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Dr Kerry Schott AO
Chair | Energy Security Board | John Gorton Building
King Edward Terrace | Parkes, ACT 2600
Submitted via: info@esb.org.au

8 March 2018

Dear Dr Schott,

Response from EnerNOC to the Energy Security Board's **National Energy Guarantee Draft Design Consultation Paper**, dated 15 February 2018.

EnerNOC is an independent demand response aggregator with experience operating in twelve countries. We work with commercial and industrial energy users to enable dispatchable demand-side flexibility, and offer that flexibility into wholesale capacity, energy, and ancillary services markets, as well as to networks and utilities. Locally, EnerNOC is a market participant in the Wholesale Electricity Market (WEM) and the National Electricity Market (NEM). EnerNOC's regional head office for Asia-Pacific is in Melbourne. In 2017, EnerNOC became part of the Enel Group.

EnerNOC is grateful for the opportunity to comment on the Energy Security Board's (ESB) consultation paper. As an independent demand response aggregator, our comments in this submission are specifically focused on demand response (DR), and what must occur in order for DR to play its envisaged role in the National Energy Guarantee (NEG). EnerNOC's local affiliate Enel Green Power Australia has lodged a separate submission with comment from the perspective of a generation project developer. The views in this submission are drawn from EnerNOC's recent experience as a market participant developing demand response flexibility in the NEM:

1) Developing reserves for AEMO in the recent Long Notice RERT procurement
2) As a participant in the AEMO-ARENA demand response trial
3) As a Small Generator Aggregator (SGA)
4) As the NEM's first Market Ancillary Service Provider (MASP)

With any questions relating to this submission please contact Matt Grover on 03 8643 5907. EnerNOC would be glad to contribute further to the ESB's consultation process upon request.

Regards,

Jeff Renaud
Vice President & Managing Director - Asia Pacific

Introduction

EnerNOC is encouraged by the consideration wholesale demand response[1] has been given in the ESB's published materials to date. The ESB should be commended for building on the recommendations of the 2017 Finkel Review and making clear its intention that dispatchable DR be classified as a resource eligible for use in the proposed Reliability Guarantee.

With a properly functioning mechanism to facilitate and quantify wholesale DR, EnerNOC estimates that at least 5% of the dispatchable capacity contracted under the Reliability Guarantee would come from DR, because it is a low cost source of reliable, dispatchable capacity. The potential benefits to both reliability and cost from DR are significant – properly incorporating DR into the NEM will reduce the need for incremental peaking plant to be built on the supply side.

However, EnerNOC is concerned that the ESB's efforts to ensure that DR plays a role in the Reliability Guarantee will be for naught. This is because the task of creating a mechanism to facilitate and quantify wholesale DR has been carved out of the NEG consultation and left in the hands of the Australian Energy Markets Commission (AEMC) in their Reliability Frameworks Review. The AEMC has yet to develop and present to stakeholders any detail about any new mechanism that will usefully facilitate the operation of DR in the wholesale energy market – and by extension, in the Reliability Guarantee. Without a new mechanism, there will be no change to the status quo, and wholesale DR will remain underutilised in the NEM.

Accordingly, EnerNOC suggests that the ESB work closely with the AEMC on their Reliability Frameworks Review to ensure that a workable new mechanism to facilitate wholesale demand response is designed, accepted, and implemented on a timeline that will allow for DR's incorporation in the Reliability Guarantee. The last time the AEMC recommended the design and implementation of such a mechanism (as part of its 2012 Power of Choice recommendations[2]), incumbent interests – to whom the new mechanism represented increased competition – significantly watered down the mechanism design during the stakeholder consultation process, such that the AEMC ultimately could not approve the rule change request put before it. The ESB must ensure the same thing does not happen this time.

Key issues

Below we detail four key issues that must be urgently addressed in order for the ESB to realise its vision of DR playing a useful role in the Reliability Guarantee.

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[1] In this submission we refer exclusively to "wholesale DR", meaning DR that participates "inside the energy market" by responding to high spot prices by modulating energy consumption - the same way that supply-side resources modulate generation in response to spot price signals. This in contrast to DR that is procured and participates "outside the energy market" variously referred to as "reliability DR", "emergency DR", "RERT" or "strategic reserve". While EnerNOC believes the latter has a significant and critical role to play in the future of the NEM, reforms relating to the former are most relevant to, and critical for, the development of the NEG.

[2] AEMC, Final Report, Power of choice review - giving consumers options in the way they use electricity. 30 November 2012, p115

1. **Issue #1 – DR provision must be 'unbundled' from the choice of retail supply contract, and made a separately contestable service.**
   Today, energy users in the NEM are only able to participate in wholesale DR with the agreement and active facilitation of their current retailer. The retailer serves as a single gatekeeper to the DR options an energy user does or does not have access to. Some retailers don't offer DR at all, and the NEM's retailers have proven uninterested in, or incapable of, developing wholesale DR options for all but the largest and most sophisticated energy users in the NEM.

2. **Issue #2 – There is no way for independent aggregators to directly interface with the wholesale market to capture the value of wholesale DR**
   At present there is no mechanism through which independent aggregators can directly contract with energy users and serve as their representative to the wholesale market for purposes of facilitating DR. In this way, energy users' access to DR is fully bundled to their choice of energy supplier. This is a glaring weakness in the NEM's frameworks that is hindering competition and innovation – particularly when compared to liberalised energy markets overseas,[3] where the vast majority of demand response participating in wholesale markets has been developed and managed by independent aggregators.[4] If presented with a mechanism to interface directly with the wholesale market, the NEM will see a boom in demand-side innovation, led by aggregators. New-entrant aggregators are likely to include C&I load flexibility specialists like EnerNOC, residential battery control system manufacturers, smart thermostat companies, EV fleet management companies, and other innovative new-energy technology solutions.

   As evidence for the potential impact aggregators will have on the provision of wholesale demand response that could serve the NEG, we would point to what happened after the AEMC approved the recent *Ancillary Services Unbundling* rule change, which 'unbundled' the provision of FCAS from an energy user's choice of retailer, and allowed independent aggregators to participate in the FCAS markets for the first time. Today, just eight months after the new rule took effect; new-entrant independent aggregators have increased the amount of DR participating in the FCAS markets by approximately 5X, whilst carving out a 5-6% market share from incumbent suppliers (and growing). An illustration of this growth can be found in Appendix A. This increase in competition unlocked by the *Ancillary Services Unbundling* rule change has contributed to a 64% reduction in Contingency Raise FCAS prices so far in 2018, relative to 2017.[5] If the AEMC can create a mechanism that has the same 'unbundling' effect in the wholesale energy market, aggregators will immediately

[3] For example - in Europe, the European Commission's 2016 Clean Energy Package includes specific articles mandating that all member states provide direct wholesale market access to independent aggregators. Source: Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on common rules for the internal market in electricity, 30 November 2016. See Article 13, Clause 1 and Article 17, Clause 1.

[4] For example – in PJM in the United States, of the > 9,000 MW of demand response participating in the wholesale market, 81% has been brought forth by independent aggregators, with only of the portion of the remaining 19% brought forth by retailers. Source: PJM, 2018 Demand Response Operations Markets Activity Report: March 2018, Figure 4, accessed 8 March 2018.

[5] Average combined price, R6, R60, R5. Calendar year 2017 compared to 2018 through 6 March.

begin innovating and developing new dispatchable resources that will compete alongside generators in the wholesale energy market, and will be contracted to help retailers meet their obligations under the Reliability Guarantee.

3. **Issue #3 – There's no way to sell financial hedge contracts (like caps) that are backed by physical load reductions.**
   On the supply side, any market participant can build a generator, register it with AEMO, run the generator when prices are high, earn spot revenue, and sell transferrable financial contracts like caps to other market participants – contracts that are backed by the physical generator. Indeed, these are exactly the kind of contracts for dispatchable capacity the ESB envisages retailers will procure to meet their Reliability Guarantee. However, there is currently no way to earn the spot price for a load reduction, and consequently no way to sell and back a financial contract using DR. Without a new mechanism that allows DR to earn the spot price the same way a peaking generator does, and thereby sell load-backed, transferable contracts to other market participants, it will be impossible for the ESB to realise its vision for DR in the NEG.

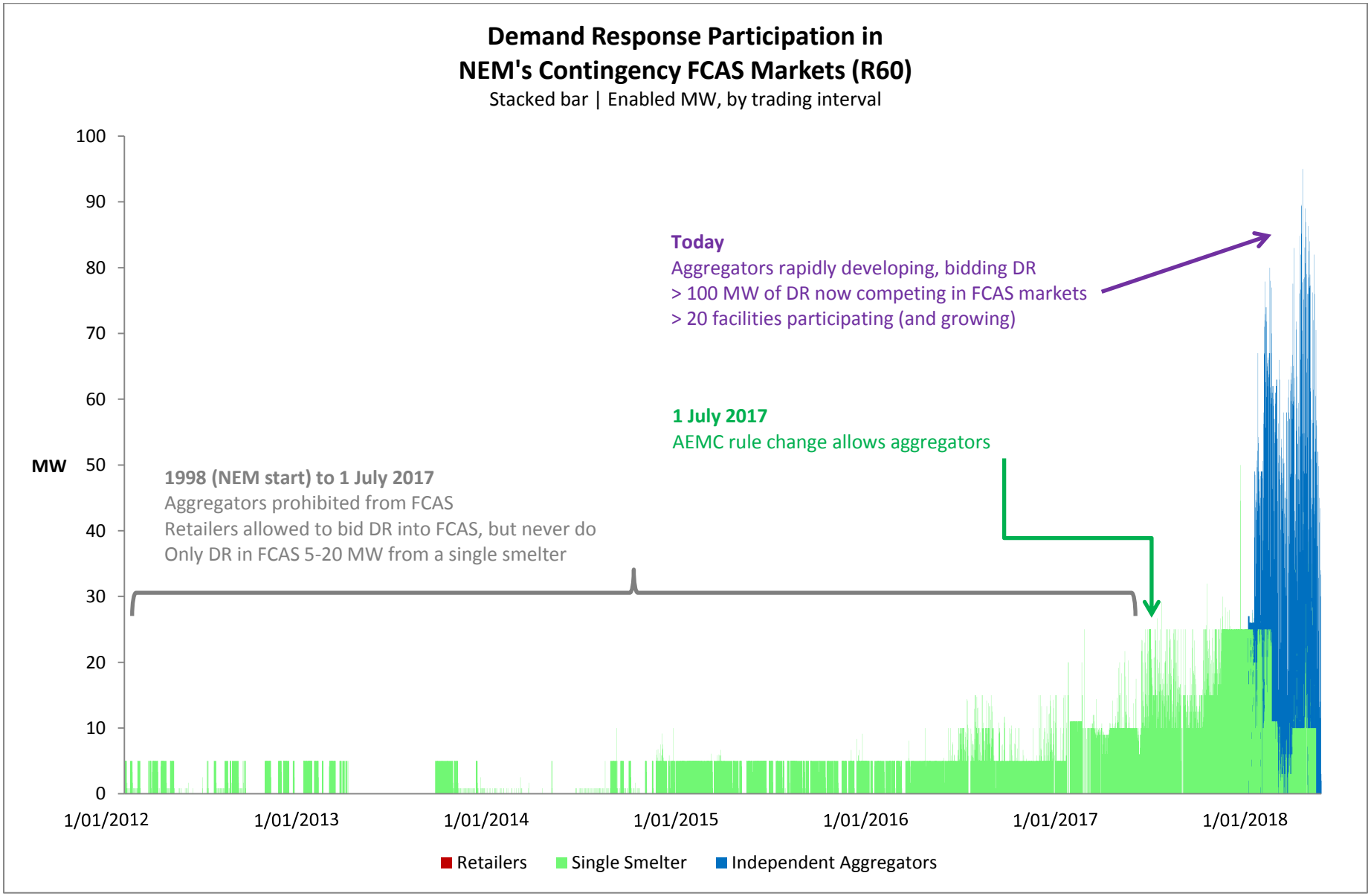
4. **Issue #4 – There are no standards in place to measure and verify DR**
   Without a standardised framework for measuring quantities of DR delivered, there is no way to verify how much DR has been contracted under the Reliability Guarantee, or how much DR has been delivered to the wholesale market when dispatched. This issue will persist regardless of the resolution of issues 1-3, i.e. even if DR provision remains 'bundled' and aggregators remain excluded from the wholesale market. For example, a retailer today who is operating some wholesale DR with a group of its large customers has no way to 'prove' to the market (and to regulators) how much DR it has developed and intends to hold up as evidence it has met its Reliability Obligation. Quantifying DR for use in the Reliability Guarantee will require the AEMC to propose, consult on, and implement standard measurement and verification methods, including defined baselines – though no mention of doing so has yet been made by the AEMC in the course of their Reliability Frameworks Review.

In Conclusion

Under a new mechanism to facilitate wholesale DR, new-entrant aggregators will build dispatchable virtual power plants from diverse aggregations of behind-the-meter resources, they will sell cap contracts, and they will thereby create tradeable, physically-backed contracts that any retailer can purchase in order to meet its Reliability Obligation. This will increase wholesale competition, promote innovation, increase financial market liquidity, help to avoid overinvestment in supply-side peaking plant, and help to ensure the Reliability Guarantee is met at lowest cost.

However, the fate of such a mechanism seems to be at risk – EnerNOC suggests that the ESB work closely with the AEMC to ensure that its Reliability Framework Review sufficiently addresses the aforementioned issues. If it doesn't, there will be no change to the status quo, there will be very little DR participation in the NEG, and the NEM will continue to be overly reliant on supply-side options controlled by incumbent generators.

Appendix 1: Impact of "unbundling" ancillary services and allowing independent aggregators into the NEM's FCAS markets



Shown: R60 (Slow Raise) Market, Enabled MWh by trading interval from dispatchable units APD01, VENUS1, ASNENC1, ASQENC1