Global Power Energy

Submission to the AEMC Directions Paper – *Improving Security Frameworks for the Energy Transition*

28 September 2023

About us

Global Power Energy (GPE) was established in order to meet the ever-growing demand for renewable energy and energy storage solutions. Since its inception, the unique advisory service that GPE provides has continually led to the success of its clients. We focus on an end-to-end, solution-based approach to aid in energy projects. Excelling in customer service, GPE specialises in providing strategic advice in order to decrease project risk, improve project delivery times and ensure key milestones can be met.

The team at GPE has extensive experience in connections, system planning, and regulation, with key team members previously holding leading roles within the energy transition. Our expertise enables us to also support clients in managing the regulatory reform underway to integrate renewable energy into the power system.

GPE is headquartered in Brisbane, with offices also in Sydney and Melbourne, and has been advising some of the largest players in the Australian energy industry on projects across the country, including large pumped hydro projects, major solar, BESS and hybrid projects, and Renewable Energy Zone network infrastructure.

Overview…

We consider some of the system security proposals to be generally good and uncontroversial. They introduce consistency across some areas of security services (Improvements to existing system security frameworks) and seek to streamline the provision of the end service (Enablement of planning timeframe security contracts). We commend the AEMC on introducing a transitional framework for the procurement of system security services (the Commission is proposing a new NMAS framework). Providing a mechanism which reduces the reliance on directions to manage security is a valuable benefit, however we do believe there are improvements available to the proposed NMAS framework.

Technology and Distribution benefits…

The ability for a wider range of technologies to provide security services represents a significant step in the transition. Allowing synthetic inertia to contribute towards the minimum threshold levels is a big step towards the acceptance that security services can be provided beyond synchronous machines.

The concept of an inertia floor and the intention to provide more equitable distribution of inertia across the NEM is likely to provide new opportunities to developers. The directions paper indicates there are more places where the services are likely to be needed and therefore more widespread opportunities to participate in this market. Coupled with the more technology agnostic approach, this provides greater opportunities for developers who intend to include storage coupled with grid forming and synthetic inertia technologies.

NMAS Framework…

Under the proposed new NMAS framework, AEMO can procure unit configurations to maintain a secure operating system as a transitional measure and/or procure security services with the purpose of trialling new system configurations or technologies. AEMO is required to define their needs as part of the procurement process, but this may not be sufficiently early enough for participants to consider what future looking system security services the developments might provide.

Recommendation

I. Further clarity as to what security service(s) are required would be helpful for the market; given they cannot be inertia, system strength, fault levels or any of the services procured under other frameworks.
II. Provide an indication of the timelines in which these security services are expected to be required to allow investment decisions to reflect the future security need.

Procurement and sandbox linkages…

We were wondering if the current proposal contains somewhat of a missed opportunity, as AEMO is not obligated to use the NMAS framework for trials and the experimental sandbox concept.

All of this is generally positive for the future of the system, however realising the full benefits is heavily reliant on 'real-world' testing. These new technologies must prove their reliability and, for all involved, they must gain confidence in this reliability such that we are willing to not only turn the technologies on but, at the same time, literally turn the traditional system support capabilities off.

Without trialling how the emerging technologies and capabilities can meet the security services gap and successfully move them into the market, the risk is the status quo will likely remain for longer. It makes the transitional arrangement less transitional than it might otherwise be.

Recommendation

III. A reasonable improvement appears a linked procurement pathway whereby the procured security service must be linked to a trial or further learning that seeks to ultimately negate the need for the security service.

IV. Implement an indemnity mechanism for AEMO that would allow them to take measured and calculated risks as part of the sandbox process. An overly conservative approach may prevent meaningful experimentation and maintain the reliance on traditional security service providers.

Directions Compensation…

The Commission has proposed a comprehensive framework for the provision of system security services because AEMO's reliance on directions to provide these services has become more BAU than a mechanism of last-resort - which all stakeholders agree will not meet the needs of a transforming power system.

The overarching intent here then, is to create a framework where directions are once again only applied as a mechanism of last resort, with system security services procured under a market based BAU approach.

Concurrently to this reform, the Commission is reforming the compensation paid to generators under direction.

A SRMC framework has been proposed applying principles (in summary) that directions compensation should only reflect operational costs, and that directions framework does not incentivise the provision of security services.

This means on the one hand, a framework is being implemented to ensure the use of directions returns to the 'last-resort' model and, on the other, the compensation for being able to provide a commodity under these "extraordinary market circumstances[1]" as described by the ACCC, is being reduced.

During its 2002 review of directions in the NEM, the ACCC determined the existing 90% compensation approach appropriate because:

"*In the event of a direction, one would expect the commodity to be in short supply at the time. As such, the payment to directed parties should be a fair payment price that reflects a market under scarcity conditions*[2]".

The ACCC went on to note this approach as appropriate as the price is not the result of a competitive market (i.e. SRMC), but rather a market where there is only one buyer and one seller where maximum value is appropriate[3].

[1] D02+59125.pdf (accc.gov.au). pg. 20
[2] Ibid.
[3] Ibid.

In a reform designed to return directions to its originally intended framework in operating as a last resort – perhaps a market design for compensation as applied to any scarce commodity remains equally appropriate.

Recommendation

V. Retain the principle of scarcity market conditions to directions compensation as the whole intent of this reform is to return directions to a scarce marketplace. At worst, pause and re-evaluate once the remaining changes are implemented.

Non-traditional generating technologies…

The proposed approach also disproportionately impacts non-traditional generating technologies, with battery and other energy storage systems particularly impacted, including by the deliberate approach to remove compensation for opportunity cost.

This exclusion fails to recognise that emerging technology like batteries and pumped hydro are inherently energy constrained. In turn, this entrenches the perception of "infinite fuel" that has traditionally accompanied large thermal generation (particularly coal).

Energy constrained participants regularly schedule their generation to derive the best return on finite inputs. In the end, fuel used now cannot be re-used later and opportunity is lost. Had the electricity market spot prices reflected a participant's perceived opportunity costs at the time of the direction, there may not have been the need for a direction at all.

This inequity is magnified by the further potential inequity – acknowledged by the AEMC and its request for alternate approaches – assigning a zero-dollar value to the energy or FCAS supplied under direction by BESS technology.

The AEMC acknowledges this in its paper and goes on to propose a series of alternative equivalences (setting hydro and BESS benchmarks equivalent to OCGT or CCGT) which they acknowledge may still not adequately reflect the true costs of battery operation.

The paper goes as far as to identify factors which would contribute the direct costs incurred by the owners of batteries. It then argues making an exception for battery storage (to reflect the actual cost associated with the operation of batteries) risks, introducing significant opportunity related costs. We disagree that this is necessarily the case and that even if this is seen as a risk, the emerging technology should be given the benefit of the doubt to ensure appropriate investment signals are being sent to invest in non-traditional technologies.

Failing to recognise the stark differences between BESS and other technologies risks providing inadequate compensation will likely force additional participants to make claims for additional compensation, which is counter to the stated aim of the changes.

Recommendations

VI. Allow compensation for opportunity cost as energy constrained technologies are a market construct that should be reflected in market design principles and approaches.

VII. Determine an appropriate value for BESS energy under direction that genuinely reflects the operational costs of battery storage operation and supports investment certainty.

Acknowledgement

GPE genuinely acknowledges the Commission and AEMC SME's extensive amount of excellent work and thinking applied to this reform and is available to discuss our submission further. Please contact christian.jensen@globalpowerenergy.com.au or matt.hyde@globalpowerenergy.com.au.

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