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Post 2025 Market Design Review  
Energy Security Board

By email: [info@esb.org.au](mailto:info@esb.org.au)

### **Essential Energy - Response to Post 2025 market design issues paper**

Essential Energy welcomes the opportunity to provide a submission to the Energy Security Board's (ESB's) post 2025 market design review issues paper.

Essential Energy supports this review and considers that an examination of the NEM's design is welcome given the scale of technological change and the increasing empowerment of consumers. However, while this review is occurring there are also several important reviews and projects underway that will have significant and long-term impacts on the market. More clarity, on how the post 2025 review will incorporate the potential impacts of these projects, would be helpful.

The ESB is rightly adopting a 'whole of market' approach in this review. The electricity supply chain is fundamentally shifting, and indeed traditional roles and responsibilities are no longer clearly defined or even applicable. Technology allows consumers to completely disengage from the market or actively trade within it, with the level of wholesale market risk exposure largely at their discretion. Localised management of the distribution network and active islanding of communities from the central grid during times of peak load are possible. Emphasis therefore needs to be placed on understanding how the system as a whole interacts with a recognition that the balance is changing between the primacy of the role of the wholesale market and the increasing functionality and importance of distributed resources.

To that end, careful consideration must be given to the future role of the distribution network in a world with high penetration of distributed energy resources (DER). These assets must be more effectively utilised by a framework that allows for effective orchestration and optimisation of these resources connected to them. Effective utilisation of distribution level resources has the potential to defer or eliminate the need for future transmission and system security investments.

Essential Energy recognises the value of drawing lessons from other jurisdictions. However, international examples should be carefully considered and not cherry-picked for apparently appealing elements that are reliant on fundamentally different risk allocation principles to the NEM's design. They must also be used in cognisance of the specific Australian context and circumstances. The provision of services to customers in geographically-diverse regional and remote areas, across different climates is one example of this.

Our response to the specific issues raised in the issues paper is attached to this letter. If you have any questions in relation to this submission, please contact Therese Grace, Regulatory Strategy Manager on 02 9249 3121 or [therese.grace@essentialenergy.com.au](mailto:therese.grace@essentialenergy.com.au).

Yours sincerely

A handwritten signature in black ink that reads "Chantelle Bramley". The signature is written in a cursive, flowing style.

Chantelle Bramley  
**General Manager, Strategy, Regulation and Corporate Affairs**

## Essential Energy submission to the ESB post 2025 market design review issues paper

Answers to specific questions raised in the paper:

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

The use of the Integrated System Plan (ISP) modelling scenarios as a starting point appears reasonable. These scenarios have been subject to consultation and comment already through the work that the Australian Energy Market Operator (AEMO) has done. It is also reasonable to have a consistent set of assumptions informing different regulatory processes.

Essential Energy agrees that additional scenarios may be required to test the impacts of market design on external factors such as financial markets. These additional scenarios should be subject to further consultation, as required.

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

Modelling and scenario analysis can provide useful insights; however, modelling is only as useful as the data and input assumptions used. The ESB should be careful about over-reliance on modelling and quantitative analysis, particularly if looking at one part of the market in isolation. Flow on impacts to other parts of the market should be carefully considered. For example, if the ESB is considering changes to wholesale market design, the impacts on the ability of retailers to effectively manage wholesale market risks and the flow on consequences for customer bills should be considered.

Changes to the market should not be predicated on a single view of the future. Any market design proposals should be robust and based on a wide range of possible (but likely) futures. Any modelling should be subject to sensitivity analysis to test this.

### **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 assessment framework appears to be comprehensive.

Some comments and proposed additions:

- **Consumer empowerment** is included in the assessment framework. This is worthwhile, however, not all customers will engage with the energy market in a meaningful way. Any proposed changes to market design should recognise this fact and ensure that the appropriate consumer protections are in place regardless of the level of engagement with the energy market. Customer experience and outcomes should be considered when assessing any potential changes to market design.
- **Practicality of implementation:** The objective of this review is to consider what changes are required to ensure that the NEM market design remains fit-for-purpose over the longer term. Therefore, it is unclear whether practicality of implementation of reforms is an appropriate assessment criterion. The focus should be not on how easy a reform would be to implement but rather whether the benefits of a particular reform outweigh the costs of implementation. For example, a change to market design may be complicated and take time to implement but the associated benefits would be very large. Perhaps the application of pragmatism would be a better choice – recognising that meaningful changes to existing frameworks may be more effective.
- Essential Energy is also of the view that the assessment criteria could also include a consideration of whether the proposed market design is suited to the provision of energy to regional and remote areas.

**Have we identified all the potential challenges and risks to the current market? If not, what would you add? Which of these challenges and risks will be most material when considering future market designs and why?**

One area that will be of importance is the ability of networks to continue to put downward pressure of network charges, and therefore customer bills - while meeting customers' expectations. Customer preferences and expectations are changing and as a result the range of network services demanded by customers are likely to change.

In a world of increasingly distributed generation, effective utilisation of the distribution network, and the grid and consumer benefits that DER can bring, should be carefully balanced against investment in new assets which may not be required in the longer term. Any consideration of changes in how transmission investments are assessed and funded should also consider the potential contribution of the distribution network to maintaining system security and reliability. Utilising existing assets before building new ones is a reasonable principle to help manage the cost of energy market transition for consumers.

Dynamic distribution level operation:

To face the challenges posed by DER, distribution networks will need to make some investment to increase visibility of network conditions and build the capability to plan and operate the network in a more dynamic way. This type of anticipatory expenditure can be difficult to justify under the current regulatory framework as the benefits to customers may be difficult to accurately quantify. In response to this, networks will need to undertake extensive customer engagement to explain the issue to customers and to gather feedback on how customers would like them to respond to the challenges and prepare for the future.

Essential Energy welcomes that the ESB has listed the Open Energy Networks project as a key program that is already underway and examining issues regarding the integration of DER into the market.

The Open Networks project has examined a series of 'no regrets' actions that would be required to enable a distribution system operator (DSO) market. These actions will provide benefits to customers no matter what the structure of a future DSO world looks like. The no regrets actions generally relate to gaining greater visibility and understanding of the low voltage network. Once visibility is improved distribution network system providers (DNSPs) will be able to define limits to network capacity in a more dynamic way. This will ensure that network assets are utilised more efficiently.

Essential Energy suggests that these 'no regrets' actions should be included in the post 2025 market design

Delivering energy to customers in new ways

The electricity sector in Australia and globally has been historically characterised by monopoly service providers, high levels of government ownership and limited customer choice. These characteristics are changing rapidly with the privatisation of large parts of the industry, the blurring of the traditional segregation of generation, transmission, distribution and retail and, most critically, the dramatic increase in the choices available to customers.

It is now possible for many customers, particularly in rural and regional areas to disconnect from the network, or 'go off grid'. Many customers that remain connected to the network are consuming less from it following investment in solar panels and, increasingly, batteries. The trend of reduced cost and increased efficiency of solar panels experienced over the last 30 years is likely to continue, and a similar trajectory in cost and efficiency should be anticipated for batteries.

In addition, customers will have more opportunity to engage with the energy market as they move from passive consumers to 'prosumers' that both consume energy but also provide energy services back into the market. New reforms such as the proposed demand response mechanism will see customers participate in the wholesale market and extract value from their consumption decisions. It is important that any reforms of this kind consider consumer protections and should have appropriate consumer safeguards in place

Network access reform

The issues paper focuses on changes to access and charging at transmission level through references to the Australian Energy Market Commission's (AEMC's) coordination of generation and

transmission investment (COGATI) review. However, there is little discussion of access reforms at the distribution level. Given the timeframe for this review, Essential Energy considers that the future of network access and charging at distribution level is also within the scope of this work.

As the number of customers with embedded generation increases, the issue of how distribution networks apportion access to the network will also require consideration.

The electricity network is a scarce resource and access to the network should be considered – current “first come first served” arrangements may not be fit-for-purpose over the longer term. This is currently under consideration at the transmission level but will impact on distribution networks and customers with DER. The issue of access is closely linked to how network charges are designed and the services for which distribution networks can charge their customers.

### Tariff design

Tariff reform is a key enabler for dynamic network operation and a range of other network and consumer benefits. The drivers of costs for distribution networks are changing as the way our customers use the network changes. For example, the proliferation of DER on our network may require upgrades to the network that are unrelated to increases in peak demand.

There is currently no mechanism available to distribution networks to appropriately allocate the costs imposed by solar exports. This is because the under clause 6.1.4 of the National Electricity Rules (NER), DNSPs are prohibited from charging use of system charges for the export of electricity generated by the user into the distribution network.

Given these changes Essential Energy supports a re-examination of the services provided by the distribution network and how we can appropriately value these services. This may mean rewarding customers where their DER contributes to the network (for example, by reducing peak demand) but also charging customers for the costs imposed by increased solar penetration on the network (for example, by causing voltage issues).

Again, all of these reforms comply with the principle of effectively utilising the current asset base and ensuring there is a balance of emphasis between central and decentralised generation, transmission and distribution. It also suggests there is a lot more work to be done on the distribution networks before consideration of additional transmission projects beyond those priority projects already identified.

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

Essential Energy supports the use of international examples to inform this work. However, care should be taken when using international examples and the analysis should consider different regulatory contexts, ownership structures (for example, vertically integrated utilities) and resource mix.

The specific geographic conditions in Australia also pose challenges for using the experience of overseas markets to inform market design in a NEM context. The NEM is characterised by long stringy networks connecting pockets of population centres. Therefore, drawing examples from countries with meshed networks with dense populations may not provide much insight. This is of particular importance to Essential Energy, as a large distribution network characterised by low customer density operating in regional and remote areas. Any proposed reforms at the distribution level should consider these circumstances and international examples should be adapted where necessary to suit local conditions.

One element of using international examples, that may be particularly instructive for this work, may be the pacing and sequencing of reforms over time. This may provide insight into which identified reforms should be pursued first to enable further changes over time.