Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

Submitted via online portal

11 August 2020

Dear Sir/Madam,

System Services Rule Changes Consultation

ENGIE Australia & New Zealand (ENGIE) appreciates the opportunity to respond to the Australian Energy Market Commission ("the Commission") in response to the System Services Rule Changes Consultation ("the Consultation").

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.

Summary

ENGIE is supportive of the Commission progressing these rule changes. The proponents have collectively identified a range of genuine issues of concern. Some of these issues may benefit from further analysis to establish whether they are sufficiently concrete to warrant the proposed response. The proposed new markets and procurement options also warrant further analysis so that stakeholders can better assess the costs benefits and risks of each. ENGIE are pleased to note that the proposals are largely focussed on leveraging the power of markets to find the efficient way to provide these services.

ENGIE acknowledges the linkages between the rule changes as well as the other elements of the Commission's work set out in the paper as well as Energy Security Board (ESB) processes such as the consultation on system services and ahead markets.

ENGIE supports the Commission and the ESB working closely on these relate projects. In particular if progress can be made on developing system service markets that integrate with the existing market framework, this will shed greater light on the necessity or otherwise of the proposed mandatory day ahead market, given that security appears to be the major driver of this proposition. On this note, we commend to the Commission a recent report for the AEC that explores this issue[1].

ENGIE supports the Commission's proposed framework for assessing the rule changes, including the definition of the system services objective, the design framework and the design principles.

Background

The rule changes canvassed in the Consultation are intended to ensure adequate and efficient supply of a range of important services for the reliability and security of the NEM. These include inertia and sub-six second frequency response, system strength, ramping and operating reserves.

In each case, the NEM has since its inception, and until recently, successfully delivered these services despite there being no direct incentive on participating generators to do so. Inertial responses and system strength were provided by virtue of the generation stock being predominantly synchronous. Operating reserves and ramping services were generally available because the design of the market, including the secondary contract market, encouraged generator availability and flexibility to allow participants to defend their contract position in the event of plant failure or late changes in the expected spot price for a dispatch interval.

Accordingly, the concerns that the rule change proposals seek to be addressed are twofold, noting that there is some linkage between them.

Issue one: declining role of synchronous generation in providing energy

The lack of synchronous generation is the other side of the coin of the growth in inverter-based resources (IBR) – namely, solar, wind and battery storage (to some extent the growth of rooftop solar PV has contributed to this trend too). IBR plant does not inherently contribute to inertia or system strength. Indeed, the interaction of nearby IBRs may also exacerbate system strength issues in that part of the grid[2]. It would be logical to begin explicitly rewarding the provision of such services, as several of the rule change proposals seek to do, and the Commission has been exploring this in the context of system strength for some time. The challenge is how best to do this and to optimise provision of these services alongside the operation of other markets.

To this extent, the Infigen Energy rule change for fast frequency response appears at first sight to fit well into the existing market framework. While fast frequency response is not a direct substitute for inertial response it should reduce the inertial response required across the NEM and enable a secure system with lower levels of synchronous generation at any one time. IBRs may be able to provide this service.

By contrast, the Hydro Tasmania proposal and the Delta proposal for unit commitment appear focussed on ensuring a certain level of synchronous generation, with the underlying implication that only this type of generation can provide system security. This may well be a reasonable working assumption today, but as techniques for managing systems as a whole and IBRs specifically evolve, it may cease to be. AEMO has signalled

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[1] Scheduling and ahead markets, Creative Energy Consulting
[2] See explanation of such issues in *Managing system strength during the transition to renewables*, GHD Advisory

that it believes it can manage progressively higher penetration of IBRs over time[3]. So these proposals may need to be considered in the context of whether they are intended to be transitional arrangements, and if so, whether they are focussed on making the best use of the existing generator fleet or supporting signals for new investment in synchronous generation. This does not negate the importance of this rule change during this time of transition.

System strength remains more challenging. It is locationally specific and can be provided via a range of assets and arrangements. Some, but not all of these are either necessarily or at least most easily provided by transmission networks service providers (TNSPs). Unlike generators, TNSPs are used to providing services, especially asset-based services under a regulated framework. It is understandable, therefore that TransGrid as a TNSP is proposing a framework that is based around delivery of system strength by TNSPs under this regulated revenue framework.

While ENGIE supports the idea of a probabilistic determination of system strength requirements, co-ordinated procurement, and the removal of the do no harm provisions, further consideration of the potential drawbacks of TNSP procurement is warranted.

In the light of the Commission's findings that there is a risk of a capex bias in the network economic regulation framework[4] the possibility that TNSPs may invest in self-owned assets (capex) rather than procure from third party suppliers (opex) cannot be discounted. Effectively procuring services from synchronous generators separately from the supply of energy and other services is a challenge even aside from the risk of capex bias.

These considerations may make AEMO better placed to procure this service and allow TNSPs to compete against other service providers on a level playing field. Alternatively, the AER could be given powers to oversee the TNSP's approach to delivering the necessary levels of system strength. In any case the nature of the procurement process should be fit for purpose and not designed to suit the expectations of any one specific service provider.

Issue two: greater need for energy reserves even as suppliers of dispatchable energy decline

The basic issue as framed by Infigen Energy is that there is on the one hand a higher risk of contingency events, including those traditionally not classified as credible, and an increasingly wide range of new and unknown modes of failure, leading to higher requirements for operating reserve capacity.

On the other hand, there is decreasing in-market reserves (i.e. generation that is offered available into the market that is not dispatched). Hence the need for a new market to specifically incentivise such reserves. ENGIE notes that one of the other successful energy-only markets, the Texas ERCOT market, has an operating reserve, albeit with an administrative price curve. Delta's proposals for ramping services notes similar issues, with a greater focus on the impact of solar generation in creating the requirement for more reserves.

ENGIE considers that, given the NEM's historical success in delivering adequate in-market reserves, that this thesis should be more thoroughly tested before introducing new markets, which will lead to new costs for consumers (noting that if well-designed these markets should also reduce costs elsewhere, such as in RERT procurement).

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[3] Renewable integration study, AEMO
[4] Economic regulatory framework review: 2018 Final Report, AEMC, pp. 14-37

ENGIE further notes that any gap between the demand for and supply of in-market reserves is at least partly a function of the level of the market price cap and cumulative price threshold. While it is accepted that lifting the price cap may create other challenges and is not necessarily a panacea (especially in the context of ongoing government intervention dampening investment signals as discussed below), it is nonetheless another potentially clear signal, that the current price cap may not be set at the optimum level. If an operating reserve market is introduced, it can be added to a growing list of market reforms designed to get around the limitations of the price cap, including the reliability reserve and the Retailer Reliability Obligation.

From spot markets to investability

The proposed new markets, assuming appropriately designed, will work in two ways. They will create incentives for the existing stock of dispatchable plants to be available at times when energy price signals alone are not sufficient for them to be available. However, if they are to be an enduring solution, then they are likely to have to contribute to investment decisions as well (including potentially delayed closure, or disinvestment). Coal plants will continue to retire through the next couple of decades and at some point, there will need to be new supply of dispatchable resources that can provide the full range of services sought. To the extent that IBRs can provide these services then there need to be adequate and enduring price signals to support their developers' decisions to invest extra in the ability to provide services beyond weather dependent energy.

Key to this is a reliable price signal. Spot markets are (or should be) highly dynamic which can result in volatile revenues. In the energy market, the solution to this is the contract market, which allows the conversion of volatile 5-minute revenues into quarterly, annual or multi-year fixed revenues. This characteristic, which can be termed *hedgeability* is crucial. So, where spot markets are being contemplated, their hedgeability must be considered. This is also important on the load side as contract markets allow large users and retailers to manage their costs. Elements of the bill that are not currently hedgeable, such as RERT cost are becoming an increasing concern for large users.

In this respect, one element of the Hydro Tasmania proposal – that providers of synchronous services be paid their bid price for doing so (separately from their energy provision, which will continue to be paid at the clearing price) may need careful consideration. ENGIE notes Hydro Tasmania's logic that this approach helps demonstrate the consumer interest, but the complication of having an alternative reference price may outweigh the benefits, especially if it influences energy price bidding.

The alternative to spot plus contract markets is long-term contracting. The extreme version of this is regulated network revenue, which entails an implicit contract to pay for approved assets in full for their full technical life, regardless of whether they deliver sufficient value to the system for their full lifetime. This approach undoubtedly supports investability, but at the cost of dynamic efficiency. Accordingly, consideration should be given to the risks of stranding before committing customers to pay for services over a long period. It may be in customers' long-term interests to pay a little more now for the possibility of avoiding stranded costs later.

Notwithstanding the above, the Commission has to reckon with the undermining of investability by what Infigen Energy calls “random and capricious government interventions[5]”.

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

Yours sincerely,

Jamie Lowe
Head of Regulation

[5] Infigen Energy Limited, *Operating reserve market* — Electricity rule change proposal, 19 March 2020, p.4.