James Hyatt
Australian Energy Market Commission
Level 6, 201 Elizabeth Street
Sydney NSW 2000

07 May 2020

Dear My Hyatt,

Investigation into system strength frameworks in the NEM

ENGIE Australia & New Zealand (ENGIE) appreciates the opportunity to respond to the AEMC Investigation into System Strength Frameworks in the NEM.

The ENGIE Group is a global energy operator in the businesses of electricity, natural gas and energy services. In Australia, ENGIE has interests in generation, renewable energy development, and energy services. ENGIE also owns Simply Energy which provides electricity and gas to more than 720,000 retail customer accounts across Victoria, South Australia, New South Wales, Queensland, and Western Australia.

Reform is timely

ENGIE agrees with the AEMC that there are elements of the existing system strength framework that are sub-optimal and that emerging system strength issues in multiple regions of the NEM mean that it is timely to update the framework. ENGIE is supportive of reviewing the definition of system strength in the NER to better reflect contemporary understanding of this phenomenon. Determining how best to define system strength is a foundational matter – only once the AEMC has done this will it be possible to fully evaluate the competing models for future procurement.

ENGIE also notes the practical issues that have arisen with the "do no harm" provisions and consider that a more centralised model of procurement is likely to be more efficient, especially given the challenges of accurately modelling the power system that are faced by individual generation proponents. Given that this modelling depends on a full understanding of the characteristics of each generation unit, including those seeking to connect, that there are challenges even for a TNSP or AEMO to carry out the modelling effectively.

Nonetheless, ENGIE retains healthy concern about models that led to increased centralised procurement and believes consumers need certainty that such models best support their interests.

The South Australian situation

ENGIE considers that the ElectraNet process to procure minimum system strength levels provides a case study of the challenges inherent in system strength procurement processes[1]. On the face of it, the selected option was considerably cheaper than the alternative, which suggests it was a sound decision in any case. However, this may be contingent on factors specific to the requirement and the available service providers and the comparison may not be so clear-cut in a future procurement process of this sort.

The procurement process was unavoidably affected by the fact that it was comparing two quite different propositions. On the one hand was the procurement of the service from a combination of generators, including ENGIE's plant. In committing to provide the service, they were effectively committing to be prepared to run at least at minimum generation levels whenever required, which in turn would mean that they would have to ensure a minimum level of dispatch, whatever the resultant spot price. In practice they would likely be called on at times of very high renewables output when prices would tend to be low. So, bids to provide system strength would need to account for the risks of not covering costs in the energy market. It's possible that future models of integrated dispatch will make this conundrum easier and to this end ENGIE looks forward to the AEMC considering Hydro Tasmania's proposal on this matter (Rule change proposal ERC0290). The calculus of generator provision of system strength service will also be affected by any future introduction of an ahead market as currently being considered by the Energy Security Board.

On the other hand, was the provision of system strength services through the building and operation of four new synchronous condensers to be installed on ElectraNet's network. While the generators would only get paid for the duration of their contract, ElectraNet would receive a regulated return for the full life of the assets (40 years). ElectraNet assumed a ten-year assessment period, beyond which they considered there was considerable uncertainty about the costs and benefits of the options. This arrangement constitutes an irreversible decision where customers are prevented from benefiting from technological advances and competitive service provision in the future. ElectraNet were also able to apply for additional revenue to cover expected incremental operating expenditure.

The comparison was also affected by the fact that the generator option required all three generation owners that were asked to tender to participate. This may have affected some parties' assessment of their bids. It's not clear from the economic evaluation report whether a third option would have been a hybrid combination of synchronous condensers and generator contracts that would not have relied on all three generators and what the outcomes of that would have been.

ElectraNet's economic evaluation cautions that they cannot be sure that either option will ensure minimum system strength is always met and though both would reduce the requirement for AEMO to direct on synchronous generation periodically, there may still be an ongoing need for some directions. It is not clear whether either option could be expected to result in fewer directions than the other.

[1] Information on the process obtained from ElectraNet's Addressing the System strength Gao in SA – Economic evaluation report

It is further noted that, as with all situations where a network business is asked to decide between a capital expenditure option and an operating expenditure option, that effective decision making is predicated on there being no capital expenditure bias.

Interestingly, ENGIE also additional owns assets in South Australia that could have provided synchronous services akin to those ultimately chosen but seemingly were in non-preferred locations. ENGIE fully respects the process of selection pursued by ElectraNet, it is unfortunate in alternative circumstances existing assets couldn't be mobilised.

These observations are not intended as criticisms of ElectraNet. In fact, it is understood ElectraNet have complied with the rules in force at the time and professionally progressed the above-mentioned processed. Rather this information is presented as a learning opportunity to build on in developing frameworks for the future.

Consider dynamic efficiency in designing future procurement methods

The market for energy in the NEM has been successful over many years in large part due to design features that promote dynamic efficiency. This entails rewarding participants appropriately for their contribution to supply in a way that is consistent with efficient investment decision-making. This is the tension against market design features that may deliver lower prices in the short-term but are not sustainable.

In the case of system strength (and the point is applicable to other grid services, such as inertia), several observations can be made.

Mandating provision of system strength without compensation from generators that can do so, does not provide any sort of scarcity signal of the value of synchronous generation's contribution to system strength. Accordingly, it does nothing to ensure adequate levels over the long run as older synchronous plant exits the market. Nor does it provide signals to new entrants of the value of contributions they may be able to make.

Similar limitations apply to the use of directions to maintain system strength especially with proposed rules that result in:

- consumers benefiting from the merit order effect of generators being directed on this displacing the marginal generator in the bid stack; and
- bare cost recovery (not guaranteed to be full cost recovery at that) only for the directed generator.

While directions may need to be used as an adjunct to procurement frameworks they should be used as a last resort. Note that one definition of "last resort" is where supply may be available but at an "inefficiently" high price. Inefficiently high is a subjective concept especially in the case of minimum system strength requirements, without which the entire system may be exposed to unacceptable security risks.

Lowest cost supply of system strength services is likely to entail comparing several potential service providers, including both regulated network businesses and market exposed businesses. This is likely to be the case even if the ability of individual generation units to guarantee a supply of system strength services is not without limits.

A procurement method that tries to compare the annualised cost of a regulated asset with the cost of a limited-period service contract will inevitably favour the former but not necessarily result in least cost provision over the

longer term as it locks in costs for the full life of an asset regardless of whether it gets stranded in the future by lower cost alternatives or a change in demand for the service. Whether a regulated return is applicable should be dependent on the service not the service provider, but if it used, the trade-off inherent in transferring stranding risk to the consumer should be accounted for.

The AEMC's four potential models

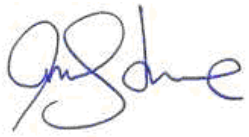
In the light of the points above, ENGIE considers that the mandatory service provision and access standard models set out by the AEMC are unlikely to be effective ways to ensure sufficient system strength in the longer-term. The centralised approach and decentralised approach both merit further consideration. As the latter is predicated on harnessing the power of markets to the greatest extent possible it has the potential to deliver the most efficient outcome over the longer term. However, its complexity may be a barrier to implementation. Further analysis will be required to fully evaluate these two models.

Interaction with other regulatory proposals

The AEMC has already signalled that it will incorporate consideration of the Hydro Tasmania proposal noted above into this review. Subsequent to the publication of the discussion paper, TransGrid submitted a rule change request (ERC0300) aimed at addressing the issues arising from the "do no harm" provisions and it would be sensible to also incorporate this into the review. The Energy Security Board's review of ahead markets has the potential to materially affect AEMO's ability to determine when and whether there are going to be sufficient synchronous resources online for a given dispatch interval to ensure system strength. Accordingly, this review should integrate developments from that review.

Should you have any queries in relation to this matter, please do not hesitate to contact me on (03) 9617 8415.

Yours sincerely,



Jamie Lowe
Head of Regulation