

# Stand-Alone Power Systems - South Australian Implementation

Consultation Paper

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## ACRONYMS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
DEM	Department for Energy and Mining
DNSP	Distribution Network Service Provider
ESCOSA	Essential Services Commission of South Australia
GSL	Guaranteed Service Level
NEL	National Electricity Law
NEM	National Electricity Market
NECF	National Energy Customer Framework
NER	National Electricity Rules
NERL	National Energy Retail Law
NERR	National Energy Retail Rules
SAPS	Stand-Alone Power System
SAPN	SA Power Networks
STPIS	Service Target Performance Incentive Scheme
SWER	Single-Wire Earth Return

## 1. What is a Stand-Alone Power System (SAPS)?

### Key Points:

- A SAPS is an electricity supply arrangement that is not physically connected to the national grid.
- Recent changes to National Energy Laws allow for DNSPs in adoptive jurisdictions to consider a SAPS as part of its assessment of relevant options to address identified needs.

A SAPS is an electricity supply arrangement that is not physically connected to the national grid. This includes microgrids, which supply electricity to multiple customers, and individual power systems, which supply electricity to a single customer.

When a Distribution Network Service Provider (DNSP) is required to upgrade its distribution network, it may now be more efficient to service a group of customers using a SAPS, rather than undertake the required network upgrade.

Recently, the National Energy Laws were amended to adequately support DNSPs to implement a SAPS rather than undertake a more expensive network upgrade.

The amendments to the national framework will facilitate the provision of DNSP-led SAPS to their existing customers, where these offer a lower cost substitute to investing in, and maintaining, traditional network solutions.

Under such arrangements, customers would not be disadvantaged where a DNSP determined it is more efficient to supply them through a SAPS. This includes preserving consumer protections comparable to those customers that are supplied by the interconnected network.

## 2. National Process to Date

### Key Points:

- The Statutes Amendment (National Energy Laws) (Stand-Alone Power Systems) Act 2021 was passed by the South Australian Parliament in March 2021 and proclaimed on 20 May 2021.
- These changes allow for DNSPs in adoptive jurisdictions to consider a DNSP led and operated SAPS as part of its assessment of relevant options to address identified issues.
- This framework applies to SAPS that are DNSP owned and operated in instances where a jurisdiction has opted into the framework by amending its local Regulations. The local Regulations will prescribe the areas that a DNSP led and operated SAPS can apply.

In August 2018, Energy Ministers tasked the Australian Energy Market Commission (AEMC) with providing advice on the required regulatory framework to allow for SAPS to be used where

it is economically efficient, while maintaining appropriate consumer protections and service standards.

The AEMC's review covered the electricity regulatory framework as set out in the National Electricity Law (NEL), the National Energy Retail Law (NERL) and associated rules. The review was structured around two priorities:

- Priority 1 covered national requirements for SAPS operated by DNSPs.
- Priority 2 covered a national framework for SAPS operated by third parties.

In November 2019, Energy Ministers considered the findings of the AEMC's SAPS Priority 1 final report (which covered national requirements for SAPS operated by DNSPs), and agreed to make a number of changes to national energy laws to support the efficient delivery of DNSP-led SAPS.

Following stakeholder consultation on proposed legislative amendments and agreement from Energy Ministers, the *Statutes Amendment (National Energy Laws) (Stand-Alone Power Systems) Act 2021* (the Act) was passed by the South Australian Parliament in March 2021. The Act came into operation on 20 May 2021.

The Act amends the following key energy legislation:

- the NEL set out in the schedule to the *National Electricity (South Australia) Act 1996*
- the NERL set out in the schedule to the *National Energy Retail Law (South Australia) Act 2011* (SA).

The Act allows participating jurisdictions to prescribe the scope of the application of the regulated SAPS framework within their jurisdiction. This reflects that jurisdictions have a wide range of geographical and environmental factors to consider. Flexibility is therefore provided with regard to how the framework is applied. For example, a jurisdiction could prescribe the whole state, or areas of the state which are outside of the metropolitan area, or coordinates for a specific geographical area within the jurisdiction, or an individual part of a system, or a regulated DNSP that proposes to own, control or operate the SAPS.

The Act provides for a SAPS owned and operated by a DNSP to be considered part of the national electricity system in certain circumstances, as determined by each participating jurisdiction.

The legislative amendments also extend the Australian Energy Regulator's (AER's) economic regulation framework to distribution services provided by means of regulated SAPS and allow flexibility when determining the regulatory treatment of a SAPS, or part of a SAPS or an extension to a SAPS in the National Electricity Rules (NER).

The amendments provide for a service provided by means of a regulated SAPS to be an electricity network service for the purposes of the Laws and Rules. The outcome is that DNSPs will be subject to the usual investment tests in the Rules before it can establish a regulated SAPS and will be able to recover revenue for services provided in relation to a regulated SAPS via regulated revenue.

Consistent with Energy Ministers' initial tasking for these amendments, customers who are moved to a regulated SAPS will be afforded comparable consumer protections to customers

connected to the grid. The NERL and National Energy Retail Rules (NERR) provide these protections.

The Act also makes provision for the South Australian Minister to make an initial set of NER and NERR Rules associated with the amendments on regulated SAPS.

After completing the 2019 review, the AEMC conducted a further review, which included public consultation, on consequential changes to the NER and NERR that would be required for DNSP-led SAPS, once the proposed DNSP-led SAPS law changes were made.

Consultation has recently concluded on the proposed amended rules which incorporate subsequent consequential amendments due to the Act and other related rule changes.

### 3. Potential for SAPS in South Australia?

#### Key Points:

- The DNSP-led SAPS framework would present SA Power Networks with options in addressing identified needs for specific instances in the distribution network.

There may be benefits in implementing the SAPS framework in South Australia. Parts of the distribution network may soon require upgrades, or certain location specific areas may benefit from transition to a SAPS. As such these areas within South Australia may be an option for consideration.

South Australia's DNSP, SA Power Networks (SAPN), has indicated SAPS may provide a more efficient alternative to service groups of customers in South Australia.

#### SA Power Networks Insights

SAPN is South Australia's sole electricity distributor. SAPN currently build, maintain and upgrade the electricity distribution infrastructure (the poles, wires and substations) that delivers electricity to around 900,000 homes and businesses. With the possible introduction of the SAPS regulatory framework in South Australia, when confronted with a need to upgrade its distribution network, SAPN would have the opportunity to consider whether it would be more efficient to service customers using a SAPS, rather than undertake the required network upgrade.

SAPN has advised the Department for Energy and Mining (DEM) that over the next few years, leading into their 2025-30 Regulatory Proposal to the AER, they aim to work with a range of stakeholders to explore potential opportunities for SAPS supply. As part of this work they intend to model where SAPS will be feasible in the short, medium and long term.

Preliminary views provided to DEM are that SAPN considers that the number of candidate sites for SAPS supply will be relatively few over the next 5-10 years in South Australia. At this early stage, they have identified several customer sites for further assessment.

SAPN considers that SAPS supply is likely to be most efficient and prudent in remote and rural areas on the fringes of the vast state-wide distribution network where SAPN may have relatively

few customers connected to the end of long power-lines that are approaching their end of asset life and presenting high maintenance / replacement costs and performance risk. A SAPS may also be more prudent in these instances where a trigger event has occurred such as major damage to the distribution network (following a bushfire for example) or there is a need to augment a distribution line.

Candidate sites for SAPS are likely to be geographically dispersed throughout the SAPN distribution network. Candidates for SAPS are also likely to include a broad range of types of customers or premises. SAPN advise that, in many cases, these premises might not be permanent residential homes. For example, there are a number of premises such as light-houses, agricultural processing sheds and pumps connected to the fringes of the SAPN network, and these will have relatively lower loads, making SAPS supply relatively more economical.

### Cape Du Couedic - Kangaroo Island

DEM has been advised that the most immediate opportunity that is currently being explored by SAPN for SAPS supply is Cape Du Couedic on Kangaroo Island. Two customers are supplied energy at this site - federal and state government departments, who own a lighthouse and three bed and breakfast cottages. The site is supplied by a 12-kilometre single-wire earth return (SWER) power line which runs through Flinders Chase national park and is located in a bushfire risk area. In 2019/20, bushfires on Kangaroo Island burnt a section of the park and the power line. Prior to this, an inspection in 2018 determined that the line was at the end of its asset life. SAPN advise that if a SAPS is not implemented, the line will need to be replaced in sections over the next 15 years.

SAPN note that removing the existing line and providing SAPS supply in this case is expected to be efficient and prudent, with several net benefits. Firstly, they consider that reliability will be improved for the two customers at the site. It is also expected that providing supply via a SAPS will remove the line access scar on the national park, improve green credentials and remove fire start risks in the national park. Finally, the change is expected to be more cost effective, and avoid a range of annual costs such as pre-bushfire patrols, emergency response, vegetation inspection/clearance and asset inspections, as well as required large scale asset replacements.

### Other potential SAPS

While Cape Du Couedic represents the most immediate opportunity that is currently being explored by SAPN for SAPS supply, there are other potential candidate sites that are in earlier stages of examination. These include Cape Borda (Kangaroo Island), Cape Donington (Port Lincoln) and Cape Banks in Carpenter Rocks (South East). These existing networks consist of SWER lines ranging from 4 to 20 kilometers, each running through a national park in high bushfire risk areas and corrosion zones. There are either one or two customers supplied at each of these sites, who are government departments owning lighthouses and bed and breakfast cottages. Implementing a SAPS in these instances will likely be a more efficient and prudent solution than maintaining and gradually replacing the existing lines, will remove fire-start risks at the national parks and improve reliability for the customers involved.

## 4. Implementation Options

### Key Points:

- Under the legislation, each jurisdiction will decide whether to adopt the DNSP-led SAPS framework.
- DEM is interested in stakeholders' thoughts on the potential benefits in implementing the national SAPS framework in South Australia.
- If adopted in South Australia, stakeholder feedback is sought on two alternative options for implementation:
  - Option 1 – Initial trial commencement
  - Option 2 – State-Wide Application

In recognition of geographical and environmental diversity, the Law provides jurisdictions the flexibility to apply the whole framework, or part of the framework, to regulated SAPS to best suit their needs.

The framework will only apply in a jurisdiction if that jurisdiction opts in by amending their local Regulations.

Importantly, if South Australia decides to implement a SAPS framework in the Regulations, it is intended that all consumers within a SAPS in will be afforded the same consumer protections as those consumers on the interconnected network.

DEM seeks stakeholder feedback on two alternate options for implementation of SAPS.

### Option 1 – Initial Trial Commencement

This option recognises that the SAPS framework is a new framework, and as such a softer introduction may be an appropriate option to commence its operation to gain consumer confidence. Under this approach a number of initial specific geographic areas could be included in the regulations as initial SAPS areas in South Australia.

The geographic areas prescribed in the regulation would, initially, be the only ones where a SAPS would be permitted. These regions would effectively act as a trial for the framework, to ensure it operates as intended. A review of arrangements would then occur and if deemed appropriate the framework could be opened more broadly (consistent with Option 2).

If this option is progressed, it is proposed that these geographic areas would be those discussed in Section 3 of this paper, where SAPN has already indicated that SAPS may provide a more efficient alternative to service groups of customers.

If this option were adopted in regulation, SAPN would still be required to undertake appropriate consultation and pass relevant investment tests before transitioning these prescribed areas to become SAPS. The regulation would only be enabling SAPS to be introduced into these geographic areas if the processes and approvals set out in the National Electricity Rules are met.



This option may provide benefits as SAPN has already assessed specific areas of interest for transition to a SAPS. These areas have therefore already been identified as potentially benefitting from transitioning to a SAPS and would be logical areas in which to commence the new framework, enabling it to be trialed before it is adopted more broadly. It would also provide the opportunity for consumers to gain confidence in the new framework.

While extensive consultation on this framework has occurred by the AEMC and Energy Ministers, practical implementation may highlight areas to improve workability of the new framework. If this is the case, this option provides an appropriate pathway for this to occur following a trial period and before the framework is fully adopted.

While there are benefits to this approach, there are also risks. As SAPS would only be permitted in the areas prescribed by regulation, the ability to quickly adopt the framework in other locations following a natural disaster, such as a bushfire, would be difficult and take time as regulatory change would be required. This could result in SAPN being forced to implement inefficient network solutions at a higher cost to consumers.

It is anticipated that, over time, the likelihood of further potential SAPS areas would be identified. If Option 1 was adopted, and the circumstances eventuated where SAPN considered a further SAPS area was warranted, it would not be able to adopt the framework in this potential new area until such time as additional regulation was made.

#### Option 2 – State-Wide Application

The SAPS framework would be applied across the whole State, from commencement, under this option. This would mean any SAPN proposed SAPS could be assessed under the framework irrespective of size or location in the distribution network.

If this option were implemented, once the Regulations were amended, it would be up to SAPN to consider where it was more efficient to install a SAPS in South Australia. SAPN would then need to undertake appropriate consultation and pass relevant investment tests before transitioning part of the network to a SAPS.

The distribution planning and investment framework, which includes the distribution annual planning report and the regulatory investment test for distribution, applies to SAPS to encourage DNSPs to make efficient planning and investment decisions. In addition, a new set of SAPS customer engagement obligations will require SAPN to develop and publish a SAPS customer engagement strategy, and to provide formal, public notice to affected parties of the intent to proceed with a SAPS supply solution.

This option may provide benefits as it will allow SAPN to apply the SAPS framework to already assessed specific areas, however, not limit SAPN's application of the framework to other areas that may emerge as potential candidates.

The risks with this approach are low given the SAPS framework includes a robust assessment and approval process to be followed for a proposed SAPS. This framework also ensures that significant stakeholder consultation occurs during these processes.



### Preferred option

DEM considers that there are potential benefits in implementing the national SAPS framework in South Australia. The preferred option to implement the framework is by adoption of Option 2 presented above – a state-wide adoption.

Under this approach the SAPS framework would be able to be utilised more efficiently where a location is identified by SAPN. For example this could potentially see a SAPS being installed following a bushfire rather than a rebuild of an effected network. This may be a faster and more efficient response to a natural disaster and was seen as a benefit of the new framework. Implementation of the framework under Option 1 would not enable this to occur.

As the framework has been developed following extensive work by the AEMC, and a number of consultation processes, any potential risks with its ability to work in practice are seen to be limited and minor. Under Option 1 or Option 2, adjustments can be made to the framework through the rule change process if implementation issues arise.

Further, the assessment and approval processes built into the framework ensure that DNSPs apply the framework in the long-term interests of consumers. Unless unforeseen damage or issues arise in relation to network infrastructure, applying the framework Statewide is not likely to result in different SAPS to those identified by SAPN being considered in the short term.

Finally, the introduction of the framework under Option 2 enables consideration of a SAPS without the need for further regulatory amendment, and potential delays, as would be necessary under Option 1.

#### Question 1

Do stakeholders consider that South Australia should implement the SAPS framework?

#### Question 2

Which implementation option is supported?

#### Question 3

Is there another option which should be considered in lieu of Options 1 and 2?

## 5. Jurisdictional Protections

### Key Points:

- Energy specific customer protections should apply to a regulated SAPS.
- In South Australia, jurisdictional consumer protections include:
  - Access to current energy concessions
  - Access to energy ombudsman schemes for independent dispute resolution
  - Safety of electrical supply
- Other matters that require consideration include:
  - Retail Pricing
  - DNSP land access rights
  - The application of reliability standards and GSL payments to a regulated SAPS

In developing the framework, it was considered that existing energy-specific consumer protection frameworks, including national consumer protections in the National Energy Customer Framework (NECF) and jurisdictional consumer protections, are appropriate for, and should apply to, DNSP-led SAPS.

In its final report the AEMC recommended that the current jurisdictional protections, including safety and technical regulation, as well as DNSP land access rights, be extended to cover DNSP-led SAPS.

In South Australia jurisdictional consumer protections include:

- Access to current energy concessions
- Access to energy ombudsman schemes for independent dispute resolution
- Safety of electrical supply

### Access to Energy Concessions

Currently, standard supply residential customers who meet certain conditions may be eligible for state-based electricity concessions and other payment assistance schemes. Generally, the energy concession is applied directly to an eligible customers' electricity bill.

All residential standard customers are informed of the availability of energy rebates and payment assistance by their authorised retailer and can contact their retailer to determine if they meet the requirements to receive a concession.

As the SAPS service delivery model includes retail services being provided by an authorised retailer, customers in DNSP-led SAPS would be eligible for these concessions and rebates in the same manner as a grid connected customer.

### Retail Pricing

Under the new framework the provision of retail services to customers who have been transitioned to SAPS supply would continue to be facilitated via the competitive retail market.

SAPS customers would therefore be able to retain their existing retailer and retail offer following their transition to a SAPS. They would therefore be able to choose and switch retailers at any time, where there is effective retail competition.

While SAPS customers would continue to pay their existing retail prices to its retailer following the transition to a SAPS, retailers would forward the standard network charges to the DNSP. They would also pay the Australian Energy Market Operator (AEMO) for the energy delivered to its SAPS customers at an administered settlement price.

In developing the SAPS framework, the AEMC concluded that the best approach to the delivery of the SAPS service to consumers would be through this *administered settlement price* charged to retailers for the delivery of energy to SAPS customers.

Existing wholesale energy market arrangements, including the settlement system, would be used to provide for the SAPS specific administered settlement price. The AEMC considered that utilising the existing wholesale energy market arrangements would make it feasible for the SAPS retail service to be provided by competing grid retailers, thus allowing SAPS customers to maintain their relationships with existing retailers, and to retain their existing retail offers.

This would support the seamless transition of existing grid-connected customers to SAPS and ensure that SAPS customers were no-worse-off in terms of price, following the transition to SAPS supply.

Further, the AEMC determined that utilising an administered settlement price (rather than the spot price) would remove retailer risk associated with price volatility in the spot market and hence also the need for retailers to hedge SAPS customer load with National Electricity Market (NEM) generators. It would also remove the incentive for retailers to provide price signals to SAPS customers that relate to spot market prices (which may not be consistent with the optimal use of SAPS).

Under the rules, AEMO must as soon as practicable after the start of a financial year determine and publish the administered settlement price (or SAPS settlement price) for each regional reference node for the financial year. The price setting approach for the SAPS settlement price uses a simple calculation based on historical wholesale prices, with adjustments.

As the recommended SAPS service delivery model maintains access to retail competition, additional retail price protections would not be required. In areas with market competition, customers would have retailer choice and be able to access available market offers in the same manner as if they were grid-connected.

### [Ombudsman schemes](#)

Currently, licensed DNSPs and authorised retailers who supply grid connected customers are required to be members of the jurisdictional energy ombudsman scheme.

As SAPS customers will also be supplied by a licensed DNSP and an authorised retailer, customers in a DNSP-led SAPS will be able to access energy ombudsman schemes for independent dispute resolution with either the DNSP or their retailer. In South Australia, this will be via the Energy and Water Ombudsman of South Australia.

### Safety of electrical supply

In developing the SAPS framework, the AEMC recommended that DNSP's safety obligations should cover DNSP-led SAPS. On the basis that DNSP-led SAPS are considered to be a distribution system (or similar, under jurisdictional definitions), the DNSP's safety obligations extend to DNSP-led SAPS.

In South Australia, *the Electricity Act 1996* (Electricity Act) and its associated regulations provide a legislative framework to ensure that South Australian consumers have access to safe electricity supply, as well as safe electrical installations.

The Electricity Act promotes the establishment and maintenance of safe and efficient systems for generating, transmitting and distributing electricity, and establishes and enforces appropriate standards of safety, reliability and quality in the South Australian electricity supply industry.

The Electricity Act also establishes and enforces appropriate safety and technical standards for electrical installations and electricity infrastructure, and provides the Office of the Technical Regulator with the authority to enforce the requirements of the legislation and its associated regulations.

### DNSP land access rights

In its review the AEMC noted that if the DNSP-led SAPS is considered to be a distribution system under the relevant jurisdictional definition, then it is likely that the DNSP's land access rights would extend to maintaining DNSP-led SAPS and installing any associated distribution network.

In the Electricity Act, a distribution network is defined as the whole or part of a system for the distribution of electricity, but does not include anything declared by regulation not to be a distribution network or part of distribution network.

In some cases, if the SAPS is required to be located on the customer's property the DNSP may need to access private property to install a SAPS on their property and maintain relevant equipment.

### Reliability standards and Guaranteed Service Levels

The AEMC also recommended that reliability standards, guaranteed service level (GSL) payments and the service target performance incentive scheme (STPIS) be extended to apply to the DNSP-led SAPS in a way that achieves equivalency with standard supply. Although the standards and measures do not necessarily need to be exactly the same as those that apply to grid-connected customers, these should be extended to encompass DNSP-led SAPS in some form.

In South Australia, the GSL Scheme forms part of the Essential Services Commission of South Australia's (ESCOSA) Electricity Distribution Code.

SAPN is required to automatically make payments to its customers when certain service levels are not met under the GSL scheme. These service levels relate to the total annual duration of supply interruption, frequency of supply interruptions, promptness of providing infrastructure to enable new connections and timeliness of streetlight repairs.

In South Australia certain levels of reliability must be provided by distribution networks which are contained in the Electricity Distribution Code. These reliability levels are measured by the system average interruption duration index (SAIDI) and the system average interruption frequency index (SAIFI). ESCOSA is responsible for determining these targets.

ESCOSA monitors and reports on SAPN's reliability of supply performance, as measured by supply interruptions. Network performance targets are set to reflect differences in the levels of interconnection and redundancy in SAPN's physical network across the state. SAPN's feeders are divided into four broad categories for the purposes of monitoring network reliability – central business district (CBD), urban, short rural and long rural.

The Electricity Distribution Code specifies 'best endeavours' SAIDI and SAIFI targets that are ceilings, such that SAPN's actual performance should not exceed them. The 'best endeavours' element of the targets reflect the fact that, in cases where actual performance falls short of the target, SAPN must satisfy ESCOSA that it has used its best endeavours in its attempt to stay within the bounds of the target.

#### Question 4

DEM considers that all of the local consumer protections discussed above will apply appropriately under a DNSP-led SAPS arrangement in South Australia. Do stakeholders have any alternative views or consider there to be any other issues to consider in relation to these matters?

## 6. Submissions

Written submissions should be provided by **cob Friday, 20 August 2021**.

Submissions via email are preferred with the subject line “Stand-Alone Power Systems - South Australian Implementation” or can be posted to:

Stand-Alone Power Systems - South Australian Implementation  
ATTENTION: Rebecca Knights  
Department for Energy and Mining  
Energy and Technical Regulation Division  
GPO Box 320  
ADELAIDE SA 5001

Email: [demsaenwg@sa.gov.au](mailto:demsaenwg@sa.gov.au)

All submissions will be published on the Government of South Australia website including your name and organisation (if applicable), however your contact details will not be published.

**Please indicate clearly on the front of your submission if you would like it to be treated as confidential, in full or part, and the reason why it should not be made publicly available.**

Under the *Freedom of Information Act 1991*, the Government of South Australia may also be required by law to release your submission to a third party. If a request is made under the Act, you will be contacted prior to the release of any material.