

30th September 2019

Submission by email to: info@esb.org.au
Energy Security Board / COAG Energy Council

Subject: Energy Security Board Post 2025 Market Design Issues Paper, September 2019

SA Power Networks welcomes the opportunity to respond to the Energy Security Board (ESB) issues paper in relation to post-2025 market design for the National Electricity Market.

SA Power Networks is represented on the ESB Working Group for this initiative and will continue to engage with the ESB through that process over the coming months to provide input to the future market design options under consideration. We also support and endorse the views of Energy Networks Australia in their submission to this paper. In light of this we have limited our response to this issues paper to a brief summary of our current perspective on the issues at hand.

At a high level, we consider that the future market design needs to consider the following issues:

- The transition is not just about the progressive displacement of traditional baseload generation with intermittent renewables, it is also fundamentally a transition from centralised to distributed energy, to a future state in which up to 50% of energy consumed in Australia may be generated by small-scale Distributed Energy Resources (DER) connected at the distribution network¹. The future market design must
 - enable and unlock the full value of energy customers' investment in DER, recognising both the value of the energy produced and the value of services DER can provide; and
 - create the right investment signals for the appropriate level of investment in distribution network infrastructure and distribution network operational systems to ensure the timely evolution of today's distribution networks to a stable and robust two-way platform.
- Market-based solutions will not necessarily be the most efficient means to deliver all outcomes. The future market design needs to consider the most efficient mix of technical standards and requirements, off-market interventions, and future markets.
- The NEO should have primacy; the electricity system is already an essential service, and the security and reliability of the system will only become more critical to society as sectors such as transport and industry progressively electrify in future.
- While we recognise that this process is considering post-2025 market design, we consider that there are critical 'no regrets' actions that can and should be taken in the short term that will lay the foundations for an effective post-2025 market. This review could develop a short-term action plan as well as a post-2025 market design.

¹ ENA/CSIRO Electricity Network Transformation Roadmap, 2017

We have provided some further observations in response to the specific questions posed in the issues paper in Attachment 1.

Should the ESB require further clarification of any of our comments, please contact Bryn Williams, Future Networks Strategy Manager, on (08) 8404 5502.

Yours sincerely,



Mark Vincent

General Manager, Network Management



Attachment 1 – responses to specific questions raised in the issues paper

1. *What scenarios and shocks should be used? How should these be used to test market design?*

We think that the ISP 2019 scenarios are a reasonable basis. Noting that the five ISP scenarios capture specific combinations of assumptions, there may be a need for further sensitivity analysis around combinations that are not represented in the five main scenarios.

An alternative approach would be to begin with a theoretical optimal end state for the NEM (in terms of the future generation mix, network capacity, etc.) and consider to what extent the proposed market might achieve that.

2. *How can market and economic modelling best be used to evaluate individual components of market design or the end-to-end market design?*

The modelling and evaluation process will need to consider:

- Which outcomes will be delivered most efficiently by markets, and which may be most efficiently achieved through appropriate technical standards or off-market interventions. The modelling will need to be able to explore alternatives, which will include modelling the impact of possible technical standards and other interventions on market outcomes.
- To what extent we should create new market mechanisms to try to address challenges that are by their nature transitional, or whether we should be designing a market for the post-transition future state of the energy system, and managing some of the transitional issues through specific out-of-market interventions by governments.
- The staging of market reforms, to identify those changes that are readily achievable and will deliver most benefit early and lay foundations for future evolution.
- The administrative cost of new markets relative to the benefits being sought.
- The learnings from previous and current efforts to model future markets, e.g.
 - The modelling of possible distribution market models being undertaken by consultant Baring for the AEMO / ENA Open Energy Networks project²; and
 - Previous modelling of long-term directions in the Australian electricity system undertaken by CSIRO for ENA in the Network Transformation Roadmap project³ and, prior to that, the Future Grid Forum⁴.

3. *Is the assessment framework appropriate to evaluate the effectiveness of future market designs? What else should be considered for inclusion in the assessment framework?*

The proposed assessment framework seems reasonable. Our feedback is as follows.

- We agree that the NEO should have primacy; in designing efficient markets we must not lose sight of the fact that electricity is an essential service.

² <https://www.energynetworks.com.au/joint-energy-networks-australia-and-australian-energy-market-operator-aemo-project>

³ <https://www.energynetworks.com.au/electricity-network-transformation-roadmap>

⁴ <https://publications.csiro.au/rpr/download?pid=csiro:EP1312486&dsid=DS13>



- We note that there appears to be some overlap between the 12 proposed evaluation criteria so there may be opportunities to consolidate these. Fewer criteria would be preferable.
- Criterion G, should consider equity as well as empowerment – markets need to create value for all customers, not only those who are actively engaged in the energy system.
- For criterion H, the evaluation should consider market resilience to other kinds of shocks like disruptive new retail models.
- Criterion I should perhaps be broadened to consider *optionality* in general, i.e. markets should be robust to a wide range of possible futures, not just those arising from government policy changes.

4. *Have we identified all of the potential challenges and risks to the current market? If not, what would you add?*

5. *Which of these challenges and risks will be most material when considering future market designs and why?*

The set of challenges seems reasonable. We offer some initial comments and observations on the challenges below.

Driving innovation

- Markets need to not present barriers to innovation, but innovation is not an end in itself.
- The modelling also needs to consider the risk of new or unforeseen retail models that cause rapid and significant disruption – the ‘Uber’ effect.
- We also note that Energy Networks Australia (ENA) is currently running a ‘Network Tariff Reform Roundtable’ together with consumer groups, AER and AEMC to discuss how to spur retail tariff innovation (that is, innovation in packages for customers that incorporate network cost reflective signals) under a competitive market framework.

Investment for reliability

- The discussion paper emphasises the need to have appropriate market signals to encourage timely supply-side investment, but there need also to be appropriate investment signals and incentives to encourage increasing demand-side flexibility.

Integration of DER

- We see integration of DER as a key factor; this is an area in which South Australia is currently at the forefront globally.
- In order to facilitate the ongoing uptake of DER, the Rules will need to recognise that the service provided by distribution networks now extends to the management of network capacity for export as well as import, and place appropriate regulatory obligations and incentives on networks to support embedded generation. This will create future markets for services that can increase hosting capacity, enable tariff reform and create a framework for appropriate levels of distribution network investment.

Resilience

- Future market design needs to understand the increasing criticality of distribution network reliability in a future energy system (a) where up to 50% of energy consumed may be



generated by DER connected at the distribution network⁵ and (b) which may be increasingly reliant on fast frequency response services from home batteries and other behind-the-meter DER to maintain system-wide stability. Network incentive frameworks for reliability will need to evolve alongside new markets for system security services.

- We also note that in a future low-carbon economy the value of reliability of the electricity system as a whole will tend to increase as key sectors such as transport and industry are electrified; what is already an essential service for all citizens will only become more critical to society in future. Energy markets are underpinned by a stable technical platform and we must not create market structures that put system security at risk in pursuit of incremental improvements in financial efficiency.
- Some services to support resilience may be more efficiently provided through either technical standards or bilateral agreements than new markets.
- Future markets should not preclude networks from providing services such as system strength and inertia services etc where this is efficient

6. *Which (if any) overseas electricity markets offer useful examples of how to, or how not to, respond to the challenges outlined in this paper?*

We don't have a view on this at this time.

⁵ ENA/CSIRO Electricity Network Transformation Roadmap, 2017

