

# **SOUTH AUSTRALIAN ELECTRICITY DEVELOPMENT PLAN** 14 FEBRUARY 2025

## INTRODUCTION

The Energy Users' Association of Australia (EUAA) is the peak body representing Australian commercial and industrial energy users. Our membership covers a broad cross section of the Australian economy including significant retail, manufacturing, building materials and food processing industries. Combined our members employ over 1 million Australians, pay billions in energy bills every year and in many cases are exposed to the fluctuations and challenges of international trade.

Thank you for the opportunity to make a submission under the South Australian Electricity Development Plan (EDP).

At the EUAA, we support the design of rules, legislation and procedures that achieve efficient, cost effective and equitable outcomes for networks, developers and consumers. In the energy sector under most circumstances, this is best achieved through a national approach and a sharp focus on the NEO.

We recognise that the "energy only" National Electricity Market (NEM) is unlikely to be capable of supporting the transition to renewable energy on its own and that other mechanisms may be required to supplement its role. We also recognise that South Australia (SA) is leading the transition of the energy sector and therefore is most impacted by the outdated NEM that provides limited investment signals for new capacity. We also note that SA is being impacted by delays in projects in other jurisdictions that could provide capacity, and existing capacity (mainly gas powered generation – GPG) is scheduled to close and therefore the State needs to act now with jurisdictional changes to maintain a "level" of firm capacity to support electricity reliability.

We understand that having firm capacity in the market means that "somebody" will need to make payments to the firm capacity owners so that the capacity is available when required, and approve of the SA and Federal Government's foresight (through the Renewable Energy Transformation Agreement - RETA) to use SA as a test-bed for a capacity market that, if successful, could be rolled out NEM-wide.

However, the inaugural EDP has not provided the level of evidence or certainty to the EUAA and its members that the proposed methodology is the most cost-effective in the provision of a reliable and resilient electricity system. The EUAA supports evidence-based policy, and together with our members, will be looking closely at the roll out of the capacity scheme in SA with a view to how that might impact their businesses. Thus, being the test-bed for a potential national capacity market, SA requires a more detailed and transparent approach that we will expect for the 2025 EDP.

Additionally, there is currently no forecast exceedance of the Interim Reliability Measure (IRM) for the SA region in the first 12 months of the MT PASA reliability assessment for 2025. The current level of forecast Unserved Energy (USE) in the first 12 months of 2025 is recorded primarily in February, and by the end of February 2025, forecast USE in SA will be less than half of the IRM.



When contemplating design features for a new market mechanism we urge you to consider that all too often policy and market design is heavily influenced by those who provide the inputs (i.e. technology, finance). While ensuring market design supports investment, it is equally important that it doesn't come at an undue cost or risk for consumers who are far more focussed on the outputs of the energy system such as affordability, reliability and sustainability.

This consumer first, outcomes driven approach is reflected in the National Electricity Objectives (NEO) but is not always reflected in the debate over policy and regulation where technology providers of the inputs argue for special support for the particular widget they want to sell with consumers or taxpayers required to foot the bill.

If we are seeking consumer focussed outcomes from the EDP we must move away from an input focussed debate to one that balances the need to enable efficient deployment of inputs with the affordability, reliability and sustainability outputs consumers want. Most consumers are largely technology (inputs) agnostic and don't particularly care what is being used to deliver the outcomes provided they are delivered efficiently (i.e. through efficient allocation of resources via competitive markets), that they are empowered to act in their best interest (without harm to others), that the market achieves a high level of reliability and that it is sustainable (environmentally and socially).

From that perspective, interventions in the SA market have been increasing year-on-year since 2016 when the Leigh Creek coal fired generator closed. These interventions have placed upward pressure on SA electricity bills with one of our members with a site in SA reporting that 30% of their current bill is market interventions and system security charges. While renewables are the least cost technology for generation, and may get cheaper over time, we are concerned that our members bills are increasing, and that the 2024 EDP places further upward pressure on prices.

Following are some recommendations that we believe need to be included in the 2025 EDP.

## **END OF RETA ARRANGEMENTS**

While we are supportive of the SA and Federal Government RETA to establish SA as a test-bed for capacity markets in the NEM, and in doing so, providing SA with the jurisdictional prerogative to establish its own specific grid reliability mechanism, we can not find where the end of this arrangement will be triggered and a transition of capacity and reliability for the SA market back into the NEM framework. This could be a trigger such as suitable NEM legislation and/or rules, or at a point when the rest of the NEM's requirement for capacity matches that of SA. Providing these clear signals are critical for investors on both the supply and demand side of the market, especially as consumers (i.e. data centres) begin to take more direct control over their own energy supply arrangements.

# VALUE OF CUSTOMER RELIABILITY (VCR)

We are not confident that the current AER's 2024 VCRs are accurate or reflective of our members or the general consumers perspective. We noted this in our submissions on the VCR determination process to AER.

We consider the 2024 VCR methodology for residential and small business customers was not fit for purpose. We consider that the desire to ensure comparability with the 2019 results and a limited timeframe and budget drove



the decision to continue with a short online survey with a few modifications to the 2019 version rather than a process to reflect the NEM as it was in 2024. This combined with a lack of transparency by the AER around the impact of respondents' comments to future costs means we are not confident that the 2024 VCR values are statistically representative of consumers in the NEM

Given the SA consumers surveyed by AER are a subset of the total NEM VCR survey, we are less confident that the SA consumers sampled is statistically representative and is likely to include a margin for error above what would normally be acceptable (due to the smaller sample size).

We are therefore not supportive of utilising these figures for justification of increased network charges to deliver capacity or any other policy.

## **RELIABILITY MEASURE**

The reliability standard considers both frequency and severity of loss of load expressed in MW of lost load. Our perception of how the reliability standard is operationalised and communicated by AEMO is that very conservative modelling results, e.g. the 2022 ESOO leading to a T-1 trigger in South Australia for Q1, 2024 which was then cancelled a few months later. Additionally, the risk of potential USE is communicated by AEMO in meeting a perceived 'political' reliability standard of close to, if not zero (the Interim Reliability Standard).

Our concern with the IRM is it has resulted in increased costs to consumers well above the level that consumers have indicated, through the AER VCR work, they are prepared to pay. We consider that the current USE measure does take account of tail risk given it is a probability measure and don't want to see a repeat of the past "gold plating" in distribution networks in the area of wholesale market reliability.

Further, we are not convinced that a move to a power system based on increasing amounts of weather-dependent supply resources results in an increase in the potential for either unserved energy or tail risk, as this is also a function of the firming resources available to manage this risk. It's possible that the electricity market transition may improve tail risks as unit size decreases and dispatch flexibility increases given that fluctuations in weather dependent supply side resources is somewhat forecastable and able to be modelled in the planning timeframe.

We accept the need for sensitivity testing around the efficient level of firming resources by artificially engineering tail-risk events in the modelling. Though the base case must be modelled on the efficient level of firming resources with reference to a range of reliability settings such as the market price cap (MPC) and cumulative price threshold (CPT). To do otherwise may result in an inaccurate assessment of the risks the proposed modelling is attempting to understand.

We are concerned that the current SA jurisdictional policy, specifically designed to ensure reliability for the "messy middle" of the transition to a renewables dominant grid will impose additional costs that are met by either or a combination of higher electricity bills.

We would support use of the Reliability Standard, however it appears that the SA Government are using the IRM in its EDP modelling. With the political nature of the IRM, we believe that the Government should pay the difference in costs between the Reliability Standard and the IRM.



## GAS

The EUAA have long argued the important role for gas in both hard to electrify sectors and electricity generation. It is becoming very clear that, just as VRE and battery developers see too much risk involved with investments in a transitioning NEM, that developers of GPG, needed for long duration firming, are wary of similar risks.

We note that both the ACCC in their regular gas market reporting and AEMO in their GSOO, continue to warn of impending supply shortages. Additionally, the ACCC continues to highlight the high cost of gas for domestic consumers, including GPG. If we can't extract sufficient quantities of gas and have that gas offered at competitive prices to the domestic market, then the cost of the critical back-up that is provided will be significantly higher than it should have been.

We are concerned that the current documentation from SA appears not to take into account these risks and how they will be addressed (and funded) to ensure a cost-effective and reliable electricity system.

## BATTERIES

We are also concerned about applying the technical limitations to storage investments in order to achieve SA FERM targets, without considering the flexibility and technical limitations of batteries, which can be dealt with contractually rather than creating market uncertainty through changing the rules of engagement.

By virtue of the configuration of, for example, 2GW of 4GWh storage, this 2GW capacity can also be 2GW of 16GWh (by slowing the release of electricity) and will be drawn on as the market conditions require i.e. a 2 hour battery can operate as an 8 hour battery. Whether the market requires the full 2GW capacity over 2 hours, 4 hours, 8 hours or longer, this configuration allows the flexibility of the storage systems to respond to the market needs, while being able to re-charge at the faster rate.

We do however recognise that the market encourages storage participants to discharge at the fastest rate possible. This is because, unlike generators who operate on the basis of average revenue being above long run marginal cost, storage usually operate on the basis of margins, i.e. at its simplest, the difference between the price paid for the electricity during charging and the price obtained when selling to the market. Batteries, in particular, have a limited number of cycles before replacement is required, thus the margin for batteries also includes a "cost per cycle", i.e. at its simplest, the CAPEX of each cell of a battery divided by the expected number of cycles before requiring replacement.

A battery's CAPEX is primarily driven by the number and type of inverters that are installed. Having more inverters may cost more, but allows flexibility in how the storage operates which improves consumer benefits, secondly the modelling assumes that the storage device charges and discharges at its maximum capacity, which is not necessarily the case, and lastly consumers will pay for storage as it is dispatched into the NEM at the market competitive price based on the margin.



Limiting the discharge and therefore the recharge rate means that if a battery fully discharged during yesterday's peak, it may not be full again for today's peak, as most storage systems charge during low price periods, which usually coincides with a few hours in the middle of the day (i.e. maximising the margin).

Arbitrarily limiting the output of storage to a slower discharge by defining a time factor to the entire plant undermines this flexibility and profitability of the facility through a technical limitation. This can all be dealt with through the FERM contractual arrangements e.g. a facility can build a 2MW 4MWh storage facility, but contract 1 MW through FERM at whatever timeframe is required, as informed by a combination of market modelling (e.g. ESOO) and the requirements of the EDP.

For batteries participating in the FERM, we propose a model that retains stability for investors and still meets the requirements of the EDP, consumers and the NEM.

## **CERTAINTY OF LOAD GROWTH**

While the SA government have "tested" each of the large load growth projects and only included those in the EDP load projections that it is comfortable are "likely" to proceed, it is difficult to support the modelling of the load growth when no further information is provided. While we understand that there will be a level of commercial confidentiality in the load projections, we would expect there to be more transparency in how government is testing the potential loads to include or exclude from the modelling.

#### ECONOMICS OF AVOIDING DEMAND RESPONSE

Many of our large commercial and industrial members engage in Reliability and Emergency Reserve Trader (RERT), primarily as short notice participants where they are only paid if they are activated. A small number of very large loads do participate in long-notice RERT where they are paid some form of standby or availability fee in addition to a market linked benefit when activated. One observation of RERT is that initially it was intended as a last resort safety net for the market operator. However, given the growing uncertainty of a messy and bumpy transition to net zero, RERT is being progressively used by the market operator as a primary means of balancing supply and demand.

What is often overlooked or not well understood is that large loads play a vital role in maintaining system strength and resilience. For example, in addition to acting as a system shock absorber that helps maintain frequency, large loads can play a vital role in securing the system restart efforts in the NEM by mitigating risks associated with uncontrolled solar generation and damaged transmission infrastructure caused by bushfires or other natural disasters.

That the modelling contained in the EDP is designed to avoid USE and does not include the impact of demand response by large loads, i.e. RERT and the economic benefits or otherwise of RERT versus avoiding USE does not provide our members with the confidence to support the EDP. We would expect this comparison to be present in the 2025 EDP.



## SA PRICE AND DEMAND VOLATILITY

We often describe different user classes in the NEM such as residential, small to medium enterprise or commercial and industrial, as if they are operating in separate markets. They are not. They are all part of the same NEM ecosystem where the actions taken to change behaviour of one customer class (i.e. supporting CER such as solar PV or electric vehicles) can have serious consequences for other customer classes or market participants.

Governments have been intervening in the NEM seeking to impact price signals for decades. Households have installed solar supported by 20 years of subsidies such as feed-in tariffs and deemed SRES certificates. Large scale VRE has been supported by the Federal LRET and a myriad of state-based subsidies. All of these government interventions mute market price signals to differing levels.

In SA, we see the impact of a high penetration of rooftop solar as very low demand in the middle of the day with very low pricing (often negative), with demand and wholesale prices rising very quickly in the evening, as the rooftop solar stops producing, requiring additional capacity to meet the ramping rates. Given a major part of the problem the EDP is attempting to solve was generated by government intervention, the EUAA would like to see a benefit to cost comparison of the current market intervention versus a strategic program to install batteries close to the rooftop solar (i.e. solar soakers) that could increase load on the SA grid during the middle of the day (and by virtue increasing both system security and the investment signal for renewable energy facilities), and reducing the evening peak by reinjecting the "stored roof top solar" and increasing capacity when it is needed in the evening.

#### **WHO PAYS**

If we assume the energy only market is incapable of delivering new investment and some form of capacity market is required to sit along-side it. If we then consider that a capacity market is like an insurance policy for a reliable NEM; at times it might look like a waste of money but when it's needed you are glad it's there. If this is the path, and it may well be, then who is in the best position to underwrite this insurance product, consumers via a capacity market or taxpayers via a government backed scheme? Or to be more precise, do governments trust markets enough to allow them to do the job or will they always want to keep a firm hand on the steering wheel?

## **ALTERNATIVE POLICY**

Much of the new generation technology that has been deployed over the last 15 years has slowly "chipped away" at system strength and in South Australia, firming capacity. Non-synchronous and inverter-based generation has played a significant role in creating a number of technical challenges.

Therefore, we would encourage the deployment of technology that does not negatively impact system strength and/or require new SA participants to clearly demonstrate at the time of submitting their bid, how they plan to enhance system strength as a result of their investment.

For example, if the FERM is supporting the deployment of battery storage then consider a requirement they are grid forming, not grid following batteries.



## **CONCLUDING REMARKS**

While we understand the issues that are present in the SA market, and support the combined SA and Federal governments approach to solve those issues, we consider that not enough evidence has been provided to allow consumers to support the approach, let alone fund it.

The EDP should consider recommendations for a future market dominated by VRE (i.e. 85%), with interim measures in place to address particular market failures during the messy middle of the energy transition, including consideration of residentially placed (either on feeders, on streets or behind the meter) batteries as solar shifters.

While we acknowledge that the 2024 keeps the SA firm capacity recommendation status quo (i.e. 2.3GW), we are concerned that the current SA jurisdictional scheme designed to achieve reliability may result in consumers paying twice for the same level of reliability We will need surety to ensure this is not the case.

The EUAA welcomes further discussions with us and our members around the issues raised in this submission.

Do not hesitate to be in contact with EUAA Policy Manager Dr Leigh Clemow, should you have any questions.

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