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Australian Energy Market Commission
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Submitted electronically

Investigation into system strength frameworks in the NEM

Alinta Energy welcomes the opportunity to provide a submission to the Australian Energy Market Commission's Investigation into system strength frameworks in the NEM.

Alinta Energy is an active investor in energy markets across Australia with an owned and contracted generation portfolio of over 3,000MW and in excess of 1.1 million electricity and gas customers.

Alinta Energy's generation assets currently provide (and utilise) the many different system strength services required to securely, safely and efficiently operate the NEM in a reliable state. As such, Alinta Energy expects to be directly impacted by the proposed system strength reforms.

Support for Investigation Process

Alinta Energy supports the AEMC's investigation of the NEM's system strength frameworks. It is important that the review promotes an investment framework that values security and reliability services provided by both new and existing plant. Alinta Energy is increasingly concerned that ageing generators (which traditionally provide system strength services) are retiring from the NEM, but are not been replaced by comparable dispatchable capacity with the ability to provide system strength services.

The frequency and duration of market interventions in the NEM are increasing, primarily because insufficient quantities of system strength services have been voluntarily sourced in response to existing NEM market signals. As such, participants have been obligated or directed to meet these shortfalls. This is commonly referred to as the "missing markets" of the NEM.

Providing system strength services incurs both direct costs and general wear and tear. The provision of these services deteriorates the operating life of units and unavoidably leads to additional maintenance costs.

In order to encourage additional system strength services into the NEM, participants must cover both their long and short run marginal costs of supply. The primary revenue sources for

generators are the production of energy and ancillary services. Nonetheless the NEM is frequently experiencing periods where wholesale market prices are below the long run costs of production, reducing the sustainability of the market in the long term.

If new dispatchable capacity is not brought forward soon, the system strength of the NEM will be compromised. Alinta Energy believes that new markets which value dispatchability, reliability and security, for existing and new plant, are required to give confidence to invest in the NEM.

Creating new markets for these services to be acquired would:

- Allow the service to be valued, thereby providing a price signal to new investment; and
- Provide for flexibility in the procurement of inertia volumes, dead band settings, frequency control, regional distributions, and interaction with the ancillary markets, for example, which are not currently possible under the existing practise of relying on the ever increasing AEMO market interventions for system security.

For these reasons Alinta Energy supports the AEMC's investigation. Nonetheless, any solutions recommended out of the AEMC investigation process must be done so in a coordinated manner, cognisant of the other major reforms underway including CoGATI and the ESB's 2025 reform package.

Centrally Coordinated Model

The design of any market model to value system strength depends in part upon the inherent characteristics of the service provided including:

- System strength services provided by generation plant are typically an instantaneous response to a requirement or disturbance within the power system in real-time.
- Information asymmetry is a fundamental issue. TNSP's and AEMO are the only parties whom have real time visibility of the operation of system strength within the network.
- Often, the generation plant which can provide system strength services are large synchronous thermal plant with rotators, or artificial synchronous rotating equipment, or even batteries.
- The benefits of system strength services are provided across the entire system, meaning they are non-exclusive. Generator plant which provides a positive contribution to system security cannot exclude other generators from benefiting from the services they provide.

These characteristics make establishing a stand-alone competitive market structure with numerous buyers and sellers in a transparent information environment challenging and in many respects complex. In this respect, a centrally coordinated procurement aspect to the model may provide some benefits with respect to simplicity in design and operation.

However, centrally coordinated models are not without shortcomings. For example:

- centralised forecasting and procurement models can be subject to conservative forecasting bias, leading to additional costs being applied to customers than would otherwise be necessary to operate markets securely; and
- the question of who should be the centralised procurer is an important one. Alinta Energy considers conflicts of interest risks can exist where monopoly TNSP businesses are selected as the centralised procurers of services, where in many cases TNSP businesses also seek to provide those services. Under such a scenario, network solutions are potentially promoted and entrenched, despite comparable generation solutions representing the best long-term value for customers.

To avoid such risks, in addition to AEMO's role in determining the level of system security services required, AEMO should also be given procurement responsibilities where required. This would allow for all potential suppliers; generators, TNSPs and other system security solutions, to compete on a level playing field, resulting in the lowest cost procurement for required services. Further, AEMO already contains the required experience, through the ancillary services and RERT procurement processes.

In terms of pricing services acquired through a centrally coordinated mechanism, in addition to the regulated approaches outlined, Alinta Energy would encourage the AEMC to consider ancillary tendering arrangements similar to SRAS services, allowing generators to introduce competitive tension which would guarantee deliveries of services under an expedient timeframe.

Taking the above points into consideration, Alinta Energy considers that the centrally coordination warrants further study and development through the investigation process.

Market Based Decentralised Model

As a general principle, Alinta Energy makes the point that market-based solutions are generally preferable at delivering the necessary services to maintain system strength. If designed correctly, the competitive process appropriately allocates risks to those participants who are best equipped to supply the services required and yields the greatest efficiencies to consumers in the long run. It is also the most effective long-term signal to incentivise the system strength capabilities the NEM requires.

While the AEMC's paper outlines some inherent complexities and significant costs required in calculating real time dynamic constraint equations to operate a markets-based model within the NEM dispatch engine. Alinta Energy considers that these complexities will be able to be addressed with technology advances.

In addition to the "pay for performance" mechanisms typically utilised under a decentralised market model, Alinta Energy recommends the AEMC consider compensation which provides both an "availability payment" to cover participants required LRMC and an "activation payment" to cover their SRMC. Similar to the operation of capacity payments, an availability payment for system strength services would provide the market with the required level to operate the market safely, without undermining the investment signals required to incentivise participation in the competitive markets in real time.

Alinta Energy believes the market based decentralised model warrants further study and development by the AEMC.

Mandatory Service Provision Model

The long-term sustainability of the market relies on the adequate compensation of system strength services. For this reason, mandatory models which oblige the provision of services should not be preferenced where alternative mechanisms based on voluntary and competitive services are available.

Many aspects of the mandatory provision model may at first glance have appeal given their lower costs of service in the short-term. However, it is important to recognise the shortcomings of this model in the long-term.

At present system strength services can be provided by different technology solutions, at significantly different levels of response rates, some multidirectional others unidirectional. Different technologies also face vastly different costs associated with the provision of system strength services. This implies that some generators are intrinsically more suitable to provide system strength than others, thus the service is bespoke and requires the creation of a competitive market or regulated service to determine an appropriate value.

As such, mandatory obligations of system strength services can risk creating perverse situations whereby those generators which are perhaps best placed to respond will be penalised and those generators who are worst placed to respond will be treated the same for the provision of a potentially inferior level of system strength service.

In the long run, this will lead to additional costs for generators whom are able to provide the required services and will ultimately remove the incentive for long-term investments required.

For these reasons, Alinta Energy does not believe the mandatory service provision model should proceed further.

Access Standard Model

Alinta Energy does not support the proposed obligation under the access standard model to ensure that all generators are able to perform under lower system strength conditions. By imposing a new access standard upon newly connecting generators (or generators who renegotiate generator performance standards) the efficient market for the provision of system strength services is distorted and potentially unnecessary costs are imposed on all generators acting as a barrier to investment. Under the competitive and regulated models considered above, potentially more appropriate system strength services could be procured at a more economic cost to consumers.

Under this model Alinta Energy considers the same risks would be present as identified as a deficiency of the existing "do no harm framework". That being, technology solutions/modifications such as synchronous condensers (or alternate technology modifications) are made to newly connecting generators to ensure they meet a newly

determined "access standard". However, when applied en masse, this increases the operational complexity of system strength provision in the NEM in an uncoordinated manner.

For these reasons Alinta Energy is not convinced that the access standard model will provide the long-term requirements necessary to incentivise system strength services within the NEM.

Conclusion

Alinta looks forward to participating in the ongoing consultation process and would encourage consideration of the points raised above.

If you have any queries in relation to this submission, please contact me via email: anders.sangkuhl@alintaenergy.com.au or by phone 02 9375 0992.

Yours sincerely,

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