

Kerry Schott AO and Clare Savage  
Energy Security Board  
Email - [info@esb.org.au](mailto:info@esb.org.au)



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**Re: Energy Efficiency Council response to post 2025 market design issues paper**

Dear Ms Schott and Ms Savage

The Energy Efficiency Council (EEC) thanks you for the opportunity to comment on the Energy Security Board's *Post 2025 Market Design Issues Paper*.

Improving energy management is essential to ensure that electricity remains reliable and affordable. Energy management is a broad term that includes energy efficiency, demand response and load shaping. Improved energy management can:

- **Deliver a huge volume of reliable capacity**

Energy management delivers low-cost, reliable and zero emissions capacity – in fact, the International Energy Agency (IEA) has concluded that improvements in energy efficiency have delivered more capacity than any form of generation, and now call energy efficiency 'the First Fuel'. In Australia, industrial sites can conservatively deliver at least 3.8 Gigawatts of demand response.<sup>1</sup> In addition, improvements in energy efficiency could conservatively reduce annual electricity consumption in the National Electricity Market (NEM) by over 25 Terawatt hours by 2030 – equivalent to more than three times the annual output of Liddell.<sup>2</sup>

- **Support the transition to clean generation**

In addition to providing dispatchable capacity, flexible energy use can help the NEM incorporate higher levels of wind and solar generation. For example, pre-cooling insulated homes during the middle of the day can both absorb the excess output of solar PV systems and reduce the size of the evening peak. Accordingly, Germany has adopted the principle '*Energy Efficiency First*' (discussed later in this submission) as a central plank of the *Energiewende*.

- **Ensure that energy bills remain affordable**

Energy management primarily lowers consumers' bills by lowering the units of energy that they consume – energy efficiency improvements in Germany between 2000 and 2017 saved the average German household \$790 off their energy bills in 2017.<sup>3</sup> However, energy management can also lower the cost per unit of energy by providing low-cost capacity. After demand response and energy storage were allowed to provide Frequency Control Ancillary Services (FCAS), the cost of FCAS dropped substantially.

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<sup>1</sup> ClimateWorks Australia 2014, *Industrial demand side response potential*, Climate Works Australia, Melbourne.

<sup>2</sup> Figure of 22,700 GWh is based on energy efficiency reducing total electricity demand by 10 per cent. This is a conservative figure based on energy savings realized in jurisdictions like California, China and Japan.

<sup>3</sup> IEA 2017, *Energy Efficiency Market Report 2017*, IEA, PARIS

Numerous reports have identified both the opportunities from better energy management, and the challenges in taking this up, including the *Parer Review* in 2002 and the *Finkel Review* in 2017. The *Parer Review* states:

*“The Panel found that there is a relatively low demand side involvement in the NEM because:*

- *The NEM systems are supply side focused;*
- *The demand side cannot gain the full value of what it brings to the market; and*
- *Residential consumers do not face price signals.”*<sup>4</sup>

The Australian Energy Market Commission (AEMC) has recently stated that Australia’s energy markets have been designed around mobilising supply-side resources to meet demand, with much less effort on demand-side investment.<sup>5</sup> The AEMC not only recommended the development of a demand response mechanism that allows demand-response to compete with generation in wholesale energy markets, but further recommended widespread reform of the electricity market to ensure that it is a ‘truly two-way market’ that provides clear signals for investment and dispatch of supply and demand. It should be noted that a ‘two-way market’ should cover not just wholesale, but also network and reliability issues in the NEM.

While energy management presents a huge opportunity to boost the reliability and affordability of our electricity supply, it also presents a risk. The failure to date to properly integrate supply and demand-side issues in the NEM has not only lead to sub-optimal levels of demand management – it has also created significant supply-side problems. For example, the failure to account for the predicted impact of energy efficiency programs on electricity demand between 2007 and 2013 resulted in excessive investment in network infrastructure.

Accordingly, a post 2025 energy market must

- Optimise the balance of investment of energy management and supply to deliver the lowest-cost to consumers; and
- Properly integrate demand and supply.

The Issues Paper lists ‘Integration of distributed energy resources (DER) into the electricity market’ as one of five key challenges for post 2025 market design. While the term DER could be read to include energy management, it typically doesn’t - both the Issues Paper and most policy makers largely interpret ‘DER’ as distributed generation (e.g. solar PV) and electricity storage. Furthermore, the term ‘DER’ doesn’t capture the full range of issues related to energy demand.

Therefore, we strongly urge that the ESB add a sixth challenge to the five challenges listed in its report – ‘Integration of supply and demand in the electricity market.’ This challenge could be framed in a number of ways.

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<sup>4</sup> Parer, W. 2002 *COAG Energy Market Review – Towards a Truly National and Efficient Energy Market*, Commonwealth of Australia, Canberra, p 174

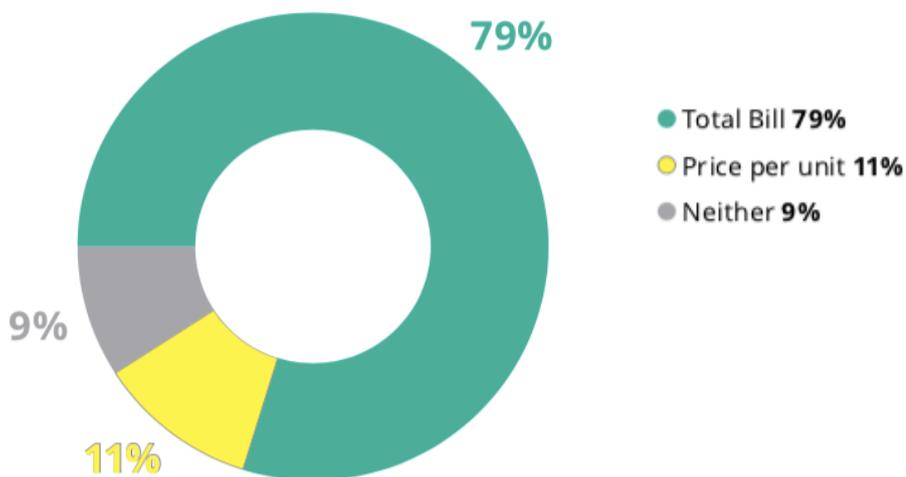
<sup>5</sup> AEMC 2019 *Wholesale demand response mechanism, Draft rule determination*, AEMC, Sydney. p 35-42.

For example, the European Union has adopted the principle ‘Energy Efficiency First’ as a central plank of its energy strategy. ‘Energy Efficiency First’ doesn’t mean that energy management should be given preference over energy supply – it simply means that energy management should be considered *before* the finalization of energy policies and monopoly investments to ensure that there isn’t a supply-side bias. In other words, ‘first’ refers to *sequencing*, rather than preferencing. In effect, the principle of ‘Energy Efficiency First’ means that markets should be designed to ensure the most cost-effective mix of investments in supply-side and demand-side measures.

The Post 2025 Market Design Issues Paper covers a range of excellent issues but is heavily focussed on supply-side issues. While the Issues Paper does mention demand response several times, there is significantly less focus on the other aspects of energy management, including energy efficiency and load-shaping.

For example, on page 5 of the Issues Paper, Figure 1 doesn’t mention energy use and talks about affordable energy, rather than affordable energy services. This distinction is critical – the vast majority of consumers care about their energy bill, not the cost per unit of energy, and total energy bills consider both the cost of supply and energy efficiency. This is demonstrated by a survey that we commissioned in 2018 along with ACOSS and the Property Council:

**Question:** *Electricity and gas bills normally include a cost for each unit of energy that you use (e.g. 25 cents per kilowatt-hour) and various fixed charges. These charges are added up to give you your total bill. When you open your bill, which of these are you more concerned about?*



Source: ACOSS, EEC and Property Council of Australia 2018, Energy bills and energy efficiency - Survey of Community Views.

The ESB’s review must have a strong focus on both energy management and energy supply. If the post 2025 market design process starts from the assumption that it should focus on supply-side issues, it will inevitably end up proposing a market design that has a supply-side bias. Supply- and demand-side issues need to be considered in an integrated fashion from the very outset.

Accordingly, the EEC recommends that the ESB's proposed assessment framework (pages 11-12 of the Issues Paper) should explicitly assess degree to which different energy market models would 'optimize investment between energy supply and energy management'.

Likewise, the ESB should also consider how investment signals (Section 4.2 in the Issues Paper) impact both energy management and energy supply. This goes beyond investment in the development and dispatch of demand response, and includes signals (including regulatory and financial) for investment in the energy efficiency of new and existing buildings and industrial sites.

The EEC recommends that a post 2025 market must:

- Be designed to ensure the most cost-effective mix of both supply-side and demand-side measures, including demand response, energy efficiency and load shaping. Ideally, the concept of treating supply-side and demand-side measures equally should be enshrined in legislation.
- Reward energy management for the benefits that it brings to market, including capacity and security services. As part of this general principle, energy users, retailers and third parties need to be properly rewarded for energy management actions that reduce network expenditure.
- Have fit-for-purpose governance systems with a strong focus on energy management. This could potentially include the establishment of a dedicated energy market body that focuses on energy management capacity;

Finally, the EEC notes that, in order to meet Australia's international greenhouse gas reduction commitments, the electricity sector will need to significantly decarbonize by 2030 through a combination of energy efficiency and a shift to low-emissions generation. The ESB should assess the impact of different market structures on scenarios with both small and large emission reductions, but we encourage the ESB to test multiple scenarios that involve 50 to 90 per cent reductions in emissions from the electricity sector, since these are the most likely.

In summary, the EEC commends that the ESB's leadership in looking to the future of the electricity sector, and urges the ESB to ensure that the review effectively considers demand-side issues. For further information please contact me on [rob.murray-leach@eec.org.au](mailto:rob.murray-leach@eec.org.au) or 0414 065 556.

Yours sincerely



Rob Murray-Leach  
Head of Policy  
Energy Efficiency Council