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Submitted via website

RE: Improving security frameworks[1]

Iberdrola Australia delivers reliable energy to customers through a portfolio of wind and solar capacity across New South Wales, South Australia, Victoria, and Western Australias. Iberdrola Australia also owns and operates a portfolio of firming capacity, including open cycle gas turbines, dual fuel peaking capacity, and battery storage. Our development pipeline has projects at differing stages of development covering wind, solar and batteries. This broad portfolio of assets has allowed us to retail electricity to over 400 metered sites to some of Australia's most iconic large energy users.

Iberdrola Australia is part of the global Iberdrola group. With more than 120 years of history, Iberdrola is a global energy leader, the world's number-one producer of wind power, an operator of large-scale transmission and distribution assets in three continents making it one of the world's biggest electricity utilities by market capitalisation. The group supplies energy to almost 100 million people in dozens of countries, has a workforce of more than 37,000 employees and operates energy assets worth more than €123 billion. Our global expertise positions us to deliver an integrated approach to decarbonisation across Australia, including through our hydrogen and networks businesses.

Our submission focuses on frameworks for procuring essential system services and the proposed directions framework, as discussed in the two sections below.

1. Essential system services

We support the AEMC's proposal to move away from the previous Operational Security Mechanism (OSM) design for procuring essential system services. While the framework had positive elements, it would have been opaque and may not have delivered necessary system services in either the operational or planning timeframes. We thank the AEMC for their detailed analysis and consideration, and willingness to avoid the "sunk cost fallacy" in deciding to move to an alternative approach.

In the near-term, the proposed framework appears to provide a suitable interim measure ahead of unbundling of system services. Our key feedback (and the

[1] https://www.aemc.gov.au/rule-changes/improving-security-frameworks-energy-transition

major issue with the proposed framework) is that it does not create sufficient incentives (and arguably creates disincentives) for AEMO and TNSPs to transition to procuring services from new resources *before* existing resources exit. A 10 year sunset period is likely to encompass the closure of all remaining coal power stations, and the proposed framework does not guarantee that suitable resources will be available in the timeframe required.

An explicit rules based obligation is required to ensure that both AEMO and TNSPs can budget for and allocate resources (both human and technological) required to plan and develop new essential system service providers *before* a shortfall emerges. This mirrors the current approach to system strength procurement. We note that this obligation should not be consider onerous – given that this work needs to happen, and aligns with AEMO's stated goals to be able to run an instantaneous zero emissions grid, a clear obligation will help avoid delays. We present some specific options and further details below. There may also need to be complementary frameworks to support investment in and trials of emerging technologies.

Further details and specific recommendations are provided below.

Future grid operation

Any framework needs to be considered in light of the updated National Enegy Objectives, which require the consideration of the achievement of emissions targets (or targets likely to contribute to emissions targets) set by participating jurisdictions. Queensland and Victoria have announced renewable energy targets of 80% and 95% by 2035, respectively, while NSW is targeting a 70% cut state economy wide emissions by 2035. All of these targets will require the rapid exit of coal generation, and the need to operate at higher national, instantaneous shares of inverter based resources (IBR).

In the near-term, the framework proposed by the AEMC appears reasonable, given the current modelling capabilities of AEMO and TNSPs. We acknowledge that, in the near-term, the complexity of the power system may require AEMO to procure combinations of units to be confident of system security while they undertake further studies on unbundling system services. Given that AEMO is at the cutting edge of power system modelling, a prudent and risk averse approach is reasonable (when coupled with sufficient transparency) even if there are near-term costs.

However, it is concerning that, despite several years of consultation on ahead markets and system services, AEMO has still not been able to define what services the grid ultimately requires and how these services will be delivered as coal and gas plant exits. If this delay continues, it creates a risk that AEMO will rely on existing units for longer than is credible based on their technical or economic closure dates.

As noted in our previous submissions, insufficient lead time for investment to manage the expected and unexpected closures of existing synchronous units could lead to system security and reliability risks, more costly outcomes for consumers, and higher emissions. For example, this could mean:

- Costly and protracted disruptions, as has occurred in South Australia following the closure of the last SA coal power station, if appropriate replacement resources are not identified and developed in advance;
- Incumbent coal power stations may be constrained on for longer, risking the success of jurisdictional emissions reduction targets; and
- Material and costly directions (or NMAS contracts), if only a small number of units are eligible to participate in a constraint.

The proposed framework is therefore not consistent with any of the National Energy Objectives.

We further note there is an "information asymmetry" where AEMO and TNSPs are the only parties able to model emerging constraints or identify what types and combinations of units would leave the system secure.

It is therefore challenging for investors (and existing participants) to identify when or where value could be delivered. Without unbundling of services, it is not clear how any new resources would be incentivised and delivered. The greatest risk to system security (and costs to consumers) would be if the the proposed framework leads to complacency in the market (e.g., an overreliance on existing units over the next 10 years) and a lack of signals for delivering the required services long-term.

Recommendations

To ensure that we have a secure and reliable grid, and avoid future costly directions, we recommend that:

- The sunset period should be reduced to three years. In the 10 year timeframe proposed by the AEMC, the majority of NEM coal units will close even under *current* emissions targets.
- There must be an obligation in the Rules for AEMO to publish the what new entrant resources could participate in and relieve any constraints or unit combinations. This could include publishing potential new entrants in the ESOO (e.g., by considering the three most popular battery and inverter installations over the past 12 months and simulating different combinations and locations) or in the ISP by ensuring that all dispatch meets security obligations (and therefore represents a credible system). Proposals must be specific enough (e.g., location and capability, specific inverter brands or technologies, etc.) that an investor could advance credible projects, which could then be further analysed by AEMO.

    - Explicit obligations will support AEMO to move beyond theoretical studies and high level scoping reports, and instead move to trials and investable proposals and specifications.
    - For example, AEMO has been considering a Fast Frequency Response service since at least 2016, but specifications were only developed after Iberdrola (formerly Infigen) submitted an explicit rule change request. Very limited analysis was also undertaken before the last South Australian coal power station closed, leading to expensive interventions.
- If AEMO considers this is too technically challenging (due to modelling limitations and the spread of new entrants), AEMO could be required to procure an increasing percentage of services from zero emissions resources. (e.g., rising over the 10 year horizon from 0% in 2024 to 100% in 2033) or an equivalent limit on the total emissions produced by contracted services. This would ensure that AEMO could justify appropriate resources to seek and contract new entrant capabilities in line with and ahead of coal closures. We note that unexpected constraints might require short-term solutions; the framework should allow some flexibility around short-term imbalance (e.g., averaged over three years). Percentage could be measured on capacity or on total expenditure.
- Any contracts with emissions intensive units under the NMAS should be short-duration (one year, with annual renewal) to avoid barriers to entry for new low emissions resources, consistent with the NEO. Those contracts should have significant penalties for non-delivery.
- Given the uncertainty and information asymmetry, contracts with low emissions resources or with new transmission investment may need to be longer duration to support investment and timely entry. These contracts could transition to a market service if/when it becomes available.

We also consider that:

- The alignment of system strength and inertia procurement seems reasonable, noting that procurement should always be competitive and not simply default to TNSP investment.
- As part of the transparency requirements, the counterfactual to AEMO's NMAS activations should be explored. For example, if AEMO is regularly activating contracts 12 hours in advance and leading to a *reduction* in IBR dispatch, this would require a review of AEMO's procedures.
- Explicit trials of synthetic inertia, voltage support, network upgrades, or other services from IBR should be accelerated.

2. Directions frameworks

In considering the future of directions in the NEM, we expect that the proposed transitional NMAS frameworks will return directions to their historical role as an emergency intervention to ensure reliability or, more commonly, security of supply. The primary driver of the compensation framework should therefore be to ensure that participants are not disicentivised to make resources available for direction.

Moving to a short-run marginal cost based model creates several problems. Firstly, relying on ISP fuel costs does not reflect the marginal costs observed by generators on the day. AEMO's fuel costs do not represent the actual costs experienced by generators, which can fluctuate daily. Even generators that have contracted fuel supply are still typically exposed to fuel spot prices at the margin.

More critically, resources in the NEM will increasingly be energy limited, particularly batteries and PHES[2]. As noted by the AEMC, these resources do not have a marginal running cost. Instead, their value is entirely determined by opportunity cost. For integrated utilities like Iberdrola, the output of these assets has been sold to consumers through our firmed renewable energy products. If the asset is not available when required (because it has been used for a direction) that opportunity cost represents a genuine loss to the business – we must buy electricity to cover our consumer load, but cannot hedge that with our firming asset.

We appreciate that the AEMC has considered developing alternative metrics. However, the lost revenue due to directions on a storage unit can vary widely. Shadowing a gas plant is unlikely to represent the opportunity cost, particularly if directions are more likely to occur at times of system stress (with high prices). A poor compensation could distort incentives for bids from storage systems if directions were considered credible, which could require earlier and more disruptive directions.

On balance, we recommend retaining the existing framework, noting that it should be rarely used in the future (as it was before system security issues arose in South Australia). If the AEMC does seek a more targeted compensation framework, this should be explicitly targeted at opportunity costs, for all generators. This may require bespoke reports for each direction, but would be more equitable for all generators.

[2] Fossil fuel based resources may also be energy limited, which was observed during the recent NEM suspension event.

3. Conclusion

We look forward to continuing to engage with the AEMC. Please do not hesitate to contact me if you have any questions on joel.gilmore@iberdrola.com.au or 0411267044.

Regards,

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