

# Updating instruments for regulated stand-alone power systems

## Explanatory statement

May 2022



## Shortened forms

Shortened Form	Extended Form
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
DNSP	Distribution Network Service Provider
NEL	National Electricity Law
NEM	National Electricity Market
NER	National Electricity Rules
Regulated SAPS	A SAPS that is part of the national electricity system
RIT-D	Regulatory Investment Test for Distribution
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SAPS	Stand-Alone Power System
STPIS	Service Target Performance Incentive Scheme

## Request for submissions

We are undertaking a consultative process for amending the following six documents to take into account the *National Electricity Amendment (Regulated stand-alone power systems) Rule 2022* (Amending Rule):

- Regulatory Investment Test for Distribution Application Guidelines
- Connection Charge Guidelines
- Distribution Service Classification Guidelines
- Distribution Reliability Measures Guidelines
- Regulatory Investment Test for Distribution
- Expenditure Forecast Assessment Guideline

We are consulting in accordance with the *distribution consultation procedures* set out in rule 6.16 of the National Electricity Rules.

In this explanatory statement we outline the changes we propose to make to these documents.

We invite interested parties to make written submissions to us regarding this explanatory statement and accompanying documents by the **close of business, 30 June 2022**.

Submissions should be sent electronically to: [AERregulatedSAPS@aer.gov.au](mailto:AERregulatedSAPS@aer.gov.au). We prefer all electronic submissions to be in Microsoft Word or another text readable program.

Alternatively, submissions can be mailed to:

General Manager, Network Expenditure  
Australian Energy Regulator  
GPO Box 3131  
Canberra ACT 2601

We prefer all submissions to be publicly available, to facilitate an informed and transparent consultative process. For this reason, we will treat submissions as public documents unless otherwise requested. If you wish to submit confidential information, please:

- clearly identify the information that is the subject of the confidentiality claim
- provide a non-confidential version of the submission in a form suitable for publication.

We will place all non-confidential submissions on our website at [www.aer.gov.au](http://www.aer.gov.au). For further information about the use and disclosure of information provided to us, see the ACCC/AER Information Policy (June 2014) on our website.

Please direct enquiries about this paper, or about lodging a submission, to the AER on 1300 585 165 or [AERregulatedSAPS@aer.gov.au](mailto:AERregulatedSAPS@aer.gov.au).

### Questions for stakeholders

- Do you agree with amending and not amending the identified documents?
- Do the proposed amendments to the documents appropriately accommodate regulated SAPS?
- Are there any additional documents that we should review?

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## Summary

We are making changes to six documents to take into account the *National Electricity Amendment (Regulated stand-alone power systems) Rule 2022 (Amending Rule)*.<sup>1</sup> The Amending Rule will allow distributor-led stand-alone power systems (SAPS) to become part of the national electricity system.

From 1 August 2022, distribution network service providers (DNSPs) can connect customers to a SAPS where it may be cheaper, safer and more reliable than connection to the grid. These will become regulated SAPS. Customers connected to regulated SAPS will not be disadvantaged. They will receive an equivalent level of consumer protections and will pay for their electricity in the same way as grid customers. Both SAPS and grid customers can benefit from lower charges and improved system resilience.

The National Electricity Rules (NER) require us to review and where necessary to amend and publish eleven documents.<sup>2</sup> These documents are guidelines that assist DNSPs deliver outcomes that are in the best interest of electricity customers. Our amendments will help all network customers receive the benefits of allowing SAPS to become part of the national electricity system.

We have completed this review and propose to amend and publish six documents: four documents identified in the NER, plus two additional documents. Our proposed amendments to these six documents will ensure that:

- existing customers are connected to regulated SAPS where it is efficient to do so
- new customers connecting to a regulated SAPS will pay only fair and reasonable connection charges, and receive the same consumer protections as grid-connected customers
- reliability of regulated SAPS can be benchmarked across DNSPs.

This explanatory note outlines what regulated SAPS are, why the Amending Rule has been made and the changes we propose to make to the six documents.

We seek your feedback on the proposed amendments to the six documents outlined in this explanatory note by Thursday, 30 June 2022.

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<sup>1</sup> The Amending Rule can be found at: <https://www.aemc.gov.au/sites/default/files/2022-02/SAPS%20NER%20amending%20rule%20final%202022.pdf>.

<sup>2</sup> NER, cl. 11.142.4.

# 1. Background

## 1.1. Stand-alone power systems

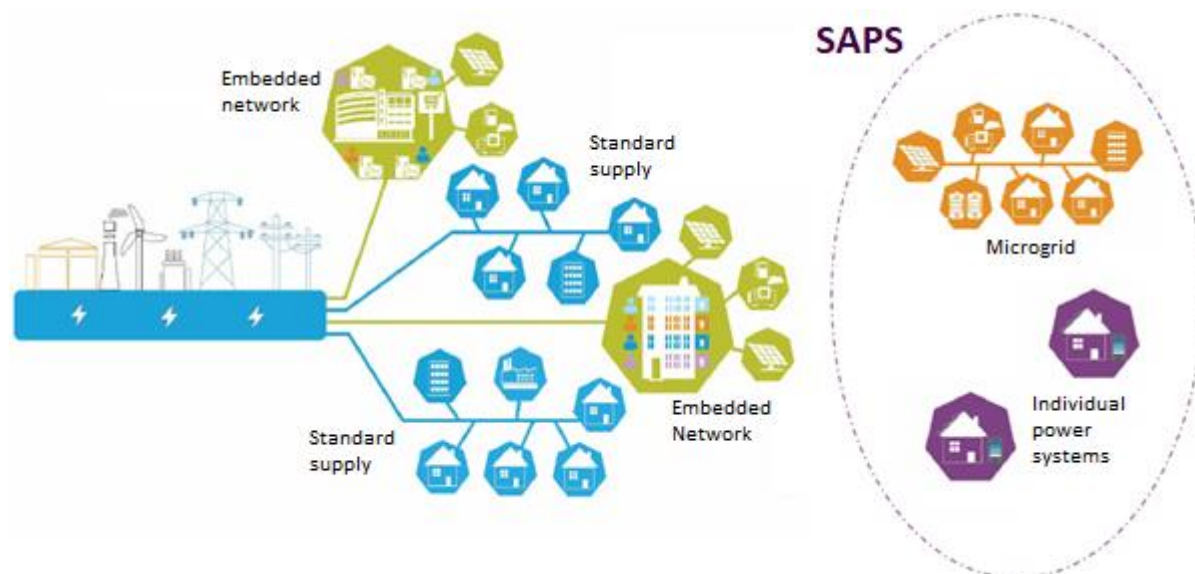
### What is a SAPS?

A SAPS is a system that generates and distributes electricity but is not physically connected to the main electricity grid. A SAPS can come in various forms, but for a residential customer it typically comprises of one or more renewable power generation units, a battery, and back-up generation. For some customers, this set-up will deliver safe and reliable power at a lower cost than connecting to the national grid.

The Australian Energy Market Commission (AEMC) identifies four potential models of electricity supply for customers, as shown in figure 1.<sup>3</sup> The four models are:

- **standard supply** via the interconnected national electricity system
- **embedded networks**, which are private systems (e.g. shopping centre or apartment building) connected to the main electricity grid
- **individual power systems**, which are SAPS supplying a single customer and are not connected to the main electricity grid
- **microgrids**, which are SAPS supplying multiple customers and are not connected to the main electricity grid.

Figure 1: Four potential models of electricity supply in the National Electricity Market



Source: AEMC.

There are presently numerous off-grid solutions across Australia, predominantly in very remote areas and on islands. These are not part of the national electricity system and customers do not receive the same rights and protections as grid-connected customers. Instead, they are covered under jurisdictional arrangements.

<sup>3</sup> AEMC, *Review of the regulatory frameworks for stand-alone power systems - priority 1, Final report*, 30 May 2019, p. 2.

## 1.2. Advantages of SAPS

A SAPS can have several benefits over a grid-connected system, including:

- improving reliability to customers who are currently connected to the grid by relatively poor performing overhead lines
- improving resilience by reducing the impact of environmental hazards such as bushfires
- lower network costs for all customers compared with replacing and maintaining long spans of overhead lines
- being more environmentally friendly when SAPS use renewable generation.

Until now, DNSPs regulated under the national framework have been unable to offer a SAPS to existing customers to realise these benefits. From 1 August 2022, DNSPs will be allowed to connect customers to a 'regulated SAPS'.

## 1.3. What is a regulated SAPS?

A SAPS is a **regulated SAPS** when it forms part of the national electricity system. It is a part of a DNSP's network and must be regulated in the same way as it otherwise would if it were part of the connected network.

Currently, around 2 per cent of households around Australia are "off-grid". These are households who own and operate their own energy supply. They do not have a retailer or access to the usual National Energy Market (NEM) energy processes and protections. A regulated SAPS (sometimes called a distributor-led SAPS) uses similar technology to an off-grid installation. However, it is operated in a different manner whereby the DNSP is responsible for the assets.

Regulated SAPS will be formed when a DNSP decides to convert a part of its existing interconnected national electricity system to a SAPS where it is economical to do so. For example:

A long span of power lines that connects a small number of farms may be approaching the end of its life. The power lines may be in a high-risk bushfire area. In this example, the DNSP will consider options to continue to provide electricity to these farms. The best option may be to decommission the power line and establish a regulated SAPS. This solution may provide the farms with a more reliable and resilient power supply, and in the long run be the lowest cost to consumers because of the lower bushfire risk and ongoing maintenance costs.

This means that existing grid-connected customers, rather than off-grid customers, will be impacted if their DNSP decides to convert their part of the network to a regulated SAPS. The SAPS quality of supply principle, which forms part of the Amending Rule, ensures that consumers being converted to a regulated SAPS will not be disadvantaged.

The NER outline the principles that DNSPs must follow before and after converting part of the network to a regulated SAPS:

- Develop and publish SAPS performance and supply standards, having regard to the SAPS quality of supply principle. DNSPs must comply with these published standards.<sup>4</sup>
  - The SAPS quality of supply principle means that a SAPS customer's quality and reliability of electricity supply should be no worse than the quality and reliability they would experience if they were connected to the interconnected national electricity system.<sup>5</sup>

<sup>4</sup> NER, cl. 5.13B.1.

<sup>5</sup> NER, cl. 5.10.

- Develop a customer engagement strategy and engage with affected customers in accordance with that strategy.<sup>6</sup>
- Give notice to affected customers when developing a proposal to convert part of the network to a regulated SAPS and having regard to comments received in response to the notice.<sup>7</sup>

Further to the above, the AER may publish guidelines about how DNSPs engage with affected customers.<sup>8</sup> We are currently reviewing the need to develop this guideline.

Regulated SAPS customers will have:

- ✓ a meter
- ✓ NEM regulation
- ✓ consumer protections equivalent to customers connected to the grid
- ✓ choice of retailer
- ✓ a distributor that is responsible for the system.

In the NEM the general principle is that generation should be competitive wherever possible and not provided by a monopoly business such as a DNSP. Therefore, the required generation is best provided by third party providers, called “SAPS resource providers”.

Section 6B of the National Electricity Law (NEL) provides for a participating jurisdiction to make regulations under which certain stand-alone power systems form part of the national electricity system. Such a stand-alone power system is a regulated SAPS under the NEL.<sup>9</sup> This means that jurisdictions will need to opt in, or provide their own SAPS frameworks, before DNSPs are allowed to start deploying regulated SAPS.

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<sup>6</sup> NER, cl. 5.13B.2.

<sup>7</sup> NER, cl. 5.13B.4.

<sup>8</sup> NER, cl. 5.13B.3.

<sup>9</sup> NER, ch. 10.



## 2. Reasons for Amending Rule

### The Amending Rule:

- allows DNSPs to connect customers to SAPS when this offers better value for money than connection to the interconnected national electricity system
- ensures that regulated SAPS customers will receive an equivalent level of service to grid customers with respect to price, reliability and consumer protections.

The Amending Rule, which comes into effect from 1 August 2022, removes existing barriers to DNSPs providing SAPS to customers. It allows for DNSPs to provide SAPS to existing customers, and to offer to connect new customers to existing regulated SAPS where it is more economically efficient than connection to the interconnected national electricity system.

Current definitions in the NEL and NER relate to the interconnected national electricity system. Power systems not connected to the interconnected national electricity system are not captured under the existing national frameworks. When the Amending Rule takes effect, these definitions will be updated to include regulated SAPS so that the price, reliability and consumer protections (such as safety) that grid-connected customers benefit from will also apply to regulated SAPS customers. SAPS customers will also retain access to the competitive retail market, including their existing retailers and retail offers. This means that consumers will not be disadvantaged where a DNSP determines that it is more cost-effective to supply them on a stand-alone basis.

Ahead of the implementation of the Amending Rule on 1 August 2022, the AEMC identified that the introduction of regulated SAPS may have implications for the AER's existing guidelines. The AEMC therefore provided for a transitional period for us to consult on and update relevant guidelines. This is to ensure that our guidelines are consistent with the national arrangements for regulated SAPS, before the Amending Rule takes effect.

### 3. Review of documents

By 1 August 2022, we must review, and where necessary, amend and publish eleven documents to take into account the Amending Rule.<sup>10</sup> These documents are listed in table 1. Any amendments must take effect on and from 1 August 2022.

We have completed the review and propose to amend four of the eleven documents:

- Regulatory Investment Test for Distribution Application Guidelines
- Connection Charge Guidelines<sup>11</sup>
- Distribution Service Classification Guidelines
- Distribution Reliability Measures Guidelines.

Further to the documents that the NER require us to review, we have also identified two additional documents that we propose to amend under this process:

- Regulatory Investment Test for Distribution (RIT-D)
- Expenditure Forecast Assessment Guideline.

Our amendments will help all network customers receive the benefits of allowing SAPS to become part of the national electricity system by ensuring that:

- existing customers are connected to regulated SAPS where it is efficient to do so
- new customers connecting to a regulated SAPS will pay only fair and reasonable connection charges, and receive the same consumer protections as grid-connected customers
- reliability of regulated SAPS can be benchmarked across all distribution network service providers (DNSPs).

Our amendments include:

- updating definitions to reflect changes to the NER
- including regulated SAPS into relevant regulatory requirements
- providing new guidance for regulated SAPS where the regulatory requirements differ from the interconnected national electricity system.

We will not amend the Distribution Ring-fencing Guidelines as they have already been amended in the latest version published on 3 November 2021.<sup>12</sup>

For the remaining six documents that we propose to not amend, we consider that:

- amendments are not required to give effect to the Amending Rule
- the Amending Rule does not change the definitions in these documents
- the guidance set out in the documents adequately cover circumstances where regulated SAPS are deployed.

Table 1 lists the documents that we reviewed as part of this process and identifies our decision to amend or not amend to take into account the Amending Rule.

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<sup>10</sup> NER, cl. 11.142.4.

<sup>11</sup> Changes to the Connection Charge Guideline as a result of the Access, Pricing and Incentive Arrangements for Distributed Energy Resources Rule 2021 will be run as a separate process.

<sup>12</sup> See <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/ring-fencing-guideline-electricity-distribution-review>.

**Table 1 Outcomes of our review of relevant documents**

Guideline	Outcome of our review
<b>Documents we are required to review under NER cl. 11.142.4</b>	
RIT-D Application Guidelines	Amend
Connection Charge Guidelines	Amend
Distribution Service Classification Guidelines	Amend
Asset Exemption Guidelines	Not amend
Cost Allocation Guidelines	Not amend
Distribution Ring-fencing Guidelines	Amended in the latest version, published 3 November 2021
Distribution Reliability Measures Guidelines	Amend
Forecasting Best Practice Guidelines	Not amend
Contracts and Firmness Guidelines	Not amend
Reliability Compliance Procedures and Guidelines	Not amend
Market Liquidity Obligation Guidelines	Not amend
<b>Additional documents that we will amend under this process</b>	
Regulatory Investment Test for Distribution	Amend
Expenditure Forecast Assessment Guideline	Amend

Our draft amendments to the six documents identified in Table 1 are outlined in Appendix A.

The documents, with all proposed changes marked up, are available to stakeholders during the consultation period for review.

#### Questions for stakeholders

- Do you agree with amending and not amending the identified documents?
- Do the proposed amendments to the documents appropriately accommodate regulated SAPS?
- Are there any additional documents that we should review?

## 4. Next steps

Following the release of the draft amended documents and this explanatory statement, we will consider submissions from stakeholders before releasing the final amended documents. Indicative timing is shown in Table 2.

**Table 2 Outcomes of our review of relevant documents**

Indicative date	Project milestone/action
18 May 2022	AER publishes explanatory statement and draft amended documents
30 June 2022	Submissions close
1 August 2022	AER publishes final decision on the amendments and final amended documents

## Appendix A. Draft amendments to relevant documents

### A.1. RIT-D and RIT-D Application Guidelines

The regulatory investment test for distribution (RIT-D) aims to promote efficient investment through greater consistency, transparency and predictability in distribution investment decision-making. This is achieved in part by requiring DNSPs to consider credible options that are non-network options.

The RIT-D Application Guidelines provides instruction to DNSPs<sup>13</sup> about the process and application of the RIT-D.

The Amending Rule means that DNSPs must consider SAPS options along with non-network options as part of the RIT-D process. The amendments to these documents are mechanical in nature to update definitions, and the procedural and consultation requirements on DNSPs are substantively unchanged.

Table 3 shows where these changes are reflected in our draft amendments to the RIT-D and RIT-D Application Guidelines.

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<sup>13</sup> Or a Transmission Network Service Provider for joint planning projects.

**Table 3 Draft amendments to the RIT-D and RIT-D Application Guidelines to take into account the Amending Rule**

Change	Section
<b>Regulatory investment test for distribution</b>	
References to 'non-network options report' updated to 'options screening report'	1.1(2)(d) 1.1(7)(h) 1.1(12)
<b>RIT-D Application Guidelines</b>	
References to 'non-network options report' (or 'NNOR') updated to 'options screening report'	1.2 1.6 3.5.4 3.6.2 4 (incl. fig. 1) 4.2 4.3 4.5.1 5.3 5.4 6 B
References to 'applicable regulatory instruments' updated to 'applicable regulatory instruments or SAPS performance and supply standards'	3.1 3.3 B
Definitions included for 'SAPS performance and supply standards' and 'SAPS quality of supply principle'	3.1
References to 'notice of non-network options' updated to 'options screening notice'	1.6
References to 'non-network options report' updated to 'options screening report' in quote to reflect amendments to RIT-D	3.6
References to 'non-network options' updated to 'non-network options and/or SAPS options' or references to 'non-network option' updated to 'non-network option and/or a SAPS option', as the case may be	3.1 3.2.4 3.5.4 3.6.2 3.8.3 4 4.2 4.3 4.4 6 6.1 6.3
References to 'demand side engagement register' (or 'DSER') updated to 'industry engagement register'	4 4.2 4.3 4.4

	B
Definition and guidance provided for 'industry engagement register'	4
References to 'non-network option' updated to 'non-network option or (in relation to an adoptive SAPS network) a SAPS option' or references to 'non-network options' updated to 'non-network options, and (in relation to an adoptive SAPS network) SAPS options'	4.2
After 'A summary of potential credible options to address the identified need,' added 'as identified by the RIT-D proponent', to better align with NER cl. 5.17.4(e)(5)	4.2

## A.2. Connection Charge Guidelines for Electricity Retail Customers

This guideline sets out how DNSPs must develop a connection policy covering the circumstances in which connection charges are payable and the basis for determining the amount of such charges.

Consistent with the AEMC's policy intent to treat regulated SAPS customers similar to customers within the interconnected national electricity system, we have not prescribed a different connection charge framework for connections to regulated SAPS. The changes to the guideline are mostly mechanical in nature.

The AEMC's final report proposes that only Chapter 5A will apply where a person is seeking connection to a regulated SAPS. Chapter 5A has also been amended so that it applies to *Registered Participants* or *Intending Participants*<sup>14,15</sup> when they are:

- acting as the agent of a retail customer, or
- seeking connection or connection services in relation to a regulated SAPS.

For connection charging purposes, *Registered Participants* and *Intending Participants* will be treated in the same category as real estate developers. That is, *Registered Participants* and *Intending Participants* connecting to a SAPS are (like real estate developers) not eligible for the exemption from being charged for upstream augmentation.<sup>16</sup>

We have also added a paragraph to the guideline to clarify that the guideline also covers connections to SAPS.

Table 4 shows where these changes are reflected in our draft amendments to the guideline.

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<sup>14</sup> *Registered Participant* has the same meaning as that in the NER; namely, a person (for example, a generator or retailer) who is registered by AEMO in any one or more of the categories listed in NER rr. 2.2 to 2.7 (see exceptions in NER glossary). *Intending Participant* has the same meaning as that in the NER; namely, a person who intends to participate in the market and is registered by AEMO as an *Intending Participant* under NER ch. 2.

<sup>15</sup> The purpose of allowing Registered Participants and Intending Participants to seek connection to regulated SAPS includes, for example, to enable customers to buy from the NEM at the SAPS settlement price. In this context, *Registered Participants* and *Intending Participants* mainly refer to electricity retailers.

<sup>16</sup> Charge for augmenting a DNSP's network upstream from the point of connection.



**Table 4 Draft amendments to the Connection Charge Guidelines for Electricity Retail Customers to take into account the Amending Rule**

Change	Section
<p>Insert paragraph to clarify that the guideline applies to connections of retail customers to both the interconnected networks of DNSPs as well as for connections to Regulated Stand Alone Power Systems</p> <p>Added text to reflect changes to specific clauses in the Rules</p>	<p>Nature and authority – Application of this guideline</p>
<p>Added the words <i>Registered Participant or an Intending Participant</i> to text which describes what the connection charge guideline must do</p>	<p>Nature and authority – Requirements of the National Electricity Rules</p>
<p>Added the words “<i>Registered Participant or an Intending Participant</i>”</p>	<p>1.1.1</p>
<p>Added:</p> <ul style="list-style-type: none"> <li>- new section 8.1.1, explaining the limits of application of the guideline for <i>Registered Participant and Intending Participant</i></li> <li>- references to <i>Registered Participant</i> and <i>Intending Participant</i> to 8.1.2 to 8.1.5</li> </ul>	<p>8</p>
<p>Added definitions for <i>Intending Participant</i>, <i>Interconnected national electricity system</i>, <i>New connection</i>, <i>Registered Participant</i> and <i>Regulated Stand-alone Power System</i></p>	<p>12 - Definitions</p>

### A.3. Electricity Distribution Service Classification Guideline

This guideline provides a practical explanation of how the AER determines the type of economic regulation, if any, to be applied to distribution services.

The Amending Rule means that regulated SAPS are to be treated the same as the interconnected components of the distribution network for the purposes of service classification. It will also direct the AER to include regulated SAPS as a distribution service. The amendments to this guideline are mechanical in nature to update definitions.

Table 5 shows where these changes are reflected in our draft amendments to the guideline.

**Table 5 Draft amendments to the Electricity Distribution Service Classification Guideline to take into account the Amending Rule**

Change	Section
Footnote added that standard control services includes regulated SAPS	1.1
Footnote added that 'flow of electricity through the network' includes regulated SAPS	2.2.1
Regulated SAPS works included in Common distribution service—standard control classification	3.1 A
SAPS added to glossary	Glossary

## A.4. Distribution Reliability Measures Guideline

This guideline outlines a set of common definitions of reliability measures that can be used to assess and compare the reliability performance of DNSPs. This includes interruption frequency (SAIFI) and duration (SAIDI), which are reported by feeder type and the total network level.

The guideline will be updated so that the network reliability, security and quality standards that apply to grid-connected customers also apply to regulated SAPS customers. In this guideline, we propose to add a new “SAPS feeder” classification to SAIDI and SAIFI to reflect the unique characteristics of SAPS. We propose to treat each regulated SAPS as a single SAPS feeder. The reason for the changes are as follows:

- SAPS will mainly be formed in rural areas by converting rural feeders into SAPS feeder. We expect SAPS feeders will have much better reliability than rural feeders because of shorter length and local power source. Hence, they do not fit into a rural feeder category. They also do not fit into urban feeder category because of the location and power density.
- It is unlikely that the total number of customers within a SAPS will be large compared with typical network feeders on the interconnected grid. Therefore, we consider that the reliability measure for each SAPS can be adequately monitored to treat the entire SAPS as one entity (effectively as one feeder).
- A SAPS could be the product of a combination of multiple existing feeders to form a local supply precinct with centralised generating units. There can be several pre-existing feeders within the precinct to supply the customers within a SAPS if a new network type classification is not in place.

Table 6 shows where these changes are reflected in our draft amendments to the guideline.

**Table 6 Draft amendments to the Distribution Reliability Measures Guideline to take into account the Amending Rule**

Change	Section
Regulated SAPS added to definition of 'Feeder'	3.2
'Regulated SAPS' and 'SAPS feeder' added to definitions	3.2
Added that SAPS feeders are excluded from certain exclusions for the calculation of SAIDI, SAIFI, MAIFI and MAIFLe	3.3
SAPS added to shortened forms	4

## A.5. Expenditure Forecast Assessment Guideline for Electricity Distribution

This guideline describes the process, techniques and associated data requirements for our approach to setting efficient expenditure allowances for network businesses.

The Amending Rule means that we must have regard to how SAPS options, along with non-network options, have been considered and provided for in DNSPs' regulatory proposals. The amendments to this guideline are mechanical in nature to update definitions.

Table 7 shows where these changes are reflected in our draft amendments to the guideline.

**Table 7 Draft amendments to the Expenditure Forecast Assessment Guideline for Electricity Distribution to take into account the Amending Rule**

Change	Section
References to 'non-network options' updated to 'non-network options or SAPS options'	3.2.2 5.1