



Network Vision Discussion Paper

Submission to ElectraNet

March, 2021

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1. Introduction

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

SACOME notes the purpose of ElectraNet's Network Vision Discussion Paper (Discussion Paper) is to consider the changes and influences impacting on the delivery of electricity transmission services over the medium to longer-term; and set out directions and priorities for South Australia's transmission network over a 5-10 year planning horizon.

SACOME welcomes the opportunity to provide input into the Vision. Rather than responding to every question as outlined in the Vision, SACOME proposes to provide high-level commentary around the emerging trends impacting the secure supply of electricity to the resources sector; and outline the services required by industry for it to continue to successfully operate.

South Australia continues to be front and centre of the energy transition occurring within the National Electricity Market (NEM), with world leading levels of renewable energy generation.

As part of this transition, SACOME member companies have experienced first-hand the unplanned consequences and high energy costs associated with the lack of a cohesive national energy policy.

Energy affordability and reliability are key concerns for SACOME member companies having a direct impact on business viability, new project development and investment decisions.

While the need for reliable, affordable 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 and the consequences of an interruption to supply.

Accordingly, the policy settings relevant to the energy supply chain are of critical importance.

SACOME is committed to working collaboratively with ElectraNet and all stakeholders, not only in the context of the Vision, but in all aspects of developing an energy supply chain that delivers secure and reliable energy at least cost to consumers.

2. 2016 Network Vision

SACOME submits the key elements and themes as identified in the 2016 Network Vision are still relevant and appropriate to support the delivery of the updated Vision.

In response the Discussion Paper's question of the role of the transmission network in providing value into the future, SACOME submits that the primary role of the transmission network is to move energy from generators to large load customers and the lower voltage distribution network at least cost.

The Discussion Paper also recognises that the shift from large traditional thermal power generation to renewable energy generation has resulted in ElectraNet increasingly having to provide key system services to underpin the growth in renewable energy generation.

SACOME reiterates that one of the unplanned consequences in the absence of an agreed national energy policy includes the uncoordinated development of renewable energy generation. The lack of informed planning and coordination has precipitated the loss of key system services.

Maintaining the electricity system within the required parameters for frequency, voltage, inertia, and system strength is difficult as variable energy generation increases its presence in the NEM.

Efficient solutions to these problems exist but are complicated by both the significant pace of change and the lack of markets or other means of valuing the system essential to system security.

As Australia's energy transition continues, SACOME member companies (in particular our large C&I members) will be placing greater value on these services given the importance of energy reliability to their operations.

3. Drivers of Change

SACOME submits that ElectraNet have appropriately defined the drivers of change in the Discussion Paper.

The drivers of security, reliability, and resilience; rooftop solar; and affordability are areas of key concern for SACOME member companies.

Security, reliability, and resilience/affordability

SACOME has undertaken significant policy work around ensuring the security of the evolving power system; the provision of key system services and the need to balance security, reliability, and resilience against cost to consumers.

Consistent with recent submissions to both the Australian Energy Market Commissions' (AEMC) *Frequency Control Rule Changes Directions Paper*¹ and the Energy Security Board's (ESB) *Post 2025 Market Design Consultation Paper*², SACOME member companies continue to raise concerns about how Australian Energy Market Operators (AEMO) interventions in the NEM continues to increase their energy costs.

SACOME member companies have stated that these market interventions add costs which are unknown, unbudgeted, and place pressure on large energy users at the time of receipt, further compounding an unsustainable operating environment for industry.

¹ https://www.sacome.org.au/uploads/1/1/3/2/113283509/sacome_aemc_frequency_control_rule_changes_submission.pdf

² https://www.sacome.org.au/uploads/1/1/3/2/113283509/sacome_esb_post_2025_market_design_submission_final.pdf

While outside the scope of the Discussion Paper, SACOME reiterates, historically, these key system services have been provided by generators and therefore these generators should continue to have an obligation to provide and/or procure these system services from the market.

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

Rooftop solar

SACOME has also undertaken significant policy work in relation to AEMO's *2020 Power System Frequency Risk Review Stage 1 Final Report* finding that the net load interrupted by the Under-Frequency Load Shedding (UFLS) scheme is no longer sufficient for South Australia and its request that this be increased as much as possible.

AEMO's direction to increase the load available to the UFLS scheme has had significant implications on the impacted operations of SACOME member companies', all of whom operate furnaces which do not tolerate loss of power or unplanned shutdowns without serious business, safety, and operational consequences.

The risk of low frequency of the system is understood to have been caused by the deep penetration of roof-top solar PV with the periods of most concern requiring additional UFLS being days where system demand is low due to moderate temperature and uncontrolled roof-top solar generation is high.

SACOME submits that ElectraNet's Vision needs to focus on accelerating the implementation of supplementary measures that will better manage frequency issues in South Australia caused by low demand conditions.

4. Updated Directions and Policies

SACOME supports the amended directions and priorities as amended. In particular, SACOME supports the directions and priorities, set out below by theme, as they reflect SACOME Member companies' key concerns surrounding energy reliability and affordability.

- Theme 1: The Transmission network will continue to play an important role into the future to support safe, reliable, and affordable electricity supply.
 - Evolving market and regulatory frameworks are increasing the role of TNSPs to procure essential system support services; and
 - Customers are seeking material electricity price reductions.
- Theme 2: The ongoing uptake of distributed energy resources by customers is changing the role of the grid.

- Actively engage with new providers of services to ensure effective demand side solutions and technological innovations are available and ready to meet emerging needs of the transmission network; and
- Develop a wide area monitoring system to maintain adequate operation, modelling and control of the power system during system disturbances.
- Theme 3: The rapidly changing generation mix is creating new challenges for the resilient, secure, and reliable operation of the grid.
 - With the ongoing substitution of synchronous generators with inverter connected generation storage and the intermittency of renewable generation, the operation of the power system is becoming more complex and challenging;
 - Monitor and adopt new technology to maintain secure and reliable power supply at lowest whole-of system cost to customers, including the expansion of Wide Area Protection Schemes;
 - Ensure the rapid development of renewables is accompanied by the appropriate reviews of protection systems and control schemes; and
 - Explore possibilities of increasing power transfer capacity by using technologies such as storage.
- Theme 4: New technologies are changing the way some network services can be delivered.
 - The delivery of essential system services continues to evolve, and transmission is expected to play an increasing role in the delivery of these services.

5. Conclusion

SACOME welcomes the opportunity to provide input into ElectraNet’s Network Vision Discussion Paper, and the emerging trends impacting on the delivery of transmission services to the South Australian resources sector.

SACOME has sought to provide high-level commentary on the Vision in a constructive manner, emphasising the importance of energy reliability and affordability to the South Australian resources sector and its operational viability.

SACOME is committed to working collaboratively with the ElectraNet and all stakeholders, not only in the context of the Vision, but in all aspects of developing an energy supply chain that delivers secure and reliable energy at least cost to consumers.