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Reliability Panel
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Dear Panel members

2022 Review of the reliability standards and settings — Draft Report— 2 June 2022

EnergyAustralia is one of Australia's largest energy companies with around 2.4 million electricity and gas accounts across eastern Australia. We also own, operate and contract a diversified energy generation portfolio across Australia, including coal, gas, battery storage, demand response, wind and solar assets, with control of over 4,500MW of generation capacity.

We appreciate the Panel's clear analysis of the challenges in risk measurement as we transition away from a capacity constrained system, towards one characterised by energy constraints. EnergyAustralia has been highlighting the changes in underlying risk drivers for a while as part of current market reform discussions. We agree with the Panel's general finding that investment incentives need to be recalibrated to maintain reliability, particularly as we accelerate the decarbonisation of our energy supply.

The Panel's recommendations reflect how standards and settings should operate in the absence of policy interventions. It has also asked various questions on how settings affect risk and investment decisions, which need to be understood as part of the broader political and social environment that includes the expectations of our customers and community. Market participants will view these differently, and even on a theoretically commercial basis will respond to market settings with differing approaches to risk management. Notably, in the same way as the Panel sees merit in reflecting risk aversion in the Reliability Standard, market participants may not necessarily take a risk neutral approach to dealing with spot price volatility, hence investment signals will tend to be skewed. Similarly, customers and governments do not view price outcomes symmetrically, and high prices are almost always viewed as a sign of market dysfunction, rather than a transitory investment signal. We would welcome the opportunity to discuss EnergyAustralia's risk and investment strategies directly with the Panel and its secretariat to explore these issues in detail.

Our observations on the Panel's draft report and modelling are below.

We agree with the Panel's findings regarding the level and form of the standard

The Panel's datasets, particularly its 'Low RE' scenario, do not appear to solidly justify changes to the form or the level of the Reliability Standard. This may be tempered by:

- the modelling horizon being relatively short, focusing on risks out to 2028. Even so, over this period there are likely to be policy-driven changes in the supply mix, intentionally excluded by IES, that would tend to make the system more exposed to weather-driven and other events

- historical datasets may not be deep enough to enable a robust statistical analysis of tail risk, or others arising from longer-term trends. AEMO's recent ISP presented longer-term wind data and various case studies to explore system resilience.[1] However our expectation is that properly exploring tail risk would be a resource and time-consuming task involving many stakeholders that has not been, and needs to be, completed.

Data presented by the Panel still suggest tail risk is likely to materially increase over time. We agree with the Panel that this is a sufficient concern to consider introducing an element of risk aversion into the standard. The Panel's straw proposal of a weighted average measure could be tested in terms of how different choices of weightings and conditional probability thresholds might affect investment outcomes and costs worn by customers. The Panel should then actively seek consumer input[2] on how different options provide insurance for risk drivers, noting data limitations and ongoing work in properly quantifying tail risks. Setting dimensions of this nature would also assist the Panel and other interested parties in considering whether any changes satisfy its 'net benefit' materiality threshold. More broadly, the Panel would need to consider cost impacts associated with a change in the form of the standard in an environment where wholesale costs are generally elevated. There are also feedbacks into recommended price cap settings.

Our interpretation of the straw proposal is that it does not effectively change the form of the standard, rather as a weighted average would simply tend to make the standard more stringent. This might overcome the complexities previously considered in operationalising two (or potentially more) measures.[3] There may be benefits in briefly exploring whether different measures are more desirable in relation to different technologies or services, or as potential triggers under the RRO, a proposed capacity mechanism, renewable energy storage targets etc.

Our understanding is that the Panel will not resolve these issues for its September report. In making any recommendations for further work around risk aversion, the Panel should also consider:

- AEMO's discretion on how it interprets the Reliability Standard in its operations and forecasting

- AEMO's approach in weighting P10, P50 and P90 forecasts

- any risk-mitigating effects arising from other, more stringent reliability settings including the Interim Reliability Measure and the NSW Energy Security Target

[1] AEMO, *2022 Integrated System Plan - Appendix 4 System Operability*, June 2022, pp. 15-16.
[2] For example, in the same way as explored by the ISP 2022 Consumer Panel. See section 2: https://aemo.com.au/-/media/files/major-publications/isp/2022/isp-consumer-panel-report-on-draft-2022-isp.pdf?la=en
[3] AEMC Reliability Panel, *Comprehensive Reliability Review Final Report*, December 2007, pp. 23-24.

- degrees of risk aversion used in the transmission planning framework, which affect generation and storage investment. In particular, AEMO's 'least worst regret' approach in the ISP works towards addressing specific risks including accelerated coal closures and project delays.

We are concerned about the suggested need for large changes in price settings

Our judgement is similar to the Panel's in that we see a misalignment between current market settings and those required to deliver the investment and reliability outcomes that consumers value. We generally accept the indicative range of price settings that the Panel has set out in figure 6.9 of its draft report, and the considerations that it will make when selecting parameters from within this range.

We question, however, whether market bodies, policy makers or customers will realistically tolerate increasing the market price cap (MPC) or cumulative price threshold (CPT) as a means to deliver necessary investment, especially to the extent suggested for Victoria in the Panel's modelling.

Modelling for the 2018 review suggested a wide range of price cap settings might be appropriate, including values below the prevailing MPC at the time. This range was attributed to several factors, including sensitivity to portfolio bidding assumptions. The Panel notes its current modelling analysis includes a more extensive consideration of weather-related risks and uncertainties and consideration of the role of storage[4], which might give more confidence in the range of estimates than in 2018.

The Panel's choice of sensitivities appear to suggest that its base case results are the lower bound of what prices are necessary. The Panel's upper bound MPC of $29,000/MWh would arguably be inadequate under a Low RE scenario, and moreso under various sensitivities. The main scenario modelling assumes perfect foresight, which is unrealistic, although we note that alternative plausible assumptions are difficult to construct. Nevertheless, if the Panel's imperfect foresight sensitivity is taken as a more realistic base case assumption, it suggests MPCs of around $30,000/MWh for Victoria.

Materially higher combinations of the CPT and MPC would be required to encourage short duration storage. The Panel says it has chosen the 'middle of the band' of MPC/CPT outcomes for each candidate technology, defined by modelled sensitivities, to deal with uncertainty. The Panel should clarify its intentions here as the ranges presented in figure 6.9 of its report appear to reflect OCGT technologies, and for its base scenario only. In addition to dealing with general uncertainties, the Panel may wish to consider the merits of appropriately incentivising storage technologies when recommending CPT/MPC values.

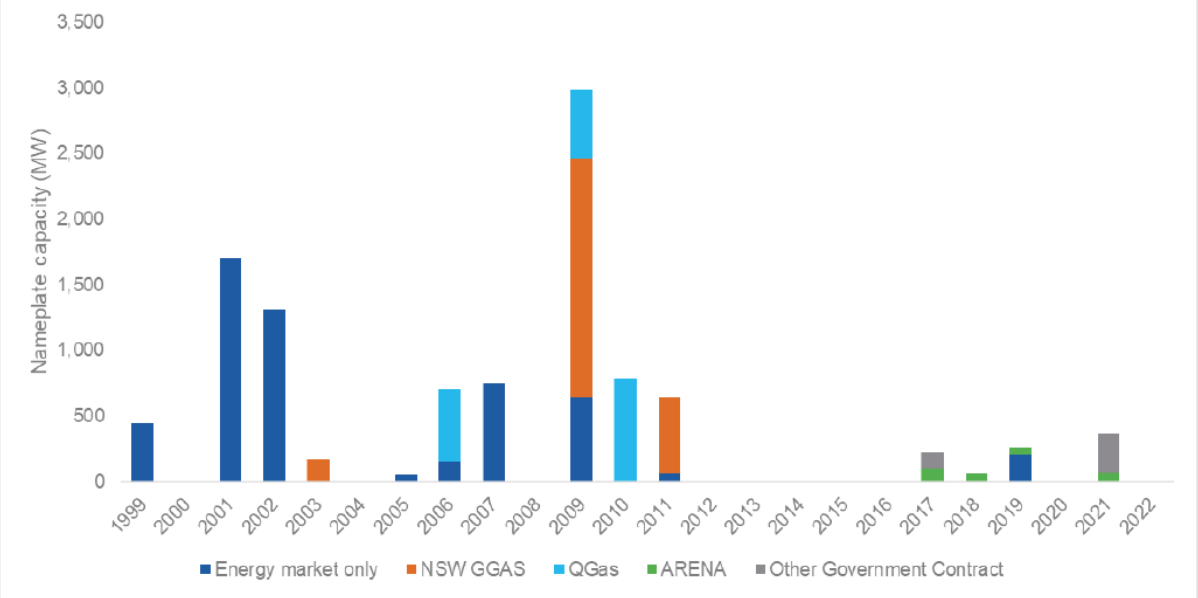
The Panel appears to have drawn longer-term implications from the Low RE scenario regarding the form of the Reliability Standard. There might be benefits in similarly anticipating how an increasingly energy-constrained system, beyond 2028, will impact efficient price settings. That is, the likelihood of an accelerated transition may present an associated need for even higher price caps when reviewing settings from 2028, compounding the transitional issue it currently faces.

[4] Reliability Panel, *2022 Review of the reliability standard and settings – Draft report*, 9 June 2022, p. 87.

We question whether large changes in price settings would be effective

The Panel's analysis of historic price outcomes in section 6.3.4 of its draft report, and of observed reliability outcomes in its earlier issues paper, does not address whether current settings have enabled new investment, particularly in the 'pure market' sense that IES has modelled. The ESB recently suggested that almost all of the investment in dispatchable plant in the last decade has involved government support in some form.[5]

Figure 4 – New dispatchable capacity (MW) by government support mechanism



Source: ESB

This chart can be projected forward, with over 5GW of new firm capacity to be commissioned by 2030. Almost all of this will be supported by governments, including 2GW for Snowy 2.0, 2GW of 8+ hour storage under the NSW Electricity Infrastructure Roadmap, and the 700MW Waratah battery (and other actions) in response to Eraring's exit.[6]

The degrees of government support versus market revenues for the above investments are important to understand. A critical question is whether this support is the cause or effect of inadequate price settings, or governments seeking levels of reliability above what is suggested by VCR estimates.

In any case, the Panel (and subsequently the AEMC and ESB) will need to consider how recommended price cap settings interact with policy and market trends.

Our view is that theoretically optimal market settings, which would allow revenue recovery through less frequent and more intense price events, will not, on their own, deliver new investment of the scale, type and accelerated timing required as the NEM transitions. Forward investment signals flowing through contract markets have limited time horizons. Other risks associated with markets, demand and technologies that

[5] ESB, *Capacity mechanism High-level Design Paper*, June 2022, p. 10.
[6] https://www.energy.nsw.gov.au/nsw-response-to-closure-of-eraring-power-station

ultimately dull efficient investment signals are listed in the ESB's capacity mechanisms paper.[7]

The impact of these and other 'missing money' effects on different technologies is also important to understand if market settings need to deliver 'duration' in response to growing tail risks:

- it is questionable whether setting price caps on the basis of marginal new entrants would ever enable investment in capital intensive plant like pumped hydro, or others relying on seasonally-stored fuel sources like hydrogen, at least without decoupling and significantly increasing the CPT

- the Panel's analysis illustrates that batteries would be unable to discharge for longer duration events relative to other technologies, thus forcing operators to earn revenues from general arbitrage, which may be less bankable

- even for marginal new entrant gas peaking plant, the prospects of much higher price risk would likely involve developers seeking additional redundancy in fuel sources (including dual fuel capabilities), choosing smaller turbines and specific locational or network access arrangements where possible. (Note this may also affect the Panel's plant cost assumptions for new entrants.)

High and volatile prices would also need to be left to occur for long periods without political intervention to provide a credible investment signal. As noted above, there is clearly a well-established history of governments taking direct action to underwrite investment in the NEM. Investors also operate in an environment where governments and regulators tend to associate high prices with improper or illegal behaviour.[8] The threat of divestment, even if remote, is still present for wholesale market participants in the broad descriptions of prohibited conduct in the Treasury Laws Amendment (Prohibiting Energy Market Misconduct) Act 2019.

Large increases in price caps would add risk

Very high price settings and elevating market risk would deter plant owners and other parties from selling contracts. The financial exposure associated with high consequence and low frequency events would see some participants take increasing long positions, erring on the side of having excesses of physical generation or storage capacity in case of outages. This reduced propensity to offer contracts was noted by EY in the 2018 standards and settings review:

> In the case of a large increase in the MPC, this may increase market price volatility (as distinct from generally high market prices). A more volatile market is inherently more risky as the opportunity to extract value is derived from shorter periods of time. The risk of not generating in the short period of time in which significant value is received from the market also makes contracting a higher risk position as the generator has fewer opportunities to recover contract settlements from generating during high price periods. For this reason anecdotal evidence suggests that above a threshold, highly volatile markets result in a reduction in propensity for suppliers to contract as the risk of failing to physically hedge the contractual position becomes too high.

[7] ESB, pp. 12-16.
[8] https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/media-releases/letter-accc-electricity-and-gas-price-rises

> Rather than a large increase in the MPC, another option is a moderate increase in both the MPC and CPT. The purpose of the CPT is described as the setting that limits participants' financial exposure to the wholesale spot market during prolonged periods of high prices. The CPT is therefore intended to protect electricity consumers from exposure to high wholesale spot market prices. The CPT may also influence the propensity for contracting between retailers and generators. If the CPT is very low, the financial exposure to the spot market would be commensurately low and therefore the need to secure risk management instruments would be lessened. Conversely, if the CPT is relatively high then risk of exposure to prolonged high prices increases, driving an increase in propensity to contract.
>
> Increasing the CPT will increase the consumer risk to prolonged high prices but allow for a reduced MPC as presented in Section 6.3.2. However, there are secondary considerations relating to increasing the CPT from its current setting. A material matter is the setting of prudential requirements for market customers. Increasing the CPT may lead to a call for increasing credit support under the participant prudential settings. This may place customers under financial pressure, increase barriers to entry and reduce efficiency in the market.[9]

The Panel's indicative MPC/CPT ranges do not permit a trade off as described by EY, that is, its choice is to increase one or both from their current levels. A further contrast with the 2018 review is heightened prospect of changes in the underling risk profile, compounding the effect of higher price caps.

Aside from contracting incentives, elevated price risk would have flow-on effects to the importance of network investment, for example the calculation of total system costs arising from different network options and timing. Network operations, including planned and unplanned outages, will also become critical in assessing participants' risk exposure. Individual plant operators seeking to mitigate the risk of outages may change their upstream supply contracting, plant location, configuration etc.

These issues notwithstanding, the predictability of price cap settings and visibility of changes, including through a transitional price path as suggested by the Panel, should assist participants by giving them time to progressively reassess their exposure to new risk drivers as part of the transition.

The administered price cap and recent developments

Alinta has lodged an urgent rule change to increase the APC in light of recent market events. We will provide views on the appropriate level and calculation of the APC as part of this process, which we expect the Panel will draw from in considering the enduring APC from 2025.

If you would like to discuss this submission, please contact me on 03 8628 1655 or Lawrence.irlam@energyaustralia.com.au.

Regards

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[9] Ernst & Young, *Reliability Standard and Settings Review 2018 – Modelling Report*, 13 April 2018, p. 64.