



Post 2025 Market Design Options

Submission to the Energy Security Board

June, 2021

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1. Introduction

The South Australian Chamber of Mines and Energy (SACOME) is the peak industry association representing companies with interests in the South Australian minerals, energy, extractive, oil and gas sectors and associated service providers.

SACOME acknowledges that the Energy Security Board (ESB) in conjunction with market bodies have committed significant time and resources to progress the development of a fit-for-purpose 2025 Market Design for the National Electricity Market (NEM) that delivers secure and reliable power at least cost to consumers.

The ESB's Options Paper (the Paper) shortlists potential reform options under three categories: immediate reforms; initial reforms; and next reforms for the four key areas identified in the ESB's Directions Paper. These key areas are:

- resource adequacy and aging thermal generation retirement;
- essential system services, scheduling, and ahead mechanisms;
- integration of distributed energy resources (DER) and demand side participation; and
- transmission and access.

SACOME recognises that the Paper comprises the final round of consultation on detailed market design and potential reform options ahead of recommendations to Energy Minister's in mid-2021.

SACOME's submission adopts a format consistent with that set out in the Paper providing high level commentary against the proposed 'initial' and 'immediate' reforms under each key area.

Consistent with SACOME's submission¹ to the ESB's Post 2025 Market Design Consultation Paper, energy affordability and reliability are areas of major concern for SACOME member companies, directly impacting on business viability, new project development and investment decisions.

While the need for affordable and reliable energy is common to all users, the energy needs of the resources sector are distinct given the scale of operations; the quantity of energy required to power them; the consequences of an interruption to supply; and access to energy as a pre-requisite to project development.

SACOME takes a technology neutral position with regard to energy generation and emissions reduction and extends this position with respect to how the ESB achieves its objectives.

SACOME remains committed to working collaboratively with the ESB, relevant market bodies and other stakeholders throughout the Post 2025 Market Design consultation process.

¹ [SACOME's Post 2025 Market Design Consultation Paper Submission](#)

2. Resource Adequacy and Aging Thermal Generator Retirement

The Australian Energy Market Operator's (AEMO) Integrated System Plan (ISP) in all NEM transition scenarios to 2040² finds:

- Coal-fired generation will decrease from 23 gigawatts (GW) to 9GW.
- Small-scale Distributed Energy Resources (DER) is expected to double, and, in some scenarios, triple.
- Over 26 GW of new grid-scale Variable Renewable Energy (VRE) will be needed beyond what is already committed.
- 6-19 GW of new dispatchable resources will be needed in support to firm up VRE.
- Investments in power system services will be needed to support a system no longer dominated by centralised thermal generation with large spinning generators.

The NEM relies upon scarcity pricing to drive future investment. However, Commonwealth and State Government's continual NEM interventions; the impact of renewable energy generation on future price curves; and the absence of long-term price signals creates uncertainty for investors in committing to large generation projects.

Policy makers must provide a stable regulatory environment to support investment in the new generation to transition the NEM at least cost.

SACOME submits that a stable regulatory environment can only be achieved through consistent, bipartisan Commonwealth and State energy policy.

2.1 Immediate reforms

The Paper proposes three Generator exit mechanisms to support the timely entry and orderly exit of energy generation, namely:

- Increased information around mothballing and seasonal shutdowns;
- Expanding the notice of closure requirements to include mothballing; or
- An integrated process to manage early exit.

The key considerations for all three mechanisms are ensuring that the reliability and security of supply continues to meet community expectations; minimisation of price shocks; and anticipating the exit of thermal generation.

SACOME notes under '*an integrated process to manage early exit*' a System and Market Impact Assessment would be required to consider the operational risks and challenges to reliability and security that may arise from an early closure of generators and the associated impact on wholesale prices.

The assessment could also extend to considering whether the generating plant could be operated safely, reliably, and commercially for a period beyond the early closure date.

² [2020 Integrated System Plan](#)

SACOME recognises that market intervention as outlined above does not provide the long-term price signals required by industry to invest in new plant and equipment but could protect NEM regions like South Australia from increased costs where the supply/demand balance from unexpected exits is tight.

SACOME reiterates that if the ESB is to prioritise an exit mechanism, it should favour an approach that addresses energy affordability and reliability, and which considers the impact of increased energy costs on industry.

2.2 Initial reforms

The key initial reform identified in the Paper is to modify the Retailer Reliability Obligation (RRO). The two options proposed are:

- Refining the current RRO, but with no T-3 trigger (the T-3 trigger only applies when a shortfall in reliability is forecast); or
- A physical RRO with no or minimal triggers.

SACOME notes that ESB's own paper³ recognises that the current RRO and a physical RRO place obligations on retailers and large loads to procure reliability measures.

Further, the removal of the T-3 trigger could encourage over-contracting by retailers, promoting inefficiency within the market.

Both options and the provision of their respective services to the NEM will increase overall energy costs as affected market participants seek to recover their investment.

The Paper states the ESB in considering these options prefers for energy generation to come through signals in the real time market, together with the support of an RRO⁴.

SACOME reiterates that the options outlined in the Paper are only stop-gap solutions and the key to driving future NEM investments is to resolve external factors such as policy uncertainty, government intervention and global emissions policy.

3. Essential System Services, Scheduling and Ahead Mechanisms

The Paper highlights that the increasing volume of renewable energy generation and battery storage within the NEM will increase the need for key system services (inertia; system strength; provision of reserves; frequency control ancillary services) to maintain system security.

Historically, key system services were a by-product of synchronous firm generation.

³ Pg. 34 [Energy Security Board Post 2025 Market Design - A Paper for consultation Part A](#)

⁴ Pg. 32 [Energy Security Board Post 2025 Market Design - A Paper for consultation Part A](#)

SACOME understands the importance of providing key system services through different arrangements to maintain network supply, reliability, and security. However, SACOME member companies continue to raise concerns about the escalating costs of AEMO's increasing market interventions in key system services areas.

These costs are unknown, unbudgeted and place pressure on large energy users at the time of receipt.

While resolution of these issues at the policy and market level is preferable, SACOME broadly supports options that allow for the equitable distribution of costs across all energy market consumers in the absence of a holistic solution.

3.1 Immediate reforms

The Paper prioritises:

- the establishment of new fast frequency response markets; and
- refining frequency control arrangements, particularly for primary frequency control.

Consistent with SACOME's submissions to the AEMC's *System Services Rule Changes Consultation Paper*⁵ and *Frequency Control Rule Changes Directions Paper*⁶, the manner in which the cost of providing necessary system services are allocated and passed on is an area of primary concern for SACOME member companies.

The lack of a clear, agreed national energy policy has led to Australian States and Territories pursuing their own energy policy agendas with a range of unplanned consequences, including the uncoordinated development of renewable energy generation that has precipitated the loss of these services.

SACOME reiterates that these key system services have previously been provided by generators and, therefore, it would be most efficient for these generators to continue to have an obligation to provide and/or procure these system services from the market.

Generators could factor into their bid price any additional cost of their obligation to procure these system services "smoothing" recovery costs across all market users in a more predictable and equitable manner.

3.2 Initial reforms

The initial reforms proposed are:

- a unit commitment for security (UCS); and
- a system security mechanism (SSM)

⁵ [SACOME's System Services Rule Changes Submission](#)

⁶ [SACOME's Frequency Control Rule Changes Submission](#)

SACOME understands that the AEMC is considering rule changes that would be used to implement the USC and SSM to align with the ESB's recommendations.

SACOME notes the ESB is committed to some form of mechanism to support efficient scheduling of resources providing system security services that are not accounted for in real-time market prices or settings.

With energy affordability and reliability being SACOME member companies key concern, SACOME submits the implementation of either the UCS or SSM should only occur if it materially supports system strength and at least cost.

4. Integration of Distributed Energy Resources and Demand Side Participation

South Australia has approximately 33 per cent of dwellings with rooftop PV installed – the highest proportional penetration of all Australian States and territories⁷.

The unprecedented volume of solar PV in South Australia and its lack of integration within the NEM has challenged both distribution companies and AEMO's ability to keep generation and demand in South Australia in balance; and system stability in check.

Further, as solar PV and increased battery storage continues to enter the NEM in South Australia, this creates new challenges to maintain the electricity system within required parameters, particularly when considered alongside lowering minimum demand projections.

As an overarching principle, SACOME supports the integration of DER where it improves energy affordability and reliability and does not increase costs to industry.

4.1 Immediate reforms

The proposed immediate reforms include expanding the responsibilities of distributors to include hosting distributed generation and storage and introducing technical standards for DER to assist in ensuring energy security.

South Australia's high penetration of renewable energy generation has resulted in the deployment of storage technologies to support the asynchronous nature of their generation.

South Australia's current and future energy mix means the continued development of storage options will be critical in maintaining secure system operations; reducing the price and volatility of electricity supply; and boosting industry confidence.

SACOME supports South Australian policy initiatives that:

- accelerate the roll-out of large grid-scale energy storage, particularly 'Big Batteries' and 'Virtual Power Plants';
- increase the availability of home batteries;

⁷ Pg. 3 & Pg. 41 [South Australian Electricity Report](#)

- deploy demand management programs; and
- limit domestic photovoltaic export generation.

4.2 Initial reforms

Initial reforms put forward by the ESB focus on rewarding customers for flexible demand and increasing value to the system from flexible resources provided.

As large energy consumers, resources sector operators can support the delivery of affordable and reliable power for the whole community through major investments and energy infrastructure.

SACOME member companies have flagged that changes to the NEM through the Wholesale Demand Mechanism (WDM) presents resources sector operators with the opportunity to provide grid stability through demand side responses that save energy use at critical peak times.

5. Transmission and Access

SACOME recognises the transition to the NEM will necessitate large quantities of renewable energy generation with substantial transmission investment required to accommodate it.

SACOME submits that the ISP and its proposed pathway for NEM transition should continue to receive bipartisan support.

5.1 Immediate reforms

SACOME recognises considerable progress has already been made in introducing measures to coordinate transmission and generation, including

- new transmission investment;
- actionable ISP rules; and
- Interim REZ framework – and access within a REZ.

SACOME broadly supports the development of REZs.

Reliability of energy supply is a critical consideration for SACOME member companies in making operating/investment decisions.

SACOME is supportive of initiatives that will assist in stabilising the South Australian energy grid and reduce market interventions by regulatory bodies.

5.2 Initial reforms

The ESB identifies initial reforms includes streamlining the investment process, reducing the likelihood of customer access to REZ generators being degraded by external generators connected to the grid, and implementing processes for real time congestion management.

SACOME member companies broadly support transmission access reforms that facilitate efficient and timely capital investment, efficient system operations and reduce costs to consumers.

6. Conclusion

Recognising the scale of the task, SACOME is committed to working with the ESB, relevant market bodies and all stakeholders in progressing the ESB's Post 2025 Market Design.

SACOME has sought to provide high-level commentary on both 'immediate' and 'initial' reform options under the four key areas identified in the Paper with a clear focus on energy affordability and reliability.

While the need for affordable, reliable energy is common to all users, the energy needs of the resources sector are distinct given the scale of operations; the quantity of energy required to power them; the consequences of an interruption to supply; and access to energy as pre-requisite to project development.

In South Australia, the absence of a coordinated national energy policy resulted in the rapid development of subsidised renewable energy generation, leading to the retirement of aging coal-fired generation and South Australia experiencing some of the highest energy costs in the world.

South Australian electricity prices have decreased in recent times; however South Australia remains front and centre of the energy transition occurring within the NEM with world leading levels of renewable energy generation presenting both opportunities and challenges for resources sector operators.