages, and hence capacity refunds is weak, and cannot be used as justification for recycling capacity refunds to retailers.

Furthermore, the AEMO 2022 WEM ES00⁶ forecast estimates a RCM shortfall for 2025-26 of 21MW.⁷ The Draft 2023 WEM ES00⁸ indicates that Peak Demand is likely to be significantly higher in future years compared to the AEMO 2022 WEM ES00 forecasts – new expected peak demand outlook up 300 MW in 2025/26 compared to previous AEMO 2022 WEM ES00. If investment in new generation or storage capacity is delayed, due to transmission constraints, land approval delays or supply chain constraints, then there may be an increased likelihood that the SRC may be triggered again in the future. Once again, this is not connected to, or because of plant outages. Rather it is due to the AEMO's limited capacity to provide realistic demand forecasts given companies and Australian Government's commitments to decarbonisation objectives resulting in the expectation of higher demand with electrification (which has been known for several years). The variance in these new forecasts is significantly higher when compared to previous AEMO forecasts, which implies that forecasting risk has increased substantially and that the setting of future RCP's (for example, setting the Reserve Capacity Target (RCT) will be more (and likely increasingly) difficult.

⁴ See [AEMO | Western Australia's power system resilience strengthened for summer through supplementary Reserve Capacity mechanism](#)

⁵ See [SRC Review Scope of Works.pdf \(www.wa.gov.au\)](#)

⁶ AEMO, 2022 Wholesale Electricity Market Electricity Statement of Opportunities, A report for the Wholesale Electricity Market, June 2022

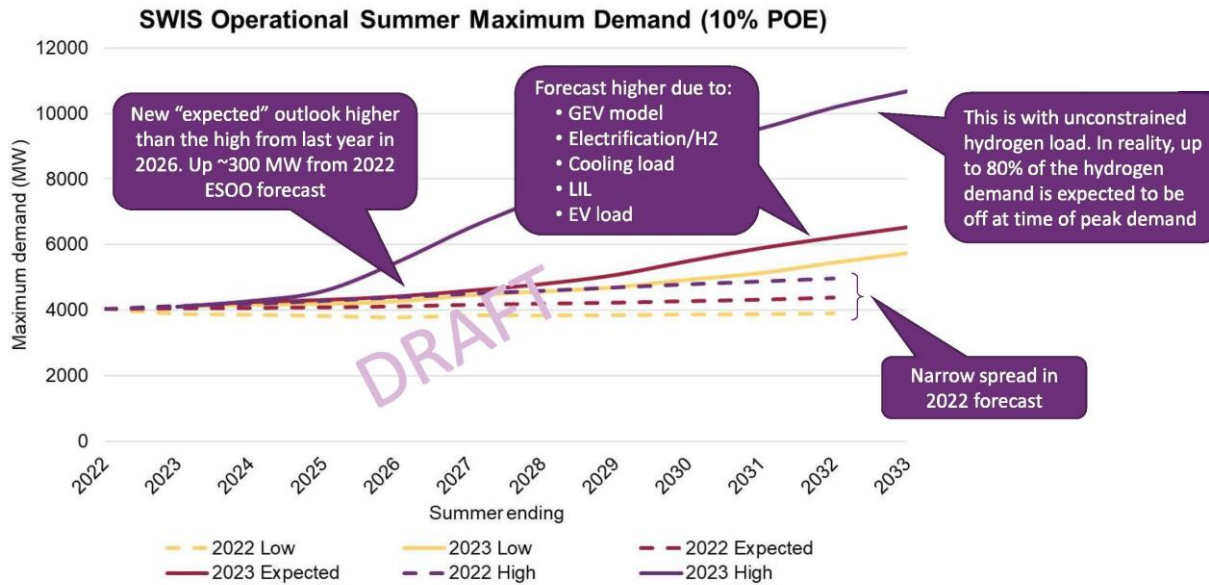
⁷ See page Request for Expressions of Interest for the 2023 Reserve Capacity Cycle, AEMO [2023-request-for-expression-of-interest.pdf \(aemo.com.au\)](#)

⁸ WA Forecasting Reference Group, 2023 WEM ES00, Draft Consumption and Demand Forecasts, 13 April 2023



Given this increased forecasting risk, Proposal S to recycle capacity credits for outages back to retailers, increases the risk for AEMO under-forecasting demand due to the reduced cost consequences for retailers of SRC, causing the RCP to be too low and reducing income to capacity providers.

Figure 1: Peak Demand Forecasts (MW)



Source: WA Forecasting Reference Group, 2023 WEM ESOO, Draft Consumption and Demand Forecasts, 13 April 2023

In summary, there is a significant risk that existing high emissions generation could withdraw from RCM markets in the future, in response to increasing competition from lower-cost intermittent generation and storage, alongside the proposed emissions penalty arrangements. In the same transitional period, delays in the energisation of new transmission may delay and raise the costs of new entrants to RCM markets. Therefore, holistically, there appears to be an elevated risk that SRC provisions will be triggered in coming years which have nothing to do with anticipated future forced outages of generation. The link between SRC and plant outages, and hence capacity refunds is weak, and cannot be used as justification for recycling capacity refunds to retailers.

Proposal S does not address the rationale for the current capacity recycling arrangements

Key considerations underpinning the decision to recycle capacity refunds to capacity suppliers appear to not have been addressed in the Consultation Paper. The analysis in the 2015 Position Paper is notably much more extensive than that in support of Proposal S. The Consultation Paper does not discuss the incentive and efficiency impacts of the proposed change to the allocation of RCM recycling from capacity suppliers.

As stated in the 2015 Position Paper on Reforms to the Reserve Capacity Mechanism that underpinned the decision to recycle capacity refunds:

Retailers who benefit from a capacity payment refund will in most cases not experience a power supply disruption – as other capacity providers deliver aggregate capacity to meet demand. This means that the retailer still receives the service it has paid for in its capacity credit obligation, but also receives a refund on that cost for no diminution in that level of service. Additionally, in situations where a capacity provider fails to provide capacity, the value of capacity supplied by all other providers increases (due to scarcity of supply). It is therefore logical to compensate these providers for their more valuable capacity.⁹

This statement highlights that retailers receive a benefit from the RCM system rather than from individual capacity suppliers. If individual capacity suppliers experience forced outages, the value of the capacity services that continue to be provided by other capacity suppliers increases.

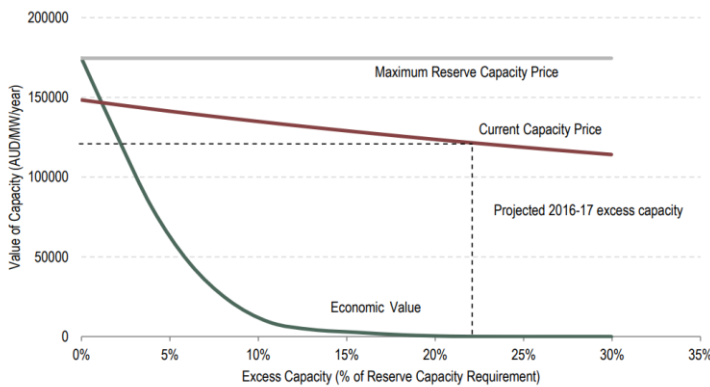
⁹ See page 42.



Reserve Capacity Prices (RCPs) are set more than two years in advance and are not sufficiently dynamic to reflect actual demand and supply conditions when capacity credits are provided. Dynamic capacity refunds, with recycling to generators, help to reflect those actual demand and supply conditions. Those generators that are available when supply is short due to forced outages of other plants receive refunds, which is a proxy for the fact that the RCP should have been higher because of the plant outage. Thus, until dynamic RCP is introduced, dynamic capacity refunds with recycling to generators is the nearest available equivalent to dynamic RCP setting.

The change in the economic value of the capacity credits provided is illustrated in Figure 2 below from the 2015 Position Paper. The economic value curve depicted by the green line reflects expected unserved energy (EUE) and is related to the WEM reliability standard.

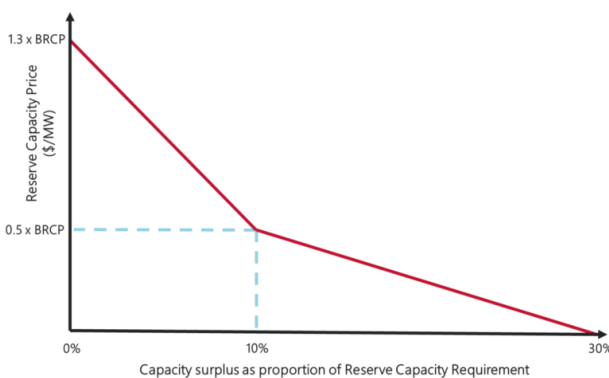
Figure 2: Economic value of capacity in the SWIS against excess capacity



Source: page 8 of Position Paper on Reforms to the Reserve Capacity Mechanism, Public Utilities Office, December 2015

Since 2017, the Minister for Energy amended the WEM Rules to sharpen the RCP curve. As a result, the decline in the RCP is now steeper, falling to 50% of the Benchmark Reserve Capacity Price (BRCP) at 10 per cent excess capacity.¹⁰ This is shown in the Figure 3 below.

Figure 3: Reserve Capacity Price curve



Source: page 55, WEM Reform: Wholesale Electricity Market Design Summary, May 2021, AEMO.

RCP does not take into account the actual RCM supply

The methodology for setting the BCRP does not incorporate any adjustment to account for outcomes where the actual level of capacity credits supplied falls short of the level used to set the RCP. There is no ex-post adjustment to the RCP where supply is reduced relative to the supply used to set the RCP.

¹⁰ See <https://aemo.com.au/en/energy-systems/electricity/wholesale-electricity-market-wem/wa-reserve-capacity-mechanism/reserve-capacity-price>



This means the RCP received by available capacity suppliers is very unlikely to correspond to the RCP associated with the actual supply of RCM for a given period. This is because the movement along the red line (in Figure 3) due to variations between forecast and actual capacity services delivered, is not reflected in the RCP. If the RCP is set on the assumption that excess capacity exceeds 10 per cent, when the actual excess capacity is only 5 per cent, then available capacity suppliers would be under-compensated by around 25 per cent.

Moreover, the RCP received is also very unlikely to correspond to the economic value of the RCM services that are supplied. Hence the red line in Figure 3 does not correspond to the green line in Figure 2.

Where the quantity of delivered capacity for a given capacity year is lower than the quantity used to set RCP, the economic value of the remaining capacity that remains available increases (moving left along the green line in Figure 2). The ex-post economic value of the RCM service does not match the ex-ante price received by available capacity suppliers. Under conditions where there is little, if any excess capacity, there is a possibility that RCP, set more than two years ex-ante, may be lower than the economic value of the capacity service.

Recycling to capacity is a proxy for dynamic RCP pricing

The current capacity recycling mechanism increases incentives for remaining capacity suppliers to make plant available under conditions where available capacity is reduced. Among other things, this reduces the likelihood that an SRC would be required. An increase in plant availability could also be expected to place downward pressure on prices in Real-Time Markets (RTM) for energy and Essential System Services (ESS).

Tighter RCM supply increases the need for dynamic RCP

Proposal S does not improve the pricing and hence supply of RCM supply under conditions where RCM supply is likely to be much tighter than it has been over most of the period since WEM start in 2006. In fact, under conditions where RCM supply may be consistently tighter, there are higher payoffs from ensuring that all available RCM suppliers are adequately compensated for the actual value of the RCM supplied.

In the short term, Proposal S would reduce the de facto RCP received by available RCM suppliers. At the margin, this could result in the earlier exit of some existing RCM suppliers, potentially exacerbating RCM supply shortfalls and increasing the likelihood that SRC needs to be triggered. In the longer term, at the margin, Proposal S reduces the point at which it is economic and does not incentivise new capacity to enter RCM markets. This is especially so to the extent that network congestion levels, and that marginal loss factors and curtailment are higher than may be assumed under the BRCP.

The SWIS Demand Assessment (SWISDA) highlights the substantial network build-out required to meet a modelled five times increase in SWIS demand.¹¹ This suggests that network congestion could be significant over the modelled SWISDA period. It is possible that total network costs (connection, renewable energy hub and core transmission system) could form a significant component of gross CONE and hence the BRCP.

All of the considerations above emphasise the importance of maintaining incentives for existing RCM suppliers to continue to be viable until new entrants are established. Current capacity credit recycling arrangements operate to increase the de facto dynamic RCP received by available RCM suppliers when RCM supply decreases below the levels used to set the RCP for a given period. This increases incentives for RCM suppliers to make their eligible capacity available. This in turn places downward pressure on RTM prices for the relevant periods. Capacity refund recycling helps to address a shortcoming in the process of setting RCPs – it does not take into account actual RCM performance and supply.

Conclusion

The Consultation Paper, and associated consultation processes throughout the development of the paper prior to its release, are not sufficient to support the proposed change to capacity refund recycling. Proposal S does not deliver efficiency or equity benefits and is not consistent with the WEM objectives and dynamic factors requiring the RCM to be more effective and efficient. It appears merely to provide for a wealth transfer rather than an improvement in economic welfare across the WEM. Shell Energy strongly suggests that Proposal S should not proceed.

Any further consideration of Proposal S must be supported by analysis as to whether competitive and regulatory arrangements are in place to ensure that recycled capacity funds are applied to SRC, NCESS, or passed back to consumers.

¹¹ See [SWIS Demand Assessment \(www.wa.gov.au\)](http://www.wa.gov.au)



The Consultation Paper does not address the rationale for the current arrangements. Dynamic capacity refunds and capacity recycling to generators support more dynamic price signals about actual demand and supply conditions at the time that capacity credits are provided. This helps to offset errors in the 2-year forward pricing currently, which gives rise to situations whereby RCPs are set too low if plant outages are higher than expected in the capacity year (i.e., supply of capacity credits is lower than anticipated) and ensures that remaining plant is available to meet reliability requirements.

Changes to capacity refund recycling should only be considered in the context of introducing dynamic RCPs and better alignment of RCP levels with RCM outcomes, as well as better alignment between RCP levels and the economic value of RCM supplied.

Given the transition to intermittent generation and energy storage facilities with only limited energy supplies (2 to 4 hours), this is not the time to reduce future revenue streams for existing generation facilities that provide firm capacity and are not energy constrained to the same extent as energy storage facilities. Recycling capacity refunds to generators provides a strong signal for plants to be available, which is critical to maintaining supply when there are significant plant outages (as occurred with the unavailability of the Collie Power Station for several months due to coal supply concerns).

We look forward to further engagement on the matters addressed in this submission and welcome the opportunity to discuss our submission prior to the development of the final design.

Please contact Tessa Liddelow at tessa.liddelow@shellenergy.com.au for any queries regarding this submission.

Yours sincerely

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