

Australian Energy Market Commission

ISSUES PAPER

**REVIEW OF THE REGULATORY
FRAMEWORKS FOR STAND-ALONE
POWER SYSTEMS**

11 SEPTEMBER 2018

REVIEW

INQUIRIES

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ABOUT THE AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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SUMMARY

- 1 The Australian Energy Market Commission (AEMC or Commission) has been asked by the COAG Energy Council to undertake a review of the regulatory arrangements for stand-alone power systems under the national energy laws and rules.
- 2 A stand-alone power system (SAPS) is an electricity supply arrangement that is not physically connected to the national grid. The Commission uses the term to encompass both microgrids, which supply electricity to multiple customers, and individual power systems, which relate only to single customers.
- 3 Currently, the national energy laws and rules only apply to the interconnected electricity grid on the east coast of Australia that forms the National Electricity Market (NEM).¹ Where there are stand-alone systems not connected to this grid, generally in remote areas, these are subject only to regulation by states and territories at the jurisdictional level.²
- 4 Some states with significant numbers of stand-alone power systems have relatively well-developed regulatory frameworks. However, other jurisdictions, notably those without SAPS (or with relatively few SAPS), do not. Jurisdictional regulation is also not well suited to circumstances where distribution network service providers (DNSPs) might seek to supply current NEM customers on a stand-alone basis, as DNSPs are otherwise regulated largely through national frameworks, particularly in terms of economic regulation.
- 5 Changes in technology and technology costs are leading stand-alone power systems to become an increasingly viable option for providing electricity services to customers, particularly where the costs of providing a grid-connected service might be high (for instance, in remote locations). Consequently, there is a risk that the current regulatory frameworks, by not adequately supporting the use of stand-alone power systems and the transition of grid-connected customers to stand-alone solutions, might be inhibiting the use of the most efficient technological solutions to supply some customers.
- 6 In 2017, the Commission considered a rule change request made by Western Power that sought to allow DNSPs to deploy alternative technologies and methods of providing distribution services, such as transitioning customers to off-grid supply. The Commission concluded that there may be situations where it would be efficient to allow DNSPs to offer off-grid supply, but that a broader package of framework changes would be required to properly implement the required reforms. Consequently, the Commission determined not to make a rule at that time, but recommended that the COAG Energy Council ask it to provide advice on the law and rule changes that would be required.³
- 7 Similar conclusions have recently been reached by the *Independent Review into the Future Security of the National Electricity Market* (“the Finkel Review”) and the Australian Competition and Consumer Commission (ACCC) in its retail electricity pricing inquiry. The Finkel Review recommended that the COAG Energy Council should direct the AEMC to

1 Certain elements of the national laws and rules also apply to the more major electricity systems in the Northern Territory.

2 Note that Queensland applies some national regulation to stand-alone systems.

3 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, pp. i-iv.

undertake a review of the regulation of individual power systems and microgrids so that these systems can be used where it is efficient to do so,⁴ and the ACCC recommended that immediate work should be undertaken to identify and implement changes to the national energy laws and rules to allow DNSPs to develop off-grid supply arrangements where efficient.⁵

Approach

8 Under the terms of reference for the review provided by the COAG Energy Council, the Commission is to consider two priority areas:

- Priority 1 will focus on the development of a national framework for customers that move from grid-connected supply to stand-alone systems provided by DNSPs.
- Priority 2 will focus on the development of a national framework to support the supply of electricity from stand-alone power systems by parties other than DNSPs.

9 Additionally, under priority 1, the Commission has been asked to develop a mechanism that will form part of the national regulatory arrangements to facilitate the transition of customers currently supplied by a DNSP to a stand-alone power system that is provided by a party other than a DNSP, such as a developer or community group. The terms of reference for the review contemplate that such systems could then be regulated on an ongoing basis under jurisdictional frameworks or under the national arrangements to be developed by the Commission in accordance with priority 2.

10 The Commission is closely coordinating the review with its further work on embedded networks. The *Updating the regulatory frameworks for embedded networks* review commenced on 30 August 2018, and will provide advice to governments on the detailed amendments to the regulatory framework that are required to implement the recommendations from the Commission's earlier *Review of regulatory arrangements for embedded networks*. The two reviews will consider similar, potentially linked policy and legal issues, particularly in relation to consumer protections. Both reviews are likely to result in recommendations for changes to national energy laws, and the COAG Energy Council may subsequently choose to progress these as a single legislative package.

11 As the national electricity frameworks do not apply in Western Australia, the national arrangements for stand-alone power systems developed through this review will also not apply in Western Australia. Consideration will need to be given to which parts of the national framework (if any) would apply in the Northern Territory.

12 Consistent with the terms of reference, existing legacy SAPS (individual power systems and microgrids) which have been established and are currently operating under jurisdictional legislative frameworks need not be captured by the new national framework for SAPS.

4 Commonwealth of Australia, Independent Review into the Future Security of the National Electricity Market, Blueprint for the Future, June 2017, Recommendation 6.9

5 ACCC, Restoring electricity affordability and Australia's competitive advantage, Retail Electricity Pricing Inquiry – Final Report, June 2018, Recommendation 23.

This paper

- 13 This issues paper forms the first stage of consultation for the review. It focusses specifically on priority 1, that is issues associated with transitioning customers currently supplied by DNSPs to stand-alone supply.
- 14 The paper explains the background to the review and its scope, sets out our proposed approach to assessing identified issues, and discusses a range of issues on which stakeholder comment is sought. The issues are broken into four key topics:
1. Transition to off-grid supply by DNSPs
 2. Allocation of roles and responsibilities
 3. Application of consumer protections
 4. Mechanisms for transitioning to off-grid supply by parties other than DNSPs
- 15 The Commission notes the considerable breadth of these topics and, consequently, intends to consult on the further issues associated with priority 2 (national arrangements for the ongoing provision of stand-alone supply by parties other than DNSPs) later in the review.
- 16 Written submissions from stakeholders commenting on the matters raised in this issues paper are requested by 9 October 2018.

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1 INTRODUCTION

The COAG Energy Council has requested that the Australian Energy Market Commission (the Commission) undertake a review of the regulatory arrangements for stand-alone power systems. Stand-alone power systems (SAPS) are electricity supply arrangements that are not physically connected to the national grid.

The falling costs of renewable generation and batteries are leading to significant decreases in the costs of providing off-grid electricity supply through stand-alone power systems.⁶ In some cases, off-grid supply may now be cheaper than standard supply, and there are potential additional benefits such as improved reliability for remote customers and reduced bushfire risk.

There are currently relatively few customers receiving supply from a stand-alone power system. A combination of factors,⁷ including limitations in the regulatory frameworks, currently inhibit the adoption of off-grid supply by customers who are currently grid connected, even where this would be economically efficient.⁸

In 2017, the Commission considered a rule change request made by Western Power that sought to allow distribution network service providers (DNSPs) to deploy alternative technologies and methods of providing distribution services, such as transitioning customers to off-grid supply. The Commission concluded that there may be situations where it would be efficient to allow DNSPs to offer off-grid supply, but that a broader package of framework changes would be required to properly implement the required reforms. Consequently, the Commission determined not to make a rule at that time, but recommended that the COAG Energy Council ask it to provide advice on the law and rule changes that would be required.⁹ Consistent with this recommendation, the COAG Energy Council has now tasked the Commission with undertaking such a review.

The terms of reference for this review distinguishes between SAPS that are managed by a DNSP and SAPS that are managed by other providers. The key focus of this paper is the regulatory arrangements under the national energy laws and rules for stand-alone power systems facilitated by DNSPs. However, Chapter 6 touches on possible amendments to the national framework to enable the transition of grid-connected customers to a SAPS facilitated by a party other than a DNSP.

This chapter provides an introduction to the review and provides:

- an overview of stand-alone power systems
- background to the review of the regulatory framework for stand-alone power systems
- terms of reference for the review
- related work

6 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. i.

7 These factors affect both decisions by individual customers and decisions by networks.

8 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. ii.

9 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, pp. i-iv.

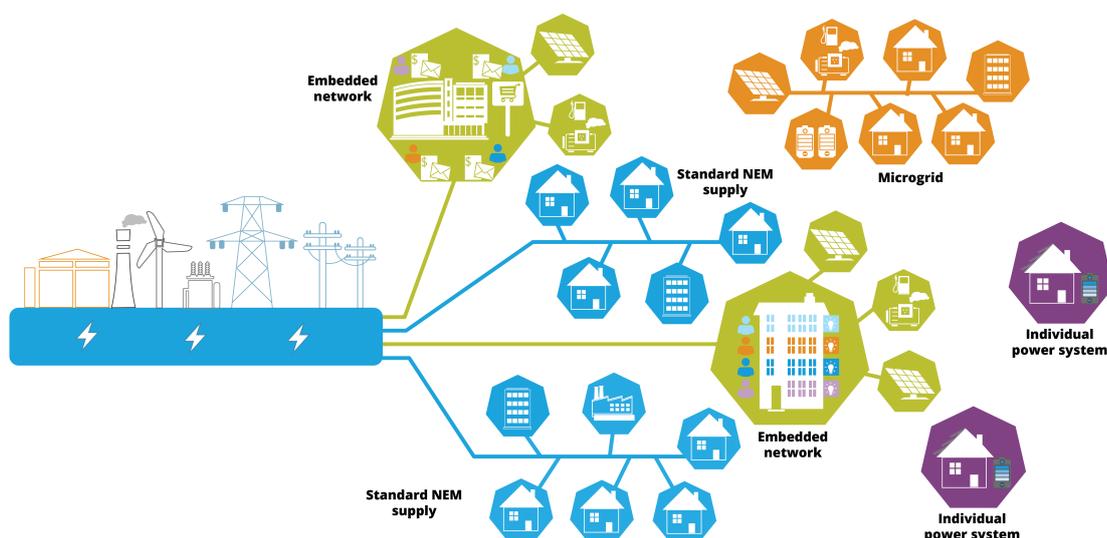
- stakeholder consultation plan and timeframes.

1.1 Overview of stand-alone power systems

1.1.1 Definitions and concepts

There are four possible models of electricity supply for customers: standard supply via the interconnected grid, supply via an embedded network, supply via an individual power system (IPS) or supply via a microgrid.

Figure 1.1: Four models of electricity supply



This review focuses on power systems that are not connected to the interconnected grid. An electricity supply arrangement that is not physically connected (directly or indirectly) to the national grid can be referred to as a stand-alone power system (SAPS). Microgrids and individual power systems are both a form of stand-alone power system.

Microgrid

A microgrid is a SAPS that generates and supplies electricity to multiple customers. This could include anything from a large town to two farms connected to each other. Power may be supplied by a mix of local generation and storage, or behind-the-meter generation and storage. Remote communities, island resorts and remote mining towns are often supplied by microgrids.

Individual power system

An individual power system (IPS) is a SAPS that generates and supplies electricity to a single customer. Typically, power is generated by a combination of renewable generation, energy storage and/or conventional diesel or gas generators.

Microgrids and individual power systems are distinct from embedded networks. While embedded networks supply electricity to customers in a way that is an alternative to standard supply, they remain connected to the national grid (they may or may not have generation within the embedded network). The regulatory framework for embedded networks is being considered in a concurrent review by the AEMC.

Box 1 explains embedded networks and other definitions used in this paper.

BOX 1: KEY DEFINITIONS USED IN THIS PAPER

DNSP

A DNSP is the distribution network service provider or the party that is responsible for the electricity distribution system in a particular geographical area. This area has been allocated by the authority responsible for administering the jurisdictional electricity legislation in the relevant participating jurisdiction. Under the current regulatory frameworks for electricity, DNSPs can generally only supply customers via the interconnected grid (standard supply) and are currently unable to supply customers' electricity via a SAPS (unless granted a waiver in accordance with the AER's ring-fencing guideline).

DNSP-led SAPS

A DNSP-led SAPS is a stand-alone power system operated by a DNSP. These types of SAPS are the primary focus for priority 1 of the review, and this paper.

Third party-led SAPS

These are SAPS that are managed by a party other than a DNSP. These types of SAPS will be considered under priority 2 of the review. However, national framework requirements to support the transition of customers to a SAPS that is facilitated by a party other than a DNSP and regulated under jurisdictional frameworks are considered in chapter 6 of this paper.

Embedded networks

An embedded network is a privately owned, operated or controlled electricity network, often within the bounds of a commercial or residential building complex or other premises, which is connected to the national electricity grid. In an embedded network, a party other than a local network service provider owns and operates the private network that customers connect to.

Embedded networks are interposed between the network of the local network service provider (typically a DNSP) and the customer's installation. The embedded network operator pays the distributor for network services and charges end use customers for network services. In many instances, the embedded network operator or a related party also sells energy to

consumers within the embedded network.

Embedded networks may have distributed energy resources such as solar photovoltaic panels, battery storage, or diesel generators located within them. However, even if the electricity is supplied almost exclusively by local distributed energy resources, if there is a connection to the national electricity grid the supply arrangement is an embedded network rather than a SAPS.

Examples of embedded networks include some (but not all) shopping centres, apartment buildings, retirement villages and caravan parks.

Network service provider

A person who engages in the activity of owning, controlling or operating a transmission or distribution system and who is registered by the Australian Energy Market Operator (AEMO) as a network service provider.

Standard supply

Supply from the interconnected grid is the standard supply model for the vast majority of electricity consumers in National Energy Market (NEM) jurisdictions. In this model, a combination of large and small generators supply energy which is transported through interconnected transmission and distribution networks to consumers across the eastern seaboard. Competitive wholesale and retail markets allow for competition between providers and consumer choice. Regulated network businesses own and operate the monopoly network infrastructure for transmission and distribution of electricity.

1.1.2

National regulatory arrangements

National energy markets in Australia are governed by a combination of national and jurisdictional legislation and other regulatory frameworks. The Australian Energy Market Agreement (AEMA) is an agreement between the Australian government and the governments of all states and territories,¹⁰ and sets out the legislative, institutional and governance frameworks for energy regulation. The AEMA specifies the distribution and retail activities that are to be covered by national regulatory frameworks in NEM jurisdictions,¹¹ and those that are regulated under state and territory arrangements.

National functions include the economic regulation of distribution networks, arrangements for distribution network expansion and the authorisation of retailers.¹² The regulation of transmission networks and arrangements for the wholesale electricity market are also activities governed by national frameworks in NEM jurisdictions.

¹⁰ COAG, Australian Energy Market Agreement (as amended December 2013).

¹¹ The NEM interconnects five regional market jurisdictions: Queensland, New South Wales (including the Australian Capital Territory), Victoria, South Australia and Tasmania. Western Australia and the Northern Territory are not connected to the NEM.

¹² Some elements of the national frameworks have not been adopted in Victoria.

In general, national functions for electricity are governed through the National Electricity Law (NEL)¹³ and the National Energy Retail Law (NERL),¹⁴ together with the associated regulations, rules, guidelines, procedures, standards and settings.

The NEL establishes, among other things, obligations on network service providers in the NEM. The National Electricity Rules (NER) support the NEL, and govern the operation of the wholesale electricity market, the economic regulation of services provided by monopoly transmission and distribution networks, the way in which AEMO manages power system security, and electricity connections for retail customers.¹⁵

The NERL regulates the supply and sale of energy to retail customers in the jurisdictions that have adopted it.¹⁶ The National Energy Retail Rules (NERR) support the NERL, and govern the sale and supply of electricity and natural gas to residential and other small customers. They include key electricity consumer protection measures and contract terms and conditions. Customer connections, retail competition, energy-specific consumer protections and basic standard and market agreement terms and conditions are included in the rules.¹⁷

As the NEL and the NER are currently only applicable to interconnected systems, they do not apply to SAPS.¹⁸ However, where a DNSP is nominated in the regulations of the relevant jurisdiction as the operator of a microgrid, certain provisions of the NER may apply to that DNSP.¹⁹

In respect of the NERL and NERR, these instruments do not currently apply to SAPS established in New South Wales, South Australia or Tasmania. Certain provisions may apply to microgrids in Queensland and the ACT (unless the seller has an exemption).²⁰ In Victoria, the Energy Retail Code includes provisions which are equivalent to the NERL and NERR and so may also be applicable to SAPS (if the SAPS customers are supplied by a licensed retailer).

1.1.3 Jurisdictional regulatory arrangements

Currently, as SAPS are not (in general) captured under the national regulatory framework, they are subject to jurisdictional frameworks. These jurisdictional frameworks vary in their comprehensiveness, with state and territory regimes differing quite widely. Some states with significant numbers of stand-alone power systems have relatively well-developed regulatory frameworks, but other jurisdictions with no or relatively few such systems often do not.

If there are changes to the NEL and NER, NERL and NERR and associated regulations that elevate SAPS to a national framework, there will remain functions for which jurisdictions have

13 Schedule to the National Electricity (South Australia) Act 1996.

14 Schedule to the National Energy Retail Law (South Australia) Act 2011.

15 AEMC website <https://www.aemc.gov.au/regulation/energy-rules/national-electricity-rules>

16 It should be noted that Victoria has not adopted the NERL, and state-specific retail frameworks continue to apply in that state.

17 AEMC website <https://www.aemc.gov.au/regulation/energy-rules/national-energy-retail-rules>

18 Key terms that are used throughout the NEL and NER, including "network service provider" in the NEL and "distribution system" in the NER, are defined with reference to interconnected systems.

19 NEL section 6A.

20 The Acts adopting the NERL in Queensland and the ACT do not limit the application of the NERL to the sale of electricity to customers connected to the national electricity system. Therefore in those jurisdictions, suppliers of electricity in a microgrid who are authorised retailers must comply with the NERL.

responsibility under the AEMA. These functions will need to be reviewed by jurisdictions to provide a complete framework for consumers under the SAPS model of supply. These state and territory functions include DNSP technical and safety requirements, small customer dispute resolution, service reliability standards and the determination of distribution and retail service areas.

In the course of the review, where it is identified that changes to the jurisdictional functions will be required to allow customers receiving electricity under a SAPS model of supply equivalent coverage to that of grid-connected customers, the Commission will highlight those areas where change will be required.

Legacy SAPS which are currently operating under jurisdictional frameworks will not be a focus of this review.

BOX 2: MICROGRID UNDER JURISDICTIONAL REGULATORY ARRANGEMENTS - BASS STRAIT ISLANDS

The Bass Strait Islands are not connected to the national grid, and therefore provide a good example of a SAPS subject to jurisdictional regulation. The Bass Strait Islands, comprising King and Flinders Islands, are supplied electricity by Hydro Tasmania via microgrids.

The Tasmanian Electricity Code (the Code) contains specific provisions for electricity generation and supply in the Bass Strait Islands, and there are provisions regarding the inspection, safety and rectification of electrical infrastructure for any microgrids in Tasmania under the Electricity Industry Safety and Administration Act 1997 (Tas). The Code also sets out reliability standards for the Bass Strait Islands, and imposes specific rules regarding systems operations and controls.

For the Bass Strait Islands, all tariffs, charges and conditions are subject to approval by the Tasmanian Economic Regulator, and metering and billing requirements for Bass Strait Island customers are set out in the Code. Momentum Energy (which is 100 per cent owned by Hydro Tasmania) is contracted to perform the retailing function for the Bass Strait Islands. There is no retail competition.

Flinders Island is powered by solar and diesel generation. Wind energy is also generated through two turbines connected to the grid – one is privately owned.

King Island Advanced Hybrid Power Station is part of an integrated system that generates solar power and uses diesel generation to ensure reliability in all conditions. The Huxley Hill Wind Farm is also a part of the system.

Source: Tasmanian Electricity Code, chapter 1, chapter 2, chapter 4A, chapter 8 and chapter 9; Electricity Supply Industry Act 1995 (Tas), ss42, 43; Electrical Industry Safety and Administration Act 1997 (Tas); Hydro Tasmania website, <https://www.hydro.com.au/clean-energy/powering-bass-strait-islands>

1.1.4

Development of a framework for stand-alone power systems

As SAPS are not generally captured under the national regulatory framework and are subject to jurisdictional legislative frameworks that vary in their completeness, and given the changes

to technology, it is important that changes to the national framework are considered to allow the uptake of SAPS where this is efficient.

There are a range of reasons that justify the need for effective regulation of SAPS:

- Energy is an essential service for which there is a need and expectation for certain minimum protections, but in some jurisdictions SAPS customers currently have no energy-specific consumer protections and minimal safety or reliability standards.
- Once they are established, SAPS may exhibit natural monopoly characteristics such that regulation is required to simulate competitive market outcomes.
- SAPS may be a more efficient alternative to maintaining a traditional regulated DNSP connection in some areas, but customers will not voluntarily install them in rural locations where non-locational network pricing means the costs faced by the customer would increase.
- Regulatory barriers may inhibit new entrant products and services that have potential to benefit consumers and increase energy productivity.

Amendments to the NEL and NER, and the NERL and NERR, could allow DNSPs to provide off-grid supply via SAPS as a distribution service, with conditions to protect customers and enable (as much as feasible) competition for off-grid supply services.²¹ Additionally, the development of a national framework for SAPS, including amendments to the NEL and NER and the NERL and NERR, could enable SAPS to be facilitated by parties other than DNSPs, whilst maintaining relevant consumer protections and supply provisions.

As discussed in section 1.1.3, under the arrangements underpinning national energy markets, many aspects of regulation, such as safety and network reliability, are governed primarily by jurisdictional frameworks. Consequently, SAPS can only be effectively regulated if there are complementary changes to both the national and jurisdictional regulatory frameworks.

1.2 Background to this review

The need to update the regulatory framework to better facilitate the use of SAPS has been recognised both by governments and regulatory bodies in recent years. Details of past related work programs that have led to this review are provided below.

1.2.1 Energy Market Transformation Project Team work

In August 2016, the COAG Energy Council's Energy Market Transformation Project Team (EMTPT) published a consultation paper on regulatory issues relating to off-grid systems.²² Following consideration of submissions to the consultation, the COAG Energy Council agreed that EMTPT should engage with regulators and other relevant jurisdictional bodies to develop a best practice model for jurisdictional regulation of stand-alone power systems, and to develop changes to the national framework to address regulatory gaps for transferring from grid supply to SAPS.²³

21 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p.iii.

22 COAG Energy Council, Stand-alone power systems in the electricity market, Consultation on regulatory implications, 19 August 2016.

In 2017/2018 the EMTPT undertook further work on the regulatory issues relating to off-grid systems. This included commissioning HoustonKemp to facilitate a workshop involving the EMTPT, the Commission and the Australian Energy Regulator (AER), and to develop a workshop report. The HoustonKemp report, *Decision-making mechanisms for transition to Stand-alone Power Systems*, is Appendix 2 to the terms of reference for this review.

1.2.2 Western Power rule change

In September 2016, Western Power, an electricity distributor in Western Australia, submitted a rule change request to the Commission which sought to remove certain barriers to distributors deploying alternative technologies and methods of providing distribution services, such as transitioning customers to off-grid supply.²⁴

In its final determination, the Commission decided not to make a rule. The Commission considered that the rule change request identified a real issue that should be addressed. However, without changes to the NEL, the change to the definition of “distribution service” in the NER proposed in the rule change request would likely result in inconsistencies between the NEL and the NER, which would make the proposed rule invalid.²⁵

The Commission also noted that there are currently substantial differences between the energy-specific consumer protections available to grid-connected customers and those available to off-grid customers. In several jurisdictions the full suite of protections under the NERL and NERR cease to apply when a customer moves off-grid.²⁶ Consequently, the Commission recommended that a co-ordinated package of changes to national laws and rules, together with relevant jurisdictional instruments, should be developed and implemented to allow off-grid supply to be used where efficient, while maintaining appropriate protections for consumers. Specifically, the Commission recommended that the COAG Energy Council ask it to provide advice on the law and rule changes that would be required.

BOX 3: WESTERN POWER STAND-ALONE POWER SYSTEM TRIALS, WESTERN AUSTRALIA

Western Power’s decision to submit a rule change request to the AEMC was made following a successful trial of SAPS in Western Australia. In July 2016 it installed individual power systems on six rural farms as part of a 12-month pilot to test the suitability of the technology. In determining the sites to select for the trials, Western Power used the following criteria:

- SAPS had to be 50 per cent cheaper to install and operate compared with the costs of building or replacing a grid-connection
- the bushfire risk had to be medium to high

23 COAG Energy Council, Energy Market Transformation Bulletin Number 5 – Work Program Update.

24 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. i.

25 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. ii.

26 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. iii.

- they had to be on short spurs on the same feeder
- the customers had to consume less than 40kWh/day
- there needed to be heightened reliability issues.

The systems were independent energy-generating units with solar photovoltaic (PV) panels, lithium batteries, an inverter and backup diesel generator. The units were sized to each customer's needs with a greater capacity than a typical IPS to maintain levels of supply consistent with the grid, allowing for increases in demand. Customers paid the same rates they would have if they were grid-connected.

The results of the trial, and feedback from the customers, were positive. Customers experienced significantly fewer power interruptions than customers on the network in the same area, the individual power systems proved robust in extreme weather events, more than 90 per cent of electricity was generated from solar PV, and customers reported greater satisfaction. Western Power is extending the trial to supply these customers under IPS for a further three years.

Source: Western Power, Stand-alone Power System Pilot, One Year On, pp. 2-6.

1.2.3

Finkel review

The *Independent Review into the Future Security of the National Electricity Market* (the Finkel review) detailed 50 recommendations for the national electricity market. At its July 2017 meeting, the COAG Energy Council agreed to implement 49 of the 50 recommendations. One of the recommendations (6.9) was that:

"By mid-2018, the COAG Energy Council should direct the Australian Energy Market Commission to undertake a review of the regulation of individual power systems and microgrids so that these systems can be used where it is efficient to do so while retaining appropriate consumer protections".²⁷

1.2.4

ACCC retail electricity pricing inquiry

On 11 July 2018, the Australian Competition and Consumer Commission (ACCC) released its final Retail Price Inquiry report *Restoring electricity affordability and Australia's competitive advantage*. The report contained a recommendation (recommendation 23) on SAPS. The recommendation was that the package of law amendments recommended by the AEMC in the Western Power rule change determination be worked on immediately to allow DNSPs to supply power to existing customers or new connections via SAPS, where efficient.²⁸

The ACCC stated in its recommendation that the arrangements for SAPS should be adopted on a consistent basis across the NEM, and operated under a contestable framework. Further, the ACCC recommended that protections for customers being supplied by a distributor via a

²⁷ Commonwealth of Australia, *Independent Review into the Future Security of the National Electricity Market*, Blueprint for the Future, June 2017, p. 154.

²⁸ ACCC, *Restoring electricity affordability and Australia's competitive advantage*, Retail Electricity Pricing Inquiry - Final Report, June 2018, p. 221.

SAPS should be equivalent to those of customers connected to the grid, including obligation to supply, reliability and security of supply.²⁹

1.3 Terms of reference and scope

1.3.1 COAG Energy Council Terms of reference

On 23 August 2018, the Commission received the terms of reference from the COAG Energy Council for a review of the regulatory frameworks for SAPS. The review is in response to the Commission's recommendations in the final rule determination on the Western Power rule change. The review is to be forward looking, focusing on the regulation of new SAPS, and will consider the national electricity regulatory framework set out in the NEL and NER, the NERL and NERR, and associated regulations and other subordinate instruments including guidelines issued by AEMO and AER.³⁰ Legacy SAPS operating under jurisdictional legislation will not be a focus of the review.

The review will consider three scenarios involving the transition of grid-connected customers to:

- DNSP-led SAPS under a national SAPS framework
- third-party-led SAPS under a jurisdictional framework
- third-party-led SAPS under a national framework.³¹

The terms of reference split the review into two priority areas:

- Priority 1 will focus on:
 - development of a national framework for customers that move from grid-connected supply to a SAPS facilitated by a DNSP, and
 - adjustments to the national framework to enable the transition of grid-connected customers to a SAPS facilitated by a party other than a DNSP which will subsequently be regulated under a jurisdictional framework.
- Priority 2 will then focus on development of additional arrangements within the national framework to support a SAPS model of supply facilitated by a party other than a DNSP.³²

For priority 1, the COAG Energy Council requires the Commission to identify the key issues, risks and solutions (including, at a high level, regulatory changes) to enable grid-connected customers to transition to a DNSP-led SAPS. The terms of reference set out a comprehensive list of key issues and options that the review should consider. The issues are grouped broadly as follows and include:

- Planning and economic regulation:
 - Decision making mechanism to trigger transition to SAPS, including suitability of the regulatory investment test for distribution (RIT-D), the need for a regulatory approval role and the need for a customer consent process

²⁹ Ibid.

³⁰ Terms of reference, p. 2.

³¹ Terms of reference, pp. 4-5.

³² Terms of reference, p. 7.

- Treatment of SAPS assets, including requirements for DNSPs to test for competitive provision of SAPS
- Arrangements for generation within the SAPS framework (new and existing)
- Consumer protections:
 - Costs and benefits of retaining/providing access to retail competition and alternative ways of protecting customers from monopoly pricing
 - Merits or otherwise of retaining a separate retailer function
 - Options for simulating competitive market outcomes (including in relation to the wholesale market exchange)
- Reliability, security and service quality:
 - Which regulatory framework should apply
- Other matters:
 - Possible changes to the network connections framework and market registration and participation requirements etc.³³

Consumer protection issues once customers have transitioned to a SAPS must also be considered, and advice (including on regulatory changes) provided on:

- which elements of the NERL/NERR consumer protections framework should apply or be adapted to SAPS customers
- which elements of the NEL/NER should apply or be adapted to ensure SAPS customers continue to receive a reliable, secure and efficient electricity service
- any need for, and issues with, inclusion of a “return to grid” process for SAPS customers where they wish to reconnect to the grid (including consideration of the connection process and capital contribution arrangements).³⁴

In carrying out the review, the Commission is to give consideration to the risks and benefits of regulating SAPS under a jurisdictional versus national framework, and the risks and benefits associated with different SAPS in the same jurisdiction being subject to different regulatory arrangements (i.e. jurisdictional or national frameworks).³⁵

For priority 1, the Commission is to publish a draft report by 18 December 2018 and a final report by 31 May 2019.

1.3.2

Our approach to the review

The terms of reference require the Commission to carry out the review in two stages. Stage 1 (or ‘priority 1’) will focus on the development of a national framework for customers moving from grid-connected supply to a SAPS facilitated by a DNSP. Adjustments required to the national framework to enable grid-connected customers to transition to jurisdictionally regulated SAPS, facilitated by parties other than a DNSP, will also be examined under priority 1.

³³ Terms of reference, pp. 10-13.

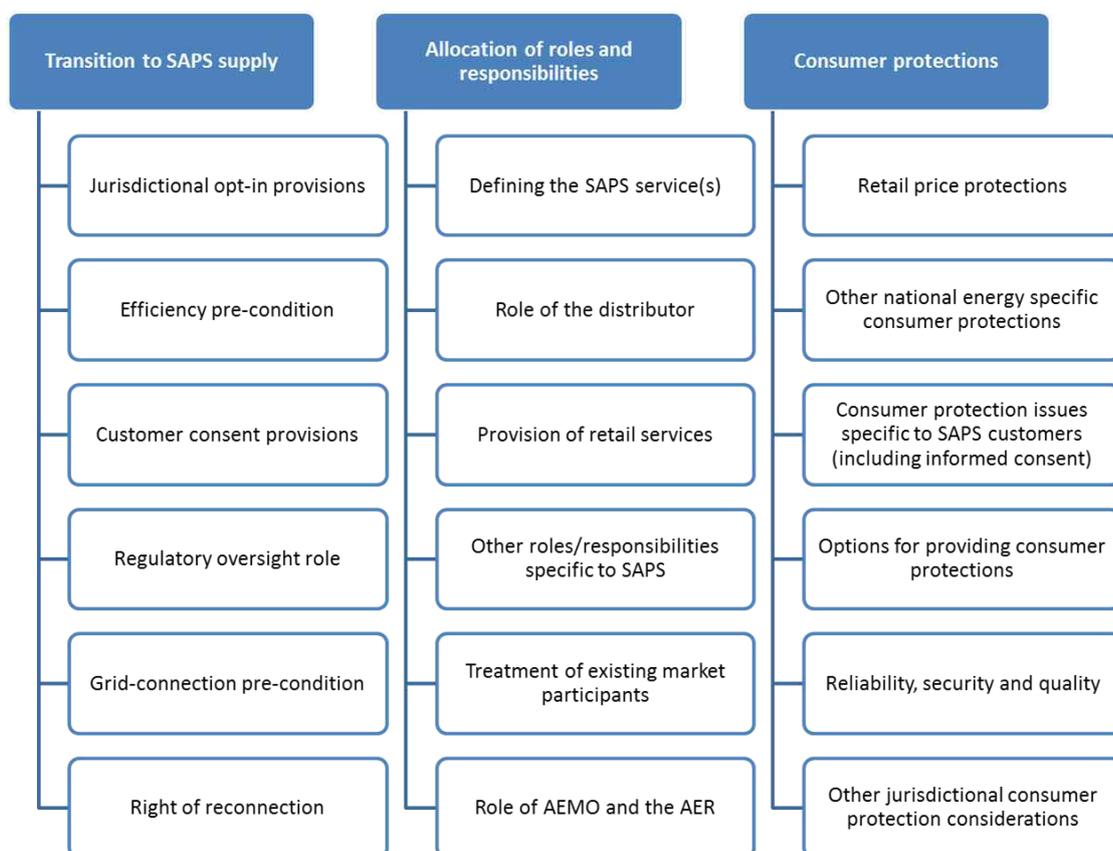
³⁴ Terms of reference, p. 6.

³⁵ Terms of reference, p. 7.

In respect of the transition of grid-connected customers to DNSP-led SAPS under priority 1, the key issues can be divided into three discrete areas:

- transition to SAPS supply
- allocation of roles and responsibilities, and
- consumer protections.

Figure 1.2: Breakdown of key issues for DNSP-led SAPS



The key issues under the three areas relating to transition of grid-connected customer to DNSP-led SAPS are considered in Chapters 3-5 of this paper.

Chapter 6 of this paper focuses on the other deliverable for priority 1, the required amendments to the national framework to enable the transition of grid-connected customers to a SAPS facilitated by a party other than a DNSP. The terms of reference envisage that such systems will subsequently be regulated under a jurisdictional framework or under the national regime for third party SAPS to be developed by the Commission under priority 2.

Priority 2, the second stage of the review focusing on a national framework for SAPS facilitated by parties other than a DNSP, will commence in late 2019/early 2019.

1.4 Other related work and issues

The Commission is closely coordinating and considering linked policy and legal issues between the SAPS and the Embedded networks workstreams. The COAG Energy Council has recommended the two workstreams are coordinated to ensure strategic overview, efficiency and consistency, as the regulatory issues covered will be similar.³⁶

Additionally, the Western Australian Government has commenced a Parliamentary Inquiry into Microgrids and Associated Technologies in WA. This Inquiry will likely look at both stand-alone power systems and embedded networks, as well as other associated technologies. The Commission will be looking at the outcomes of this Inquiry closely as it progresses the SAPS review.

1.4.1 Embedded networks implementation workstream

Embedded networks rule change 2015

On 17 December 2015, the Commission made a final rule to reduce the barriers to embedded network customers accessing retail market offers.³⁷ The rule commenced on 1 December 2017, and established an accredited provider role in the NER – the embedded network manager – to be responsible for performing market interface services for embedded network customers.³⁸ This enables embedded network customers to access retail market offers.

In the final determination, the Commission also recommended separate but supporting changes to state and territory legislation, the AER's network exemption guideline and a review of the NERR for embedded network customers.³⁹

Embedded networks review 2017

On 28 November 2017, the Commission completed its *Review of regulatory arrangements for embedded networks* (embedded networks review),⁴⁰ which arose from the earlier embedded networks rule change. The Commission concluded that the current regulatory framework for embedded networks is no longer fit for purpose.

The review found that embedded network customers receive a lesser level of consumer protections and there is a more limited monitoring and enforcement regime due to regulatory gaps, the growth in the numbers of embedded networks, and diversity in the capacity and resources of embedded network operators. The Commission also found significant practical barriers to customer access to retail market competition.⁴¹

36 Terms of reference, p.7.

37 AEMC, Embedded Networks, Final rule determination, 17 December 2015.

38 AEMC, Embedded Networks, Final rule determination, 17 December 2015, p. ii.

39 AEMC, Embedded Networks, Final rule determination, 17 December 2015, p. v.

40 AEMC, Review of regulatory arrangements for embedded networks, Final report, 28 November 2017.

41 AEMC, Review of regulatory arrangements for embedded networks, Final report, 28 November 2017, p. iv.

In the report, the Commission recommended changes to the regulatory framework and a new regulatory approach to:

- improve access to competition for embedded network customers
- elevate embedded networks into the national framework
- better regulate new and legacy embedded networks.⁴²

The Commission also made a number of recommendations on matters relating to embedded networks under jurisdictional regulatory frameworks that should be progressed by state and territory governments, including:

- improving access to ombudsman schemes
- improving awareness of and access to concessions
- improving information provision at the time of purchase or lease of a property
- reviewing jurisdictional safety and reliability regimes.⁴³

Embedded networks review 2018

The Commission self-initiated the *Updating the regulatory frameworks for embedded networks* review on 30 August 2018. The purpose of the *Updating the regulatory frameworks for embedded networks* review is to advise on the detailed amendments to the regulatory framework that are required to implement the recommendations from the Embedded networks review (2017). Through the 2018 review, the Commission will develop a package of changes to the NEL and NER, NERL and NERR and any other relevant regulatory instruments to implement the new regulatory approach for embedded networks previously recommended by the Commission.

The key deliverables will align with those for the SAPS review and will include a draft report to be published at an appropriate interval ahead of developing a final report, which is to be published by 31 May 2019.

1.4.2 Western Australia Parliamentary Inquiry into Microgrids and Associated Technologies in WA

In Western Australia, a Parliamentary Inquiry into microgrids and associated technologies commenced on 21 February 2018, with a report due to be tabled at the end of November 2018.

Under the terms of reference for the Inquiry, the Economics and Industry Standing Committee will investigate and report on the emergence and impact of electricity microgrids and associated technologies in Western Australia. The report will consider the potential for microgrids and associated technologies to contribute to the provision of affordable, secure, reliable and sustainable energy supply, in both metropolitan and regional WA.⁴⁴

42 AEMC, Review of regulatory arrangements for embedded networks, Final report, 28 November 2017, pp. 59-60.

43 AEMC, Review of regulatory arrangements for embedded networks, Final report, 28 November 2017, p. ii.

44 Terms of reference, Inquiry into Microgrids and Associated Technologies in WA, accessed on 24 August 2018 at [http://www.parliament.wa.gov.au/parliament/commit.nsf/\(\\$all\)/8C9FB0B8AA10E88D4825823B0019BAA3?opendocument](http://www.parliament.wa.gov.au/parliament/commit.nsf/($all)/8C9FB0B8AA10E88D4825823B0019BAA3?opendocument)

The inquiry will also look at:

- economic and employment opportunities which could be supported by the development of microgrids and associated technologies
- enablers, barriers and other factors affecting microgrid development and electricity network operations, and
- initiatives in other jurisdictions relating to microgrids and associated technologies.⁴⁵

1.5 Stakeholder consultation and timeframes

Under this review, the COAG Energy Council has requested the Commission to consult with the EMTPT, the AER, the Economic Regulatory Authority Western Australia and AEMO. The Commission proposes to consult broadly with stakeholders, including with jurisdictional regulators and consumer groups. The Commission intends to utilise stakeholder forums and/or roundtable meetings to facilitate consultation at appropriate times as the review progresses.

The breath of issues to be considered in the review, and the depth in which they need to be considered, necessitates this paper focusing primarily on the transition of customers to a stand-alone power system facilitated by a DNSP (priority 1).

A second issues paper will likely be required to focus on a national framework for customers transitioning to a stand-alone power system facilitated by someone other than a DNSP. The second issues paper focusing on priority 2 will be released at a similar time to the draft report on priority 1, that is in late 2018, or early 2019.

The key deliverables and timeframes are detailed below.

Table 1.1: Key deliverables and timeframes

REPORT	DATE
For Priority 1	
Issues paper	11 September 2018
Draft report	18 December 2018
Final report	31 May 2019
For Priority 2	
Issues paper (if required)	Late 2018 or early 2019
Draft report	30 June 2019
Final report	31 October 2019

⁴⁵ Ibid.

2 ASSESSMENT FRAMEWORK

2.1 Introduction

This chapter sets out the Commission's proposed assessment framework for this review. It first discusses the overarching objectives that guide all the Commission's work, including this review. It then outlines the criteria that we propose to use in testing whether arrangements promote these energy objectives (section 2.3), including how these criteria relate to a number of objectives set out by the COAG Energy Council in the Terms of Reference.

2.2 National energy objectives

This review will involve considering potential changes under the NEL and NER for electricity and the NERL and the NERR for retail energy services. Two of the national energy objectives - the NERO and the NEO - are relevant to this review.

Although these objectives have some differences, at the heart of them is the promotion of the long term interests of consumers.

The NERO is:⁴⁶

"to promote efficient investment in, and efficient operation and use of, energy services for the long term interests of consumers of energy with respect to price, quality, safety, reliability and security of supply of energy."

In addition, under the NERL the Commission must, where relevant:⁴⁷

"satisfy itself that the Rule is compatible with the development and application of consumer protections for small customers, including (but not limited to) protections relating to hardship customers."

This is referred to as the consumer protection test.

The NEO is:⁴⁸

"to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system."

Based on an assessment of the terms of reference for the review, the Commission considers that the relevant aspects of the NERO and NEO are the promotion of efficient investment in, and operation of energy/electricity services for the long term interests of consumers of energy/electricity with respect to price, quality, safety and reliability.

46 National Energy Retail Law section 13.

47 Retail Law section 236(2)(b).

48 National Electricity Law section 7.

For example, any regulatory arrangements for stand-alone power systems may affect the prices consumers pay (including consumers that remain connected to the grid) and the reliability of the service SAPS customers receive.

The consumer protection test will also be important given the strong focus of the review on the protections that consumers should receive when supplied by stand-alone power systems.

For a detailed discussion on the Commission's approach to applying these overarching objectives to rule making processes and reviews, such as this one, refer to *Applying the energy objectives: A guide for stakeholders*.⁴⁹

2.3 Criteria

The following criteria are proposed for assessing the potential regulatory arrangements for stand-alone power systems and making recommendations to the COAG Energy Council on appropriate amendments to the national energy laws and rules:

- Do the regulatory arrangements promote efficient investment and allocation of risks and costs?
- Do the regulatory arrangements facilitate competition and consumer choice in energy services and products?
- Do appropriate consumer protections and compliance mechanisms apply within stand-alone power systems?
- Are the regulatory arrangements clear, consistent and transparent?
- Are the regulatory arrangements proportional to the risks they seek to mitigate?

Each criterion is discussed further below.

2.3.1 Efficient investment and allocation of risks and costs are promoted

The key driver for the review is to develop regulatory arrangements to allow DNSPs to use new technical solutions to supply energy to consumers in a more economically efficient way, consistent with the national energy objectives.⁵⁰ The regulatory framework for stand-alone power systems should encourage innovation and promote efficient investment in network infrastructure and the supply of energy services.

Efficient outcomes are most likely to arise where risks and costs are appropriately allocated. This allocation should lead to:

- mitigation of risk - in the instance the risk (that is, the potential for financial or physical loss) materialises, the consequences should be avoided or lessened
- incentives to improve risk management over time - risk should be allocated to a party who can, relative to others, better manage the consequences of that risk.

⁴⁹ AEMC, *Applying the energy objectives: A guide for stakeholders*, 1 December 2016, Sydney.

⁵⁰ The development of arrangements for DNSP-led stand-alone power systems that are economically efficient is noted as an objective by the COAG Energy Council in the Terms of Reference. Terms of Reference, p. 8.

As a general rule, risks should be borne by, or allocated to, parties who are in the best position to manage them and have the incentives to do so. This review, for example, will consider how costs and risks are allocated between stand-alone power system service providers and consumers.

2.3.2 Facilitating competition and promoting consumer choice in energy services and products

Competition is a key driver of productivity and efficiency in markets, driving lower prices and improved choices for consumers in the long run. This is because, over time, effective competition will incentivise businesses to innovate, minimise costs, provide competitive prices, provide a quality of service matching customer expectations and a choice of services consistent with consumer preferences. The terms of reference recognises the relevance of competitive service delivery as a means of driving better price and service outcomes for consumers.⁵¹

An effective regulatory framework should be sufficiently flexible to encourage emerging technologies and services, thus promoting competition. The Commission will assess the degree to which any regulatory framework for stand-alone power systems promotes or hinders innovation and competition in the provision of electricity services.

2.3.3 Appropriate consumer protections

In the final determination for the Western Power rule change, the Commission set out its view that customers who move to off-grid supply to reduce distribution costs (thereby benefiting all electricity customers by reducing overall costs) should continue to receive appropriate energy-specific consumer protections aligned with those of standard supply customers. The Commission considers that, where off-grid supply is provided as a regulated DNSP-led service at the same price as paid by grid-connected customers, protections should be no less stringent than the relevant customers currently receive for their existing grid connection.⁵²

This review will therefore consider the extent to which the regulatory arrangements for stand-alone power systems can provide for equivalent consumer protections to be extended to stand-alone power system customers, and how this can best be achieved. The Commission will also consider the mechanisms for compliance and enforcement of consumer protections within stand-alone power systems.

2.3.4 Clarity, transparency and predictability

The regulatory framework for stand-alone power systems needs to be transparent and result in predictable outcomes for all participants and should provide a clear, understandable set of rules to encourage effective participation in the market. Consumers and businesses need to understand what their protections and obligations are, and what others' obligations are, with respect to the transactions they undertake. This should promote confidence in the regulatory framework and encourage effective participation.

⁵¹ Terms of Reference, p. 8.

⁵² AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. 36.

To the extent they are required to make them, consumers should have access to sufficient information to make informed and efficient decisions, especially as a decision to accept a stand-alone power system solution is likely to have long term implications. As such, clear information around the consumer protections which apply when being supplied by a SAPS would assist consumers in making decisions about transitioning from a standard grid connection to a SAPS model of supply.⁵³

A clear and transparent regulatory framework creates confidence in the market which should also encourage investment and innovation in providing stand-alone power system based services.

2.3.5 **Proportionality and regulatory burden**

Competition and market signals often help protect and provide the best outcome for consumers. However, regulation may be necessary in the case of market failure or to safeguard safe, secure and reliable supply of energy to consumers. This review will consider how the regulatory framework can appropriately address any market failures or risks arising from the evolution and growth of stand-alone power systems.

Where arrangements are complex to administer, difficult to understand, or impose unnecessary risks, they are less likely to achieve their intended ends, or will do so at higher cost. The Commission will keep this consideration in mind in developing regulatory arrangements for the provision of stand-alone power systems by DNSPs. The Commission will consider whether the administrative and compliance burden created by its recommendations is likely to be proportionate to the benefits it is seeking to achieve.

⁵³ The terms of reference notes as an objective that SAPS customers should only be provided with a lower standard of service if they have expressly accepted it. Terms of Reference, p. 8.

3 TRANSITION TO OFF-GRID SUPPLY

This chapter focuses on the key questions that need to be answered in order to develop a regulatory framework for the transition of a customer, or group of customers, to a stand-alone power system by a DNSP. Specifically, this chapter sets out a number of potential features/measures of a framework which may or may not be necessary to support the transition of grid-connected customers to a DNSP-led SAPS. These include:

- Jurisdictional opt-in provisions
- Efficiency pre-condition
- Customer consent provisions
- Regulatory oversight role
- Grid-connection pre-condition
- Right of reconnection

The features/measures discussed in this chapter build on the analysis and consultation already undertaken by the EMTPT in 2016, as well as by the AEMC in the context of the Western Power rule change and the embedded networks review in 2017.

3.1 Jurisdictional opt-in provisions

The terms of reference for this review note that the potential for, and the development of, SAPS is unlikely to be consistent across all jurisdictions in the NEM. The speed at which SAPS may emerge in a jurisdiction is likely to be influenced by jurisdiction-specific factors such as bushfire risk, existing network infrastructure and the prevalence of remote customers and communities. In addition, the existing regimes and regulation of SAPS across jurisdictions differ significantly in terms of their completeness.

Given these differences, the terms of reference have asked the Commission to consider including arrangements which would allow jurisdictions to choose how SAPS will be regulated within their jurisdiction. Specifically, we have been asked to consider how to provide for jurisdictions to opt-in to one (or more) of the following:⁵⁴

- a national framework for the regulation of SAPS led by a DNSP
- the relevant jurisdictional framework for the regulation of SAPS led by a party other than a DNSP, and/or
- a national framework for the regulation of some or all SAPS.

This could be achieved by incorporating a jurisdictional opt-in trigger into the national regulatory framework applicable to DNSP-led SAPS.⁵⁵ The 'trigger' would effectively be a requirement on jurisdictions to make an initial, once-off decision to opt-in to the national

⁵⁴ Terms of reference, pp. 5-6, 16.

⁵⁵ Note that the consideration of a national framework applicable to SAPS which are led by a party other than a DNSP will be considered as part of priority 2 of this review. Subject to the inclusion (or otherwise) of an opt-in trigger for jurisdictions to choose to participate in national framework for DNSP-led SAPS, this requirement could be extended to enable jurisdictions to opt-in to a national framework for the regulation of DNSP and/or non-DNSP led SAPS.

framework and thereby allow a DNSP to participate in the national process for the provision of SAPS.

Requiring an explicit decision to opt-in to the national framework would encourage jurisdictions to review and, where appropriate, amend relevant jurisdictional instruments to ensure sufficient consumer protections and reliability standards are in place for customers who have been transitioned from standard supply via the grid to a SAPS model of supply.

In addition, the inclusion of an opt-in decision would allow jurisdictions to adopt the national framework as soon as they consider that their own jurisdictional arrangements are appropriate, rather than waiting for all jurisdictions to amend their arrangements before the relevant NEL and NER changes are made.

In considering the design of a jurisdictional opt-in provision, consideration will be given to whether flexibility would be beneficial to enable jurisdictions to take a more bespoke approach to opting-in to the national framework, for example, on a regional or distribution area basis.

QUESTION 1: JURISDICTIONAL OPT-IN PROVISIONS

- (a) Should the arrangements supporting the transition to off-grid supply include an explicit mechanism to enable jurisdictions to determine when the national framework for SAPS would come into effect for DNSPs in their jurisdiction?
- (b) Should this mechanism provide jurisdictions with the flexibility to opt-in to the national framework on a more bespoke basis e.g. on a regional or distribution area basis, rather than state or territory wide?

3.2 Efficiency pre-condition

The current framework for the regulation of DNSPs in the NER is designed to encourage these businesses to make efficient investment and expenditure decisions. It uses incentives and obligations to encourage DNSPs to generate outcomes that consumers need, want and are willing to pay for, and to do so efficiently and in line with jurisdictional reliability standards.

The relevant aspects of the broader incentive frameworks and obligations in the NER are set out in Box 4 below.

BOX 4: INCENTIVE FRAMEWORKS AND OBLIGATIONS IN THE NER

Broadly, the promotion of efficient investment and expenditure relate to two areas of the regulatory framework for distribution businesses: the planning and investment framework; and the incentive regulation framework. These frameworks encourage consideration of non-network options, provide information to businesses that may offer non-network solutions, and

provide distribution businesses with incentives to invest in least-cost options.

Planning and investment framework

Included in Chapter 5 of the NER, the distribution network connection, planning and expansion framework is designed to encourage distribution businesses and network users to make efficient planning and investment decisions. It does so by creating obligations on, and a framework within which, distribution businesses can explore non-network options as alternatives to network investment.

The key components of this framework include the distribution annual planning report, demand side engagement strategy and the RIT-D and associated RIT-D project assessment process.

Incentive regulation framework

Set out in Chapter 6 of the NER, the incentive regulation framework is designed to encourage distribution businesses to spend efficiently and to share the benefits of efficiency gains with consumers.

Specifically, it is designed to encourage distribution businesses to make efficient decisions on when, what type of investment (network or non-network investment) and what type of expenditure (capital or operating expenditure) to incur in order to meet their network reliability, safety, security and quality requirements.

It does so by seeking to align the incentives (or savings) between capital and operating expenditure, and between network and non-network investment. These incentives are important as the majority of SAPS expenditure would be expected to be funded through operating expenditure.

The key incentive schemes include the efficiency benefit sharing scheme (EBSS), and the capital expenditure sharing scheme (CESS) and associated ex-post review mechanism for capital expenditure.

With respect to SAPS, the objective of the regulatory framework should be to achieve an outcome where distribution businesses pursue and develop SAPS where these provide a more efficient model of supply for a customer (or group of customers) than continuing to provide them with standard supply via the interconnected grid (which requires maintaining, and at some point upgrading, the distribution network).⁵⁶

The terms of reference for this review have asked the Commission to consider the need for a fit-for-purpose economic test to establish whether a SAPS model of supply provides an economically efficient alternative to standard supply for some customers, and the need for such a test to adequately consider the impacts of SAPS on the market as a whole, including customers that will remain on the grid.

⁵⁶ Terms of reference, pp. 10-11.

There are several options for an economic test, most notably the existing RIT-D established under the NER. If SAPS were included within the scope of the NEL and NER as a distribution service, a SAPS would essentially be treated as any other non-network option within the distribution planning and investment (and incentive regulation) framework. The RIT-D and associated process would therefore apply. This option is considered further below.

3.2.1 Consideration of the RIT-D

The RIT-D aims to promote efficient investment in distribution networks in the NEM by ensuring there is consistency, transparency and predictability in distribution investment decision making.⁵⁷ DNSPs must apply the RIT-D, subject to certain processes and criteria, before investment decisions are made. In applying the test, DNSPs must consider all credible options (which may include both network and non-network options) when choosing how to address an identified need for investment on the network. The preferred option is the one which maximises the economic benefit to all those who produce, consume and transport electricity in the NEM.

A key benefit of the RIT-D process is that it can result in a DNSP procuring non-network services (where a non-network option has the highest net benefit) which it may not have otherwise considered. Requiring DNSPs to consider non-network options when applying the RIT-D therefore encourages the further development and effective operation of the contestable non-network services market.

If SAPS were to fall within the scope of the existing RIT-D, the following observations can be made:

- **SAPS as a non-network option** - The existing arrangements require DNSPs to consider non-network options as well as network options when considering how to address an investment need on the network. A SAPS solution would essentially be treated as any other non-network option as part of the RIT-D assessment. In this sense, DNSPs would be required to screen for potential SAPS solutions to meet an identified need. They would also be required to seek further information from potential SAPS proponents where a SAPS solution is likely to provide a credible alternative to maintaining or upgrading the existing network (the consideration of non-network options are considered further below).
- **RIT-D threshold** – A DNSP is not required to apply the RIT-D where (among other things) the estimated cost to the DNSP of the most expensive potential credible option to address an identified need is less than \$5 million.⁵⁸ Therefore, where a SAPS solution is one of a number of potential credible options to address an identified need and the most expensive of those options (which or may not be the SAPS solution) is less than \$5 million, the RIT-D and associated process would not be applicable.⁵⁹ If an efficiency pre-condition is considered necessary before a DNSP can transition customers to a SAPS,

⁵⁷ The rules governing the RIT-D are set out in Chapter 5 Part D of the NER.

⁵⁸ Projects which are exempt from the RIT-D are set out in NER clause 5.17.3.

⁵⁹ The NER requires DNSPs to treat all parts of an integrated solution to an identified need as a discrete, single option for the purposes of determining whether the RIT-D applies to each of those parts. See NER clause 5.17.3(e).

consideration will need to be given to how this condition would be met for SAPS which provide a credible option to an identified network issue which does not meet the RIT-D threshold.

- **Classes of market benefits and costs** - The NER set out the classes of costs and market benefits which must be considered by a DNSP when assessing each credible option as part of the RIT-D.⁶⁰ If SAPS are treated as a non-network option in the context of the RIT-D, it will be necessary to review the NER provisions on the RIT-D and the RIT-D application guidelines to understand whether the specified classes of market benefits and costs, and the associated guidance, are appropriate in the context of SAPS.
- **RIT-D application guidelines** - To provide guidance to DNSPs in relation to applying the RIT-D, the AER prepared and published the RIT-D application guidelines. The guidelines explain, using worked examples, how DNSPs should assess all credible options, and the circumstances in which DNSPs are required to consider and quantify market benefits when undertaking a RIT-D. Inclusion of SAPS within the scope of the RIT-D would require the application guidelines to be reviewed to ensure they are fit-for-purpose and provide appropriate guidance to DNSPs in respect of how a SAPS specific non-network option should be assessed, including applicable market benefits and costs.
- **Information on non-network options** - When applying the RIT-D, DNSPs are required to follow a transparent, multi-stage consultation process. This process requires DNSPs to screen for non-network options, and to prepare and publish a non-network options report. The non-network options report sets out key information to assist non-network proponents in considering, developing and proposing viable non-network options. Submissions to the report allow DNSPs to collect information on potential credible options, including on the range of materially relevant costs and market benefits associated with a particular non-network option,⁶¹ to be used by DNSPs in applying the RIT-D. If SAPS are considered as non-network options, it will be necessary to review the information requirements set out in the NER to ensure potential SAPS proponents receive from, and provide to, DNSPs all the information necessary to carry out a comprehensive RIT-D assessment.⁶²

3.2.2 Need for a light-handed and targeted test

For any projects which do not meet the RIT-D threshold, DNSPs must ensure, acting reasonably, that the investment required to address the identified need is planned and developed at least cost over the life of the investment.⁶³ In this case, where a DNSP proposed to implement a SAPS solution as an alternative to network investment, the SAPS would need to be planned and developed at least cost.

60 Classes of market benefits and costs are set out in NER clauses 5.17.1(c)(4) and (6) respectively. The classes of market benefits include "other classes of market benefits" which may be specified in the test (developed and published by the AER) directly.

61 The only exception is if the RIT-D proponent determines, on reasonable grounds, that there will not be a non-network option that is a potential credible option or that forms a significant part of a potential credible option. NER clause 5.17.4(c).

62 Importantly, if a DNSP does not receive a response from possible non-network proponents regarding alternative solutions to address an identified need, the RIT-D process does not prevent a DNSP considering and including credible non-network options without a proponent as part of its RIT-D assessment.

63 See NER clause 5.17.3(d).

Further, to balance the incentives between investment in network and non-network options (which would include SAPS), the Demand Management Incentive Scheme, CESS and EBSS incentive schemes operate at the point where a DNSP considers whether to invest in a network or non-network option to address an identified need on the network. In this sense, the existing rules and the frameworks they create will encourage DNSPs to make efficient expenditure and investment decisions, including in relation to SAPS.

Nevertheless, as noted in the terms of reference, it may be appropriate to consider the development of a more targeted, 'light handed' test to apply in circumstances where the RIT-D is either not applicable (for example, where the project does not meet the RIT-D threshold) or is unlikely to represent a proportionate response (where a SAPS would only affect a small number of customers). What an appropriate alternative may look like, and the circumstances in which it would be appropriate, will be considered as part of this review.

QUESTION 2: EFFICIENCY PRE-CONDITION

(a) Is the RIT-D and supporting consultation process appropriate in the context of SAPS, including in respect of the different models of SAPS supply (that is, microgrids and IPS)?

(b) To ensure they remain fit-for-purpose in the context of SAPS, what (if any) amendments may be required to:

- the RIT-D test (including to the classes of market benefits and costs)
- the RIT-D consultation process and information requirements (including in relation to the non-networks options report), and
- the AER's application guidelines?

(c) Is there a need to develop a light handed, targeted test to apply where the RIT-D is either not applicable or not proportionate? What might this test and/or assessment process look like?

3.3 Customer consent provisions

A key point to consider in this review is the role of customer choice in the decision to move to a SAPS model of supply. Customers being considered for transition to a SAPS model of supply by a DNSP have not chosen to move off-grid for their own reasons. Rather, they are customers identified by a DNSP as those who could be more efficiently supplied via a SAPS model of supply, for the benefit of all customers. However, while transition to a SAPS model of supply may make sense from a market-wide economic perspective, customers may value their connection to the grid for other reasons.⁶⁴

For a customer, the risk profile of receiving supply via a SAPS is quite different from that of grid supply, not least because of the differences that currently exist between the energy-

⁶⁴ In this context, 'other reasons' may include economic reasons that do not relate to energy costs, for example, concern regarding the resale value of a house. In addition, it is important to note that there are non-economic reasons why customers may prefer supply via a SAPS relative to grid supply, for example, improved land amenity due to removal of poles and wires.

specific consumer protections available to grid-connected customers and SAPS customers, as well as customers' perceptions of supply reliability associated with SAPS relative to grid-supply.⁶⁵ Further, customers' access to their existing retail offer (and other retail offers in the future) may be affected by a transition to a SAPS model of supply. Therefore (subject to the consumer protections framework developed for SAPS), it may not necessarily be in the long term interests of all customers to move certain customers off-grid.

There are several approaches to protecting the long-term interests of customers identified by a DNSP for transition to a SAPS model of supply. These options include:

- requiring customer consent to transition to a SAPS, and
- prescribing minimum customer outcomes in lieu of consent provisions.⁶⁶

A key question for this review is therefore whether the long-term interests of consumers would best be approached by providing affected customers with a choice to move off-grid (that is, gaining their consent), or by implementing a set of protections against potential adverse impacts on those customers (for example, mandating minimum customer outcomes).

Another key question for the review is whether it is appropriate for matters associated with customer consent to be addressed within the framework established by the NER, or whether there are mechanisms outside of the national energy frameworks which may be better suited to addressing matters related to the rights of individuals.

A number of options to protect the long-term interests of customers are considered below.

3.3.1

Customer consent requirement

The inclusion of a customer consent provision would require DNSPs to obtain a customer's consent before transitioning them from grid-supply to a SAPS model of supply. A consent provision would reflect the principle that a customer has a right to choose to be (or not to be) disconnected from the interconnected grid in order to be supplied via a SAPS.⁶⁷

A key decision in designing a consent provision would be whether to require DNSPs to obtain consent from all the customers identified for transition to a SAPS (unanimous consent model) or whether it would be more appropriate to require that consent be obtained from a specified percentage of the affected customers (majority consent model).

Where substantial differences exist between the energy-specific consumer protections available to SAPS customers relative to grid-connected customers, a unanimous consent model may be appropriate. On the basis that consent would need to be informed, unanimous consent would ensure that all customers are made aware of the risks and benefits associated with the transition to SAPS supply, and are able to make an informed decision on whether to disconnect from the grid.

⁶⁵ These matters are discussed in detail in Chapter 5.

⁶⁶ Terms of reference, p. 12.

⁶⁷ Currently, customers cannot be moved to off-grid supply unless they request to be disconnected. This may change depending on the exact wording of the changes to the NEL and NER that include off-grid supply as a distribution service or distribution system, as moving to off-grid supply may no longer constitute a disconnection.

However, requiring DNSPs to obtain unanimous consent raises the risk that a single customer will have an effective veto over a project that a DNSP has identified as providing net benefits to the market. This is a particular issue and could result in perverse outcomes where a DNSP has identified efficiencies in transitioning multiple customers to a microgrid, for example in order to remove a power line.

An alternative would be to establish a majority consent model (a consent percentage lower than 100 per cent) which may be more appropriate where the energy-specific consumer protections between grid-connected customers and SAPS customers are similar. In this case, the risks associated with the transition to a SAPS in terms of customer outcomes relative to grid supply would be reduced and it may be less likely that a customer would object to being transitioned to a SAPS.

The majority consent percentage could be set with reference to the degree of similarity between the protections applicable to grid and SAPS supplied customers. That said, if a majority consent model were used, consideration would need to be given to the rights of dissenting customers.

Embedded network regulation provides an example of how a majority consent model could operate. Under the AER's network exemption guideline, converting an existing site to an embedded network (brownfield conversion) requires the AER's approval. The applicant must conduct a marketing campaign to inform tenants and may apply to the AER for approval if it can demonstrate that 85 per cent or greater of tenants and/or residents have agreed to conversion to an embedded network.⁶⁸

The review will also consider whether it is appropriate for DNSPs to offer incentives to secure the consent of affected customers. This will include consideration of how the benefits of a SAPS could potentially be shared.

3.3.2

Explicit informed consent

Irrespective of whether a unanimous or majority consent model was considered appropriate, a customer consent requirement could be designed similar to the explicit informed consent (EIC) requirement set out in the NERL and applicable to retailers wishing to transfer customers from another retailer or entering into a market retail contract.⁶⁹ When obtaining a customer's consent for these transactions, the NERL requires that the consent be both explicit and informed. The requirements for EIC in this context are summarised in Box 5.

BOX 5: EXPLICIT INFORMED CONSENT REQUIREMENTS UNDER THE NERL

Sections 38 to 42 of the NERL detail the requirements for explicit informed consent. These can be summarised as follows:

⁶⁸ Condition 4.9.7, AER network exemption guideline.

⁶⁹ Refer to ss. 38 to 42 of the NERL.

- EIC is consent given by a small customer to a retailer where the retailer or its agent has clearly, fully and adequately disclosed all matters relevant to the consent of the customer to a transaction, including each specific purpose or use of the consent.
- A customer's consent must be given either in writing, verbally or electronically.
- A retailer must maintain a record of each EIC provided by the customer, which includes information that will enable the AER to verify the retailer's compliance with its EIC obligations.
- A retailer must produce a satisfactory record of the informed consent if a customer asserts that EIC was not obtained.
- A transaction for which EIC is required will be void if it is established that EIC was not obtained in accordance with these provisions.

Source: NERL ss. 38-42. See also AER Compliance Check, National Energy Retail Law: Explicit informed consent, Issued: November 2015

Requiring a DNSP to obtain explicit informed consent before transitioning customers to a SAPS model of supply would ensure that affected customers are given adequate, up-to-date information on the risks and benefits of transitioning to a SAPS model of supply, including the consumer protections and reliability standards they can expect to receive as a customer supplied by a SAPS, before making a decision.

However, whether customers are equipped to make informed decisions, particularly with respect to *understanding* what they are agreeing to in terms of reliability and security, and potentially price, outcomes, is a matter that requires consideration.

3.3.3

Alternatives to customer consent

An alternative to including a customer consent pre-condition is to establish a set of minimum customer outcomes which would be guaranteed to customers who are transitioned to a SAPS by a DNSP without consent. The minimum customer outcomes could reflect the key consumer protections and reliability outcomes currently afforded to grid connected customers. The aim would be to reduce the risk of adverse outcomes being faced by customers whom a DNSP has identified as being more efficiently supplied via a SAPS, but who have not chosen to move off-grid themselves.

Guaranteeing a set of minimum customer outcomes may not, however, alleviate all customer concerns regarding the transition to off-grid supply (in particular, some of the non-economic reasons a customer may not wish to move off-grid). However, this approach may provide an appropriate solution where there are broader market benefits to be gained from transitioning a set of customers to a SAPS model of supply, and where the ability of a DNSP to gain consent from at least a majority of affected customers would likely prove difficult (for example, in the case of a large microgrid with many customers).

Importantly, the benefits or merits of guaranteeing minimum customer outcomes rather than requiring DNSPs to obtain consent from all or a majority of affected customers are likely to be greater where the SAPS framework provides customers with access to retail competition.

This would further alleviate concerns that consumers may have in relation to giving up their access to retail choice and competitive market outcomes.

There may be other approaches to protecting the long term interests of consumers, in addition to requiring DNSPs to obtain customer consent and guaranteeing a minimum set of customer outcomes. As an example, in New Zealand, if a distributor proposes to supply customers with electricity from an alternative source (that is, off-grid supply), there is no explicit customer consent requirement. However, the distributor must give at least six months' notice to the customers, relevant retailers and the public, provide an opportunity to submit comments, and have regard to any comments received.⁷⁰

The Commission would be interested in possible alternative approaches to protecting the long-term interests of customers identified by a DNSP for transition to a SAPS model of supply which stakeholders may have considered.

QUESTION 3: CONSUMER CONSENT PROVISIONS

(a) Is a requirement for customer consent necessary? If existing consumer protections can be maintained for SAPS customers, is consent necessary? If so, should this be based on a unanimous or majority consent model? What are the implications and issues associated with each model?

(b) Are customers equipped to make informed decisions, particularly with respect to understanding what they are agreeing to in terms of reliability and security, and potentially price, outcomes? Should explicit informed consent be required before DNSPs transition customers from the grid to supply via a SAPS?

(c) Where consent is considered appropriate, could incentives be offered by DNSPs to secure the consent of affected customers? What might these be (and could the benefits of a SAPS be shared)?

(d) What alternative mechanism(s) could be used to ensure the long-term interests of affected customers are met?

3.4 Regulatory oversight role

Transition of grid-connected customers to a SAPS model of supply comes with a number of risks, including the possibility that customers' access to certain consumer protections, and potentially to retail competition, may be removed. Decisions made by DNSPs could therefore have significant impacts on outcomes for customers being considered for transition to a SAPS.

This review will therefore consider whether it is necessary to establish a specific oversight or approval role for the AER (or other appropriate body) in respect of a DNSP's activities regarding consideration of, and transition of customers to, a SAPS model of supply.

⁷⁰ Section 107, Electricity Industry Act 2010 (NZ).

Precisely what an oversight/approval role would entail depends on several factors, including the design of the arrangements supporting the transition of grid-connected customers to a SAPS model of supply by DNSPs. Further, whether an oversight role potentially focussed on compliance with the rules is appropriate, or whether an approval role potentially focussed on specific aspects of the transition framework is appropriate, will require consideration.

In relation to the former, it is important to note that the AER already has a number of functions and powers set out in legislation in relation to monitoring, investigating and enforcing compliance with various aspects of the national energy framework, including with the NER and NERR. Its approach to compliance is set out in the AER's compliance and enforcement statement of approach document.⁷¹ The approach is based on a risk assessment of the impact and probability of breaches of particular obligations in the NER and NERR. It is also variable over time, as needed and in light of changes in the market and other matters. Whether it is appropriate for the energy laws or rules to mandate and prioritise the AER's compliance and enforcement activities in the area of SAPS is a matter this review will need to consider.

In relation to a more specific approval role, it may be appropriate to establish arrangements whereby the AER (or other relevant body) would need to confirm that a DNSP has met the pre-conditions required before customers are transitioned to a SAPS model of supply. For example, there may be a role for the AER in reviewing the application of the relevant economic test to confirm it was applied in a manner consistent with the rules. In addition, there may be benefit in the AER having oversight of the customer consent process, potentially approving a DNSP's conduct in seeking, and receipt of the requisite level of, explicit informed consent (where this mechanism is appropriate).

As mentioned in section 3.3, the AER's network exemption guideline requires that an embedded network brownfield conversion be given AER approval. An applicant can apply to the AER for approval if it can demonstrate that 85 per cent or greater of tenants and/or residents have agreed to conversion to an embedded network.⁷²

QUESTION 4: REGULATORY OVERSIGHT ROLE

- (a) Is there a need to incorporate a formal oversight and/or approval role by the AER (or other appropriate body) in relation to the transition arrangements for DNSP-led SAPS?
- (b) Who would be best placed to perform such a role?
- (c) If the AER is the appropriate body, what additional benefits might be provided by giving the AER additional powers in relation to SAPS, given it is already responsible for monitoring, investigating and enforcing compliance with various aspects of the energy laws and rules?

⁷¹ AER compliance and enforcement - Statement of approach, April 2014.

⁷² Condition 4.9.7, AER network exemption guideline.

3.5 Grid-connection precondition

Customers are currently able to establish a SAPS at a new property as an alternative to paying for a connection to the grid. They are also able to disconnect from the interconnected grid and to arrange their own power supply (with some restrictions).⁷³

However, not all customers face price incentives to move to off-grid supply where it would be efficient for the grid as a whole for them to do so. While customers at new properties without an existing grid connection could choose between paying for a grid connection (which may be quite costly) or obtaining off-grid supply, customers in remote areas who are currently connected to the grid are only likely to move to off-grid supply if it is no more expensive than their current tariff for supply via the grid.

The tariffs paid by most grid-connected remote customers do not reflect the high costs of supplying those specific customers. Instead, tariffs tend to reflect the average cost of supplying power to all customers in the DNSP's area. State laws and policies play a role in this.

Given existing tariff structures, remote grid-connected customers are unlikely to choose to move to off-grid supply provided by a competitive provider, even when there would be economic benefits overall compared to maintaining the grid connection. For this reason, it is likely to be efficient to allow DNSPs to facilitate the provision of SAPS as a regulated service where competition is not practicable and off-grid supply would be cheaper than maintaining a grid connection.⁷⁴

However, unlike existing grid-connected customers, new customers without a grid connection are likely to have a financial incentive to obtain off-grid supply from the competitive market where the cost of establishing a grid connection (likely to be quite costly for remote customers) is more expensive than obtaining off-grid supply.

The terms of reference for this review request that the Commission considers the merits and downsides of excluding new customers from the framework supporting the provision of SAPS by DNSPs. This review will therefore consider whether there are circumstances where it may be appropriate for a DNSP to consider, and potentially implement, a SAPS model of supply as an alternative to a new grid connection for new, never connected, customers (for example, where the contestable provision of SAPS may not be possible).

3.5.1 Obligations to connect

Currently, if a new customer makes a request to a DNSP to supply them with connection services, the DNSP is required under the NERL to provide those services in accordance with a customer connection contract.⁷⁵

⁷³ Rule 118 of the NERR allows a customer to request a retailer to arrange for de-energisation of the customer's premises. Jurisdictional planning and safety requirements may, in some circumstances, affect a customer's ability to install their own IPS.

⁷⁴ See AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, Chapter 3.

⁷⁵ Section 66 of the NERL.

The development of a national framework for the provision of DNSP-led SAPS raises a number of questions in respect of the obligations on DNSPs in respect of connection. These issues include (but are unlikely to be limited to) the following:

- Where a new customer makes a request to a DNSP to be connected to the grid but the provision of connection services by the DNSP would not provide the most efficient outcome relative to the establishment of a SAPS for that customer, should a DNSP have the ability to refuse that connection and to facilitate the provision of SAPS for that customer as a regulated service?
- Where a new customer makes a request to a DNSP to be connected to the grid but a pre-existing SAPS (likely a microgrid) is closer to the customer's premises than the interconnected grid, how should a DNSP proceed with the request? That is, should the DNSP be required to connect the customer to the SAPS where supply via the pre-existing SAPS would be more efficient than connecting the customer to the grid? What role should the customer have in the decision to be connected to the SAPS or to the grid (would consent be required)?

QUESTION 5: GRID-CONNECTION PRECONDITION

(a) Should new customers or developments without an existing grid-connection be eligible for SAPS provision facilitated by a DNSP? Why or why not?

(b) Would new customers always have a financial incentive to obtain SAPS from the competitive market? Could implementation of a SAPS for a new customer or group of customers by a DNSP result in network savings?

(c) Would enabling DNSPs to consider and potentially implement a SAPS solution as an efficient alternative to grid connection for new customers damage the competitive market for SAPS? In answering this question, consider new customers located in remote areas where a competitive market for SAPS may not be established.

(d) What are the potential issues associated with DNSP obligations to connect where SAPS are regulated under the national framework?

3.6 Right of reconnection

The review will consider issues in relation to the potential for SAPS customers transferred by a DNSP to seek reconnection to the national interconnected grid.

The purpose of developing a national framework for SAPS facilitated by DNSPs is to capture the efficiency benefits associated with supplying a customer, or group of customers, via a SAPS rather than continuing to supply those customers via the interconnected grid. The establishment of a SAPS therefore presumes that the existing assets connecting those customers to the grid will be either taken out of service or removed completely.

This inevitably presents challenges in the event that a customer, or group of customers, transitioned to a SAPS wishes to reconnect to the grid at a later date.

Currently, customers choosing to reconnect to the grid would have the same rights as any customer wishing to connect to the grid. These rights are set out in the NERL and NER and are supported by DNSP connection policies, including arrangements that allow the DNSP to require a capital contribution from the customer, approved as part of AER revenue determinations. Application of current standard connection arrangements for reconnection would likely make this option prohibitively expensive, particularly for remote SAPS customers wishing to re-establish connection to the grid.

The review will therefore consider whether there is any need for, and the issues associated with, a 'return to the grid' process for SAPS customers in the event they wish to reconnect to the grid. Further, the suitability of applying the current standard arrangements for network connection, including current arrangements that allow the DNSP to require a capital contribution from the customer, will also be considered.

The issue of reconnection to the grid for SAPS customers is closely linked to the discussion in respect of customer consent provisions. Where it is considered appropriate to require DNSPs to obtain customers' consent to move off-grid, there is a question around whether consenting customers (and indeed dissenting customers, or customers who move into the relevant area after the decision to move off-grid has been made) should have the right to request reconnection at a later date. Further, it may also be necessary to consider issues associated with the costs of reconnection, including who should face those costs and the need for a mechanism to avoid potentially burdening other customers with the cost of reconnection.

QUESTION 6: RIGHT OF RECONNECTION

- (a) Should existing reconnection rights apply unchanged to DNSP-SAPS customers wishing to seek reconnection to the grid? Alternatively, should the SAPS arrangements include special rights for DNSP-SAPS customers seeking to reconnect/revert?
- (b) Should the reconnection rights of DNSP-SAPS customers who have provided consent (where applicable), or new customers, differ from the rights of customers who have not provided their consent to be moved?
- (c) What might a "return to grid process", including charges, look like for DNSP-SAPS customers?
- (d) Would a mechanism need to be designed to avoid any potential to burden other customers with the costs of reconnection?

4 ALLOCATION OF ROLES AND RESPONSIBILITIES

This chapter focuses on the key questions to be considered in determining the appropriate regulatory framework to apply to parties participating in the provision of SAPS. Specifically, this chapter explores the services that will be provided to consumers via a SAPS in terms of generation, network and retail service provision. It then considers the roles and responsibilities of DNSPs and the various other parties involved in the provision of these services. The key issues include:

- Defining the SAPS service(s)
- Role of the distributor
- Provision of retail services
- Other roles/responsibilities specific to SAPS
- Treatment of existing market participants
- Role of AEMO and the AER

The matters discussed in this chapter again build on the analysis and consultation already undertaken by the EMTPT in 2016, as well as by the AEMC in the context of the Western Power rule change and embedded networks review in 2017.

4.1 Defining the stand-alone power system service(s)

4.1.1

Distribution services

The services provided by DNSPs are regulated in different ways (or are not regulated) depending on whether they are distribution services or not, and if they are distribution services, whether and how they are classified by the AER.⁷⁶

Supplying electricity to customers via poles and wires connected to the national grid is a core distribution service that is currently classified as a standard control service. DNSPs earn regulated returns for these services. A DNSP typically charges all customers receiving a standard control service from that DNSP the same price for that service (rather than charging different customers different prices depending on the cost to provide that service to the customer).

The Western Power rule change request sought to allow off-grid supply to be treated in the same way, by making it a distribution service and allowing the AER to determine how it should be classified and regulated.⁷⁷

Under the AER's Ring-Fencing Guideline, DNSPs are not permitted to provide services that are not distribution or transmission services (unless the AER has granted a waiver).⁷⁸ Currently, as off-grid supply is unlikely to constitute a distribution (or transmission) service, it is unlikely that a DNSP would be permitted to provide it. An affiliate or subsidiary of a DNSP could

⁷⁶ See the AEMC, Contestability of energy services, Consultation paper, 15 December 2016, for a complete overview of distribution service classification.

⁷⁷ AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017.

⁷⁸ AER Ring-fencing Guidelines Version 2 – October 2017.

provide off-grid supply, but DNSPs are not permitted to cross-subsidise such services using regulated returns.

Having regard to the Commission's final determination for the Western Power rule change, including its analysis and stakeholder views, this review will consider whether and what changes are required to the NEL and NER to enable SAPS to be provided by DNSPs, where efficient, on a regulated basis.

4.1.2

SAPS service model

A key matter for this review will be deciding on the appropriate regulatory treatment of SAPS and, in particular, how the various direct and indirect services associated with their provision are treated.

The SAPS service provided to a customer (or group of customers) by a DNSP could incorporate a suite of services including local generation services, network services and potentially retail services. Additional system operator services may be required for SAPS which are larger microgrids.

Further, the suite of services required to supply a customer via a SAPS could be provided to a DNSP as a single integrated SAPS service by one proponent, or as separate services by a number of proponents. In certain circumstances, the DNSP may not provide all the necessary services to supply a customer via a SAPS (for example, it may only provide local generation and network services). In other circumstances it may be efficient for one or all of these services to be provided directly by a DNSP.

Precisely what services are required to supply customers via a SAPS, and in particular which services would be provided by DNSPs as distribution services, could depend on a number of factors, including the location, scale and complexity of the SAPS, the feasibility of retail competition and restrictions on DNSP ownership and/or operation of certain assets.

Two possible service models for SAPS provision (of which there are likely to be many) are outlined in Box 6 below.

BOX 6: POSSIBLE SERVICE MODELS FOR SAPS PROVISION

Integrated solution procured by DNSP from third party

The full suite of services (including retail services) required to supply a customer via a SAPS model of supply could be vertically integrated and presented by a single proponent to a DNSP as a complete non-network alternative to maintaining or upgrading a customer's existing connection to the grid. Where the non-network option is shown to be the most efficient (or least cost) model of supplying customers, it would then be procured by the DNSP as a network support service following a competitive tender process. The integrated SAPS service would then be provided by the DNSP to a customer (or group of customers) as a distribution service (where this is provided for by the NEL and NER) for which it would receive regulated revenue.

Generation/network solution procured by DNSP from third party

Another possible option (which mirrors existing arrangements in the NEM) is that local generation services could be presented to a DNSP as a non-network alternative to maintaining or upgrading a customer's existing connection to the grid. Where efficient (or least cost), the non-network option could then be procured as a network support service. In this example, the DNSP would continue to own and operate any network assets required to support the local generation, and an authorised retailer would provide the customer (or group of customers) with relevant retail services. The distribution service in this case would relate to the network assets and the component of local generation that was providing the substitute for network capacity.

There are a myriad of possible models of SAPS service provision and this review will need to consider whether the national framework should be designed around one model of SAPS service provision (which could accommodate various circumstances), or whether it is appropriate to focus on establishing a framework that allows DNSPs to pursue a variety of approaches to SAPS service provision, depending on the circumstances at hand.

Further, in considering the various models of SAPS service provision, consideration will need to be given to the potentially complex flow of payments between the customer and a DNSP, and any other parties responsible for providing the different services within a SAPS. As discussed later in this chapter, relevant parties may include the DNSP, a local generation provider(s), a retailer and (depending on the model of SAPS service provision) potentially also AEMO.

In all cases, it will be important to ensure that the arrangements enable customers transitioned to a SAPS by a DNSP to continue to receive distribution charges equivalent to the cross-subsidised price they currently pay.

QUESTION 7: DEFINING THE SAPS SYSTEM SERVICE(S)

- (a) Should the national framework be designed around one model of SAPS service provision which could accommodate various circumstances? What might this model look like?
- (b) If the answer to the previous question is no, should this review focus on establishing a framework that allows DNSPs to pursue a variety of approaches to SAPS service provision, depending on the circumstances at hand? Why or why not?
- (c) In what circumstances (if any) might it be appropriate for a DNSP to own/operate a vertically integrated SAPS solution?
- (d) When (that is, at what stage point in the process) would contestability in the provision of SAPS be tested and by who?

4.2 Role of the distributor

As discussed elsewhere in this paper, DNSPs are likely to have a role to play in the efficient provision of SAPS to some customers currently connected to the grid. That is, there is a case to remove the prohibition on DNSPs being able to provide SAPS to certain customers as a “distribution service” regulated under the NER, once the consumer protection issues for those customers have been addressed (discussed in chapter 5).

However, certain conditions may need to be imposed on DNSP provision of SAPS in order to promote and maintain competition in electricity services and, in particular, in the emerging energy services market, and to best contribute to the achievement of the NEO. These conditions would impact the degree of involvement by a DNSP in the ownership and/or operation of a SAPS.

Therefore, in considering the role of the DNSP, the review will have regard to:

- the final rule for the contestability of energy services rule change which restricts a DNSPs ability to earn regulated returns on “behind the meter” assets⁷⁹ and
- the AER’s ring-fencing guidelines which prohibit DNSPs from providing services that are not distribution or transmission services (unless the AER has granted a waiver).⁸⁰

These matters are discussed below.

4.2.1 Potential restriction on DNSPs owning SAPS

The final rule for the contestability of energy services rule change aims to facilitate competition in the emerging contestable energy services market by introducing restrictions on DNSPs’ ability to earn regulated returns on “behind the meter” assets.⁸¹ This means that to access the functions that assets located behind the meter can provide (such as demand response), DNSPs will need to pay customers or third parties for such functions rather than investing in the assets themselves.

The Commission considered that the final rule would safeguard competition in the emerging energy services market by addressing two key concerns about DNSPs’ actions:

- **Favouring network benefits at the expense of maximising value across the electricity system.** Many of the new technologies associated with emerging energy services are capable of providing multiple value and revenue streams, but not simultaneously. If DNSPs are in control of assets embodying the new technologies, they may favour network benefits at the expense of maximising value across the electricity system as a whole.
- **Foreclosing competition in the emerging energy services sector system.** The nature of new technologies such as battery storage is such that once installed at a customer’s premises, the customer is not likely to install additional assets of the same

79 See AER website: Electricity ring-fencing guideline - October 2017, www.aer.gov.au

80 See AEMC website: Contestability of energy services rule change request, 2016, www.aemc.gov.au

81 ‘Behind the meter assets’ refer to assets electrically connected to the network on the metering point side of the connection point at a retail customer’s premises, which may include, for example, rooftop solar systems and battery storage.

type. DNSPs, with their incumbent status as monopoly operators of distribution networks, may be able to adversely affect the level of competition in the energy services market through the ability to install (and operate) these assets and recover the costs through regulated revenues.

The final rule does not restrict DNSPs' ability to use behind the meter technologies to deliver network services. It simply requires DNSPs to procure those services from third-parties or from their own ring-fenced affiliates rather than owning and controlling the assets.⁸²

In addition, the final rule provides the AER with the ability (and flexibility) to grant exemptions in relation to DNSPs' investments for a range of scenarios. For example, DNSPs that supply rural areas may need exemptions for some assets to supply extremely remote customers, or some exemptions may be needed for safety equipment for very large customers. The circumstances under which such exemptions are provided are determined by the AER, having regard to certain considerations, rather than being specifically set out in the NER.

Having regard to the drivers for, and benefits of, these restrictions on DNSPs, this review will consider whether it is necessary and appropriate to restrict the ability for DNSPs to earn a regulated return on some or all of the assets specifically associated with the provision of SAPS (where SAPS are included within the definition of 'distribution services'). The case for and against restrictions on DNSP ownership of assets located both 'behind the meter' (particularly relevant in the context of IPS) and 'in front of the meter' will be considered.⁸³ Further, consideration will be given to whether the issues that the contestability of energy services rule change sought to address (listed above) are relevant in the context of SAPS (which, by definition, are not connected to the interconnected electricity system).

4.2.2 Impact of the ring-fencing guideline

The objective of ring-fencing is to provide a level playing field for competition in the provision of electricity services. This includes providing an even playing field for third party providers in new and existing markets such as metering and energy storage services. Without effective ring-fencing, DNSPs may hold significant advantages in such markets.⁸⁴

The AER's distribution ring-fencing guideline requires the accounting and functional separation of the provision of direct control services by DNSPs from the provision of other distribution services by DNSPs.⁸⁵ It also prohibits DNSPs from providing services other than distribution and transmission services (except where the DNSP has been granted a waiver from this restriction, discussed below).⁸⁶ The guideline aims to address the following two key risks:

82 In relation to DNSP ownership and operation of assets in front of the meter, the usual ring-fencing requirements apply, as discussed in the following section.

83 Noting that, in the context of Individual Power Systems, it may be difficult to distinguish between these concepts.

84 AER, Electricity distribution ring-fencing guideline - explanatory statement, November 2016, p. 2.

85 Clause 6.17.2 of the NER.

86 Currently, DNSPs are not permitted to provide off-grid supply (without a waiver), as it is unlikely to be a distribution service.

- The risk of a DNSP cross-subsidising other services with revenue earned from distribution services. The guideline addresses this through legal separation of the DNSP, which may only provide distribution services, from affiliated entities that may provide other services. The legal separation obligation is supported by other obligations for the DNSP to maintain separate accounts, follow defined cost allocation methodologies, and be able to report on transactions between itself and its affiliates.
- The risk of a DNSP favouring its own negotiated services or unclassified distribution services, or an affiliated entity's services, in contestable markets. The guideline addresses this by imposing "behavioural" obligations on DNSPs, including restrictions on sharing and co-locating staff, and information, and on co-branding of advertising materials.

The AER may grant a waiver (on application) from the prohibition on DNSPs providing non-distribution services, for instance where a DNSP is required by law to provide the non-distribution services. One example given by the AER of such services is "isolated network services in remote areas".⁸⁷

In addition, the ring-fencing guideline includes a number of exemptions to specific obligations in certain circumstances. For example, in respect of regional and remote areas, the guideline includes an automatic exemption from the physical separation requirements for regional offices that have less than 25,000 customer connection points within a 100 kilometre radius of the office. This exemption recognises that the requirement for physical separation may impose unnecessary additional costs on a DNSP. It also recognises that, in these areas, the potential for development of competition may be limited.⁸⁸

In summary, the ring-fencing guideline requires non-distribution services to be provided by a subsidiary or other affiliate of a DNSP, or by a DNSP if the circumstances are such that the prohibition is waived. Where changes are made to the NEL and NER such that SAPS are included within the definition of 'distribution services', consideration will then need to be given to exactly which services provided by the DNSP are 'distribution services' and whether there are any services which are 'non-distribution' services and therefore subject to the ring-fencing provisions.

QUESTION 8: ROLE OF THE DISTRIBUTOR

- (a) Are the issues identified in the contestability of energy services rule change applicable in the context of SAPS?
- (b) Is it necessary and appropriate to restrict the ability for DNSPs to earn a regulated return on behind-the-meter and/or in-front-of-the-meter assets specifically associated with the provision of SAPS? Why or why not?

⁸⁷ In this case, the AER would consider granting a waiver from the guidelines' legal separation obligation. AER, Electricity Distribution Ring-fencing Guideline - Explanatory Statement, November 2016, pp. 42-43.

⁸⁸ The AER considers that a current or potential competitor of the DNSP would contact it if the particular regional office was supplying to a contestable, or potentially contestable, market. AER, Electricity Distribution Ring-fencing Guideline - Explanatory Statement, November 2016, pp. 42-43.

(c) In what circumstances (if any) might it be appropriate for a DNSP to own/operate a vertically integrated SAPS solution (that is, to seek an exemption (where relevant) from restrictions on asset ownership)?

4.3 Provision of retail services

4.3.1 Access to retail competition

While connected to the national grid, customers are able to switch retailers at any time, including when another retailer provides a more attractive offer.⁸⁹ Retail competition can play a valuable role in keeping prices down and in providing innovative services tailored to customer preferences.

A key issue for this review will be whether it is possible, practical and efficient to retain retail competition for SAPS customers in a way that is similar to grid supply.

This matter was explored at a high level in the Western Power rule change and stakeholders were divided in their views on whether or not retaining retail competition would be possible. Two models for off-grid supply with retail competition were also put forward by stakeholders.⁹⁰ These are summarised in Box 7 below.

BOX 7: STAKEHOLDER MODELS FOR OFF-GRID SUPPLY WITH RETAIL COMPETITION

In their submissions to the Western Power rule change, AusNet Services and the Public Interest Advocacy Centre (PIAC) each proposed a set of arrangements which could, if found to be practicable after further consideration, potentially allow for the retention of retail competition for SAPS customers.

AusNet Services model

In its submission, AusNet Services considered that arrangements could be made for the provision of network services via off-grid assets which would allow customers to preserve the same electricity supply services as those that are conventionally grid-connected. This includes access to retail competition. Under this model:

- A customer moving to DNSP-led IPS would remain on its existing market offer and continue to access the full range of retail offers.
- Both the customer's premises and the generation asset (procured by the DNSP but operated by a separate registered entity) would have National Metering Identifiers assigned and have metering to account for all generation and consumption.

⁸⁹ The exceptions being regional Queensland and Tasmania: retail competition in regional Queensland is not permitted while retail competition in Tasmania, although permitted, has not emerged.

⁹⁰ Stakeholder views on this matter are set out in section 4.2.1 of the Commission's final determination for the Western Power rule change.

- The customer would then pay the retailer for electricity consumed, and the retailer would pay AEMO the wholesale market spot price for that electricity, as if the customer were grid-connected.
- AEMO would make payments to the registered entity operating the off-grid generation asset for the electricity it produces, with the amount of the payments determined by reference to wholesale spot market prices (but AEMO would not dispatch that electricity).
- As the Commission understands this model, the DNSP would make additional payments to the registered entity operating the off-grid generation through a network support agreement.

PIAC model

PIAC's submission set out several potential models providing for and pricing off-grid supply. One of these models, which may be consistent with retaining retail competition, involved the following:

- A retailer would charge the customer under a normal market offer but making no wholesale payments for electricity from the off-grid system.
- The DNSP would receive the usual distribution use of system payments from the retailer.
- The costs of procuring and maintaining the SAPS would be included in the DNSP's total operating expenditure allowance in its revenue proposal and hence recovered from all customers.

In this model, there would be no need for a bespoke arrangement between the retailer and the DNSP for payments for electricity from the off-grid system, since the retailer would not be making any such payments. In PIAC's view, this would reduce costs for the SAPS customer's retailer and encourage retail competition for SAPS customers. It was recognised that this model would likely need to be reviewed if DNSP-led SAPS became more common such that the revenue associated with them became a material part of the overall network revenue.

Source: AusNet Services submission to AEMC, Alternatives to grid-supplied network services, Consultation Paper, 14 June 2017, Sydney, p. 6, 8; PIAC submission to AEMC, Alternatives to grid-supplied network services, Consultation Paper, 14 June 2017, Sydney, consultation paper submission, pp. 7, 8.

This review will explore these and other potential models for retaining retail competition. However, while it may be possible to design arrangements which provide SAPS customers with access to the competitive retail market, there may be administrative complexity associated with implementing these models that would mean it is simply impractical or inefficient to seek to retain retail competition.

If there is no ability for SAPS customers to change retailer or retail offer, appropriate regulatory oversight would be needed to ensure these customers are paying an efficient price. This may take the form of price regulation for the entire off-grid supply to the customer. Issues associated with price regulation are discussed in Chapter 5.

4.3.2 Retail service provider and the role of an authorised retailer

Where access to retail competition is found to be feasible for SAPS customers, there is unlikely to be a need for a new retailer role within a SAPS. Conversely, where it is impractical or inefficient to retain effective retail competition in practice, another more efficient model of retail service provision will be necessary.

As discussed in section 4.1, consideration will be given to whether a separate retailer role is appropriate (i.e. where retail services would be separated from the provision of other SAPS services such as local generation) or whether it may be appropriate for retail services to be bundled with other SAPS services (in some or all circumstances) such that they are provided as one integrated service.

Further, this review will consider whether it is appropriate for retail services to be managed by an authorised retailer, on the basis that such a retailer would be required to provide a range of consumer protections such as requirements for information provision and vulnerable customer arrangements. The review will have regard to the outcome of the AEMC's 2017 embedded networks review in relation to this matter, as summarised in Box 8.

BOX 8: EMBEDDED NETWORKS REVIEW 2017

In the embedded networks review, the Commission's view was that retailer authorisation should be required irrespective of the business model of the seller or the number of customers supplied, though there is also a need to make the current retailer authorisation process more adaptable.

The Commission recommended a sub-category of authorised retailer be established with an appropriate set of consumer protections applied, including access to ombudsman schemes for energy-specific dispute resolution services.

The AER would be granted discretion to waive, or modify, any obligations of authorisation which may be inappropriate or not required to meet the objectives and intent of the regulatory framework (subject to not eroding customer protections).

This approach could also be applied in the context of SAPS models of supply.

Source: AEMC, Review of regulatory arrangements for embedded networks, Final Report, 28 November 2017, Sydney, pp. 118-125.;

Note: Ensuring customers have access to ombudsman schemes in relation to disputes with service providers in an off-grid system may require changes to the jurisdictional instruments establishing the ombudsman schemes. The issues are discussed further in the embedded networks review.

However, a requirement for the entity providing retail services to be authorised does not necessarily mean that that entity must be separate from the party or parties performing other SAPS services. As noted above, a DNSP may contract with one party (which may be a ring-fenced affiliate of the DNSP) to provide the full suite of SAPS services, including installation and maintenance of the SAPS and retail billing. This party may then be required to meet the criteria to be an authorised retailer.

Alternatively, a DNSP may apply to be an authorised retailer if the AER has granted it an exemption from the restriction in the ring-fencing guideline on DNSPs providing retail

services. This restriction and exemption regime may continue to be appropriate in the context of SAPS supply.

QUESTION 9: PROVISION OF RETAIL SERVICES

- (a) Is it likely to be feasible to design arrangements to provide SAPS customers with access to retail competition? What might these arrangements look like?
- (b) What specific retail services would need to be provided to customers supplied via a SAPS model of supply?
- (c) Is there a need for a separate retailer role (distinct from the provision of other services) within the SAPS model of supply? Why/why not?
- (d) Should retail services be managed by an authorised retailer?

4.4

Other roles/responsibilities specific to stand-alone power system provision

In addition to DNSPs and SAPS customers, this review will identify other key stakeholders within a SAPS supply model, and set out their roles and responsibilities under the recommended framework.

Other stakeholders who may have a role in the process of transitioning customers to a SAPS and/or in the provision of SAPS services within the DNSP-led SAPS supply model include:

- **Relevant community council or local authority** - the relevant community council or local authority may have a role in the mechanism (if any) to obtain consent from the customers identified by a DNSP as being more efficiently supplied via a SAPS.
- **Non-network proponent and third party service providers** - a non-network proponent may propose a SAPS solution as a credible alternative to maintaining or upgrading the network in order to continue to supply a customer(s) via the grid. The non-network proponent may also be the service provider chosen by the DNSP to deliver part or all of the SAPS solution.⁹¹ The service provider would be contracted by the DNSP to provide one or all of the relevant SAPS services, for example, local generation services.
- **Developer or embedded network operator** – it is possible that customers being supplied through an existing embedded network may be identified by a DNSP as being more efficiently supplied via a SAPS model of supply. In this case, the developer or

⁹¹ DNSPs may differ in their approach to choosing a service provider to deliver a non-network solution, where efficient. For example, the proponent of a non-network option which is identified as the preferred option following a RIT-D may continue to work with the relevant DNSP as the service provider to deliver that solution (the process of identifying credible non-network options through the RIT-D would, in effect, act as a competitive tender process). Alternatively, once a non-network option is identified as a preferred option, a DNSP may choose to commence a competitive tender process to choose a service provider, which may or may not be the original non-network proponent. DNSPs have a requirement under the NER to set out their approach to engagement with non-network providers in a Demand Management Engagement Document. These documents are available on DNSPs' websites.

embedded network operator may retain a role in the transition to SAPS and in the SAPS supply model.

- **SAPS system operator** – it may be necessary, particularly in the context of a larger microgrid, to consider the need for a system operator role to maintain distribution safety and system security as the SAPS network and energy resources become more complex. Who is best placed to perform this role, and whether it is necessary and/or appropriate for this role to be integrated within the DNSP, will be issues for consideration.⁹²

Once the key stakeholders are identified and their roles and responsibilities articulated, the review will consider whether there is a need for additional regulatory arrangements (over and above the existing rules) to support those roles and the relationships between different parties.

QUESTION 10: OTHER ROLES/RESPONSIBILITIES SPECIFIC TO STAND-ALONE POWER SYSTEM PROVISION

Who are the key stakeholders within a SAPS model of supply (other than the DNSP and the retailer) and, specifically, what would be their key roles and responsibilities?

4.5 Treatment of existing market participants

The review will consider whether DNSPs should be required to consider the impact of moving a customer (or group of customers) to a SAPS model of supply on market participants who may be impacted by that transition. For example, impacts on:

- a local embedded generator who would, as a consequence of the transition, no longer be able to export to the interconnected grid
- an ancillary service provider who is no longer able to offer electricity into the ancillary services market
- a customer's existing energy retailer who may (subject to the feasibility of retaining access to retail competition for SAPS customers) no longer have the ability to offer retail services to that customer.

The review will consider whether these (and other affected) participants require any special protections, or whether the impact a SAPS may have on their businesses is an aspect of market risk and so does not require addressing.

QUESTION 11: TREATMENT OF EXISTING MARKET PARTICIPANTS

(a) Which existing market participants (if any) may be impacted by a DNSP's decision to

⁹² Consideration of the potential role and responsibilities of a SAPS system operator will have regard to the outcomes of the AEMC's final report on the Distribution Market Model review. See AEMC 2017, Distribution Market Model, Final report, 22 August 2017, Sydney.

transition a customer (or group of customers) to a SAPS model of supply?

(b) Should DNSPs be required to consider the impact of transitioning a customer (or group of customers) to a SAPS on these participants? Why or why not? Via what mechanism?

(c) Is it necessary to put in place special arrangements for market participants, including embedded generators or retailers, who may be affected by a DNSP's decision to transition customers to a SAPS model of supply? What might these arrangements involve?

4.6 Roles of AEMO and the AER

The review will consider the roles and responsibilities of AEMO and the AER (if any) in the process of transitioning customers to SAPS supply, or in relation to the provision of SAPS services to customers.

The roles of these bodies (if any) will depend on a number of factors, including the final arrangements supporting the transition of customers by DNSPs to a SAPS model of supply (discussed in chapter 3), as well as decisions made in relation to the SAPS service model (discussed in section 4.1).

Depending on the feasibility of retail competition, AEMO could retain a role in the settlement of wholesale electricity prices between retailers and providers of the SAPS generation services. AEMO may also have a role in monitoring or collecting metering data from DNSP SAPS customers (see the AusNet Services model in Box 7).⁹³

In addition, if it is necessary to consider a system operator role for a larger SAPS (that is, microgrids), it may be appropriate to consider what role (if any) AEMO could play in this.

In respect of the AER, amendments to the NEL and NER to include SAPS within the definition of "distribution service" will mean that the AER is responsible for classifying SAPS services provided by DNSPs as either standard control services or negotiated services. If the SAPS service(s) are classified as standard control services, then the AER would regulate the pricing of the services under the building block methodology, tariff structure statements and annual pricing proposals. Unless the framework provides for exemptions, the AER's relevant instruments and guidelines in relation to the rate of return, for example, would apply to the SAPS supply model.

Further, depending on the final design of the arrangements to support the transition of customers by DNSPs to a SAPS model of supply, it may be appropriate for the AER to have an oversight role in relation to certain preconditions for SAPS transition, including potentially the customer consent and efficiency preconditions. This role may require obligations over and above the AER's existing compliance and enforcement obligations.

⁹³ Retail competition is discussed in section 4.3.

QUESTION 12: ROLES OF AEMO AND THE AER

(a) What role could/should the AEMO play within the framework for SAPS provision by a DNSP?

(b) What role could/should the AER play within the framework for SAPS provision by a DNSP?

5 APPLICATION OF CONSUMER PROTECTIONS

The regulatory framework for electricity should promote new and innovative services, however, not at the expense of an enforceable set of consumer protections or access to retail market competition (if practicable). The Commission's view in the Western Power rule change (and the embedded networks review) was that consumer protections for an essential service should depend on the needs of consumers rather than the model of supply of that service.⁹⁴

Under the current regulatory frameworks, customers in New South Wales, Tasmania, South Australia and the Australian Capital Territory who move off-grid lose their energy-specific consumer protections under the NERL and the NERR - together the National Energy Customer Framework (NECF). The loss of these energy-specific consumer protections was a key reason the Commission made a final determination not to make a rule in the Western Power rule change.⁹⁵

Consideration needs to be given to which energy-specific protections are appropriate for the SAPS model of supply, and if different system sizes or ownership models impact the consumer protections that are required. The full suite of protections in the NERL and NERR may not be appropriate for all types of SAPS and/or additional consumer protections may be required. For example, if retail competition is ultimately determined not to be practicable in all off-grid supply situations, the retail competition provisions in the NERL and NERR may not be necessary, and instead it may be recommended that additional retail price protections be adopted by jurisdictions.

Given its focus on DNSP-led SAPS, a key question that this review will be examining is whether customers who move to off-grid supply to reduce distribution costs should continue to receive energy-specific consumer protections aligned with those of standard supply customers. It is likely reasonable, and the terms of reference highlight, that consumers who move to off-grid supply in DNSP-led SAPS should receive equivalent service quality, reliability and levels of consumer protections that they previously received as a grid-connected customer.⁹⁶

This chapter examines the key consumer protection issues which will be explored in the review. The key issues are:

- retail price protections
- other national energy-specific consumer protections
- consumer protection issues specific to the SAPS model of supply
- options for providing energy-specific consumer protections
- reliability, security and quality.

94 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. 36; AEMC, Review of regulatory arrangements for embedded networks, Final Report, 28 November 2017.

95 AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. 36

96 Terms of reference, p. 10.

The provision of retail services and the feasibility of retail competition are discussed in section 4.3.

5.1 Retail price protections

Section 4.3 of this paper considered how retail services may be provided in DNSP-led SAPS, and whether there are practicable models for retail competition for off-grid supply. If vertical integration of generation, distribution and retail services (or some vertical integration of distribution and generation or distribution and retail services) is considered the most efficient approach for some or all DNSP-led SAPS, some form of retail price protections will likely be required to ensure that consumers are paying an efficient price, and will not be disadvantaged by moving off-grid.

Under the AEMA, retail price regulation is a jurisdictional function, with jurisdictions utilising retail energy price controls where competition is “not yet effective for a market, group of users or a region”.⁹⁷ Retail energy price controls can be transferred to the AER and the AEMC at the discretion of each jurisdiction.⁹⁸ The AER does set effective controls on retail energy prices in some circumstances. For example, the AER’s retail exempt selling guideline, applicable to retailers with a licence exemption, contains a pricing condition.

The pricing condition contained in the AER’s retail exempt selling guideline is that customers supplied by the exempt person must not be charged “tariffs higher than the standing offer price that would be charged by the relevant local area retailer for new connections”. Additionally under the pricing condition, notice must be given of any change in the customer’s tariff, no additional charges that could not be charged by the local area retailer are allowed, and any late payment fees must be limited to recovering reasonably incurred costs as a result of the customer’s late payment.⁹⁹

The AER’s retail exempt selling guideline pricing condition could be adapted for off-grid supply. For DNSP-led SAPS, while the retailer may be an authorised retailer rather than one operating under an exemption, a pricing condition similar to that in the AER’s retail exempt selling guideline could be adopted via an alternative mechanism.¹⁰⁰

The effectiveness of price controls based on standing offers has been questioned in recent years, with the Commission’s 2018 Retail Energy Competition Review finding the average standing offer to be as much as \$832 more annually than the best market offer.¹⁰¹ The ACCC’s Retail Electricity Pricing Enquiry Final Report released in July 2018 recommended that “In non-price regulated jurisdictions, the standing offer and standard retail contract should be abolished and replaced with a default market offer at or below the price set by the AER”.¹⁰²

97 Australian Energy Market Agreement, Retail Price Regulation condition 14.15, p. 32.

98 Australian Energy Market Agreement, Retail Price Regulation condition 14.15, p. 33.

99 AER (Retail) Exempt Selling Guideline, version 5, March 2018, Condition 7 - Pricing, p. 37.

100 Stage 2 of this review will consider the need for retail price protections in the context of SAPS provided by a party other than a DNSP. This will include consideration of whether a pricing condition similar to that set out in the AER’s retail exempt selling guideline would be appropriate and if so, how this could be implemented.

101 AEMC, 2018 Retail Energy Competition Review, final report, p. viii.

102 ACCC, Retail Pricing Enquiry Final Report, July 2018, p. xxii. The Victorian Government is also currently investigating the application and scope of a regulated ‘Basic Service Offer’, or an alternative to replace standing offer contracts. A Basic Service

The ACCC recommendations are being examined outside of this review, and if a default market offer or similar replaces the current standing offer, a similar principle could apply.

There are also alternative approaches to retail price protections than the pricing condition in the AER's retail exempt selling guideline that could be examined. For example, the Victorian Department of Environment, Land, Water and Planning's final position in the *Review of the Victorian Electricity Licence Exemptions Framework* is that the new maximum rate an exempt seller may charge its embedded network customers should be based on commercial market data, instead of the standing offer.¹⁰³

This would better approximate a fair price for electricity and restrict the potential for exempt sellers to earn monopoly profits on electricity sales. Currently, the Victorian Essential Services Commission (ESC) publishes an annual schedule which prescribes the maximum charges that an embedded network operator may charge its customers. The ESC will continue to annually publish the applicable rates on its website.

In addition, the terms of reference for this review note that other mechanisms for protecting consumers could include long-term contracts with minimum contract terms and regulated retail price setting methodologies and price monitoring.¹⁰⁴

In Tasmania and regional Queensland, there are regulated retail prices for grid-connected customers. In these areas, a reasonable approach may be for SAPS customers to continue to pay the same regulated price that they did when they were grid connected.

QUESTION 13: RETAIL PRICE PROTECTIONS

- (a) If retail competition is not possible in SAPS, what alternative protections may be appropriate (e.g. retail price controls) for customers receiving supply via SAPS?
- (b) Would applying the pricing condition from the AER's retail exempt selling guideline to not charge more than the standing offer price that would be charged by the local retailer be appropriate for SAPS, if retail competition does not apply? Is there an alternative price control that would be more appropriate?
- (c) In the areas that currently have price regulation, is extending that price regulation to customers in SAPS an appropriate approach?

5.2

Other national energy-specific consumer protections

Under the national electricity framework there are a number of energy-specific consumer protections for grid-connected customers. National energy-specific consumer protections are

Offer is a 'no frills', unconditional offer, available if requested by a customer and was recommended in the Final report of the Bipartisan independent review of Victoria's electricity and gas retail markets, released in August 2017. A decision on the Basic Service Offer is expected later in 2018.

103 Victorian Department of Environment, Land, Water and Planning, *Review of the Victorian Electricity Licence Exemptions Framework*, Final Position Paper, 2017, pp. 18-19.

104 Terms of reference, p. 11

found primarily in the NECF, the main legal instruments of which are the NERL and the NERR. The NECF:¹⁰⁵

- establishes the consumer protections and obligations regarding the sale and supply of electricity and natural gas to consumers, with a particular focus on residential and small customers
- defines the rights, obligations and protections relating to the relationship between customers, energy retailers and energy distributors
- complements and operates alongside the generic consumer protections in the Australian Consumer Law and state and territory safety and concession regimes.

Currently consumer protections under NECF do not generally apply to customers receiving supply from a SAPS, except for some microgrids in Queensland and, potentially, the ACT.¹⁰⁶ Consumers in NSW, Tasmania and South Australia who move off-grid would lose their energy-specific consumer protections under the NECF. Consumers in Victoria would likely be covered by protections under the Victorian Energy Retail Code, if they are supplied by a licenced retailer. The Energy Retail Code applies protections to Victorian consumers similar to many of those in the NECF.

As discussed at the beginning of this chapter, many of the energy-specific consumer protections under NECF are likely to remain valuable for customers receiving supply via a SAPS. For DNSP-led SAPS, it would not be unreasonable for a consumer to expect energy-specific consumer protections equivalent to those they would have received under grid supply. For example, customers receiving supply via a SAPS should be entitled to requirements regarding accurate metering and regular billing that are equivalent to requirements for grid-supplied customers.

Some of the consumer protections provided under the NECF that may be reasonably expected to apply for consumers under a DNSP-led SAPS model of supply relate to:

- rights to access energy services and obligations to supply
- informed consent requirements
- dispute resolution procedures
- minimum contractual standards
- billing, tariff and payment minimum requirements, and
- protections for vulnerable customers.

When considering the appropriateness of the consumer protections under NECF for the SAPS model of supply, although many (if not most) would remain valuable, some amendments to the consumer protections (or alternatively jurisdictional regulations) may need to be made. For example, if retail competition is not found to be feasible for DNSP-led SAPS, the

¹⁰⁵ The NECF currently applies, with jurisdictional specific amendments, in Queensland, New South Wales, South Australia, Tasmania and the Australian Capital Territory. The NERL and NERR do not apply in Victoria.

¹⁰⁶ The Acts adopting the NERL in Queensland and the ACT do not limit the application of the NECF to the sale of electricity to customers connected to the NEM. If the seller of electricity in a microgrid in those jurisdictions is an authorised retailer it would be subject to the full provisions of the NECF.

competition provisions would require amendment. It is also likely that additional consumer protections specific to off-grid supply may be useful (see section 5.3).

In the embedded networks review, it was recommended that an appropriate set of consumer protections be implemented through the NERL and NERR, rather than through an exemption framework.¹⁰⁷ It is likely that a similar approach would be suitable for the SAPS model of supply.

QUESTION 14: OTHER NATIONAL ENERGY-SPECIFIC CONSUMER PROTECTIONS

(a) The Commission has suggested a general principle that energy-specific consumer protections for customers being supplied via a DNSP-led SAPS should be equivalent to those for grid-connected customers. Are there any significant provisions that wouldn't apply, or would require amendment for customers under a DNSP-led SAPS model of supply?

5.3

Consumer protection issues specific to SAPS customers

It may be necessary to provide additional consumer protections for consumers being supplied via DNSP-led SAPS, in addition to energy-specific consumer protections equivalent to those provided to grid-connected customers under NECF (where applicable). In the Western Power rule change the Commission agreed with stakeholders that additional off-grid-specific consumer protections may be necessary.¹⁰⁸

In their submissions to the Western Power rule change, PIAC and the ATA suggested additional protections relating to explicit informed consent, in particular a protection that the provider needs to confirm the customer understands the differences between living with a grid connection and living with off-grid supply.¹⁰⁹ If it is determined that consumer consent is required to transition a consumer to a DNSP-led SAPS, then those consent provisions would need to be included as an additional consumer protection under the framework. If consumer consent is determined not to be required for transition to a DNSP-led SAPS, it is likely that consumers would still require information on any differences they could expect under the SAPS model of supply.

Submissions to the Western Power rule change also suggested it may be necessary to include additional information provisions requiring information that is specific to the consumer's supply via a SAPS to be provided to the consumer. For example, provision of detailed product information on the SAPS assets to help them understand the reality of supply via a SAPS should be provided.¹¹⁰ This could include information on the components that comprise the SAPS, and information on how to refuel diesel generators, if required.

¹⁰⁷ AEMC, Review of regulatory arrangements for embedded networks, Final Report, 28 November 2017, p. 61.

¹⁰⁸ AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. 45.

¹⁰⁹ Submissions to the consultation paper on the AEMC, Alternatives to grid-supplied network services, PIAC, p. 20, ATA, p. 9, p. 13.

¹¹⁰ AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. 44.

The Commission welcomes stakeholders' views on what additional consumer protections specific to the SAPS model of supply may be appropriate.

QUESTION 15: CONSUMER PROTECTIONS SPECIFIC TO SAPS CUSTOMERS

- (a) Are there any additional consumer protections that may be necessary for SAPS customers?
- (b) In relation to detailed product information for the SAPS, what are the minimum provisions that should apply (if any)?

5.4 Options for providing consumer protections to SAPS customers

The mechanism under which consumer protections are provided for consumers being supplied under a SAPS needs to be determined. The Western Power rule change touched on two options for providing consumer protections for SAPS consumers.¹¹¹

Extending the application of the NERL and NERR to customers in SAPS is one method of providing consumer protections to SAPS customers. In order to apply the NERL and NERR protections to consumers being supplied via a SAPS, amendments to the state Acts adopting the NERL as a law of the state (particularly in NSW, Tasmania and South Australia) would be required. The NERL and NERR would also need to be amended so that relevant existing provisions would apply to SAPS customers, irrelevant provisions would not, and certain SAPS specific protections were incorporated.

This approach would continue the provision of consumer protections under the framework the consumer would have benefited from when they were grid connected. The continuity may provide comfort for consumers moving off-grid at the instigation of a DNSP.

An alternative to providing consumer protections by extending the application of the NERL and NERR could be providing consumer protections for SAPS customers under separate jurisdictional laws and regulations (preferably harmonised). Some jurisdictions have already developed frameworks for off-grid supply (which will continue to apply to legacy SAPS), and similar arrangements could be adopted in other jurisdictions. As part of this approach the protections in the NERL and NERR that are relevant to SAPS customers could be mirrored (where appropriate) in jurisdictional laws and regulations.

In Victoria, where the NERL has not been applied, the Energy Retail Code provides electricity consumers with similar consumer protections. The Energy Retail Code would apply to SAPS customers being served by a retailer but not those serviced by an entity with an exemption from the requirement to obtain a retail licence. This review will not undertake a detailed examination of changes that may be required to the Victorian Energy Retail Code to cover all consumers under a SAPS model of supply.¹¹²

¹¹¹ AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. 46.

¹¹² However, the Commission intends to work with the Victorian Government to assist it in understanding the implications of any recommendations for changes to the NECF and how equivalent protections might be implemented in Victoria.

QUESTION 16: OPTIONS FOR PROVIDING ELECTRICITY-SPECIFIC CONSUMER PROTECTIONS

To provide equivalent protections for consumers receiving electricity supply via SAPS is the most efficient approach to amend the jurisdictional Acts adopting the NERL, as well as amending the NERL and NERR? Is there an alternative approach which may be more effective?

5.5 Reliability, security and quality

Reliability of electricity supply is a key factor considered in the national energy objective and the Commission considers that having appropriate reliability standards for off-grid supply would be a prerequisite for a rule allowing DNSP-led SAPS, and to enable the provision of SAPS by DNSPS to meet the NEO.¹¹³

Network reliability standards are jurisdictional regulatory functions.¹¹⁴ The levels of reliability that must be provided by transmission and distribution networks are contained in jurisdictional licence conditions or in state codes or regulations. As reliability at the distribution level (and to a lesser extent transmission level) is a key issue for determining whether supply via a SAPS is suitable, it is important it is explored in detail in this review.

In addition to the jurisdictionally set service reliability standards, there are reliability performance standards for DNSPs set by the AER. These are the performance targets set under the service target performance incentive scheme (STPIS). This scheme would apply to SAPS if they are classified as standard control services.¹¹⁵

Although early indications from some SAPS trials have shown improved reliability,¹¹⁶ the technology used in SAPS is relatively recent and it is uncertain how reliability levels may change as the systems age.

For DNSP-led SAPS, it is likely reasonable that reliability, security and quality standards with equivalent principles to those of grid-connected customers should apply. The standards and measures do not necessarily need to be exactly the same as those that apply to grid-connected customers, and some of the measures or incentive targets used for grid-connected customers may not be appropriate for SAPS systems.

In most jurisdictions, distribution reliability requirements are specified in terms of levels of the System Average Interruption Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI). These measures are averaged across large numbers of customers, and would therefore provide no assurance to specific customers that the levels of reliability they experience would be maintained in the event of a move to a SAPS model of

¹¹³ AEMC, Alternatives to grid-supplied network services, Final rule determination, 19 December 2017, p. 40.

¹¹⁴ Annexure 2, Australian Energy Market Agreement (as amended December 2013).

¹¹⁵ Section 2.1(a) of the Electricity distribution network service providers - Service target performance incentive scheme (November 2009).

¹¹⁶ Western Power, Stand-alone Power System Pilot One Year On, September 2017, p. 6.

supply. There may also be differences in effective targets and measures for microgrids compared to individual power systems.

BOX 9: ESSENTIAL SERVICES COMMISSION OF SOUTH AUSTRALIA'S SA POWER NETWORKS RELIABILITY STANDARDS REVIEW

In August 2018, the Essential Services Commission of South Australia (ESCOSA) released its draft decision on the SA Power Networks reliability standards review, on standards which will apply to SA Power Networks from 1 July 2020 to 30 June 2025. For a number of reasons, ESCOSA found that the current reliability metrics were no longer the most appropriate approach, and that a region-based approach for setting network performance standards would be more suitable in South Australia.

Under the draft decision, network reliability standards will apply to ten region-based categories with targets set to maintain reliability at current levels. Previously network performance standards were set for four feeder-type categories.

One of the reasons behind the approach to set network performance standards for regions rather than feeder types is that it would accommodate SAPS if they are able to be a regulated distribution service under the national framework.

Source: Essential Services Commission of South Australia, SA Power Networks reliability standards review, draft decision, August 2018.

It may also be appropriate to set Guaranteed Service Levels (GSL) for SAPS, and provide GSL payments to SAPS supplied consumers if those levels are not met. GSL schemes are determined by jurisdictional regulators. To apply GSLs and GSL payments to consumers receiving off-grid supply, the jurisdictional schemes would need to be amended. In Queensland, the Queensland Competition Authority is currently carrying out the Review of Guaranteed Service Levels - Energex and Ergon Energy, and one of the topics of that review is extending GSL arrangements to supply from microgrids. The Clean Energy Council recommended this extension of GSL arrangements to microgrids.¹¹⁷

System security refers to the safe scheduling, operation and control of the power system on a continuous basis, within defined technical limits (even if there is an incident such as the loss of a major transmission line or large generator). Power system security relates to the technical parameters of the system such as frequency and voltage, and the rate at which these may change, as well as the ability of the system to withstand faults.¹¹⁸ The system security requirements in the NER apply to the national grid and it is likely that appropriate security settings could be quite different for microgrids than those developed for the national grid. For individual power systems, the concept of system security appears to be less relevant.

¹¹⁷ Queensland Competition Authority, Stakeholder Notice, Review of Guaranteed Service Levels - Energex and Ergon Energy, p. 3. accessed on 20 August 2018, <http://www.qca.org.au/getattachment/f909b5dd-6831-41a8-9964-df9558ecf553/QCA-GSL-Review-further-consultation-notice.aspx>

¹¹⁸ Chapter 4 of the NER.

QUESTION 17: RELIABILITY, SECURITY AND QUALITY

- (a) What reliability, security and quality standards are appropriate for DNSP-led SAPS? Should the same reliability and service quality levels apply as for grid-connected customers?
- (b) Are there any existing network reliability, security and quality standards that would be difficult to comply with for SAPS? For example SAIDI and SAIFI requirements may have equivalent principles, but the practice for determining them may be different in SAPS.
- (c) Should GSLs be determined for DNSP-led SAPS? If so, should the same standards apply as for grid-connected customers (why/why not)?

5.6

Other jurisdictional consumer protection considerations

To provide a complete set of consumer protection and safety regulations to consumers receiving electricity under a SAPS model of supply, there are other state and territory energy functions that need to be considered. These include:

- whether safety requirements and monitoring regimes apply to and are appropriate for SAPS
- whether the state and territory concessions and rebates are available to residential customers in DNSP-led SAPS
- whether consumers in DNSP-led SAPS will have access to independent dispute resolution services for both distribution and retail services
- whether there are any concerns with or restrictions to the DNSP's access to land to install and maintain SAPS.

The initial view of the Commission is that many of these jurisdictional protections would automatically apply to SAPS customers where the SAPS is provided by a DNSP. Consideration of these jurisdictional functions will likely become more important for Priority 2 of this review, which considers consumers transitioning to a SAPS facilitated by a party other than a DNSP. The Commission intends to discuss these issues with jurisdictional governments over the course of the review.

QUESTION 18: OTHER JURISDICTIONAL CONSUMER PROTECTION CONSIDERATIONS

- (a) Are the other jurisdictional issues presented in section 5.6 less likely to be a concern for DNSP-led SAPS (why/why not)?
- (b) Should any of these issues be examined in greater detail in relation to DNSP-led SAPS?

6 TRANSITION TO THIRD PARTY STAND-ALONE POWER SYSTEMS

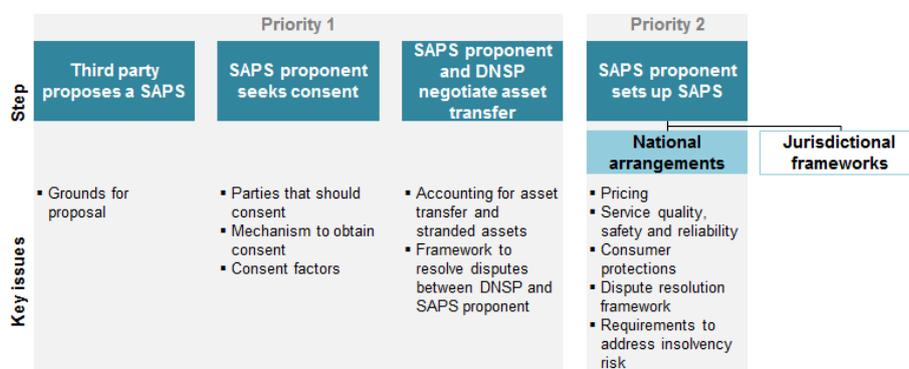
In addition to developing a national framework for SAPS facilitated by distribution businesses, priority 1 also requires that the Commission develop a mechanism under the national framework to support the transition of grid-connected customers to a SAPS that is provided by a party other than a DNSP. An alternative to DNSP-led SAPS provision might be a community group or developer wishing to transition existing grid-connected customers to a SAPS that it would subsequently own and operate.

Priority 1 does not include the development of national arrangements to regulate such third party SAPS provision on an ongoing basis. The terms of reference for the review contemplate that stand-alone power systems that have been transitioned away from DNSP provision could be regulated under jurisdictional frameworks. However, the Commission has also been asked to develop a national framework for the ongoing regulation of third party SAPS under priority 2 of the review. In doing so, the Commission’s objective will be to propose a third party SAPS framework that promotes consistent outcomes with the framework recommended by the embedded networks review, in order to minimise incidence of service provider shopping across different frameworks.¹¹⁹

This chapter will consider a number of matters relevant to the development of a mechanism to enable third parties to transition existing grid-connected customers to a SAPS. The matters identified in this section relate to consent, risk mitigation, asset transfer and stranded assets.

Figure 6.1 illustrates this approach.

Figure 6.1: Approach of review to third party stand-alone power systems



¹¹⁹ Refer to the project page for the Commission’s review into “Updating the regulatory frameworks for embedded networks”: <https://www.aemc.gov.au/markets-reviews-advice/updates-the-regulatory-frameworks-for-embedded-networks>.

6.1 Decision making framework

In developing a mechanism under a national framework to support the transition of customers from the grid to a SAPS facilitated by a third party, consideration will be given to:

- the types of third parties that may propose to transition customers to a SAPS model of supply
- the drivers behind the decision to transition customers to a third party-led SAPS
- whether the third party should be required to gain consent from affected parties, who the affected parties may be and the mechanism for obtaining consent.

The transitional mechanism itself may not need to specify the types of third parties that might propose to transition customers to a SAPS. However, it will be important to consider the possible parties (which may include developers, councils or other community groups)¹²⁰ in order to understand whether any specific arrangements may need to be developed to ensure the transition process is appropriate and effective.

It will also be important to understand the drivers of the decision of a third-party to transition customers to a SAPS model of supply. Unlike DNSP-led SAPS which will be driven by economic efficiency objectives, the decision to transition customers to a SAPS made by a third-party may be influenced by environmental and/or social, rather than economic, objectives. This raises the question of whether it is appropriate for a third-party to proceed with the transition of customers to a SAPS if there is a risk that the decision will have a negative impact on economic efficiency. This review will therefore consider the merits (or otherwise) of including an efficiency pre-condition in the transitional arrangements for third-party-led SAPS.

The review will also consider the role of customer choice in the decision to move customers to off-grid supply where this is facilitated by a third-party. For example, in the event that a local council is considering moving a community to a SAPS model of supply, there is a question around whether the Council should be required to obtain consent from some, or all, of the affected members of the community before proceeding. The Commission's initial view is that it is likely to be appropriate to gain the consent of customers transitioning to the third party SAPS.

The review will also set out whether the regulator's consent should also be obtained, which would depend on a set of factors that include the regulator's role in the SAPS supply model. The Commission will also consider whether the consent of customers left behind on the grid should also be sought if they were impacted in any way, for instance through asset costs being spread across a smaller number of customers and thereby increasing tariffs.

In developing a framework, it will be necessary to consider the nature of the mechanism to seek consent. The framework would likely need to set out the proportion of customers (if any) that should consent to the transition. There appears to be an argument that it may be appropriate for the proportion to be higher than that for customers transitioning to a DNSP-led SAPS as the impact of the transition is likely to be larger. The framework would also set

¹²⁰ The case where the DNSP proposes the transfer is covered earlier in the paper.

out the conditions or factors that should be presented to obtain consent. These conditions could include expected consumer outcomes such as prices, service standards and consumer protection safeguards.¹²¹ A right to reconnect to the grid, if technically feasible, may also be considered as a consent condition, with further implications on cost allocation and transfer between grid and transitioned customers.¹²²

QUESTION 19: THIRD PARTY STAND-ALONE POWER SYSTEMS - DECISION MAKING FRAMEWORK

- (a) Which party should make the decision to transition customers to a SAPS and which party/ies should approve the decision?
- (b) What should be the grounds for deciding to transition customers to a third party SAPS?
- (c) Which mechanisms should be employed to seek approval and/or consent?
- (d) If the consent of transitioned customers is sought, what is the proportion of customers that should provide their consent? Should consent factors be defined, and what should they be?
- (e) Should transitioned customers, either individually or collectively (in the case of a microgrid), retain the right to reconnect to the grid?

6.2 Asset transfer and stranded assets

Transitioning customers from the grid to a SAPS supply model will (by definition) involve the removal or decommissioning of the set of assets previously used to supply the transitioned customers from the grid, and may also entail the transfer of other network assets between the DNSP and the SAPS provider.¹²³

A framework for transition will therefore need to consider arrangements to enable the transfer of assets between a DNSP and third-party SAPS proponent, as well as arrangements (including possibly funding arrangements) to address the matter of stranded assets (that is, those that are no longer required to supply either the transitioned customers or customers left behind on the grid). The implications of a transfer would be that:

- assets that are directly linked to the supply of electricity to the transitioned customers would no longer form part of the Regulatory Asset Base (RAB) of the DNSP
- any stranded assets that are no longer used to supply either set of customers would also need to be removed from the DNSP's RAB
- depreciation of, and return on, assets that were previously used to supply electricity to both the transitioned customers and those that are left behind on the grid but, going

¹²¹ Priority 2 of the review will look into consumer outcomes under a third party SAPS in further detail.

¹²² Cost allocation and transfer is discussed further in section 6.3.

¹²³ Subject to the discussion in Chapter 4 of this paper, the issues of asset transfer and the treatment of stranded assets is also likely to be relevant in the context of DNSP-led SAPS. These issues will also be discussed in that context.

forward, will only be used to supply the customers that continue to be grid connected, will be fully allocated to these remaining grid-connected customers.

To the extent that any of the above occurs as a result of the transition, the DNSP would have to remove stranded assets and assets transferring to the SAPS from its RAB. It may be appropriate for a SAPS proponent to pay the DNSP a fee for any stranded assets. The DNSP may then account for the stranded assets and asset transfer through a revenue building block increment or decrement. Alternatively, the relevant jurisdiction may impose a jurisdictional scheme obligation.¹²⁴

The Commission will also consider whether an oversight mechanism (or dispute resolution process) is necessary to ensure effective arbitration in respect of how stranded assets, and assets transferred to the SAPS proponent, are valued.¹²⁵ It may be appropriate for the AER to have a role in setting out the appropriate mechanism to account for the asset transfer in the DNSP's regulatory accounts.

Under priority 2 of the review, the Commission will consider the need for a mechanism to account for stranded assets in the prices charged to the transitioned customers. Similarly, the pricing may also be through a revenue increment or jurisdictional scheme, depending on the pricing methodology of the SAPS supply model and how equivalent it would be to the building block methodology.

To protect customers during the transition process, the Commission may propose a dispute resolution framework to act as a credible threat for fair negotiations between DNSPs and SAPS service providers over asset values and stranded assets. The framework may include a role for the regulator in setting or approving the asset values consistently with its revenue and capital base determinations.

QUESTION 20: THIRD PARTY STAND-ALONE POWER SYSTEMS - ASSET TRANSFER AND STRANDED ASSETS

- (a) Is there a role for the AER, jurisdictional regulator or other body in setting or approving asset values and pricing methodologies as a result of the transfer?
- (b) How should asset transfers be treated in the DNSP RAB?
- (c) How should stranded assets be treated in the DNSP RAB?
- (d) Should corresponding fees be charged to the transitioned customers and customers left behind on the grid?
- (e) Is a dispute resolution framework design required for asset transfer and stranded assets? What are the key elements of the design?

¹²⁴ Refer to clause 6.4.3 in the NER.

¹²⁵ This is linked to the price regulation framework that is discussed in section 6.2.

7 LODGING A SUBMISSION

Written submissions on this consultation paper must be lodged with Commission by 9 October 2018 online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code EMO0037.

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Where practicable, submissions should be prepared in accordance with the Commission's guidelines for making written submissions. The Commission publishes all submissions on its website, subject to a claim of confidentiality.

All enquiries on this project should be addressed to Sherine Al Shallah on (02) 8296 7800 or sherine.alshallah@aemc.gov.au

ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CESS	Capital expenditure sharing scheme
Commission	See AEMC
DNISP	Distribution network service provider
EBSS	Efficiency benefit sharing scheme
EIC	Explicit Informed Consent
EMTPT	Energy Market Transformation Project Team
ESC	Essential Services Commission (Victoria)
ESCOSA	Essential Services Commission of South Australia
IPS	Individual Power System
MCE	Ministerial Council on Energy
NECF	National Energy Customer Framework
NEL	National Electricity Law
NEM	National Energy Market
NEO	National electricity objective
NER	National Electricity Rules
NERL	National Energy Retail Law
NERO	National energy retail objective
NERR	National Energy Retail Rules
RIT-D	Regulatory investment test for distribution
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SAPS	Stand-alone power system

A EXISTING MICROGRIDS UNDER JURISDICTIONAL REGULATION

The intention of the review is that any new arrangements need not apply to existing microgrids. However, it provides useful context to understand the location of existing microgrids. Consequently, this appendix briefly describes known microgrids in participating NEM jurisdictions (excluding the Northern Territory).

A.1 New South Wales

In NSW, Lord Howe Island is supplied by a microgrid, with the Lord Howe Island Board (a statutory authority) responsible for the supply of electricity on the island. It is exempt from the NERL as the NERL only applies to customers connected to the NEM in NSW. Lord Howe Island Board sets tariffs for customers, and electrical installations must comply with the Lord Howe Island Electrical Service Rules.

Few regulations would currently apply to microgrids in NSW (excluding Lord Howe Island).

A.2 Queensland

Ergon Energy (part of Energy Queensland) owns and operates 33 isolated and remote power stations that are not part of the interconnected grid. The 33 microgrids are throughout Western Queensland, the Gulf of Carpentaria, Cape York, some of the Torres Strait Islands and Palm and Mornington Islands.¹²⁶ The NERL and NERR apply to these SAPS, as well as Chapter 5A of the NER.

There is also a large Mount Isa-Cloncurry microgrid, which is operated by Ergon Energy and supplies approximately 10,000 customers. Although not connected to the NEM, the Mount Isa- Cloncurry microgrid is subject to Chapter 5A, Chapter 6 and Chapter 11 of the NER,¹²⁷ as well as the NERL and NERR.

Figure A.1 shows the locations of the isolated and remote SAPS operated by Ergon Energy, excluding the Mount Isa – Cloncurry microgrid.

¹²⁶ Ergon Energy <https://www.ergon.com.au/network/network-management/network-infrastructure/isolated-and-remote-power-stations>

¹²⁷ Electricity - National Scheme (Queensland) Act 1997 s10.

Figure A.1: Ergon Energy Isolated and remote microgrids



Source: Ergon Energy <https://www.ergon.com.au/network/network-management/network-infrastructure/isolated-and-remote-power-stations>

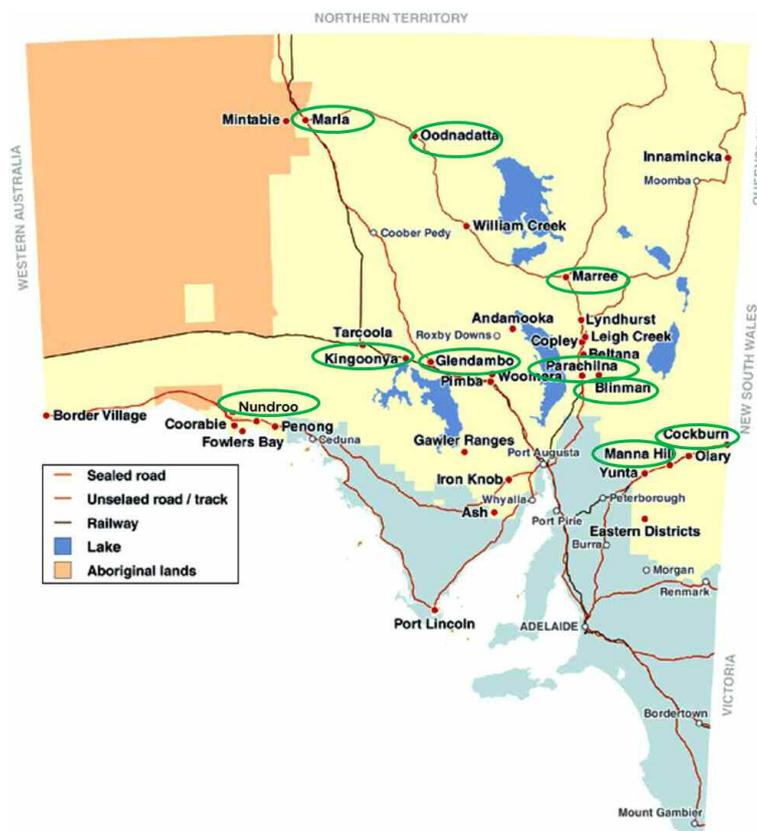
A.3 South Australia

In South Australia, the Remote Areas Energy Supply (RAES) scheme supplies electricity to customers in remote areas via microgrids. The Minister for Energy and Mining is responsible on behalf of the Government for electricity supply via microgrids to 15 Aboriginal Communities, as well as 10 remote state sites¹²⁸ (NB. one of these sites, Cockburn, is no longer an isolated microgrid as it is supplied from NSW by Essential Energy, however, it is still treated as RAES by the South Australian Government).

¹²⁸ Electricity Generation Licence Application Cowell Electric, Part B Attachment 2: State Sites Remote State Sites Information, p.2.

Figure A.2 shows the 10 remote state sites, indicated by the green circles.

Figure A.2: South Australian RAES state sites



Source: Electricity Generation Licence Application Cowell Electric, Part B Attachment 2: State Sites Remote State Sites Information, ESCOSA accessed at <https://www.escosa.sa.gov.au/ArticleDocuments/903/20160309-ElectricityGenerationLicenceApplication-CowellElectric-RemoteStateSitesInformation.pdf.aspx?Embed=Y>

A.4 Tasmania

In Tasmania, the Bass Strait Islands (King and Flinders Islands) microgrids supply around 2,500 people. Provisions for electricity generation and supply in the Bass Strait Island are in the Tasmanian Electricity Code. In addition, all tariffs, charges and conditions relating to retailing are subject to approval by the Tasmanian Economic Regulator. The NECF does not apply to Tasmania microgrids.

A.5 Victoria

In Victoria licences are required for the generation, distribution, supply and sale of electricity, unless an exemption applies. Victoria has not implemented the NECF, however, the Victorian Energy Retail Code applies protections similar to many of those in the NECF to customers of

retailers in Victoria. Microgrid customers who are served by retailers should receive the benefit of the protections under the Energy Retail Code.

Mt Stirling (a ski resort) is an known example of a microgrid in Victoria.