AEMC

RULE CHANGE

Australian Energy Market Commission

CONSULTATION PAPER

National Electricity Amendment (Alternatives to grid-supplied network services) Rule 2017

Rule Proponent
Western Power

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Inquiries

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

E: aemc@aemc.gov.au
T: (02) 8296 7800
F: (02) 8296 7899

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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.

Contents

1 Introduction

Western Power, an electricity distributor in Western Australia, has submitted a rule change request to the Australian Energy Market Commission (Commission) which seeks to remove certain barriers to distributors deploying alternative technologies and methods of providing distribution services (such as transitioning to off-grid supply), where efficient.

Western Power proposes changes to the definition of "distribution service" in the National Electricity Rules (Rules) to ensure such off-grid supply is a distribution service, for which distributors may receive regulated returns depending on how the Australian Energy Regulator (the AER) classifies the service.

Assessing the rule change request involves considering several complex legal and regulatory issues. This consultation paper has been prepared to facilitate public consultation on the rule change request by seeking stakeholder submissions on specific issues. It sets out a summary of, and background to, the rule change request and outlines the process for making submissions. Issues for stakeholder comment include:

- the costs and benefits of off-grid supply
- competition issues relating to consumers moving from grid supply to off-grid supply
- consumer protection issues
- potential alternatives to the proposed rule change.

Written submissions from stakeholders are requested by 18 July 2017.

2 The rule change request

The rule change request from Western Power proposes to amend the definition of "distribution service" in the Rules to capture non-network options where they are provided by a distributor and used to replace, or are a substitute for, a network asset. This chapter:

- provides background to the rule change request, including information on the proponent and on the drivers for the request
- sets out the proponent's proposed change to the Rules (referred to as the proposed rule) and discusses how the proponent describes the intention of the proposed rule and the types of supply the proposal would cover
- discusses the interpretation of key terms relating to the current definition of "distribution service", an important part of the rationale for the request
- notes potential legal implications of the proposed rule.

2.1 Western Power

Western Power is a Government-owned corporation that connects more than one million customers via the transmission and distribution networks located in the south west of Western Australia. The Western Power network forms the vast majority of the South West Interconnected Network, which together with all of the electricity generators, comprises the South West Interconnected System.[1]

When Western Power submitted its rule change request, it expected that it would become subject to the Rules in the near future, as it was expected that regulatory functions would be transferred from Western Australia's Economic Regulatory Authority to the AER with the passage of the Network Regulation Reform Bill through the Western Australian Parliament. However, the Bill was not passed. As a result, the Economic Regulatory Authority remains Western Power's regulator for the forthcoming regulatory control period.

The fact that Western Power is not covered by the Rules does not prevent it from submitting a rule change request, as the Rules permit anyone to submit a rule change request.[2] Additionally, Western Power notes that issues raised in the rule change request are equally applicable to many distributors already operating in the national electricity market.[3]

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1 Rule change request *Removing barriers to efficient network investment*, Western Power, September 2016 (rule change request), p. 29. The rule change request is available on the Commission website, www.aemc.gov.au, under reference ERC0215.

2 National Electricity Law s. 91(1).

3 Rule change request p. 29.

2.2 Western Power's views on issues giving rise to rule change request

Western Power argues that network businesses around Australia are increasingly looking to emerging technologies to help meet their objectives of delivering safe, reliable and affordable electricity services to their customers. Western Power argues that this intent is generally supported in the Rules by the underlying philosophy of least cost investment, technology-neutrality and service-based economic regulation. Western Power is concerned that, in some situations, a lack of clarity in the Rules may unintentionally create a barrier to the use of such technologies, and effectively deny customers the benefits of delivery of not only the most cost-effective services, but also potentially more reliable and safe services.[4]

Western Power argues that uncertainty in the ability of distributors to deploy new technologies principally arises due to ambiguity in relation to the definition of a "distribution service" in the Rules.[5] Together with the related definitions of distribution system and distribution network, Western Power argues that the Rules could imply that services provided by means of certain assets may not qualify for classification as a distribution service. The implication of a service not qualifying for classification as a distribution service is that it cannot be economically regulated and a distributor will not be able to recover regulated revenue for the provision of those services. If a distributor is not certain that the AER is able to classify the service as a distribution service, then the distributor may be reluctant to put the time and effort in to exploring the merits of using such a technology to help deliver efficient services for customers.[6]

An example of a service which Western Power considers may not meet the current definition of "distribution service" is a stand-alone power system (SPS). Western Power describes an SPS as a modular renewable energy solution usually comprised of solar PV panels, batteries, diesel generation and supporting infrastructure.[7] An SPS is not connected to a distribution network.[8] Yet a distributor may wish to deploy an SPS as an alternative to a network solution (such as replacement of existing poles and wires) so as to meet its regulatory obligations and licencing requirements to facilitate the supply of electricity to customers in rural areas at lower cost.[9] This can be considered a distributor-led transition from grid supply to off-grid supply.[10] Western Power argues that currently it is not clear that the Rules permit a distributor-led transition from grid supply to off-grid supply where the distributor provides an SPS as a regulated distribution service.

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4 Rule change request cover letter.

5 Rule change request p. 3.

6 Rule change request p. 3.

7 Rule change request p. 11. See section 2.4.3 for further information on the types of supply considered in this paper.

8 Rule change request p. 3.

9 Rule change request p. 3.

10 The role of customer choice in such a transition is discussed in section 5.2.

2.3 Western Power's reasons for wishing to provide off-grid supply in place of grid supply

In its rule change request, Western Power provides its rationale for seeking to move customers in certain areas from grid supply to off-grid supply. The main arguments raised by Western Power in the rule change request are summarised as follows:

- **Least cost investment:** The near-term opportunity from the deployment of SPSs as an alternative to network renewal can provide significant benefits to customers in the national electricity market. Using assumptions that appear relatively conservative, Western Power's modelling identifies an estimated 2,702 SPS candidates on its network over the next ten years, resulting in a net benefit of $388m (over 50 years) compared to the cost of replacing existing network assets.[11] Western Power considers that similar opportunities are likely to emerge across all regions within the national electricity market.[12]

- **Reliability:** SPSs may present a more reliable supply of electricity than poles and wires, particularly in bush-fire prone areas. Many areas in which SPSs are being considered are in fringe-of-grid areas subject to extreme weather and/or rough terrain. This often results in low levels of reliability for customers. SPSs are likely to be more reliable, as they are less prone to external risks such as fire, wind, lightning and traffic.[13]

- **Safety:** The fact that SPSs are less prone to external risks such as fire, wind, lightning and traffic are also likely to increase safety to consumers.[14]

- **Improved aesthetics and practicalities associated with maintaining and preserving land:** Customers surveyed by Western Power considered an SPS less of an intrusion than poles and wires, both in terms of visual amenity and in terms of maintaining the assets and surrounding land.[15]

2.4 Proposed rule and Western Power's description of its proposal

2.4.1 Proposed rule

The rule change request includes a proposed rule, with Western Power proposing that the definition of a distribution service be amended as set out in Box 2.1 (proposed additions are underlined):

11 Savings are expressed in net present value, using a 6.53 per cent discount rate (according to information provided separately by Western Power).

12 Rule change request p. 11.

13 Rule change request p. 11.

14 Rule change request p. 23.

15 Rule change request p. 23.

Box 2.1 Proposed rule change[16]

Distribution service. A service provided by means of, or in connection with, a *distribution system*. Without limiting the phrase 'in connection with', a service provided by means of a *non-network option* is a service provided in connection with a *distribution system* if the *non-network option*:

(a) replaces or is a substitute for part of a *distribution system*;

(b) could potentially be a more efficient method of addressing the *identified need* to which the *non-network option* responds; and

(c) is owned, controlled or operated by a *Distribution Network Services Provider*.

For the purpose of this definition, *identified need*, when used in the definition of *non-network option*, is to be read as if the reference to *network* in that definition is a reference to *distribution system*.

For the purposes of understanding the proposed rule, the relevant definitions are as follows:[17]

distribution system	A *distribution network*, together with the *connection assets* associated with the *distribution network*, which is connected to another *transmission* or *distribution system*. *Connection assets* on their own do not constitute a *distribution system*.
distribution network	A *network* which is not a *transmission network*.
identified need	The objective a *Network Service Provider* ... seeks to achieve by investing in the *network*.[18]
network	The apparatus, equipment, plant and buildings used to convey, and control the conveyance of, electricity to customers (whether wholesale or retail) excluding any *connection assets*. In relation to a *Network Service Provider*, a *network* owned, operated or controlled by that *Network Service Provider*.
network option	A means by which an *identified need* can be fully or partly addressed by expenditure on a transmission asset or a distribution asset which is undertaken by a *Network Service Provider.* For the purposes of this definition, transmission asset and distribution asset has the same meaning as in clause 5.10.2.
non-network option	A means by which an *identified need* can be fully or partly addressed other than by a *network option.*

16 Rule change request p. 15.

17 Rules chapter 10.

18 This term and the related terms *network option* and *non-network option* were recently moved to chapter 10 of the Rules under the National Electricity Amendment (Demand management incentive scheme) Rule 2015.

2.4.2 Western Power's description of its proposed approach

Western Power describes the proposed rule as follows:[19]

> "This proposed rule change seeks to clarify that alternatives to network options may be classified as providing *distribution services*. The three limbs of the [proposed definition of distribution service] place constraints on the circumstances under which non-network options may be classified as *distribution services*. These limitations will ensure that the exercise of the expression "in connection with" in respect of new technology solutions are confined to where that service is clearly associated with the regulated functions of a DNSP and therefore is in conjunction with the *distribution system*."

Western Power goes on to describe the purpose of each part of the proposed rule as follows:[20]

First limb (a)

- Services provided by means of a non-network asset can only be classified as *distribution services* if the non-network asset replaces, or is a substitute for, part of a *distribution system*.
- The intention of this limb is to restrict the classification of services provided by means of non-network options as *distribution services* to those that would otherwise be provided by means of *distribution network* assets or *connection assets*. That is, a distributor must make an investment so as to meet its regulatory or licence obligations and the customer being supplied by the service cannot, or has no incentive to, access the service through a competitive provider.

Second limb (b)

- A service provided by means of a non-network option can only be classified as a *distribution service* if it is potentially more efficient than providing that service by means of a network option.
- The intention of this limb is to only allow a service provided by means of a non-network option to be classified as a *distribution service* where investment in the non-network option has the potential to be more efficient than investment in the network, and therefore is more likely to result in reduced costs and so reduced prices for customers.

Third limb (c)

- A non-network asset can only be used to provide *distribution services* where that asset is owned, controlled or operated by a distributor.
- This is consistent with the definition of *network*, and helps to confine the interpretation of "in connection with" in relation to a *distribution system* to circumstances where there is a clear association with the existing *distribution system*.

19 Rule change request p. 15.

20 Rule change request p. 15-16.

Final sentence

- The final amendment expands the definition of *identified need* so as to capture *connection assets* for the purposes of the definition of *distribution service*.

- This recognises that distributors currently invest in two categories of assets: *network* assets and *connection assets*. Distributors should have the flexibility to invest in non-traditional technology in replace of, or in substitute for, each of these asset types.

The rule change request frequently refers to stand-alone power systems or SPS as a key type of supply Western Power seeks to provide pursuant to the proposed rule.[21] The rule change request also states that the proposed solution is intended to be technology neutral, and that the Commission "may wish to consider whether other potential technology types, such as micro grids, should be captured".[22]

Western Power also clarifies that it does not seek to supply stand-alone power systems to new customers through its regulated business, only to existing customers who "do not face the cost of maintaining their network connection and so have no incentive to install an SPS."[23]

As part of the rule change process, the Commission will consider the extent to which the proposed rule reflects the proponent's intended purpose, as reflected in the text of the rule change request. In this regard, the Commission notes that the first limb of the proponent's revised definition of distribution service may not necessarily limit the non-network options being caught by that new definition to those that are replacements, or a substitute, for parts of the *existing* distribution system. The Commission will assess this and other aspects of the proposed rule further during the rule change process.

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21 See for examples pages 3, 4, 11, 12, 19 and 23 of the rule change request. This consultation paper uses the term individual power system, instead of Western Power's term stand-alone power system, for consistency with the Commission's previous work in this area. See section 2.4.3.

22 Rule change request p. 20.

23 Rule change request p. 12. This appears to relate to the "safeguards" described by Western Power that are intended to ensure the "amendment is only exercised when it is in the interest of customers and delivers more efficient outcomes to customers." One such safeguard is that "the technology solution will replace, or be a substitute for, part of the existing *distribution system* which the DNSP would otherwise be required to invest in to meet a regulatory obligation or licence requirement". Rule change request p. 7.

2.4.3 Forms of supply that appear to be contemplated by proponent's proposal

The proponent's proposal[24] relates only to certain forms of supply by distributors: moving from grid supply to local power systems, either microgrids or individual power systems (referred to collectively as "off-grid supply" in this paper).

Proponent's proposal relates to:	Proponent's proposal does not relate to:[25]
Customers who have an existing connection to the national grid, where the distributor considers it may be more cost-effective for the customer to be supplied through an off-grid system (either a microgrid or an individual power system) rather than maintaining and/or replacing the grid connection assets. Customers who may fall into this category could include "edge of grid" customers, customers in remote areas, customers in very low-density areas, and customers served by long lines which are due for replacement (particularly where the new line would need to be a costly underground line, due to fire safety regulations).[26] (Note that not all customers of these types would be candidates for a distributor-led transition to off-grid supply.)	• Customers of existing microgrids • Customers with their own existing power supply system • Customers who decide to establish their own power supply system rather than paying for a new grid connection • New microgrids established in greenfield sites (sites where there is no existing grid connection), for example by property developers • Community-led transitions to off-grid supply provided by a party other than the local distributor • Embedded networks (being a network operated by a party other than the local distributor, which is physically connected to the grid).

The circumstances to which the proponent's proposal relates are illustrated below. For reference, Figure 2.1 shows standard grid supply, the conventional supply model where electricity is supplied through the national electricity system.[27] In Figure 2.2, some of the customers who were connected to the grid have had their connection to the

24 As described in section 2.4.2, based on statements on pages 6-7 and 15-16 of the rule change request. As noted above, there may be differences between the proponent's intended purpose of the rule change and how its proposed rule would operate in practice.

25 These scenarios are, however, under consideration in separate projects; see chapter 6.

26 Victoria has introduced such requirements. The Electricity Safety (Bushfire Mitigation) Amendment Regulations 2016 (Vic) inserts new regulation 7(1)(hc) into the Electricity Safety (Bushfire Mitigation) Regulations 2013.

27 *National electricity system* is defined in the National Electricity Law as "(a) the generating systems and other facilities owned, controlled or operated in the participating jurisdictions connected to the interconnected national electricity system; and (b) the interconnected national electricity system." The *interconnected national electricity system* is defined as "the interconnected transmission and distribution system in this jurisdiction and in the other participating jurisdictions used to convey and control the conveyance of electricity to which are connected - (a) generating systems and other facilities; and (b) loads settled through the wholesale exchange operated and administered by AEMO under this Law and the Rules." National Electricity Law s. 2.

grid removed, and have instead been provided with off-grid supply, either microgrids or individual power systems.

Figure 2.1 Standard grid supply

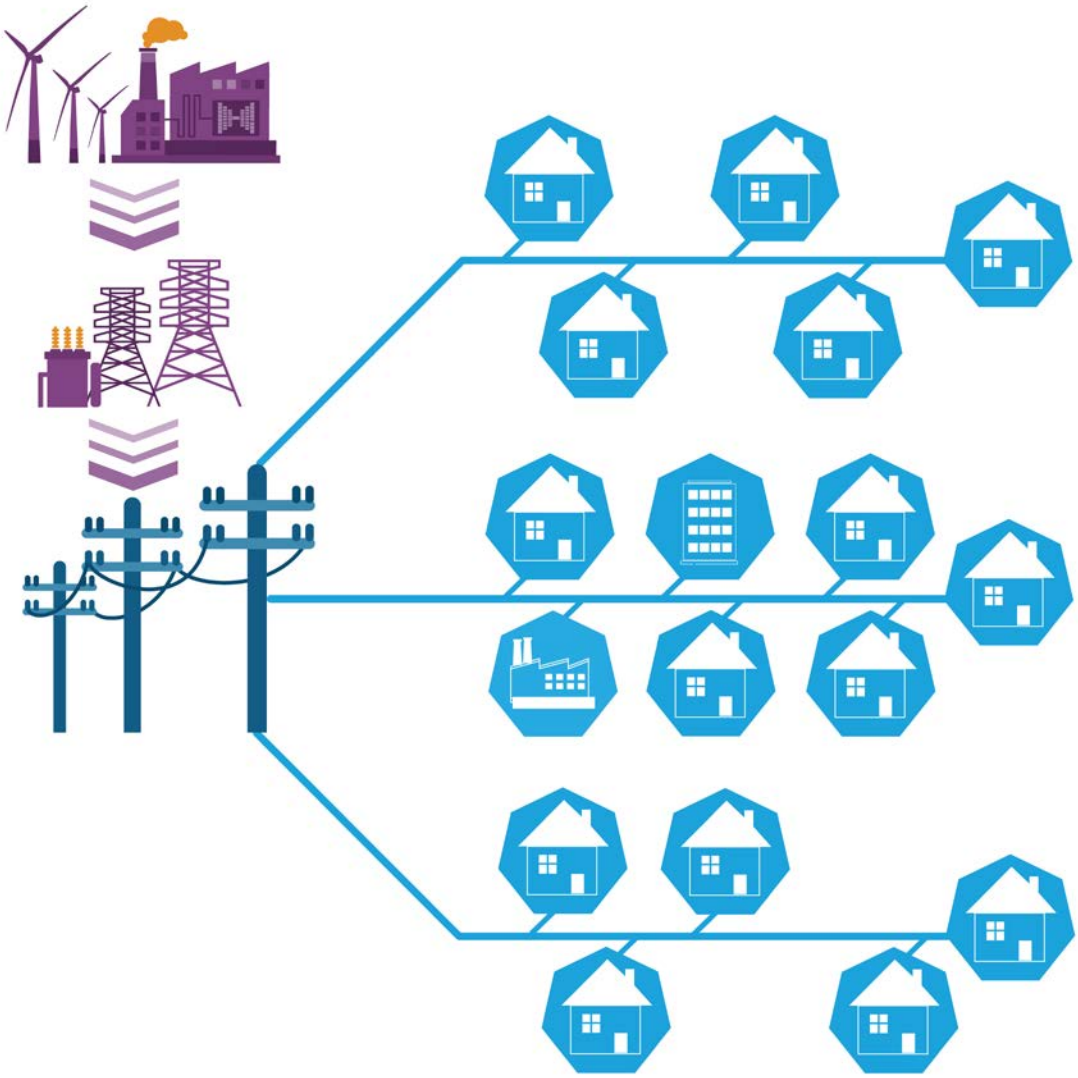
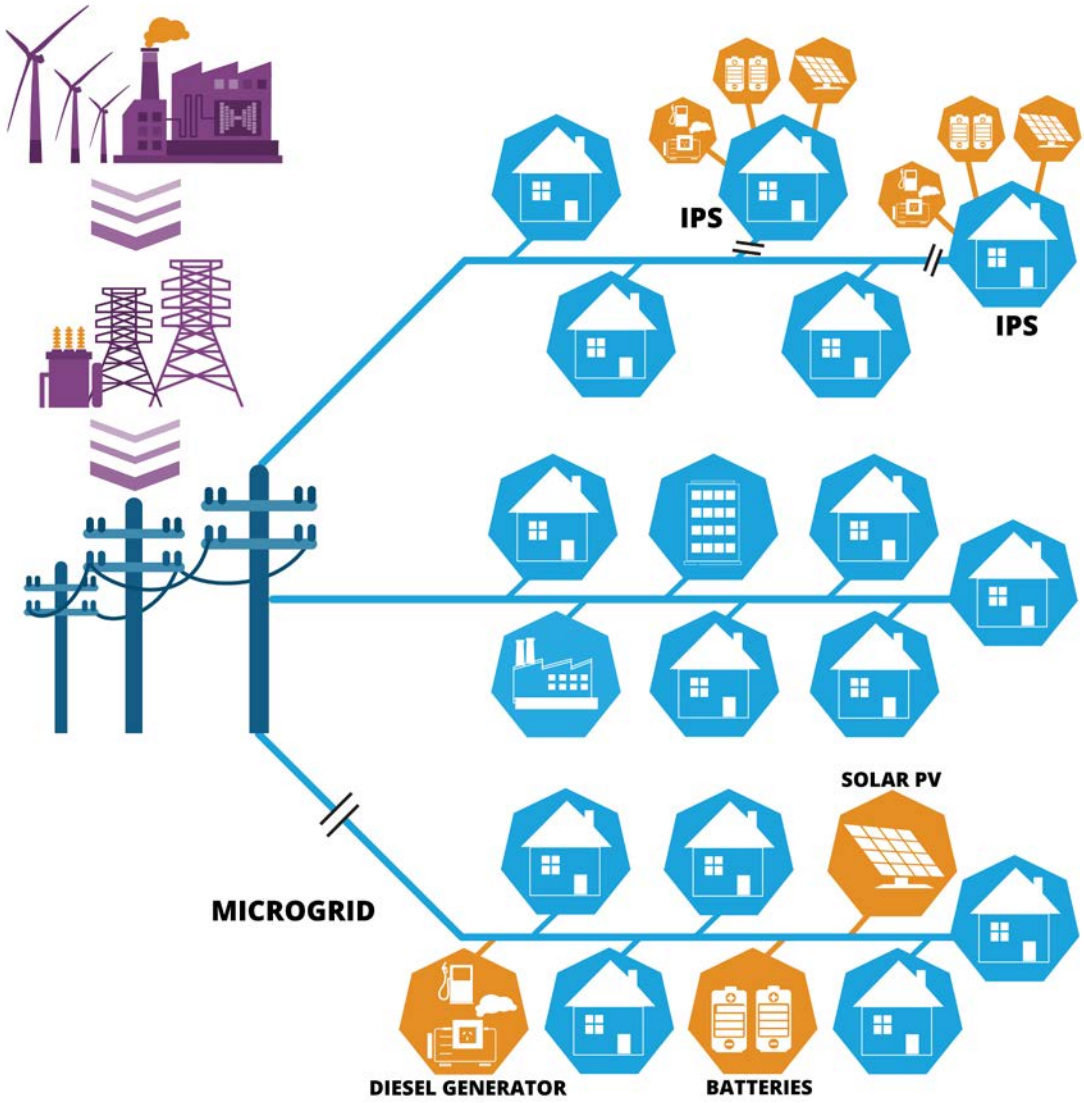


Figure 2.2 Transition to off-grid supply



The relevant forms of electricity supply are discussed in more detail below.

Standard grid supply

Supply via the grid is the traditional supply model for the vast majority of electricity consumers in national electricity market 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.

Generators, network service providers and retailers are regulated under the National Electricity Law (Law) and the Rules, and network service providers and retailers are

regulated under the National Energy Retail Law (Retail Law) and National Energy Retail Rules (Retail Rules).[28]

Microgrid

The Commission uses the term microgrid to refer to a power system that supplies electricity to multiple customers and that is not physically connected to the national electricity system. This could include anything from a large town to two farms connected to each other. Power may be supplied by any mix of local generation and storage, and behind-the-meter generation and storage. For the purposes of this rule change request, systems that are treated as if they are connected to the national electricity system are not considered to be microgrids - for example, systems defined as local electricity systems in the Northern Territory.[29]

Individual power system or IPS

The Commission uses the term individual power system to refer to a power system that supplies electricity to an individual consumer and that is not physically connected to the national electricity system. Typically, it includes a combination of solar PV, energy storage and back-up generation.

2.5 Scope of distribution service as defined under the Rules

Western Power considers that the current definition of distribution service in the Rules lacks clarity and, as a result, may create barriers to network businesses adopting technologies that will deliver more cost effective, reliable and safe services. More specifically, Western Power is concerned that the use of the phrase "in connection with" in the definition of distribution service provides a degree of uncertainty as to what types of assets may be deployed by network businesses in providing distribution services.[30]

Interpretation of "by means of or in connection with" a distribution system

The Rules define distribution service as "a service provided by means of, or in connection with, a *distribution system*."[31]

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28 The National Electricity Law and the Rules have been adopted (at least in part) in every state and territory of Australia other than Western Australia. The Retail Law and Retail Rules been adopted in New South Wales, the Australian Capital Territory, Tasmania, South Australia and Queensland.

29 These systems are defined in the *National Electricity (Northern Territory) (National Uniform Legislation) Act* 2015.

30 Western Power notes in its rule change request that services provided by means of assets that "form part of the network, and assets that are necessary to provide a connection asset, clearly fall within the scope of a distribution service". However, while the phrase "in connection with" in the definition of distribution service provides some degree of flexibility in respect of the types of assets that may be used in the provision of distribution services, Western Power states that the "breadth of that flexibility is uncertain". Rule change request p. 9-10.

31 Rules chapter 10. Related definitions are set out in section 2.4.1.

The scope of services that may constitute services provided "by means of or in connection with" a distribution system for the purposes of the Rules, is difficult to define precisely. However, the Commission considers that two general observations can be made:

- Services provided "by means of" a distribution system are those services provided wholly or very substantially by or through the network and connection assets that together form a distribution system.

- Services that are provided "in connection with" a distribution system are those services that have a clear functional nexus with a distribution system, but which are not necessarily provided through equipment or facilities that are physically connected with a distribution system.[32]

Off-grid supply is unlikely to be considered to be a distribution service under current definition

While the range of services that may fall within the category of services provided "in connection with" a distribution system is potentially very broad, off-grid supply is unlikely to be considered a distribution service for the purposes of the current definition.[33]

In the context of this rule change, off-grid supply is a self-contained system provided in lieu of, or in substitution for, a part of a distribution system.

The meaning and synonyms for the phrase "in connection with" that have been noted in relevant case law include: "forming part of"; "having to do with"; and "being bound up with".[34] In their ordinary application, none of these terms easily encompass a relationship between two physically unconnected things, where one is established in place of another thing.

As such, it is difficult to conclude that the relationship between off-grid supply and a distribution system is sufficiently close to constitute "in connection with" a distribution system for the purposes of a distribution service under the Rules. Off-grid supply is therefore unlikely to be a distribution service under the current definition of that term.

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32 There has been judicial consideration of the phrases "by means of" and "in connection with" in the context of the operation of the National Electricity Law and other statutory frameworks. In *Ergon Energy* (2012) 213 FCR 576 at [53] -[54], Logan J suggests the expression "by means of" in the context of the Law refers to services provided directly through a distribution system. Other cases that have considered the phrases in different statutory contexts, include *Alinta Asset Management Pty Ltd v Essential Services Commission* (No.2) [2007] VSC 210 and *Collector of Customs v Cliffs Robe River Iron Associate*s (1985) 7 FCR 271.

33 Note, however, that in Queensland a specified microgrid, the Mount Isa-Cloncurry supply network, is deemed to be a distribution system (and services provided by the network are deemed to be distribution services) for the purposes of certain chapters of the Rules, under the state Act applying the National Electricity Law in Queensland. See *Electricity – National Scheme (Queensland) Act* 1997, Part 3.

34 See Pearce and Geddes, *Statutory Interpretation in Australia* (8th edition, 2014) at [12.8].

This is consistent with the concern expressed by Western Power in the rule change request.

Question 1 Nature of issues

(a) Do Western Power's concerns, as described in section 2.2, accurately identify the nature of any problems associated with distributor-led transitions from grid supply to off-grid supply in the jurisdictions that are part of the national electricity market?[35]

(b) In relation to customers who currently have a grid connection, is there workable competition for off-grid supply systems, or are there barriers that significantly impede businesses that are not economically regulated (non-distribution businesses) from providing off-grid supply to these customers?

(c) Does the issue identified by Western Power, and any barriers from (b), indicate that it may be appropriate to allow distributors to provide off-grid supply as a regulated service, in certain circumstances?

(d) Other than concerns as to whether off-grid supply would constitute a distribution service, what barriers (such as other regulatory barriers or licence requirements) prevent distributors from seeking customers' agreement to move off-grid where it would be cost effective?

Question 2 Costs and benefits of moving to off-grid supply

(a) Do you agree with Western Power's description of the costs and benefits of transitioning from grid supply to off-grid supply? What other costs and benefits should be considered?

(b) What credible estimates are there of the current costs to procure, install and maintain (i) microgrids and (ii) individual power systems in fringe of grid areas of Australia? How are those costs broken down between electricity generation, network provision and retail costs/billing? How do these costs compare to the costs of providing electricity to such customers through the national grid?

(c) Distributors, please provide information (to the extent you have any) on the number of your customers who are currently grid-connected but who

35 As Western Australia is not currently covered by the National Electricity Law and Rules, any change to the Rules will not affect it (at least in the short term). The consumers and market participants who would be affected by the proposed change are those in the other states and territories of Australia, which are covered by the Law and Rules. Responses to the questions in this paper should be in relation to parties in Queensland, New South Wales, the Australian Capital Territory, Victoria, Tasmania, South Australia and the Northern Territory.

you consider may be more cost-effectively served by (i) microgrids and (ii) individual power systems. Consider current and projected costs of those systems.

(d) What are the key factors that make customers candidates for off-grid supply? For example, upcoming line replacements, local reliability or congestion issues, safety standards, line undergrounding requirements, declining costs of off-grid supply, presence of existing distributed generation?

(e) Distributors, if you were permitted to supply the customers identified in question (c) through off-grid supply, please provide an estimate of your annual savings (if any). Please state any critical assumptions such as pricing approaches to be applied to off-grid customers.

(f) Other than the costs of the off-grid supply itself, what costs and benefits are likely to arise from moving certain customers off-grid, for the customer, the distributor, the customers remaining on the grid, retailers, local generators, or any other parties? How could any costs be mitigated?

2.6 Potential legal implications of Western Power's proposed rule

As set out in Box 2.1, Western Power proposes to amend the definition of "distribution service" in the Rules, in order to address what it considers to be existing ambiguity with the term.[36]

Purpose of proposed changes

The purpose of the amendments is to either broaden the scope of the term distribution service or, to the extent that the scope of the term is currently unclear, clarify that it does encompass a non-network option of the kind described in the proposed definition.

Western Power states that its proposed amendments would enable the AER to consider whether to classify non-network options as providing a distribution service where such options are used to replace, or operate in substitution for, a network investment.[37] In addition, it considers its changes would impose "limitations on the circumstances under which non-network options can be classified as distribution services" by limiting them to situations where the option is used specifically to address a need for investment as part of a regulated network service.[38]

36 Rule change request p. 15.

37 Rule change request p. 3-4.

38 Rule change request p. 4.

Potential inconsistencies between Law and Rules

Making the proposed rule may broaden the definition of distribution service in the Rules and, as such, may lead to inconsistencies between that new definition and the defined term "electricity network service" in the Law[39] and, more generally, the AER's economic regulatory functions or powers under the Law. Any such inconsistency between a rule made by the Commission and the Law may result in such a rule being invalid and infringe an implied limitation on the Commission's rule-making power.[40] The Commission will assess the potential for any such inconsistencies between the proposed rule and the Law further during the rule change process.

2.7 Potential alternatives to proposed rule

There may be alternative solutions to addressing the issues raised in the rule change request, if a rule change is considered necessary. Such alternatives may avoid the potential inconsistencies referred to above between Western Power's proposed rule and the Law. For example, amendments to the definition of distribution system under the Rules may have the same, or similar, effect to the proposed rule, without giving rise to such inconsistencies. Western Power identifies changes to the definition of distribution system as a potential alternative solution to the issues raised in the rule change request, however it considers amendments to the definition of distribution service as providing "a clearer basis for implementing the policy objective of this rule change request".[41]

The Commission will further assess the appropriateness of amending the term distribution system, and other potential alternative solutions to addressing the issues raised in the rule change request, during the rule change process.[42]

Question 3 Potential alternatives to the proposed rule

(a) If a rule change is considered necessary, are there alternatives to the proposed rule which relate to the issues raised in the request and:

39 The term *electricity network service* as defined in the Law mirrors the current definition of the term *distribution service* in the Rules, with the exception that the former captures both distribution and transmission systems. *Electricity network service* is defined under the Law as "a service provided by means of, or in connection with, a transmission system or distribution system." National Electricity Law s. 2.

40 In this case, the implied limitation would be in respect of the Commission's activities power under s. 34(1)(a)(iii) of the National Electricity Law.

41 Rule change request p. 18.

42 This will include consideration of AusNet's proposed approach to the regulation of off-grid supply by distributors, set out in its submission to the COAG Energy Council consultation paper on the regulatory implications of stand-alone energy systems (see section 6.2.1). On an initial investigation, it appears that this approach may rely on off-grid supply systems being considered to be distribution systems.

(i) are consistent with the Law;

(ii) would allow all customers to benefit from lower costs by enabling electricity to be supplied in the most efficient way in each area; and

(iii) would result in customers who move to off-grid supply receiving electricity supply with appropriate reliability, quality, safety and other relevant consumer protections?

(b) Would the alternatives in (a) be able to be achieved through changes to the Rules alone, or would changes to other instruments, such as the Retail Rules or other laws, regulations or licences (jurisdictional or national) be required or desirable?

3 Assessment framework

This chapter sets out the requirements under the Law that the Commission must satisfy in considering the rule change request, and provides details on the proposed approach for assessing the rule change request. Stakeholder feedback on this proposed assessment framework is welcomed.

3.1 Rule change requests and the national electricity objective

The Law confers on the Commission the ability to take one of three potential actions in response to receiving a valid rule change request.[43] It can make the proposed rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national electricity objective.

Alternatively, the Commission can make a rule that is different (including materially different) to the proposed rule if it is satisfied that, having regard to the relevant issues in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the national electricity objective.[44] The third option is for the Commission to not make a rule.

Accordingly, the Commission's assessment of this rule change request will consider whether the proposed rule, or a more preferable rule, promotes the national electricity objective, which is:[45]

> "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 a preliminary assessment of this rule change request, the relevant aspects of the national electricity objective appear to be the efficient investment in and use of electricity services with respect to the price, quality, safety and reliability of supply of electricity, as potentially all of these elements are materially impacted by the proposal.

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43 A valid rule change request is a request that the Commission will act on under Division 3 of the National Electricity Law, having had regard to the matters set out in section 94(1) of the National Electricity Law.

44 National Electricity Law s. 91A.

45 National Electricity Law s. 7.

3.2 Additional requirements for the Northern Territory

From 1 July 2016, the Rules, as amended from time to time, apply in the Northern Territory, subject to derogations set out in regulations made under the Northern Territory legislation adopting the Law.[46] Under those regulations, only certain parts of the Rules have been adopted in the Northern Territory.[47] As the proposed rule change relates to parts of the Rules that apply in the Northern Territory, the Commission will assess the proposed rule change against additional elements required by the Northern Territory legislation (referred to here as the NT Act).[48] The additional tests are set out below.

National electricity system and local electricity systems

Under the NT Act, the Commission must regard the reference in the national electricity objective to the "national electricity system" as a reference to whichever of the following the Commission considers appropriate in the circumstances, having regard to the nature, scope or operation of the proposed rule change:

(a) the national electricity system

(b) one or more, or all, of the local electricity systems

(c) all the electricity systems referred to above.[49]

Differential rule

Under the NT Act, the Commission may make a differential rule if, having regard to any relevant ministerial statement of policy principles, the differential rule will, or is likely to, better contribute to the achievement of the national electricity objective than a uniform rule.[50] A differential rule is a rule that:

(a) varies in its terms as between:

  (i) the national electricity system; and

  (ii) one or more, or all, of the local electricity systems; or

(b) does not have effect with respect to one or more of those systems,

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46 National Electricity (Northern Territory) (National Uniform Legislation) (Modifications) Regulations.

47 For the version of the Rules that applies in the Northern Territory, refer to: http://www.aemc.gov.au/Energy-Rules/National-electricity-rules/National-Electricity-Rules-(Northern-Territory).

48 *National Electricity (Northern Territory) (National Uniform Legislation) Act* 2015.

49 Section 14A of Schedule 1 to the NT Act, inserting section 88(2a) into the National Electricity Law as it applies in the Northern Territory.

50 Section 14B of Schedule 1 to the NT Act, inserting section 88AA into the National Electricity Law as it applies in the Northern Territory.

but is not a jurisdictional derogation, participant derogation, or rule that has effect with respect to an adoptive jurisdiction for the purpose of section 91(8) of the Law.[51]

3.3 Proposed assessment framework

The Commission uses an assessment framework to evaluate whether the proposed rule, if made, is likely to promote the national electricity objective.

The proposed assessment framework includes the following factors:

- **Efficient provision of electricity services**. Supplying electricity in the most efficient manner possible so as to achieve the lowest possible cost of supply over the long term is a key element of the national electricity objective. Through this rule change process the Commission seeks to understand the cost implications of grid versus off-grid supply options and whether there are existing mechanisms that restrict or enable optimum choices to be made between grid and off-grid supply options.

- **Service reliability**. Electricity supply services have a suite of characteristics that encompass both price and non-price elements (for example, reliability). A common concern is to ensure that cost savings are not achieved at the expense of service reliability. The Commission will consider any cost/reliability trade off in considering the rule change request, together with mechanisms that currently exist or could be implemented to address reliability issues.

- **Risk profile**. Customers moving from grid to off-grid supply may be exposed to potential risks not faced by grid-connected customers, for example as a result of no longer being covered by consumer protections in the Retail Law and Retail Rules. These risks could result in consumers facing higher prices or receiving poorer service. The Commission will seek to understand what, if any, such risks exist and how they might be managed.

- **Impact on competition**. A move to off-grid supply provided by the distributor may have the effect of reducing the possibility of such customers accessing alternative competitive supply options. The Commission will seek to understand whether this is likely to be a material issue and if so whether other benefits are sufficient to offset any competition impacts.

- **Technology neutrality**. Rules that are technology neutral (and therefore do not distort investment choices) are essential to achieving long-term dynamic efficiency and therefore achievement of the national electricity objective. The Commission is seeking to understand whether the proposed rule change would positively or negatively impact on technological neutrality.

51 Section 14 of Schedule 1 to the NT Act, inserting additional definitions into section 87 of the National Electricity Law as it applies in the Northern Territory.

Bearing in mind the above factors, the assessment of the likely costs and benefits of the proposed changes overall will be an important component of the Commission's assessment of the rule change request. The proposed changes would likely result in costs and/or benefits which would ultimately impact on the cost of electricity for end users. This paper seeks stakeholder feedback on these issues, including on the assessment framework itself; questions are set out below and in chapters 2, 4 and 5.

Question 4 Assessment framework

Do you agree with the approach set out in section 3.3 to assessing whether the rule change request will, or is likely to, contribute to the achievement of the national electricity objective? If not, how should it be assessed?

4 Issues for consultation: competition

Taking into consideration the assessment framework, a number of issues have been identified for initial consultation in this chapter and the following chapter, in addition to the questions set out in chapter 2. Stakeholders are encouraged to comment on these issues as well as any other aspect of the rule change request or this paper. A full list of the questions posed throughout this paper is included in Appendix B, for ease of reference.

This chapter discusses:

- the relationship between competition in the provision of off-grid supply and the classification of those services by the AER (if off-grid supply is included as a distribution service)
- competition issues relating to moving to off-grid supply
- competition issues arising after a customer has moved to off-grid supply.

Effective competition in the provision of electricity services is an important way in which the long-term interests of consumers may be served. Several issues arise in relation to competition for providing off-grid supply, and in particular moving from grid supply to off-grid supply as proposed by Western Power.

The effectiveness of competition in the market for off-grid supply, currently and in the future if a rule change is made, is relevant to the consideration of this rule change request as it will bear on the degree of regulation that is appropriate for off-grid supply. Where competition is not effective, and its effectiveness cannot be improved by amending the Rules, the Commission will need to consider whether allowing a distributor-led transition to off-grid supply is in the long term interests of consumers.

4.1 Background: competition and service classification

If the Rules are changed so that certain off-grid supply becomes a distribution service, the AER can determine whether and how to classify off-grid supply that a distributor proposes to provide.[52] The way a service is classified will affect the degree of regulation applied to that service. This has implications for whether distributors would be likely to provide these services, and the conditions under which they could provide them.

The AER must refer to a range of factors when classifying the services a distributor proposes to provide. For example, the extent of any barriers to entry in the market for an electricity network service, and the potential for development of competition in the

[52] Under clause 6.2.1(a) of the Rules, the AER may classify a distribution service to be provided by a distributor as: (a) a direct control service, or (b) a negotiated distribution service. Distribution services that are not classified by the AER are referred to in this paper as *unclassified distribution services*.

relevant market.[53] As part of this consideration, the AER typically considers any jurisdictional legislation which, in a practical sense, has the effect of limiting the scope for competition in a market.[54] Applying these factors, the AER may classify off-grid supply as a standard control service for a distributor, and this is the approach that Western Power appears to envisage in its rule change request. Under this classification, the distributor would provide off-grid supply as a vertically integrated monopoly supplier, earning regulated revenue.

However, it is not clear that the AER would necessarily classify off-grid supply in this way, and it is possible that off-grid supply would instead be classified as an alternative control service or be treated as an unclassified distribution service. The AER may also decide to change the classification of a distribution service in a subsequent regulatory control period if there have been significant changes to the circumstances relating to the factors it must consider.

Classification has implications for the network and retail pricing of off-grid supply. A distributor typically charges all customers receiving a standard control service from that distributor the same price for that service.

If the services are classified as anything other than standard control services, distributors are unlikely to be able to average the costs of the provision of these services between customers in metropolitan areas and customers in regional/remote areas, where the cost to serve may be higher than in metropolitan areas (see section 4.2). Accordingly, distributors that provide off-grid supply in these circumstances may have to charge customers significantly higher prices than the prices that customers in these areas currently pay for electricity. Customers may not agree to pay higher prices, and therefore distributors may not be able to recruit customers to move off-grid (see section 5.2 on the requirements regarding consent to moving off-grid).

Therefore, if the AER classifies a distributor's off-grid supply in any way other than a standard control service, that distributor may not wish to provide these services to the market.

For a more detailed discussion of classification issues, see Appendix A, sections A.1 to A.4. These sections contain information on how the service classification framework operates, the factors that the AER considers when making service classification decisions under this framework, how the AER may apply these factors in the context of off-grid supply, and the implications of off-grid supply being classified in any way other than as a standard control service.

53 The factors are listed in Appendix A, sections A.2 and A.3.

54 Some jurisdictional legislation which may be relevant in this regard is outlined in Appendix A, section A.5.

4.2 Competition issues relating to moving from grid supply to off-grid supply

The long-term interests of consumers are generally better served when services that are not natural monopoly services are provided through a competitive market. It can be argued that off-grid supply (particularly individual power systems) does not have natural monopoly characteristics, and that regulated entities should therefore not be permitted to provide it. This is effectively the status quo, given the current definition of "distribution service" and the ring-fencing requirements that apply to distributors.[55]

However, the rule change request may indicate that in practice there are barriers to the competitive provision of off-grid supply where a customer has a grid connection.

Specifically, the rule change request notes that existing customers (with a grid connection) "do not face the cost of maintaining their network connection and so have no incentive to install an SPS."[56] In some parts of Western Power's service area, "less than 10% of cost to serve over a 50 year period is recovered directly from customers, with the balance being subsidised by the remaining tariff base."[57] Other distributors may have customers in a similar position.

One contributing factor is that some jurisdictions in Australia have "postage-stamp" pricing policies.[58] These policies require that customers pay the same price for their electricity consumption irrespective of where they live, and are often designed to ensure that rural/regional customers pay the same price for their electricity as customers in metropolitan areas. In order to achieve these objectives, state governments often provide a subsidy to an entity or a group of entities for providing electricity in rural/regional areas.

This creates additional competitive advantages for the entities receiving these subsidies and therefore, has implications for the potential for competition in these markets.

The lack of location-specific pricing by distributors for standard control services and the subsidies paid to retailers serving remote customers (in some jurisdictions) mean that many remote customers are not currently paying the full cost of providing electricity to them via the grid. This may affect the ability of entities that are not the local distributors, and do not receive subsidies, to provide off-grid supply at prices that can compete with the prices the incumbents are able to offer for grid supply. If the rule change is made so that distributors can provide off-grid supply as a distribution service in certain circumstances, the same issues may prevent non-distributors from competing with distributors to provide off-grid supply in those circumstances.

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55 The AER's ring-fencing requirements are discussed in Appendix A, section A.4.

56 Rule change request p. 12.

57 Rule change request p. 30. Figure 2 on page 31 of the rule change request indicates that customers in a large part of Western Power's service area pay 11.4 per cent or less of the cost to supply them (including the cost of replacing lines when necessary).

58 Relevant examples of postage-stamp pricing exist in regional Queensland, the Northern Territory and South Australia. Details are set out in Appendix A, section A.5.

The Commission would like to hear from stakeholders as to the potential impacts of these issues on the scope for competition in the market for new off-grid supply, as an alternative to existing grid supply.

Question 5 Competition issues relating to moving from grid supply to off-grid supply

(a) To what extent do you consider that distributors' ability to average the costs of grid-connected distribution services across their customer base inhibits the development of competition in off-grid supply as an alternative to grid connection?

(b) If the proposed rule (or a more preferable rule) is made, and the AER classifies off-grid supply as a standard control service, would distributors' ability to offer below-cost off-grid supply hamper the development of competition in the off-grid supply market, as costs of off-grid supply fall in the future?

(c) In addition to the issues discussed in chapter 4, what other factors affect competition for providing off-grid supply in place of grid supply?

(d) Would the AER's process for classifying distribution services, including considering the potential for the development of competition, provide an adequate way in which to address these competition issues in practice?

4.3 Competition issues arising after moving to off-grid supply

In addition to the above competition issues relating to moving to off-grid supply, a different set of competition issues arise once a customer has moved to off-grid supply. With grid supply, in most parts of the national electricity market, retail services are contestable: retailers compete for customers, and customers can choose their retailers and change retailers at any time (although this may be limited in practice in some areas such as regional Queensland, Tasmania and the Northern Territory). This option may not be available once a customer moves to off-grid supply, as in several jurisdictions, the customer will no longer be covered by the Retail Law and Retail Rules (see section 5.3) which provide for customer transfers and are based on retail competition.

4.3.1 Regulation of retail prices for off-grid supply

In several jurisdictions, a customer moving from grid supply to off-grid supply would face considerable changes in the regulation of their retail prices. Whether or not the AER classifies off-grid supply as a standard control distribution service (as discussed above), jurisdictional price control mechanisms need to be taken into account.

A number of jurisdictions allow for the regulation of electricity prices where electricity is supplied to remote sites by a range of entities. However, the extent and form of price

regulation varies considerably between jurisdictions. Examples of price controls under state and territory laws are discussed in Appendix A, section A.6.

In addition, in the jurisdictions where the Retail Law applies to off-grid supply,[59] where a party providing off-grid supply has an exemption from being an authorised retailer under the Retail Law, the exemption may contain price control conditions. The standard condition requires an exempt person not to charge customers prices higher than the standing offers by the local area retailer for new connections.[60]

4.3.2 Off-grid supply as a single monopoly service or a collection of contestable services

Off-grid supply may be seen as an integrated monopoly service provided to the customer by a single supplier, or as a collection of related services, some or all of which may be separately contestable. The most efficient arrangements may differ depending on whether the system is an individual power system or a microgrid, and on the size of the microgrid.

Services that form part of off-grid supply include providing appropriate generating equipment and a meter and connecting them to the premises, ongoing maintenance and occasional replacement of the equipment, ongoing provision of diesel (if a diesel generator is used), meter reading and billing. Additional system operation services will be required for microgrids. Several of these services could, theoretically, be provided separately to the customer on a competitive basis, particularly for the larger microgrids. However, the competitive pressures and scale efficiencies are likely to be quite different with off-grid supply compared to grid supply. Accordingly, requiring specific services forming part of off-grid supply to be contestable might not lead to efficient outcomes, particularly at small scales where there is unlikely to be an effective market.

Furthermore, not all customers may wish to negotiate a range of separate contracts relating to their electricity supply, and it is unclear whether providers of these services would wish to deal with individual customers, or would prefer to deal with one co-ordinating entity which arranges off-grid supply contracts with a number of customers.

The most efficient form of off-grid supply, at least for individual power systems and smaller microgrids, may involve a customer entering into a long-term arrangement with one entity to provide all services forming part of off-grid supply, even if that entity then subcontracts with various other providers of specialised services.

The provision of vertically integrated off-grid services may raise issues relating to the accepted principle that monopoly providers of services in one part of the electricity supply chain should not be able to leverage off these advantages by being able to

59 See section 5.3.

60 *AER (Retail) Exempt Selling Guideline*, version 4, March 2016. Condition 7 (Pricing) is in Appendix A-2 of the guideline.

provide services in other parts of the supply chain. However, if it appears that competition to provide off-grid supply is limited and ineffective, or if requiring certain off-grid services to be contestable would impose an administrative burden that is disproportionate to any benefits, consideration should be given to the most appropriate way to regulate monopoly providers of off-grid supply.

Answers to the following questions will help us understand the range of likely impacts on customers of moving off-grid.

Question 6 Competition issues arising after moving to off-grid supply

(a) Should a monopoly provider of a service in one area of the supply chain for off-grid services be able to provide an integrated service whereby it provides all the services forming part of off-grid supply, in circumstances where competition is limited?

(b) If a customer moves to off-grid supply where one entity is the monopoly off-grid retailer, generator and distributor, what disadvantages are they likely to face due to the lack of ability to change retailers?

(c) Do the extent of any disadvantages under (b) depend on which entity provides the monopoly services (e.g. a licensed, regulated distributor, compared to an entity that is exempt from registration and licensing provisions under the Rules and state laws)?

(d) How can any disadvantages under (b) be mitigated?

(e) Is it desirable (in light of the long-term interests of consumers) that customers being moved to off-grid supply would be offered, or would be able to access, competitive offers for each component of off-grid supply (for example, provision of generating plant, maintenance of the plant, billing)? If so, what circumstances or policies would encourage this?

5 Issues for consultation: impacts on reliability and consumer protections

Consumers who move from grid supply to off-grid supply may face various changes, some of which may be positive and some of which may be negative. For example, there is potential for the off-grid customers to have improved reliability, but rules on reliability standards may no longer apply. Other parties may also be affected, and there may be impacts on the wider public, e.g. bushfire risks may be reduced if long lines are removed.

This chapter discusses the following issues:

- reliability requirements applying to off-grid supply
- restrictions on distributors moving customers to off-grid supply
- the application of the Retail Law and Retail Rules to off-grid supply
- the application of certain other consumer protections to off-grid customers.

Information relating to the Retail Law and Retail Rules is provided for reference only, as the rule change request does not propose any changes to the Retail Rules.

5.1 Reliability requirements for off-grid supply

Moving to off-grid supply could, in theory, improve reliability of supply in some remote areas where the reliability of grid supply is relatively low. However, in practice the reliability of a microgrid or individual power system is likely to depend on a range of factors which may be quite different from the factors affecting the reliability of grid supply.[61] The reliability requirements applying to off-grid supply may also be quite different from those applying to grid supply, depending on the wording of jurisdictional regulations and the classification of off-grid supply by the AER.

Jurisdictional reliability requirements

State and territory governments set the level of reliability that must be provided by transmission and distribution networks. In most Australian states and territories, entities seeking to provide distribution services (defined in different ways in different jurisdictional instruments) are required to obtain distribution licenses. Reliability requirements may be included as licence conditions, often in the form of a requirement to pay customers specified amounts if defined standards are not met. Alternatively, reliability requirements may be set out in the state energy code or regulations.

61 These may include, for example, how well it was designed to meet the needs of the customer(s) it serves, whether it has been upgraded if customer needs change, how well it is maintained, and how well customers are informed regarding the characteristics of the system and appropriate behind-the-meter activities.

Whether these reliability requirements apply to any off-grid systems a distributor operates depends on the language and definitions in the licence or the regulation. In many cases these documents were not drafted with off-grid supply in mind.

Some examples of jurisdictional reliability requirements for distributors, and how they might apply in the context of off-grid supply, are discussed in Appendix A, section A.7.

Reliability performance targets set by the AER

Certain performance targets, including in relation to reliability, are set by the AER as part of the service target performance incentive scheme for distributors.[62] This scheme is stated to apply to the distribution services that are classified as standard control services.[63]

If the Rules are changed so that off-grid supply becomes a distribution service, the targets in the performance incentive scheme would apply to off-grid supply only if this service was classified as a standard control service.

The Rules contain other provisions on reliability and security of supply, outlined in Appendix A sections A.8 and A.9, but these are less relevant in the context of off-grid supply.

Question 7 Appropriate regulation of reliability of off-grid supply

In light of the varying reliability requirements that may apply to off-grid supply under the current arrangements, are specific consumer protections regarding the reliability of off-grid supply required before the Rules should allow distributor-led transition to off-grid supply?

5.2 Restrictions on distributors moving customers to off-grid supply

There do not appear to be provisions in the Rules, the Retail Law or the Retail Rules that explicitly allow distributors to move customers from grid supply to off-grid supply, nor do there appear to be provisions that explicitly prohibit distributors from doing so.

However, the Retail Rules contain restrictions on disconnection, which (in the case of electricity) is defined as opening a connection in order to prevent the flow of energy to the premises.[64] A connection is defined as a physical link between a distribution

62 The *Electricity distribution network service providers - Service target performance incentive scheme* (November 2009) was established pursuant to Rule 6.6.2 and is available on the AER website, www.aer.gov.au. The AER is currently reviewing this scheme and consulting on the development of a Distribution Reliability Measures Guideline (AER reference 60666).

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

64 Retail Law section 2.

system and a customer's premises to allow the flow of energy.[65] Combining the relevant definitions, a disconnection would be opening a physical link between a grid-connected distribution network and a customer's premises, in order to prevent the flow of energy to the premises. This would seem to cover moving to off-grid supply; the customer will, in that case, continue to receive a flow of energy, but not via the link to the grid.

Disconnection is only permitted in certain circumstances, for example if customers do not pay their bills. Moving to off-grid supply, on the grounds that it is more cost effective than replacing a long line in a remote area, is not currently a permitted reason for disconnection by a distributor (or a retailer) under the Retail Rules.[66]

Nor are distributors able to unilaterally terminate a customer's contract with a retailer. However, under the model terms and conditions for standard retail contracts, a customer's retail contract will end if the customer starts to buy energy from the premises from a different retailer.[67]

Customers are able to request their retailer to arrange disconnection.[68] It appears, therefore, that under the current Retail Rules customers can only move off-grid (whether they seek to supply their own electricity or they have entered an agreement with a distributor or other party to supply it) if they request a disconnection.

While it appears that a customer cannot be moved off-grid unless they have requested a disconnection (and entered into a new arrangement with their new supplier), there is no requirement that the customer be fully informed of the consequences of their decision.[69]

The requirement for a customer request would not necessarily apply in jurisdictions that have not adopted the Retail Law and Retail Rules. Jurisdictional laws or licence requirements may, however, impose restrictions on disconnections by distributors.

5.3 Application of Retail Law and Retail Rules to off-grid supply

The Retail Law and the Retail Rules currently apply in the Australian Capital Territory, Tasmania, South Australia, New South Wales and Queensland. In certain of those jurisdictions the Retail Law and Retail Rules apply to off-grid supply; in other jurisdictions they do not.

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65 Retail Law section 2. As discussed earlier, the definition of 'distribution system' in the Rules currently includes a requirement for connection to another transmission or distribution system.

66 See Part 6 of the Retail Rules and section 12 of the model terms and conditions for deemed standard connection contracts, in schedule 2 of the Retail Rules.

67 Retail Rules schedule 1, model term 4.2(a)(iv).

68 Retail Rule 118.

69 With the possible exception of circumstances where the customer is in a jurisdiction where the Retail Law applies to off-grid supply (see section 5.3), and the provider of off-grid supply is a retailer to which the provisions on explicit informed consent for entry into new contracts apply. Retail Law Part 2, Division 5.

Jurisdictions in which Retail Law is restricted to grid supply

In Tasmania, South Australia and New South Wales, the Acts adopting the Retail Law specify that the Retail Law applies only in relation to the sale (and supply, in Tasmania) of electricity:[70]

> "to customers whose premises are connected, or are to be connected, to the interconnected national electricity system within the meaning of the NEL."

Thus, in those states the Retail Law and Retail Rules would not apply to the sale or supply of electricity to customers via off-grid supply. A customer who moves from grid supply to off-grid supply would lose the protections in those instruments. However, off-grid customers would still be covered by general laws such as the Australian Consumer Law (see section 5.5 below) and any applicable state laws.

Jurisdictions in which Retail Law is not restricted to grid supply

Queensland and the Australian Capital Territory do not appear to restrict the application of the Retail Law and Retail Rules to grid-connected customers.

In those jurisdictions, the Retail Law and Retail Rules would apply to off-grid supply. However, an entity selling electricity via off-grid supply in those jurisdictions may be eligible for an exemption from the requirement for retailer authorisation under the Retail Law.[71] Exempt sellers still have to comply with a range of conditions relating to the exempt selling, which can be tailored to the circumstances, but the regulatory requirements are lower than for authorised retailers.[72]

In Queensland and the Australian Capital Territory, therefore, the protections that apply to customers who move from grid supply to off-grid supply would depend on whether the entity selling electricity to them is authorised or exempt, and if exempt, on which conditions the AER has imposed.

Victoria

Victoria, which has not adopted the Retail Law, has a number of energy codes (including the Energy Retail Code) which contain provisions similar to the Retail

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70 *National Energy Retail Law (South Australia) Act* 2011 (SA) s16; *National Energy Retail Law (Adoption) Act* 2012 (NSW) Schedule 1, s11 and *National Energy Retail Law (NSW) No.37a*, s3A; *National Energy Retail Law (Tasmania) Act* 2012 (Tas) s17.

71 See Part 5, Division 6 of the Retail Law, Part 9 of the Retail Rules, and the AER (Retail) Exempt Selling Guideline, version 4, March 2016. Depending on the circumstances of the off-grid supply, an individual exemption may be required as the supply may not meet the criteria for the deemed or registrable exemptions.

72 Conditions that may be imposed by the AER include conditions relating to an obligation to supply, pricing restrictions, billing and payment arrangements, information provision, disconnection and reconnection, choice of retailer, concessions and rebates, dispute resolution, and arrangements for life support customers. The core exemption conditions are set out in Appendix A-2 to the Exempt Selling Guideline.

Law.[73] It does not appear that the application of these codes is restricted to grid-connected customers. In the Energy Retail Code, "customer" is defined as a customer of a retailer licensed under state law. If an off-grid customer does not have a contract with a licensed retailer, the protections of the Energy Retail Code and the related codes may not apply (unless the provider has an exemption containing conditions requiring the entity to comply with certain codes).

5.4 Access to energy ombudsman for assistance with dispute resolution

Given that, in several jurisdictions, customers who move to off-grid supply will no longer by covered by the Retail Law and Retail Rules, it is important to consider whether those customers would lose protections that would be valuable in the context of off-grid supply.

This section considers one example of a protection provided by the Retail Law: access to energy ombudsmen. Small customers in jurisdictions where the Retail Law applies have the right to complain to, and receive assistance from, the energy ombudsman in their jurisdiction regarding relevant matters concerning the customer and a retailer or distributor.[74]

What is the fate of this protection after a customer moves to off-grid supply? This depends on the details of the ombudsman scheme in each jurisdiction, and on whether the entity providing the off-grid supply has a licence in that jurisdiction.

In **South Australia** and **Tasmania**, it appears that the ability to access the ombudsman will remain after a customer moves to off-grid supply, as long as the off-grid supply is provided by an entity licensed under jurisdictional law.[75]

In **New South Wales** the position is less clear. NSW-licensed distributors are required to be members of the scheme, and the scheme applies (without limitation) in relation to all disputes and complaints arising under customer connection contracts and customer retail contracts for small customers.[76] However, as the relevant state law adopts definitions of key terms from the Retail Law as it applies in New South Wales,[77] "customers" may be limited to those who are connected to the grid (see section 5.3 above); people with off-grid supply would not have "customer connection contracts" or "customer retail contracts".

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73 Other codes containing consumer protections include the Electricity Customer Transfer Code, Electricity Customer Metering Code, and the Code of Conduct for Marketing Retail Energy. The codes are available at: http://www.esc.vic.gov.au/energy/regulation-legislation/codes-guidelines/codes/.

74 Retail Law Part 4, Small customer complaints and dispute resolution. Certain jurisdictions have modified this part as it applies in their jurisdiction.

75 Constitution of Energy and Water Ombudsman (SA) Limited, adopted 30 November 2016. *Energy Ombudsman Act* 1998 (Tas) sections 3 and 6.

76 *Electricity Supply Act* 1995 (NSW) section 96B(2)(f).

77 *Electricity Supply Act* 1995 (NSW) section 4(3).

In **Queensland**, the Retail Law is not restricted to grid-connected customers (see section 5.3), and therefore off-grid customers of authorised retailers and distributors can access the ombudsman under Part 4 of the Retail Law. Customers of exempt entities may not be able to access the ombudsman, unless membership of the ombudsman scheme has been made a condition of the exemption.[78]

5.5 Australian Consumer Law

The Australian Consumer Law does not replicate the energy-specific protections in the Retail Law and Retail Rules, but rather provides a range of generic protections to consumers across Australia. These include:

- protections against unfair terms in standard form contracts
- prohibiting unconscionable conduct and misleading or deceptive conduct
- guarantees for consumers when buying goods and services
- product safety requirements.

Some of these protections (such as the prohibition on misleading or deceptive conduct) apply to all consumers, whether or not they are also covered by the Retail Law and Retail Rules, and may be helpful for off-grid consumers.

The consumer guarantees apply to "consumers". A person is a "consumer" if they acquire goods or services that are priced at less than $40,000, or that are ordinarily acquired for personal, domestic or household use or consumption.[79]

5.6 Impacts on consumers of moving to off-grid supply – general questions

While the Commission is not able to change the Retail Rules pursuant to this rule change request, nor is it able to change jurisdictional requirements relating to off-grid supply, responses to the following questions will help the Commission assess the magnitude of the consumer protection issues associated with the rule change request and whether making the proposed rule would be in the long term interests of consumers.

78 The core exemption conditions in the AER's Retail Exempt Selling Guideline (discussed in section 5.3 above) include Condition 15 on dispute resolution, but it does not require membership in an ombudsman scheme. It merely requires the exempt person to advise the customer of any right the customer has to access such a scheme in that jurisdiction, if applicable.

79 Australian Consumer Law section 3. A recent review of the Australian Consumer Law recommended that this dollar value be increased to $100,000. *Australian Consumer Law Review: Final Report*, March 2017, Proposal 15, page 74.

Question 8 Impacts on consumers of moving to off-grid supply – general questions

(a) Chapter 5 discusses various regulatory issues and considers the potential impacts of moving to off-grid supply under the current regulations. If you have further information on, or a different analysis of, any of these issues, please provide details.

(b) What are the impacts on off-grid customers of ceasing to be covered by the protections in the Retail Law and Retail Rules, bearing in mind the protections provided by the Australian Consumer Law and by state laws?

(c) To what extent are customers who move to off-grid supply likely to face additional risks relating to electricity supply not faced by grid supplied customers? If additional risks arise, what is the nature of these risks and how material are they?

6 Projects addressing related issues

In addition to the rule change request, issues relating to off-grid supply are currently being examined in several different ways, both by the Commission and by other bodies. Commission projects will be coordinated and staff will keep abreast of these projects as this rule change request progresses.

6.1 Commission projects

6.1.1 Rule change requests – contestability of energy services

The Commission is assessing two related rule change requests relating to the contestability of energy services:

- The COAG Energy Council's request seeks to promote the development of competitive markets for new technologies that are capable of providing services in both contestable and regulated markets. To achieve this goal, COAG Energy Council proposes to change the provisions and processes within Chapter 6 of the Rules that relate to the classification of distribution services.
- The request from the Australian Energy Council also relates to the contestability of a range of services that can be provided by new technologies and seeks changes to the framework for classification of distribution services. It seeks to restrict distributors' ability to earn a regulated rate of return on assets that provide network support, demand response or are located on the customer's side of the meter. The Australian Energy Council also proposes that the threshold for the regulatory investment test be reduced so that it applies more extensively to distribution businesses' investment decisions.

As with the Western Power rule change request, these rule change requests involve consideration of the term distribution service and the range of services that should be supplied by distributors.

The initial consultation period for these rule change requests closed in February 2017, and draft rule determinations are due in September this year.[80]

6.1.2 Rule change request - network replacement expenditure planning

In April 2017, the Commission published a draft rule determination on a rule change request from the AER in relation to replacement expenditure planning arrangements

80 Further information on these rule change requests is available on the Commission website. The project on the COAG Energy Council rule change request (project code ERC0206) is at http://www.aemc.gov.au/Rule-Changes/Contestability-of-energy-services. The project on the Australian Energy Council rule change request (project code ERC0218) is at http://www.aemc.gov.au/Rule-Changes/Contestability-of-energy-services-demand-response.

for electricity networks.[81] Among other proposed changes, it extends the current regulatory investment test and annual planning report frameworks for distributors to include replacement expenditure. These frameworks include providing information on upcoming network investment needs and consideration of "non-network options" (a term also used in Western Power's proposed rule) in place of expenditure on network assets.[82] Submissions on the draft determination closed on 6 June and a final rule is due in July 2017.

6.1.3 Reviews

The Commission is undertaking several reviews which may touch on some issues associated with off-grid supply.

- *Review of regulatory arrangements for embedded networks*: The purpose of this review is to identify and assess any issues for embedded network customers under the Retail Law and Retail Rules and identify appropriate solutions. Although, as discussed above, embedded networks are distinct from off-grid supply, and are regulated quite differently, some similar issues may arise, particularly in relation to consumers' ability to choose their retailer and other consumer protections. Submissions on the consultation paper for this review closed in May and a draft report is due in September 2017.[83]

- *Electricity network economic regulatory framework review*: This review will monitor developments in the energy market, including the increased uptake of distributed energy resources, and provide advice on whether the economic regulatory framework for electricity transmission and distribution networks is sufficiently robust and flexible to "continue to achieve" the national electricity objective in light of these developments. The Commission is due to publish its findings in July this year, the first in an annual series.[84]

- *Distribution market model review*: This project explores how the operation and regulation of electricity distribution networks may need to change in the future to accommodate an increased uptake of distributed energy resources such as rooftop solar systems, battery storage and electric vehicles. A draft report was published on 6 June and a final report is due in August 2017.[85]

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81 Further information on this rule change request (project code ERC0209) is available at: http://www.aemc.gov.au/Rule-Changes/Replacement-Expenditure-Planning-Arrangements.

82 Definitions of relevant terms are set out in section 2.4.1.

83 Further information on this review (project code RPR0006) is available at: http://www.aemc.gov.au/Markets-Reviews-Advice/Review-of-regulatory-arrangements-for-embedded-net.

84 Further information on this review (project code EPR0050) is available at: http://www.aemc.gov.au/Markets-Reviews-Advice/Electricity-Network-Economic-Regulatory-Framework.

85 Further information on this review (project code SEA0004) is available at: http://www.aemc.gov.au/Markets-Reviews-Advice/Distribution-Market-Model.

6.2 Projects by other bodies

6.2.1 COAG Energy Council

The COAG Energy Council's Energy Market Transformation Project Team issued a consultation paper on the regulatory implications of stand-alone energy systems in August 2016. The paper noted that a key policy question is whether there is value in regulating stand-alone systems under the national framework, and if so how this should occur.[86]

The paper considered a wide range of issues, including off-grid supply in existing remote locations, in new developments, in distributor-led transitions from the interconnected network, and in community-led transitions from the interconnected network. It considered a range of off-grid supply models including the landlord model, municipal model, co-op model and district model.

Submissions on the consultation paper closed in October 2016.[87] The Commission will consider the submissions to the COAG paper that relate to the subject matter of this rule change request.[88] The Commission encourages stakeholders to respond to this consultation paper as well, but responses may refer to or attach submissions made to the COAG paper.

6.2.2 Essential Services Commission of South Australia

The Essential Services Commission of South Australia is conducting an inquiry into regulatory arrangements for small-scale and off-grid electricity services (as well as gas and water services). This includes inquiring into appropriate regulatory arrangements and price regulation arrangements to apply in relation to non-national market electricity supplies. Submissions closed in November 2016 and the project is expected to conclude in October 2017.[89]

6.2.3 Energy Networks Australia and CSIRO

Energy Networks Australia and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) conducted a joint program called the Electricity Network

86 Stand-alone energy systems in the Electricity Market: Consultation on regulatory implications, Energy Market Transformation Project Team, 19 August 2016, p. 4.

87 The consultation paper and the submissions, including one from the Commission, are available on the project webpage: http://www.coagenergycouncil.gov.au/publications/energy-market-transformation-%E2%80%93-consultation-processes.

88 For example, the AusNet Services submission, which outlines a potential model for the regulatory treatment of distributor-led transitions from the grid.

89 The issues paper and the submissions are available at: http://www.escosa.sa.gov.au/projects-and-publications/projects/inquiries/inquiry-into-regulatory-arrangements-for-small-scale-water-sewerage-and-energy-services/inquiry-into-regulatory-arrangements-for-small-scale-and-off-grid-water-gas-and-electricity-services.

Transformation Roadmap, which included considering the potential role for off-grid supply. The final report was issued in April 2017.[90] It sets out a series of milestones towards a "resilient 2027 future state" of the national grid, including the following:[91]

> "Micro-grids and standalone power systems are a feasible alternative to traditional grid connection.
>
> From 2021, networks connect new customers in remote areas (typically 1km or more from the existing grid) with standalone power systems where it is demonstrated to be a lower cost than grid extension. Networks also routinely procure micro-grids, or standalone power systems, as a substitute for traditional delivery models where it is demonstrably efficient and fair to do so."

Several actions for networks are associated with this milestone. The report suggests that these actions should be completed in the period 2017-2021:[92]

- Develop criteria to evaluate demonstration of efficient and fair deployment of microgrids.
- Establish current state and preferred future state obligations and responsibilities under pre and post microgrid arrangements.
- Assess competition and regulatory issues associated with microgrid deployment and prioritise regulatory framework amendment if needed.
- Develop trial of microgrid deployment as key learnings for broader scale rollout.[93]

In the course of assessing Western Power's rule change request the Commission will consider issues relating to the third, and to some extent the second, of the actions above.

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90 Information on this project is available at: http://www.energynetworks.com.au/electricity-network-transformation-roadmap.

91 Electricity Network Transformation Roadmap: Final report, April 2017, Energy Networks Australia and CSIRO, p. 43.

92 Electricity Network Transformation Roadmap: Final report, p. 44. A move towards cost reflective electricity tariffs and the installation of advanced meters are also noted as important early actions.

93 Some distributors are currently operating microgrids, notably Ergon Energy, which owns and operates 33 isolated power stations for communities in remote parts of Queensland that are not connected to the grid (information from www.ergon.com.au). In relation to IPS, some distributors are currently undertaking limited trials in specific areas, with customer consent. For example, Horizon Power's trials in Esperance and Western Power's trials in Ravensthorpe, both in Western Australia. AusNet Services' submission to the COAG Energy Council consultation paper on stand-alone energy systems (discussed in section 6.2.1) indicates a strong interest in providing individual power systems to certain customers instead of replacing some overhead lines with underground cable, as a fire risk mitigation measure. AusNet submission dated 4 October 2016, page 2, available at: http://www.coagenergycouncil.gov.au/publications/energy-market-transformation-%E2%80%93-consultation-processes.

7 Lodging a submission

The Commission invites written submissions on this rule change request, in accordance with the notice it has published under section 95 of the Law. Lodge submissions online or by mail by **18 July 2017** in accordance with the following requirements.

Where practicable, submissions should be prepared in accordance with the Commission's guidelines for making written submissions on rule change requests.[94] The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Lodge submissions online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code **ERC0215**.

Alternatively, send the submission by mail to:

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

The envelope must be clearly marked with the project reference code ERC0215.

The Commission publishes all submissions on its website, subject to a claim of confidentiality.

All enquiries on this project should be addressed to Lily Mitchell on (02) 8296 7809.

94 This guideline is available on the Commission's website www.aemc.gov.au.

Abbreviations and defined terms

AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
COAG	Council of Australian Governments
Commission	Australian Energy Market Commission
individual power system (IPS)	A power system that supplies electricity to an individual consumer and that is not physically connected to the national electricity system
Law	National Electricity Law
microgrid	A power system that supplies electricity to multiple consumers and that is not physically connected to the national electricity system, but excluding 'local electricity systems' in the Northern Territory as defined in the *National Electricity (Northern Territory) (National Uniform Legislation) Act* 2015 and other forms of isolated networks deemed to be a 'distribution system' and/or 'distribution service' under jurisdictional instruments
off-grid supply	The supply of electricity to end-use customers (consumers) via individual power systems or microgrids, including all services involved in providing and maintaining those systems
Retail Law	National Energy Retail Law
Retail Rules	National Energy Retail Rules
rule change request	Rule change request submitted to the Commission by Western Power titled *Removing barriers to efficient network investment*, dated September 2016
Rules	National Electricity Rules

A Regulatory background

Service classification in the context of off-grid supply

A.1 The service classification framework

The AER may classify a distribution service as a:

- *Direct control service*: These services are subject to price or revenue regulation.
- *Negotiated distribution service*: These services are subject to negotiate/arbitrate regimes.[95]

Distribution services that are not classified by the AER are referred to in this paper as *unclassified distribution services*. These services are not economically regulated by the AER.

If a service is determined to be a direct control service, then it is further classified as either a standard control service or alternative control service.[96]

Standard control services tend to be those services which exhibit natural monopoly characteristics and therefore cannot be efficiently provided by another supplier. Distributors recover the costs of providing these services from all customers who use the shared network. This restricts the ability of other parties to compete with the distributor to provide these services, but due to the fact that the service may not be able to be efficiently provided by another supplier, the lack of competition for such services is not usually detrimental to customers.

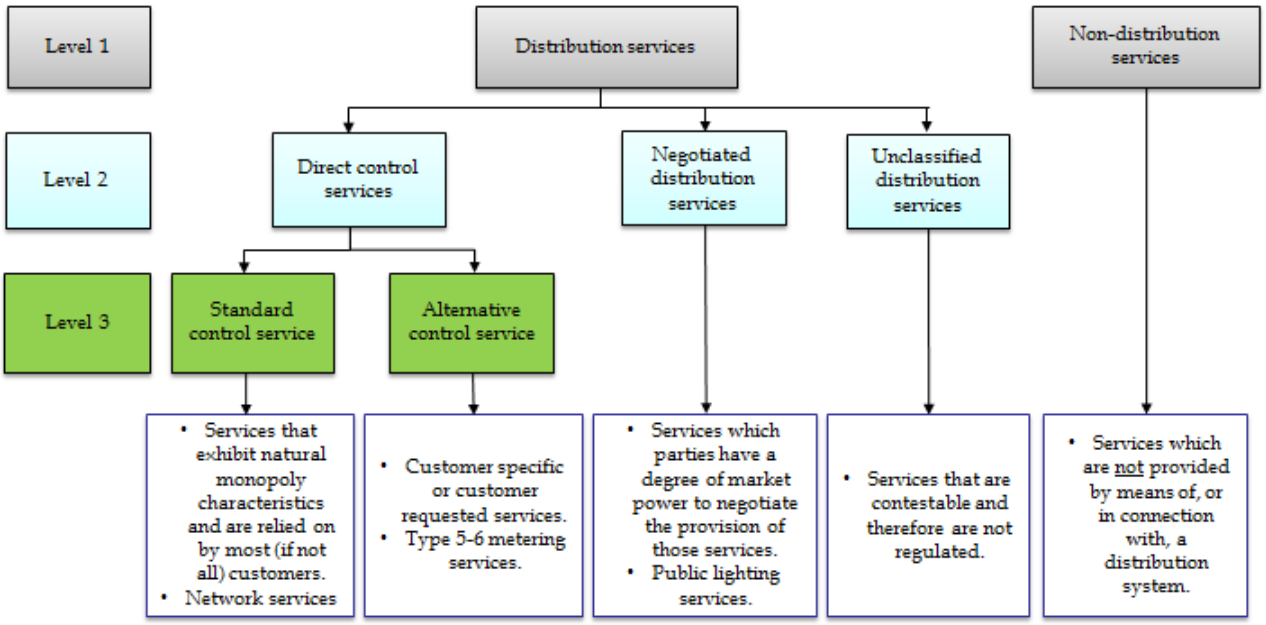
A service is typically classified as an *alternative control service* where there is, or is a potential for, a contestable market for provision of the service. Classification as alternative control services typically allows for contestable service provision because such services are generally only paid for by the users of the service. This allows customers to see the price of the service offered by the distributor and compare it to offers from other providers.

Figure A.1 illustrates the different stages of service classification.

95 Rules cl. 6.2.1(a).

96 Rules cl. 6.2.2(a).

Figure A.1 The service classification framework[97]



A.2 Factors used in classifying distribution services

If the rule change is made and off-grid supply is considered a distribution service, in determining whether it is classified as a direct control service or a negotiated distribution service, the AER would have to consider the form of regulation factors (set out below); the form of regulation (if any) previously applicable to the services and, in particular, any previous classification; the desirability of consistency in the form of regulation for similar services; and any other relevant factor.[98]

The form of regulation factors are as follows:[99]

- the presence and extent of any barriers to entry in a market for electricity network service
- the presence and extent of any network externalities (that is, interdependencies) between an electricity network service provided by a network service provider and any other electricity network service provided by the network service provider
- the presence and extent of any network externalities (that is, interdependencies) between an electricity network service provided by a network service provider and any other service provided by the network service provider in any other market

97 The white boxes in the final row provide examples and characteristics of the relevant services.

98 Rules cl. 6.2.1(c).

99 National Electricity Law s. 2F.

- the extent to which any market power possessed by a network service provider is, or is likely to be, mitigated by any countervailing market power possessed by a network service user or prospective network service user

- the presence and extent of any substitute, and the elasticity of demand, in a market for an electricity network service in which a network service provider provides the service

- the presence and extent of any substitute for, and the elasticity of demand in a market for, electricity or gas (as the case might be)

- the extent to which there is information available to a prospective network service user or network service user, and whether that information is adequate, to enable the prospective network service user or network service user to negotiate on an informed basis with a network service provider for the provision of an electricity network service to them by the network service provider.

Applying the form of regulation factors above, distributors' local knowledge of, and established presence in remote areas, may be considered to be an advantage when compared to new entrants to the market, and may therefore be a barrier to entry in the market. Furthermore, the scale, financial structure and expertise that distributors possess in providing a range of network electricity services might provide them with competitive advantages when providing new services. Nonetheless, it is difficult to say with certainty that these factors would provide them with such a competitive advantage, or even a competitive advantage at all, against entities who are actually already in the off-grid supply market and who already have the expertise to provide off-grid supply.[100]

Accordingly, it is not clear that if off-grid supply was a distribution service, the AER would necessarily classify it as a direct control service.

A.3 Factors used in classifying direct control services

If off-grid supply is classified as a direct control service, the AER is required to further classify the service as a standard control service or alternative control service.

The AER must have regard to the following factors when determining whether a direct control service is to be classified as a standard control service or an alternative control service:[101]

- the potential for development of competition in the relevant market and how the classification might influence that potential

100 For example, entities that currently provide off-grid supply to new remote mining operations and communities.

101 Rules cl. 6.2.2(c).

- the possible effects of the classification on administrative costs of the AER, the distributor and users or potential users
- the regulatory approach (if any) applicable to the relevant service immediately before the commencement of the distribution determination for which the classification is made
- the desirability of a consistent regulatory approach to similar services (both within and beyond the relevant jurisdiction)
- the extent the costs of providing the relevant service are directly attributable to the person to whom the service is provided
- any other relevant factor.

As part of its consideration of competition issues, the AER typically considers whether the presence of jurisdictional legislation may, in a practical sense, restrict the scope for competition in a market. In the context of off-grid supply, the AER may take into account the presence of jurisdictional laws which result in certain entities being provided subsidies in order to provide electricity to customers in rural/remote areas at lower than the cost to do so.[102] Where such laws apply, the AER may consider classifying off-grid supply as a standard control service.

However, where the distributor does not have a competitive advantage, the application of the above factors may result in the AER classifying off-grid supply as an alternative control service. There may be potential for development of competition in the market and the classification may influence that potential. Furthermore, given that some off-grid systems are built for an individual customer and others are built for a small number of customers (in a microgrid), the actual costs of physically constructing these systems will likely be able to be attributed to specific customers.

Accordingly, even if off-grid supply is able to be defined as a distribution service and is classified as a direct control service, there is no guarantee that the AER will ultimately classify it as a standard control service.

A.4 Implications of off-grid supply not being classified as a standard control service

Pricing implications

If off-grid supply is not classified as a standard control service, this may have significant implications for retail pricing of off-grid supply, with customers potentially facing much higher costs for these services under other service classifications.

- If the service is classified as a standard control service, then the AER regulates the revenue or price that a distributor can recover for the provision of the service

102 See section A.5 of this appendix for examples of subsidies which result from jurisdictional requirements.

under the building blocks approach set out in Chapter 6 of the Rules. Generally, distributors have not charged different prices for residential customers by location within the distributor's area. The result is that metropolitan customers generally pay more, and rural/ regional customers less, than the cost to serve them.[103]

- If a service is classified as anything other than a standard control service or is not classified, prices are unlikely to be averaged out across metropolitan and regional customers. Accordingly, off-grid customers may face significantly higher prices as they would no longer receive the benefits of cost averaging with low-cost metropolitan customers.

- If the AER does not classify off-grid supply (i.e. it is an unclassified distribution service), then a distributor is unrestricted in relation to the price that it can charge, under the Rules. However, jurisdictional instruments (discussed in section A.6 of this appendix) may provide some form of price regulation, and given that the distributor will face competition in the market to provide off-grid supply, it will be subject to competitive pricing pressures.

Customers are unlikely to agree to move off-grid if the prices they would pay are higher than the prices they currently pay for grid-connected supply. Therefore, in practice distributors may not be able to provide off-grid supply unless it is classified as a standard control service.

Ring-fencing requirements

The classification of distribution services has an impact on the ring-fencing requirements that apply to those services under the AER's Ring-fencing Guidelines (the Guidelines).[104] The AER notes that the Guidelines address two key potential harms:

- the risk of a distributor cross-subsiding other services with revenue earned from provision of distribution services

- the risk of a distributor favouring its own negotiated services or other distribution services, or an affiliated entity's other electricity services, in contestable markets.[105]

If off-grid supply is an unclassified distribution service,[106] or is considered not to be a distribution service, the distributor will be subject to certain obligations under the Guidelines.

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103 See, for example, Figure 2 on page 31 of the rule change request. It shows that in a large part of Western Power's service area, customers pay 11.4 per cent or less of the cost to supply them (including the cost of replacing lines when necessary).

104 AER, *Ring-fencing guideline: Electricity Distribution*, November 2016.

105 AER, *Electricity distribution Ring-fencing Guideline: Explanatory Statement*, November 2016, p.1.

106 The term used in the Guidelines to encompass unclassified distribution services is "other distribution services". Guidelines section 1.4.

Examples of ring-fencing obligations in the Guidelines include:

- **Legal separation requirement**: Distributors cannot provide non-distribution services themselves and have to create a separate legal entity in order to provide the service. Accordingly, if off-grid supply is determined to be a non-distribution service then distributors wishing to provide these services would need to provide them through a separate legal entity. However, the Guidelines provide for waivers from the legal separation requirement.[107]

- **Non-discrimination obligations:** A general obligation on the distributor that it must not discriminate (either directly or indirectly) between a related electricity service provider[108] and a competitor (or potential competitor) of a related electricity service provider in respect of the provision of direct control services by the distributor and/or contestable electricity services by another entity.

- **Functional separation obligations:** This includes physical separation obligations, where a distributor in providing direct control services must operate independent and separate offices to its related electricity service providers. It also includes staff-sharing obligations, where a distributor must ensure that staff involved in the provision or marketing of a direct control service or a regulated transmission service are not also involved in the provision or marketing of contestable services by a related electricity service provider.

- **Information access and disclosure obligations**, which include:

    - *Protection obligations* – A distributor must protect confidential information provided by a customer or prospective customer for direct control services and ensure its use is only for the purpose for which that information was provided.

    - *Sharing obligations* – Where a distributor acquires information in providing direct control services and shares this information with an affiliated entity, it must provide equal access to others. A distributor must establish an information sharing protocol and a register of information requests.

    - *Disclosure obligations* – A distributor must not disclose confidential information acquired in providing direct control services to any party without the explicit informed consent of the relevant customer or prospective customer to whom the information relates (unless otherwise exempt).

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107 Guidelines cl. 3.1 and cl. 5. The explanatory statement notes that "There are two broad circumstances in which we would be inclined to grant a waiver from the Guideline's legal separation obligations…. [one being] in respect of other services a DNSP is required by law to provide (for example isolated network services in remote areas)." AER, *Electricity distribution Ring-fencing Guideline: Explanatory Statement*, November 2016, p.57.

108 In general terms, a related electricity service provider is an affiliated entity of the distributor, the part of the distributor that provides contestable services or a customer or potential customer of the distributor.

Retail price regulation under state and territory law

A.5 Examples of jurisdictional subsidies

Regional Queensland

In regional Queensland, electricity prices for regional customers are subsidised through the Uniform Tariff Policy. Under this policy, the Queensland Government pays Ergon Energy Retail a subsidy so that the prices paid by customers in regional Queensland are based on the prices paid by the same classes of customers in south east Queensland.[109] We understand that the subsidies paid to Ergon Energy Retail cover off-grid supply in regional areas. The Queensland Government also pays Ergon Energy Retail a specific subsidy to ensure uniform prices for the 33 isolated power systems it operates as a vertically-integrated entity in remote parts of Queensland.[110] It appears that these subsidies are not payable to entities other than Ergon Energy (Retail or the vertically integrated entity); independent providers of off-grid supply to new or existing remote sites would not receive them.

Northern Territory

It appears that the Northern Territory Government provides a subsidy called a Community Service Obligation to all licenced electricity retailers in urban areas in order to ensure that all domestic households and small to medium business customers pay the same retail tariffs, regardless of cost of supply and location.[111] The Government pays a separate subsidy, the Indigenous Essential Services Grant, to Indigenous Essential Services Pty Ltd for the provision of electricity services in remote areas.[112] This entity is a not-for-profit subsidiary of the Northern Territory Power and Water Corporation. Given the prevalence of off-grid supply in the Northern Territory, these subsidies will likely cover off-grid supply.

South Australia

The South Australian Government provides subsidies for off-grid supply as part of its Remote Areas Energy Supplies (RAES) Scheme. Under this scheme, the South Australian Government has contracted with Cowell Electricity Supply (Cowell) to provide electricity services to remote areas in South Australia.[113] Cowell maintains and operates the power stations and electricity distribution networks, and provides meter readings and retail services. The South Australian Government subsidises the supply of electricity through Cowell by ensuring that the following tariffs apply to remote customers covered by the RAES scheme:

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109 Queensland Competition Authority 2017, *Electricity*, viewed 8 May 2017, http://www.qca.org.au/electricity.

110 Queensland Budget, *Budget strategy and outlook 2016-17,* Budget Paper No. 2, p. 215.

111 Department of Treasury and Finance, *Strategy for Northern Territory Utilities*, 22 June 2016, pp. 7-8.

112 Northern Territory Government, *Agency Budget Statements 2016-17: Budget Paper No. 3*, p. 319.

113 Independent owner-operators also supply electricity to customers in Andamooka, Coober Pedy and Yunta outside the RAES scheme.

- domestic customer tariffs are based on the average domestic standing offers by electricity retailers supplying the South Australian on-grid market
- general supply customer tariffs are based on the average small business standing offers by electricity retailers supplying to the South Australian on-grid market
- state and federal government customers pay the full cost of their electricity supply and consumption
- all remote customers pay a fixed supply charge, which is aligned with the on-grid supply charge.[114]

A.6 Examples of jurisdictional price controls for off-grid supply

Queensland

In regional Queensland (including the remote areas where off-grid supply may be relevant), retail electricity prices are regulated by the Queensland Competition Authority. The Uniform Tariff Policy ensures that prices are the same for customer connected to the national electricity market and microgrid residential customers.[115] The prices of network services for the Mount Isa-Cloncurry microgrid are regulated by the AER under the Rules.[116]

Victoria

In Victoria, the Essential Services Commission may regulate tariffs for the sale of electricity to a prescribed class of customers if, in a retail competition review directed by the COAG Energy Council, the Commission:

- concludes that competition in a market for electricity is not effective; and
- recommends, in accordance with the COAG Energy Council's direction for the review, that price controls for retail electricity services be retained or reintroduced.[117]

This provision could potentially allow for retail price regulation of off-grid supply, but may be somewhat cumbersome if a range of new off-grid projects are developed.

In addition, an exemption from the requirement to hold a generation, distribution or retail licence may include pricing provisions. For example, the 1 May 2002 exemption

114 Department of State Development 2017, Adelaide, viewed 26 April 2017, http://www.statedevelopment.sa.gov.au/resources/energy-supply/south-australias-electricity-supply-and-market/remote-areas-energy-supplies-scheme. Tariffs in Cockburn and Coober Pedy are different from other communities because of the way their electricity is generated and sourced.

115 See *Regulated retail electricity prices for 2016-2017, Final determination*, Queensland Competition Authority, May 2016.

116 This is established by the state Act applying the National Electricity Law in Queensland: *Electricity – National Scheme (Queensland) Act* 1997, Part 3.

order contains a Pricing Rule which effectively allows the Essential Services Commission to set the prices for embedded networks, on the basis that the tariff must not be more than the tariff that would apply to the relevant customers if those customers purchased electricity under a standing offer.[118] A similar approach could be adopted for off-grid system operators seeking exemptions.

South Australia

In South Australia, licensed participants who engage in the sale and supply of electricity to small customers (which would capture licensed providers of off-grid supply) may be subject to price regulation by the Essential Services Commission of South Australia and the Treasurer.[119] The Essential Services Commission of South Australia does not currently regulate off-grid pricing; nonetheless, it is able to review pricing information annually as part of information received from licensees.[120]

Tasmania

In Tasmania, a licensed entity that engages in the sale of electricity to small customers (which could capture off-grid supply) may be subject to regulatory pricing measures if the entity is categorised as a regulated offer retailer by the Minister.[121] At present, only Aurora Retail is so categorised; it is the retailer to the vast majority of customers in Tasmania as well as being the retailer of last resort in Tasmania. For regulated offer retailers, the regulator will determine price caps and approve standing offer prices.[122]

Northern Territory

Currently, the Utilities Commission of the Northern Territory and the relevant Minister can issue pricing determinations and orders for non-contestable customers and contestable customers of a prescribed class.[123] For example, an electricity pricing order was issued in December 2015, setting prices to be paid in 2016 by various groups of contestable customers whose annual consumption is less than 750 megawatt hours per year.[124] This order would include off-grid customers.

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117 *Electricity Industry Act 2000 (Vic)*, ss. 12-13.

118 Exemption Order 1 May 2002, s. 7 (similar to the exempt seller pricing condition in the AER Exempt Selling Guideline - see below). Note that the Victorian order is currently under review - see: http://delwp.vic.gov.au/energy/legislation/general-exemption-order-review.

119 *Electricity Act 1996 (SA)*, Part 3 Division 2A – Price regulation, Division 3AA – Special provisions relating to small customers.

120 Essential Services Commission of South Australia, *Issues paper: Inquiry into regulatory arrangements for small-scale water, sewerage and energy services*, August 2016, p. 10.

121 *Electricity Supply Industry Act 1995 (Tas)*, s. 38B.

122 *Electricity Industry Supply Act 1995 (Tas)*, ss. 40AA, 40, 41.

123 *Electricity Reform Act 2012 (NT)*, ss. 43-44. *Utilities Commission Act (NT)*, ss20-21. Electricity Reform (Administration) Regulations (NT) r13A. However, under the Act applying the Law in the Northern Territory, the *National Electricity (Northern Territory) (National Uniform Legislation) Act*, the AER can make network revenue or pricing determinations regarding the Northern Territory for a regulatory control period that starts after 1 July 2019.

124 Electricity Pricing Order, 22 December 2015.

Reliability and security in relation to off-grid supply

A.7 Examples of jurisdictional reliability requirements

Queensland

The Electricity Distribution Network Code provides reliability standards for 'isolated feeders' which would include microgrids. These standards apply to entities holding distribution authorities; in practice, only Ergon Energy is listed as having isolated feeders.[125]

New South Wales

The reliability and performance conditions for distributors' licences specify interruption duration and frequency standards for metropolitan and non-metropolitan customers, which could potentially apply to off-grid customers supplied by distributors. There are also overall reliability standards and individual feeder standards, but these are unlikely to apply to off-grid supply given the definition of 'feeder' that is used.[126]

Victoria

The Electricity Distribution Code defines 'distribution system' in a way that could potentially include microgrids. Distributors are required to publish reliability targets and to make payments to customers for sustained interruptions, including customers supplied by 'short rural feeders' (which could include microgrid customers).[127]

Tasmania

The Tasmanian Electricity Code specifies reliability performance standards for various categories of communities, including low density rural.[128] These standards apply to 'distribution network service providers', meaning a person who owns, controls or operates a distribution network which is connected to another transmission or distribution system,[129] and refer to interruptions on such an interconnected system. It appears that these requirements would not apply to off-grid supply, which would not be an interconnected system.

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125 Electricity Distribution Network Code (first edition) s. 2.3.9.

126 Reliability and Performance Licence Conditions for Electricity Distributors, commencing 1 July 2014, available at: https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/electricity_-_regulatory_instruments_-_dnsp_conditions_14_-_19_-_july_2014.pdf (see schedules 2, 3 and 5); Ausgrid distributor licence 28 November 2016, available at: https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/licensing-administrative-electricity-network-operations-proposed-new-licence-conditions/ausgrid-ministerial-licence-conditions-1-december-2016.pdf.

127 Electricity Distribution Code (version 9, December 2015), ss. 5.1, 5.2, 6.3.

128 Tasmanian Electricity Code s. 8.6.11.

129 Tasmanian Electricity Code chapter 14, Glossary.

Reliability provisions for off-grid supply provided by entities other than distributors

Other entities seeking to provide off-grid supply may be exempt from jurisdictional requirements to obtain a licence (as exemptions are often available for small and/or remote systems), and thus have no reliability requirements. However, some states provide for exemptions to be made subject to conditions, which may include reliability requirements.

A.8 Reliability standard under the Rules

The Rules provide for a reliability standard to be established, which indicates the expected proportion of energy demand that is at risk of not being supplied to consumers, termed 'unserved energy', in a region in a given financial year. This is currently set at 0.002 per cent in all regions.[130] It applies only to the level of reliability provided in the national electricity market by electricity generators and the interconnectors between states.

The reliability standard is not a regulatory or performance standard that is 'enforced'. Rather it is a planning standard which national electricity market planning processes associated with generators and interconnectors must seek to satisfy. It indicates to the market the required level of supply to meet demand on a regional basis.

As this standard relates to reliability provided in the national electricity market, it does not currently cover the reliability of off-grid supply, as generators in individual power systems or microgrids are (by definition) not connected to, and cannot sell to, the national electricity market. Customers who move from grid supply to off-grid supply would therefore no longer receive the benefit of the reliability standard.

However, the reliability standard may provide a useful yardstick when an off-grid system is established otherwise than through the initiative of individual customers, for example, if distributors consider that it is efficient to move off-grid in a certain area,[131] or when property developers choose off-grid supply rather than establishing a grid connection to a new development. It may be possible for new rules, regulations or standards to require that in determining the appropriate size and configuration of off-grid generation and storage equipment, expected unserved energy should be no more than the reliability standard. (Customers choosing to go off-grid may wish to make their own trade-off between the level of service sought and the cost incurred to provide that level of service, the trade-off at the heart of the reliability standard.)

130 Rule 3.9.3C. This setting is currently under review as part of the Reliability Panel's Reliability Standard and Settings Review. More information is available on the Commission website under project code REL0064.

131 Noting that, under the current rules, a distributor cannot move a customer off-grid unless the customer requests disconnection – see section 5.2.

A.9 System security under the Rules

Power system security refers to the safe scheduling, operation and control of the power system (the national grid together with generation) 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. It deals with the technical parameters of the power system such as voltage, frequency, the rate at which these might change and the ability of the system to withstand faults.[132]

Because the security requirements in the Rules apply to the national grid, they do not currently apply to off-grid supply. In relation to microgrids, appropriate security settings will need to be determined in each case, and are likely to be very different from those developed for the national grid. In relation to individual power systems, the concept of system security appears to be less relevant.

132 Chapter 4 of the Rules addresses power system security. System security market frameworks are currently under review; see project code EPR0053 on the Commission website.

B List of questions for consultation

Question 1 Nature of issues

(a) Do Western Power's concerns, as described in section 2.2, accurately identify the nature of any problems associated with distributor-led transitions from grid supply to off-grid supply in the jurisdictions that are part of the national electricity market?[133]

(b) In relation to customers who currently have a grid connection, is there workable competition for off-grid supply systems, or are there barriers that significantly impede businesses that are not economically regulated (non-distribution businesses) from providing off-grid supply to these customers?

(c) Does the issue identified by Western Power, and any barriers from (b), indicate that it may be appropriate to allow distributors to provide off-grid supply as a regulated service, in certain circumstances?

(d) Other than concerns as to whether off-grid supply would constitute a distribution service, what barriers (such as other regulatory barriers or licence requirements) prevent distributors from seeking customers' agreement to move off-grid where it would be cost effective?

Question 2 Costs and benefits of moving to off-grid supply

(a) Do you agree with Western Power's description of the costs and benefits of transitioning from grid supply to off-grid supply? What other costs and benefits should be considered?

(b) What credible estimates are there of the current costs to procure, install and maintain (i) microgrids and (ii) individual power systems in fringe of grid areas of Australia? How are those costs broken down between electricity generation, network provision and retail costs/billing? How do these costs compare to the costs of providing electricity to such customers through the national grid?

(c) Distributors, please provide information (to the extent you have any) on the number of your customers who are currently grid-connected but who you consider may be more cost-effectively served by (i) microgrids and (ii) individual power systems. Consider current and projected costs of those systems.

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133 As Western Australia is not currently covered by the Law and Rules, any change to the Rules will not affect it (at least in the short term). The consumers and market participants who would be affected by the proposed change are those in the other states and territories of Australia, which are covered by the Law and Rules. Responses to the questions in this paper should be in relation to parties in Queensland, New South Wales, the Australian Capital Territory, Victoria, Tasmania, South Australia and the Northern Territory.

(d) What are the key factors that make customers candidates for off-grid supply? For example, upcoming line replacements, local reliability or congestion issues, safety standards, line undergrounding requirements, declining costs of off-grid supply, presence of existing distributed generation?

(e) Distributors, if you were permitted to supply the customers identified in question (c) through off-grid supply, please provide an estimate of your annual savings (if any). Please state any critical assumptions such as pricing approaches to be applied to off-grid customers.

(f) Other than the costs of the off-grid supply itself, what costs and benefits are likely to arise from moving certain customers off-grid, for the customer, the distributor, the customers remaining on the grid, retailers, local generators, or any other parties? How could any costs be mitigated?

Question 3 Potential alternatives to the proposed rule

(a) If a rule change is considered necessary, are there alternatives to the proposed rule which relate to the issues raised in the request and:

(i) are consistent with the Law;

(ii) would allow all customers to benefit from lower costs by enabling electricity to be supplied in the most efficient way in each area; and

(iii) would result in customers who move to off-grid supply receiving electricity supply with appropriate reliability, quality, safety and other relevant consumer protections?

(b) Would the alternatives in (a) be able to be achieved through changes to the Rules alone, or would changes to other instruments, such as the Retail Rules or other laws, regulations or licences (jurisdictional or national) be required or desirable?

Question 4 Assessment framework

Do you agree with the approach set out in section 3.3 to assessing whether the rule change request will, or is likely to, contribute to the achievement of the national electricity objective? If not, how should it be assessed?

Question 5 Competition issues relating to moving from grid supply to off-grid supply

(a) To what extent do you consider that distributors' ability to average the costs of grid-connected distribution services across their customer base inhibits the development of competition in off-grid supply as an alternative to grid connection?

(b) If the proposed rule (or a more preferable rule) is made, and the AER classifies off-grid supply as a standard control service, would distributors' ability to

offer below-cost off-grid supply hamper the development of competition in the off-grid supply market, as costs of off-grid supply fall in the future?

(c) In addition to the issues discussed in chapter 4, what other factors affect competition for providing off-grid supply in place of grid supply?

(d) Would the AER's process for classifying distribution services, including considering the potential for the development of competition, provide an adequate way in which to address these competition issues in practice?

Question 6 Competition issues arising after moving to off-grid supply

(a) Should a monopoly provider of a service in one area of the supply chain for off-grid services be able to provide an integrated service whereby it provides all the services forming part of off-grid supply, in circumstances where competition is limited?

(b) If a customer moves to off-grid supply where one entity is the monopoly off-grid retailer, generator and distributor, what disadvantages are they likely to face due to the lack of ability to change retailers?

(c) Do the extent of any disadvantages under (b) depend on which entity provides the monopoly services (e.g. a licensed, regulated distributor, compared to an entity that is exempt from registration and licensing provisions under the Rules and state laws)?

(d) How can any disadvantages under (b) be mitigated?

(e) Is it desirable (in light of the long-term interests of consumers) that customers being moved to off-grid supply would be offered, or would be able to access, competitive offers for each component of off-grid supply (for example, provision of generating plant, maintenance of the plant, billing)? If so, what circumstances or policies would encourage this?

Question 7 Appropriate regulation of reliability of off-grid supply

In light of the varying reliability requirements that may apply to off-grid supply under the current arrangements, are specific consumer protections regarding the reliability of off-grid supply required before the Rules should allow distributor-led transition to off-grid supply?

Question 8 Impacts on consumers of moving to off-grid supply – general questions

(a) Chapter 5 discusses various regulatory issues and considers the potential impacts of moving to off-grid supply under the current regulations. If you have further information on, or a different analysis of, any of these issues, please provide details.

(b) What are the impacts on off-grid customers of ceasing to be covered by the protections in the Retail Law and Retail Rules, bearing in mind the protections provided by the Australian Consumer Law and by state laws?

(c) To what extent are customers who move to off-grid supply likely to face additional risks relating to electricity supply not faced by grid supplied customers? If additional risks arise, what is the nature of these risks and how material are they?