Shell ENERGY

8 May 2023

Alex Caroly
Reliability Panel
c/- Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

Dear Mr Caroly

RE: Review of the form of the Reliability Standard and Administered Price Cap

Shell Energy Australia Pty Ltd (Shell Energy) welcomes the opportunity to respond to the Australian Energy Market Commission (AEMC) Reliability Panel's ("the Panel") review of the form of the reliability standard ("the standard" and Administered Price Cap (APC).

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 more than 185,000 households and small business customers in Australia.

As the second largest electricity provider to commercial and industrial businesses in Australia[1], Shell Energy offers integrated solutions and market-leading[2] 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 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.

Form of the reliability standard

Shell Energy supports the current form of the reliability standard, in terms of a percentage of unserved energy (USE), based on the average probability weighted value of forecast potential USE events and considers that it should be maintained. One key advantage of USE is that it assesses both the frequency of loss of load events and the severity of it, in terms of MWh of load shed. Alternative measures such as loss of load expectation or loss of load probability generally only measure one aspect, the frequency or the severity. Our main concern with altering the standard is that it will result in a tightening of the standard that increases costs to consumers, above

[1]By 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.

the costs consumers have indicated they are willing to pay. This should be a critical consideration as part of this review.

We acknowledge the concerns around the changing nature of electricity generation, with more variable renewable generation coming online and thermal generation exiting the market. In our view, the current form of the reliability standard measures all risks appropriately, including the "tail risk" events that the Reliability Panel discussed in the consultation paper. A shift to more weather-dependent supply is different to one where random forced unit outages combined with high demand drive USE. However, the drivers of demand are fundamentally the same and the risk of weather-dependent supply reliability can be effectively managed through energy storage solutions as well as other supply-side firming resources. As such, forecasting both realistic weather-based scenarios of production as well as demand and options for firming of weather-dependent supply is the critical piece of information required.

To a great extent the unserved energy calculations already factor in "tail risk" given treatment of probability-weighted outcomes. Unserved energy from 10POE conditions is currently given a weighting of around 30 per cent meaning that the contribution to USE calculations outweighs the likelihood of such demand outcomes occurring. We note that AEMO data indicate that in most regions and years over 90 per cent of forecast USE is associated with the 10POE conditions.

In Shell Energy's view, the more important issue is to ensure that the modelling that produces the forecast USE outcomes is robust and can properly quantify tail risks including probability of occurrence. The modelling and presentation of potential future outcomes in the system is in fact more crucial than the actual metric for quantifying reliability. This is because the better AEMO's modelling is, the greater the confidence market participants will have in AEMO's projected outcomes. This will allow them to respond to changing dynamics in a manner that is likely to be closer to AEMO's own assessment. This should help support reliability in the system over the longer term and ensure sufficient supply is available.

We disagree with the arguments in the paper that a move to a power system based on increasing amounts of weather-dependent supply resources results in an increase in the potential for either unserved energy or tail risk, as this is also a function of the firming resources deployed to manage this risk. We accept the need for sensitivity testing around the efficient level of firming resources by artificially engineering tail-risk events in the modelling. Though the base case must be modelled on the efficient level of firming resources with reference to a range of reliability settings such as the market price cap (MPC) and cumulative price threshold (CPT). To do otherwise will result in an inaccurate assessment of the risks the proposed modelling is attempting to understand.

Similarly, there are many input assumptions in the modelling that warrant sensitivity testing. The process of future reliability analysis will require considerable evolution with the transitioning power system. This should also consider a review of the probability of event occurrence and the sensitivity of key input assumptions such as 10% probability of exceedance (POE) demand forecasts. 10% POE demand forecasts have tended to be high given the actual instances when demand met or exceeded the 10% POE forecast values. We note the Paper proposes sensitivity testing of weather-dependent supply resources which we agree is important. Yet sensitivity analysis on all key input assumptions should form a critical part of this review to allow a more accurate understanding of tail-risk to be achieved.

In fact, Shell Energy considers that the move away from large thermal power plants may offer some benefits to reliability and reduce the risk of tail events. Currently, tail risk is to a degree driven by random outages of large power plants. As these exit the market, replacement capacity is coming online in the form of lower capacity and more flexible dispatch plants. The design of large capacity battery energy storage systems (BESS) is such that whilst module or inverter failures occur, this will result in only the partial loss of output from a BESS. The presence of a greater number of smaller capacity and flexible dispatch plants reduces the risk that an outage at one or more larger capacity plants will drive significant levels of USE. We encourage the Reliability Panel to examine this issue as it undertakes modelling to better understand tail risk.

On the other side, we understand the Reliability Panel is concerned by the potential impact of 'dark doldrum' periods where there is little sun or wind production. Shell Energy recognises this is a risk as the NEM moves to supply more dominated by wind and solar production. However, solar and wind production is forecastable through the Australian Wind Energy Forecasting System (AWEFS) and the Australian Solar Energy Forecasting System (ASEFS). These low, but not zero, output events can be allowed for and modelled in the various NEM reliability assessment modelling processes and would contribute to the calculation of overall USE, lack of reserve and reliability gap periods. While forecasts are not perfect, the fact that there is a forecast available offers an advantage over the entirely unpredictable and random nature of forced outages at thermal power stations.

The current form of the standard is a simple to understand metric as it is purely based on the volume of energy unable to be supplied. This has a clear advantage to other forms of a standard raised in the consultation paper which require a more detailed explanation or would have to be combined with other metrics. Despite its simplicity we have noted that in practice many consumers see all outages, regardless of cause – which data shows is overwhelmingly a result of problems in the distribution network[3] –as being indicative of a lack of reliability in the system. Changing the wholesale market reliability standard is highly unlikely to significantly change the level of reliability (in terms of there being sufficient supply to meet demand) that a consumer experiences. A tighter reliability standard is, however, likely to expose consumers to increased costs.

We would encourage the Reliability Panel to make clear in its wider engagement that the focus of the reliability standard is purely on the wholesale market supply-demand balance with intra-regional constraints that impact inter-regional flows considered. Many consumers will have little experience of load-shedding for reliability purposes (which is indicative of the high level of reliability in the NEM) but are far more familiar with localised outages as a result of faults in the local network. We consider that it is crucial for consumers to understand the difference – a tighter wholesale market reliability standard will not improve service levels in the distribution network.

We note that improvements to the frequency and duration of local network outages have occurred, but this has only been achieved at significant additional costs to consumers. We also note the questioning by consumers of expenditure to "gold plate" the networks and the lack of perceived benefits for the additional costs incurred.[4] We consider it is crucial that lessons are learnt from this and that the voice of consumers is paramount in this review.

Shell Energy also considers the AEMC has not recognised the realities of load-shedding for reliability purposes. Load is shed on a rotational basis, with outages controlled by the market operator over a period of 40-60 minutes in order to share the burden. Often the potential for this outcome can be communicated to the market and consumers in advance. This creates less individual harm and can even allow time for customers to prepare.

Section 3.7 of the paper argues the current reliability standard assumes that customers have no preference over the timing, duration or frequency of outages. Yet, as noted above, the rotational nature of load-shedding means that a customer is unlikely to be impacted by multiple load-shedding events or a longer duration event. Rather, longer duration events may impact more customers for a similar time frame. We consider the AEMC has erred in querying whether consumers would value one eight-hour event or four two-hour events the same. In reality, rotational load-shedding means both cases would affect roughly the same number of people for the same length of time. The only difference is the time at which they experience the load-shedding and the impact this may have on a consumer's individual choices.

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[3] AEMC, Reliability Frameworks Review – Final Report, 26 July 2018, p12.

[4] For example, Energy Users Association of Australia Submission to AER on NSW Electricity Distribution Determinations: Ausgrid, Endeavour Energy, Essential Energy 2019 - 2024

In considering the potential impact on consumers, the Panel should consider the different jurisdictional policies that are designed to reduce consumer risk of the energy markets transition and how these might be accounted for in determining the potential impact on consumers. It is crucial that this value of consumer risk is not applied both at the jurisdictional policy level and again as part of this review as it would overestimate the value consumers place on risk and reliability. We also encourage the Reliability Panel to engage with the Federal Government in the design of the Capacity Investment Scheme (CIS) and analyse the impact of the CIS on reliability in the NEM.

Review of the APC

Given the recent history of the APC in June 2022 when the $300/MWh level was insufficient to cover the costs of plant generating using either coal or gas from spot commodities markets, we agree that it is important to reassess the level and form of the APC. The AEMC's rule change to temporarily increase the APC to $600/MWh from 1 December 2022 to 30 June 2025, allows the market more opportunity to consider the need for and nature of any change with sufficient time to analyse the issue and respond accordingly. Further, Shell Energy also notes the Reliability Panel's rule change request to set the APC at $500/MWh from 1 July 2025 to 30 June 2028.

In Shell Energy's view and experience, the level and form of the APC needs to be able to support liquidity in electricity contracts markets. We are concerned a dynamic APC that changes at regular intervals based on a benchmark gas price for instance, will reduce liquidity in contracts markets as the frequently changing level of the APC introduces a new level risk for parties seeking to sell contracts.

We also consider that the electricity market's APC could be linked to the gas market APC to avoid distortions across both markets. As such, Shell Energy is open to the Reliability Panel's suggested model of multiplying the gas APC by a benchmark metric such as heat rate. We add that the second metric needs to be carefully considered to ensure that it is fit for purpose, allows for various operating modes of thermal peaking plant and other firming supply side resources and does not inadvertently set an electricity APC that is lower than necessary. We are concerned about the circular nature of the current gas market settings following the review of the NEM reliability settings. In our view both the gas and electricity market settings should be reviewed by the Reliability Panel concurrently.

Setting the NEM APC based on the gas markets APC is based on the presumption that gas will remain the marginal generation during future administered pricing period (APP) events. As a market, we should not presume to know with absolute certainty which technologies will act as the marginal generator in years to come. Battery storage, pumped hydro, and even hydrogen could take on this role over time. Other technologies may also emerge over time. For this reason, Shell Energy considers a technology neutral approach to setting the APC may be necessary. This approach would provide adequate incentives for all supply side resources to continue to offer for dispatch during an APP.

This could be achieved by setting the APC as a percentage of the market price cap (MPC). This would provide consistency between the setting of the MPC and the cumulative price threshold (CPT) based on the efficient economic costs of incentivising new supply side resources or demand side participation as determined under the reliability standard and setting review guideline. Our proposed approach also recognises the fact that the APC is in effect a discounted MPC that applies following a period of high spot price volatility to mitigate systemic market failure risk. The key question here would be to determine the appropriate level of discount applied to the MPC in setting the APC, such that incentives are retained for efficient market dispatch offers by participants.

Conclusion

Shell Energy believes that the current form of the reliability standard remains fit-for-purpose and should be maintained for the time being. We contend that the proposed changes to the form of the reliability standard risk

tightening the standard such that it will impose additional costs on consumers both above what consumers have indicated a willingness to pay and for a very small improvement in reliability as observed by consumers. Any proposed change to the form of the standard must be supported by robust modelling including sensitivity testing of key input assumptions as well as demonstrating clear economic benefit for consumers.

Shell Energy also considers that the form of the APC should remain in terms of a known value. While there may be some advantages to a dynamic value that changes with gas prices, in terms of ensuring the APC is set at a sufficient level, frequent changes would add risk to contracts market and would likely reduce liquidity. Overall, we argue a reduction in contract market liquidity would impose greater costs on the market than the benefits of a more 'accurate' APC. Instead, we are supportive of the NEM APC being linked to the gas market APC. This does ensure linkages across the electricity and gas markets and avoid creating distortions between the two markets.

We are concerned that going forward this may not reasonably reflect the costs of marginal supply side resources during an APP event. We recommend that the Reliability Panel consider setting the APC at a fixed percentage of the MPC. Given the robust process for determining the MPC and CPT this may provide a more efficient outcome than linking to the gas markets APC and remove the circular nature of review that could occur.

For more detail on this submission, please contact Ben Pryor, Regulatory Affairs Policy Adviser (ben.pryor@shellenergy.com.au or 0437 305 547)

Yours sincerely

[signed]

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