



Electricity

Code



Electricity Distribution Code

Draft for consultation

Version: EDC/13

1 July 2020

CONSULTATION DRAFT

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Amendment record

| ISSUE NUMBER | COMMENCEMENT DATE | PAGES |
|---------------|-------------------|-----------|
| EDC/01 | 01/01/2003 | 75 |
| EDC/02 | 24/04/2003 | 75 |
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| EDC/12 | 01/07/2015 | 18 |
| EDC12.1 | 16/01/2018 | 18 |
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1 Preliminary

1.1 Authority

- 1.1.1 This industry code is made by the **Commission** under section 28 of the *Essential Services Commission Act 2002*.
- 1.1.2 A provision of, or requirement or obligation imposed under, this industry code will only apply to a person where:
- (a) that provision, requirement or obligation is not inconsistent (directly or indirectly) with a substantially equivalent provision, requirement or obligation arising under Part 5 of the **National Electricity Rules** or the **National Energy Retail Law** (as in force from time to time); or
 - (b) there is no substantially equivalent provision, requirement or obligation arising under Part 5 of the **National Electricity Rules** or the **National Energy Retail Law** (as in force from time to time).

1.2 Application of this Industry Code

- 1.2.1 This industry code applies to:
- (a) the **distributor**
 - (b) **embedded generators** which are not registered under the **National Electricity Rules**, and
 - (c) commences on 1 July 2020, or as otherwise advised in the South Australian Gazette, and will remain in effect until revoked by the **Commission**.

1.3 Other Acts, Codes and guidelines

- 1.3.1 Not all aspects of the **distributor's** obligations are regulated by this industry code. The **distributor's** obligations and some aspects of the relationship between a **customer** and a **distributor** are also **contained in (without limitation)**:
- (a) Acts of Parliament and regulations made under those Acts of Parliament (in particular, the *Electricity Act 1996* (and associated regulations) and the *Essential Services Commission Act 2002*)
 - (b) any guidelines or rules made by the **Commission** from time to time
 - (c) the **National Electricity Rules** and associated National Procedures
 - (d) the **National Energy Retail Law, National Energy Retail Regulations** and **National Energy Retail Rules**
 - (e) the Electricity Metering Code
 - (f) the Electricity Transmission Code
 - (g) the Electricity Distribution Licence, and
 - (h) **the obligations owed to customers under contracts (provided that these contractual obligations are not inconsistent with the other obligations outlined in clause 1.3.1).**

1.4 Interpretation

- 1.4.1 In this Code, unless the context otherwise requires:
- (a) headings are for convenience only and do not affect the interpretation of this Code
 - (b) words importing the singular include the plural and vice versa
 - (c) words importing a gender include any gender identity
 - (d) an expression importing a natural person includes any company, partnership, trust, joint venture, association, corporation, **statutory corporation** or other body corporate and any governmental agency
 - (e) a reference to a person includes that person's executors, **guardian(s)**, administrators, successors, substitutes (including, without limitation, persons taking by novation) and permitted assigns
 - (f) a reference to any statute, regulation, proclamation, order in council, ordinance or by-law includes all statutes, regulations, proclamations, orders in council, ordinances or by-laws varying, consolidating, re-enacting, extending or replacing them and a reference to a statute includes all regulations, proclamations, orders in council, ordinances, by-laws and determinations issued under that statute
 - (g) a reference to a document or a provision of a document includes an amendment or supplement to, or replacement or novation of, that document or that provision of that document **and any annexures to that document**, and
 - (h) an event which is required under this code to occur on or by a stipulated day which is not a **business day** may occur on or by the next **business day**.

1.5 Definitions

- 1.5.1 In this Code words appearing in bold like **this** have the following meanings:

| | |
|----------------------------------|--|
| Act | means the <i>Electricity Act 1996 (SA)</i> |
| Adelaide Business Area | means that part of Adelaide shown in Map 1 of Schedule 1 and in which customers are supplied by feeders as agreed between SA Power Networks and the Commission or where agreement cannot reasonably be reached, then as determined by the Commission |
| augmentation | means works to enlarge or enhance the capability of the distributor's distribution network to distribute electricity |
| Australian Standard or AS | means a standard published by Standards Australia |
| best endeavours | means to act in good faith and use all reasonable efforts, skill and resources |
| business day | means a day that is not a Saturday, a Sunday or a public holiday in the State of South Australia |

| | |
|--|--|
| CBD feeder | means a feeder in the CBD area supplying predominantly commercial, high-rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy when compared to urban areas |
| Commission | means the Essential Services Commission established under the <i>Essential Services Commission Act 2002</i> |
| connection | means to form a physical link to a distribution network |
| country area | means an area outside of major metropolitan areas |
| customer | has the meaning given to that term in the Act , namely a person who has a supply of electricity available from a transmission network or distribution network for consumption by that person and includes: <ul style="list-style-type: none"> (a) the occupier for the time being of a place to which electricity is supplied; and (b) where the context requires, a person seeking an electricity supply; and (c) a person of a class declared by regulations under the Act to be customers. |
| distributor | means a holder of a licence to operate a distribution network under Part 3 of the Act |
| distribution network | has the meaning given to that term in the Act |
| Electricity Distribution Determination | means any applicable determination made by the Australian Energy Regulator in accordance with the National Electricity Law and the National Electricity Rules in force from time to time and includes any instruments made under or in connection with that determination |
| emergency | means an emergency due to the actual or imminent occurrence of an event which in any way endangers or threatens to endanger the safety or health of any person, or the maintenance of power system security, in the state of South Australia or which destroys or damages, or threatens to destroy or damage, any property in the state of South Australia |
| embedded generator | means a generator who owns, operates or controls an embedded generating unit |

| | |
|---|---|
| embedded generating unit | means a generating unit which is connected to a distribution network and does not have direct access to a transmission network |
| feeder | means an electric powerline and associated equipment which the distributor uses to distribute electricity |
| Greater Adelaide Metropolitan Area | Means the area indicated in Map 2 of Schedule 2 and in which customers are supplied by feeders as agreed between SA Power Networks and the Commission or where agreement cannot reasonably be reached, then as determined by the Commission |
| good electricity industry practice | has the meaning given to it by the National Electricity Rules (as amended from time to time). |
| high voltage | means a voltage of or greater than 1,000 volts |
| interruption | means a planned or unplanned interruption of, or restriction to, distribution services of at least three minutes in duration, other than an interruption or restriction due to an emergency , a generation failure or a transmission failure |
| large embedded generator | means an embedded generator other than a small embedded generator |
| Low reliability feeder | means a feeder with a USAIDI_n twice as high as the target for that region as outlined in this industry code for two consecutive regulatory years |
| Major Metropolitan Areas | means the Adelaide Business Area , Greater Adelaide Metropolitan Area as indicated in Map 2 of Schedule 1 and Major Regional Areas including Mount Barker, Mount Gambier, Port Augusta, Port Lincoln and Whyalla in which customers are supplied by feeders as agreed between SA Power Networks and the Commission or where agreement cannot reasonably be reached , then as determined by the Commission |
| Major Event Day (MED) | has the meaning given to that term in the current version of the Institute of Electrical and Electronics Engineers IEEE Standard 1366-2012 |
| Momentary interruption | means an interruption to a distribution customer's electricity supply with a duration of three minutes or less, provided that the end of each momentary interruption is taken to be when electricity supply is restored for any duration |

| | |
|------------------------------------|---|
| National Electricity Law | means the National Electricity Law, as contained within the National Electricity (South Australia) Act 1996 |
| National Electricity Rules | has the meaning given to that term in the National Electricity Law |
| National Energy Retail Law | has the meaning given to that term in the National Energy Retail Law (South Australia) Act 2011 as in force from time to time |
| National Energy Retail Regulations | means the Regulations made under Part 11 of the National Energy Retail Law |
| National Energy Retail Rules | means the Rules made under Part 10 of the National Energy Retail Law |
| other areas | means all areas in which customers are supplied other than the Adelaide Business Area and Major Metropolitan Areas |
| planned interruption | has the meaning given to the term distributor planned interruption by the National Energy Retail Rules (as amended from time to time). |
| regulatory year | means the period commencing on 1 July and ending on 30 June the following calendar year (for example the regulatory year for 2020 will commence on 1 July 2020 and will end on 30 June 2021) |
| Rural long | means a feeder which is not a CBD feeder , urban feeder or a short rural feeder |
| Rural short | means a feeder which is not a CBD feeder or urban feeder with a total feeder route length less than 200 km |
| SA Power Networks | means SA Power Networks (ABN 13 332 330 749) a partnership comprising Spark Infrastructure (No.1) Pty Ltd (ABN 54 091 142380), Spark Infrastructure (No.2) Pty Ltd (ABN 19 091 143 038), Spark Infrastructure (No. 3) Pty Ltd (ABN 50 091 142 362), CKI Utilities Development Ltd (ABN 65 090 718 880), and PAI Utilities Development Ltd (ABN 82 090 718 951) and includes any wholly owned subsidiary of any of the partners that provides distribution services for or on behalf of the partners |
| small embedded generator | means an embedded generator which owns, operates or controls an embedded generating unit that complies with the requirements of AS 4777 |
| street light fault | means an occasion on which a street light has gone out as a result of a fault in the luminaire, |

which includes the globe, photoelectric cell, and the wiring to the luminaire block. Instances of damage to street lights where the light has not gone out (including but not limited to damaged or missing lighting covers, flickering or dimmed street lights, or damaged poles) are not street light faults

| | |
|------------------------|--|
| supply | means the delivery of electricity |
| supply address | means the address for which a customer purchases electricity |
| transmission network | has the meaning given to that term in the Act |
| Urban Feeder | means a feeder , which is not a CBD feeder , which has a three-year average maximum demand over the three-year average feeder route length greater than 0.3 mega-volt amps/km |
| unplanned interruption | has the meaning given by the National Energy Retail Rules (as amended from time to time). |
| USAID _n | means Unplanned System Average Interruption Duration Index (normalised to exclude MED) |
| USAIF _n | means Unplanned System Average Interruption Frequency Index (normalised to exclude MED) |

1.5.2 References to **Australian Standards** are references to standards existing from time to time **as amended**, or where they are superseded, their replacements.

2 Service Standards

2.1 Customer Service Measures

2.1.1 The **distributor** must use its **best endeavours** to achieve the following **customer service standards** during each **and every regulatory year**.

| Category | Customer Service measure | Target |
|------------------|---|---|
| Customer service | Time to respond to telephone calls | 85% within 30 seconds |
| Customer service | Time to respond to written enquiries | 95% within 5 business days after receipt of the written enquiry |

2.1.2 **Responding to telephone calls means:**

- (a) answering a **customer's** telephone call in person, or
- (b) answering a **customer's** telephone call after they have used an Interactive Voice Response system to elect to talk to an operator (with monitoring of the call waiting time commencing when the caller selects the relevant operator option and covers the time from this point until an operator picks up the call to deal with the caller's issue), or
- (c) answering a **customer's** telephone call by providing access to a computer/telephony based interactive service which is able to process calls by providing information or direct calls to a service officer, but

does not include the answering of a call by being placed in an automated queue to wait for any one of the options above.

2.1.3 When responding to telephone calls the **distributor** must at all times use its **best endeavours** to ensure that all **of the** information provided, including that which is provided by means of a computer/telephony based interactive service, is current and accurate **and that vital information for customers is not omitted**.

2.1.4 A written enquiry is an enquiry by the use of email, fax, **a distributor's website, direct messaging on social media channels used by a distributor,** or by letter **sent by a customer** to a **distributor**, via nominated enquiry channels, requesting information from the **distributor** **and/or** making a complaint about an action of the **distributor**.

2.1.5 A response to such an enquiry **means** direct or telephone contact or a written response in which the **distributor** either answers the enquiry or acknowledges receipt of the enquiry and indicates the process and timetable to be followed in dealing with the enquiry.

2.2 Reliability Measures

2.2.1 Network Reliability Standards

- (a) The distributor must use its best endeavours to achieve the following minimum network reliability standards during each and every regulatory year.
- (b) The distributor is only required to report on how it has applied its best endeavours if it fails to meet the reporting thresholds set out in the following table.

Network reliability minimum performance targets and reporting thresholds

| | CBD Feeders | Urban Feeders | Rural Short Feeders | Rural Long Feeders |
|-------------------------------|-------------|---------------|---------------------|--------------------|
| USAIDIn - target | 15 | 110 | 200 | 290 |
| USAIDIn - reporting threshold | 20 | 125 | 220 | 330 |
| USAIFIn - target | 0.15 | 1.15 | 1.65 | 1.75 |
| USAIFIn – reporting threshold | 0.20 | 1.35 | 1.85 | 2.10 |

Note: These targets reflect unplanned interruptions on the low voltage and high voltage distribution networks. They exclude planned interruptions, momentary interruptions; and any unplanned interruptions that occur on MEDs.

2.2.2 Network restoration standards

- (a) The distributor must use its best endeavours to achieve the minimum network restoration time targets for the proportion of the customers in each feeder category that experience unplanned interruptions that exceed the defined time periods set out in the following table during each and every regulatory year.

Network restoration time targets

| | CBD Feeders | Urban Feeders | Rural Short Feeders | Rural Long Feeders |
|--|-------------|---------------|---------------------|--------------------|
| Interruption equal to or greater than 1 hour | 10% | | | |
| Interruption longer than 2 hours | 5% | 25% | | |
| Interruption longer than 3 hours | | 10% | 25% | |
| Interruption longer than 4 hours | | | | 30% |
| Interruption longer than 5 hours | | | 10% | |
| Interruption longer than 7 hours | | | | 10% |

Note: These targets reflect unplanned interruptions on the low voltage and high voltage distribution networks. They exclude planned interruptions, momentary interruptions, and any unplanned interruptions that occur on MEDs.

- (b) The distributor is only required to report on how it has applied its best endeavours if its performance fails to meet the reporting thresholds set out in the following table.

Network restoration time reporting thresholds

| | CBD Feeders | Urban Feeders | Rural Short Feeders | Rural Long Feeders |
|--|-------------|---------------|---------------------|--------------------|
| Interruption equal to or greater than 1 hour | 12.5% | | | |
| Interruption longer than 2 hours | 7.5% | 27.5% | | |
| Interruption longer than 3 hours | | 12.5% | 27.5% | |
| Interruption longer than 4 hours | | | | 32.5% |
| Interruption longer than 5 hours | | | 12.5% | |
| Interruption longer than 7 hours | | | | 12.5% |

Note: These thresholds reflect unplanned interruptions on the low voltage and high voltage distribution networks. They exclude planned supply interruptions, momentary interruptions, and any unplanned interruptions that occur on MEDs.

2.2.3 Minimise interruptions

- (a) A distributor must use its best endeavours to:
- (i) minimise interruptions or limitations to supply caused by:
 - (A) carrying out maintenance or repair work to the distribution network
 - (B) connecting a new supply address to the distribution network
 - (C) carrying out augmentations or extensions to the distribution network, and
 - (ii) restore supply as soon as reasonably practicable.

2.3 Guaranteed Service Level scheme

2.3.1 The distributor must meet the following service standards:

- (a) Required timeframes for the connection of new supply addresses

The distributor must use its best endeavours to provide infrastructure to enable a connection for a customer's new supply address either:

- (i) on a date agreed with the customer, or
- (ii) where no date has been agreed with the customer, within 6 business days after the customer has met all of the necessary pre-conditions for connection.

The distributor must pay the customer \$65 (including GST) for each day it is late in connecting the customer, up to a maximum of \$325 (including GST).

(b) Repair of **street light faults**

- (i) The **distributor must** use its **best endeavours** to repair **street light faults affecting lights** for which it is responsible within five **business days** in the Adelaide metropolitan and CBD area, Whyalla, Mount Gambier, Mount Barker, Gawler, Stirling, Murray Bridge, Port Augusta, Willunga, Port Pirie and Port Lincoln,, and **within 10 business days in other areas**, from the date on which the **street light fault** is reported to the **distributor**.
- (ii) The **distributor must** pay the first person (provided that this person did not deliberately cause the damage to the street light) to report the **street light fault** \$25 (including GST) for each period (five or 10 business days as outlined above) in which the **street light fault** is not repaired.
- (iii) For the purpose of calculating when the five or 10 business day period commences the following conditions apply:
- (A) the **business day** on which a report is made is day zero
 - (B) a report made on a Saturday, a Sunday or a public holiday will be deemed to occur on the next **business day**
 - (C) a report made by telephone is deemed to occur on that **business day**
 - (D) a report made by other means before 4.00 pm is deemed to occur on that **business day**, and
 - (E) a report made by other means after 4.00 pm is deemed to occur on the next **business day**.
- (iv) While multiple **street light fault** reports may be made by a person on any day in respect of street lights for which the **distributor** is responsible, the **distributor's** liability to pay the person \$25 (including GST) for each period (five or 10 **business days** as outlined above) in which a **street light fault** is not repaired relates only to the first 40 **street light fault** reports (inclusive) made by that person on that day (including deemed reports).

(c) Minimise frequency and duration of supply interruptions

The **distributor must** use its **best endeavours** to minimise the frequency and duration of **supply interruptions** to a **customer's supply address**. If the **total number of interruptions** and/or **the total duration of all interruptions across a regulatory year** exceeds the thresholds in the following tables the **distributor must** make payments to **customers** experiencing **interruptions** as set out in those tables.

Thresholds and payment amount – frequency of interruptions

| | Threshold |
|--|-----------|
| Number of interruptions in a regulatory year | > 9 |
| Payment | \$100 |

Thresholds and payment amounts – total annual duration of interruptions

| | Threshold 1 | Threshold 2 | Threshold 3 |
|-----------------------------|---------------|-------------|-------------|
| Total annual duration (hrs) | > 20 and ≤ 30 | >30 and ≤60 | >60 |
| Payment | \$100 | \$150 | \$300 |

Payments will be made in the quarter directly following the **end of the regulatory year**. Payments will be made in respect of the **supply address**, not the **customer**.

The above scheme excludes:

- (i) interruptions caused by the following:
 - (A) transmission and generation failures
 - (B) disconnection required in an emergency situation (e.g. bushfire)
 - (C) single **customer** faults caused by that **customer**
- (ii) **momentary interruptions**
- (iii) planned interruptions, and
- (iv) **partial interruptions to a supply address such as:**
 - (A) **interruptions** that affect only one or two phases of **supply** at a **supply address** with three phase **supply**, and/or
 - (B) **interruptions** to one connection point where the **supply address** has multiple connection points.

2.3.2 Interruptions outside control of **distributor**

- (a) If an **interruption** arises from one or more events or circumstances that are not caused by and are outside the control of the **distributor** (for example bushfire, lightning, storm, flood) and:
 - (i) the **distributor** is prevented from restoring **supply** by an event or circumstance that is not caused by and is outside the control of the **distributor**, or
 - (ii) in circumstances where the **distributor** took steps to restore, or to seek to restore, **supply** during or following the event or circumstance, those steps would, or would be likely to, result in a serious risk to the health or safety of any person (including a serious risk to the health or safety of any employee or contractor of the **distributor** other than a risk that arises in the ordinary course of the person's employment or the performance of their contractual obligations),

the period of time during which (as applicable):

- (iii) the **distributor** is so prevented, or
- (iv) the serious risk to the health or safety of that person continues to exist,

will not be counted in determining whether the **distributor** has exceeded a timeframe set out in **clause 2.3.1(c)**.

- (b) When the event(s) or circumstances that prevent the **distributor** from restoring **supply** or that give rise to a serious risk to the health or safety of a person, have ended or ceased, the **distributor** must use its best endeavours to restore **supply**.
- (c) The **distributor** must use its **best endeavours** to give prompt notice to affected **customers** including details of the event, an estimate of likely duration, the extent to which obligations are affected and the steps taken to remove, overcome or minimise those effects.

2.4 Reconnection after disconnection

2.4.1 Where a **distributor** is obliged under the **National Energy Retail Rules** to reconnect a **customer's supply address** the **distributor** must connect the **customer's supply address** in accordance with this clause

(a) Requests made to the distributor by 5.00 pm on a business day

Where the **customer** makes a request for reconnection to its **retailer** before 4.00 pm or to the **distributor** before 5.00 pm on a **business day**, the **distributor** must:

- (i) reconnect the supply address on the day of the request in the **Adelaide Business Area** and **Major Metropolitan Areas**, and
- (ii) use its **best endeavours** to reconnect on the day of the request in **other areas** and, in any event, by the next **business day**.

(b) Requests made to the distributor between 5.00 pm and 10.00 pm on a business day

Where the **customer** makes a request for reconnection to its **retailer** after 4.00 pm but before 9.00 pm on a **business day**, or to its **distributor** after 5.00 pm but before 10.00 pm on a **business day**, and pays the **distributor's** reasonable after hours reconnection charge, the **distributor** must:

- (i) reconnect on the day requested by the **customer** in the **Adelaide Business Area** and **Major Metropolitan Areas**, and
- (ii) use its **best endeavours** to reconnect on the day requested by the **customer** in **other areas** and, in any event, by the next **business day**.

(c) Requests made to the distributor after 10.00 pm on a business day

Where under clause 2.4.1 a **distributor** is obliged to reconnect a **customer** and the **customer** makes a request for reconnection to its **retailer** after 9.00 pm on a **business day** or to the **distributor** after 10.00 pm on a **business day**, the **distributor** must reconnect the **supply address** as soon as possible and in any event by the end of the next **business day**.

(d) Requests made to the distributor made at any time on days that are not a business day

Where under clause 2.4.1 a **distributor** is obliged to reconnect a **customer** and the **customer** makes a request for reconnection to its **retailer** or to the **distributor** on a day that is not a **business day** the **distributor** must reconnect the **supply address** as soon as possible on the next **business day** and in any event by the end of the next **business day**.

2.5 Compliance and record keeping

2.5.1 The **distributor** must comply with any directions issued by the **Commission** from time to time concerning the definition and interpretation of service standards contained within **clause 2 of this industry code**. The **distributor** must keep sufficient records to monitor its performance level and to provide the information required.

2.6 Monitoring, Evaluation and Compliance Strategy

2.6.1 The **distributor** must publish and provide to the **Commission** a written Monitoring, Evaluation and Compliance Strategy that outlines how it will apply its **best endeavours** in pursuing the requirements set out in clauses 2.1 to 2.4 of this industry code, before the commencement of each **regulatory year**.

2.6.2 The Monitoring, Evaluation and Compliance Strategy document must be prepared in compliance with the **Commission's** Electricity Industry Guideline No. 1 (as amended from time to time).

2.7 Performance reporting

2.7.1 The **distributor** must provide regular written reports to the **Commission** in a manner and form defined by the **Commission's** Electricity Industry Guideline No. 1:

- (a) annually (by 31 August each year or, alternatively, on such date(s) as agreed with the **Commission** in writing from time to time), concerning its performance during the previous **regulatory year** and
- (b) quarterly (within one month of the quarter ending, or as agreed with the **Commission** in writing from time to time), regarding its performance during the current **regulatory year**.

2.7.2 Without limiting the content of regular written reports, the **distributor** must report to the **Commission**, in a manner and form defined by the **Commission's** Electricity Industry Guideline No. 1.

2.7.3 The **Commission** may require additional irregular reporting of the **distributor** on its performance on **MEDs**, including details of preparedness and restoration practices.

2.7.4 The **distributor** must report directly to the public on:

- (a) its performance against service standards set out in clauses 2.1 to 2.4 of this industry code during the previous **regulatory year**
- (b) its performance in the regions defined **Commission's** Electricity Industry Guideline No. 1 (as amended from time to time), and
- (c) instances of non-compliance with service standards, the reason(s) for the non-compliance and an explanation of how the **distributor** intends to improve its performance so as to meet the service standards set out in clauses 2.1 to 2.4.

2.7.5 The **distributor** must report directly to the public:

- (a) in a manner that **customers** and other members of the public can reasonably access
- (b) annually by 31 August each year or, alternatively, at such date(s) as agreed with the **Commission** in writing from time to time, with additional reporting following events that have a significant impact on performance, and

(c) by updating a time-series dataset to allow public comparison and analysis of performance.

2.8 Country Lines

2.8.1 A **distributor** must not, without the **Commission's** prior written approval, discontinue or cease to operate, maintain or service those parts of its **distribution network** which are in **country areas**.

CONSULTATION DRAFT

3 Connection of Embedded Generation Units

3.1 Application of Chapter 3

3.1.1 This Chapter 3:

- (a) regulates an **embedded generator's** access to a **distribution network** in South Australia where the **National Electricity Rules** do not apply in respect of that **embedded generator**, and
- (b) applies to:
 - (i) distributors
 - (ii) each small embedded generator
 - (iii) any **large embedded generator** that is not required to be registered under the **National Electricity Rules**, and
 - (iv) **embedded generators** which are exempt under the *Electricity (General) Regulations 2012* from the requirement to be licensed as a generator under the **Act**.

3.2 Obligation for Connection Agreements

3.2.1 The **distributor** must only connect an **embedded generator's embedded generating unit** to its **distribution network** in accordance with the requirements of this Chapter 3, **and in accordance with good electricity industry practice.**

3.3 Connection where a Small Embedded Generator is also a Customer

3.3.1 Where a **small embedded generator**:

- (a) applies to the **distributor** for the **connection** of its **embedded generating unit** to the **distribution network**, and
- (b) is also a **customer** at the **connection point** at which the **embedded generating unit** is to be connected,
the **distributor** must provide that **connection** as soon as practicable once the **small embedded generator** has complied with any standard application requirements established by the **distributor**.

3.3.2 For the purposes of clause 3.3.1(a), the standard application requirements established by the **distributor**:

- (a) must be of a standard form and published on the **distributor's** website
- (b) may require the provision of information about the **small embedded generator** including, without limitation, the identity of the **small embedded generator** and the nature and location of the **embedded generating unit**
- (c) must not require the **small embedded generator** to enter into any agreement, arrangement, contract or undertaking in respect of the **connection** of the **embedded generating unit**
- (d) must not impose any rights or obligations on either party, other than the right for the **small embedded generator** to be connected in accordance with this clause 3.3 where the standard application requirements are met and the right for the **distributor** to disconnect the **embedded generating unit** where it is

satisfied, on reasonable grounds, that the standard application requirements are no longer met or that the **embedded generating unit** is affecting the quality of **supply** to other **customers**, and

- (e) may require the **small embedded generator** to pay the **distributor** a **connection** fee provided that any such fee is established in accordance with the **Electricity Distribution Determination**.

3.4 Connection where a Small Embedded Generator is not a Customer

3.4.1 Where a **small embedded generator**:

- (a) applies to the **distributor** for the **connection** of its **embedded generating unit** to the **distribution network**, and
- (b) is not a **customer** at the **connection point** at which the **embedded generating unit** is to be connected,

the **distributor** must provide that **connection** in accordance with the terms and conditions of a standard **connection** agreement for **small embedded generators** developed by the **distributor**.

3.4.2 The **distributor** must seek the **Commission's** prior written approval to use a standard **connection** agreement for **small embedded generators** developed by the **distributor** under clause 3.4.1.

3.4.3 If the **Commission** does not approve a standard **connection** agreement for **small embedded generators** submitted under clause 3.4.2, the **Commission** may:

- (a) require the **distributor** to amend the standard **connection** agreement in accordance with any direction of the **Commission** and resubmit that amended standard **connection** agreement for the **Commission's** approval for the purposes of clause 3.4.2, or
- (b) amend the standard **connection** agreement and approve that amended standard **connection** agreement for use by the **distributor** for the purposes of clause 3.4.1.

3.4.4 The **distributor** must seek the **Commission's** prior written approval to vary the terms and conditions of the standard **connection** agreement which has previously been approved by the **Commission** under clause 3.4.2.

3.4.5 The terms and conditions of a standard **connection** agreement approved by the **Commission** for the purposes of clause 3.4.1, as varied from time to time in accordance with clause 3.4.4, must be published by the **distributor** on its website.

3.4.6 The **distributor** may enter into a negotiated **connection** agreement with a **small embedded generator** on fair and reasonable terms and conditions agreed by that **small embedded generator** and approved by the **Commission**.

3.5 Connection Agreements for Large Embedded Generators

3.5.1 The **distributor** must only agree to provide **connection** services to a **large embedded generator** in accordance with the terms and conditions of a **connection** agreement which is fair and reasonable and agreed by that **large embedded generator**.

3.6 Connection charges

- 3.6.1 The **distributor** may only charge an **embedded generator** a **connection charge** in respect of the **connection** of the **embedded generator's embedded generating unit** to the **distribution network** which has been calculated in accordance with the **Electricity Distribution Determination**.

3.7 Extension charges

- 3.7.1 The **distributor** may only charge an **embedded generator** an **extension charge** in respect of the **connection** of the **embedded generator's embedded generating unit** to the **distribution network** which has been calculated in accordance with the **Electricity Distribution Determination**.

3.8 Augmentation charges

- 3.8.1 The **distributor**:
- (a) must not charge a **small embedded generator** for any **augmentation** required as a result of the **connection** of the **small embedded generator's embedded generating units** to the **distribution network**, and
 - (b) may only charge a **large embedded generator** an **augmentation charge** for any **augmentation** required as a result of the **connection** of the **large embedded generator's embedded generating units** which has been calculated in accordance with the **Electricity Distribution Determination**.

3.9 Coordination of Large Embedded Generating Units

- 3.9.1 **Large embedded generators** must comply with the following requirements:
- (a) the **embedded generating unit** must be synchronised to the **distribution network**
 - (b) the **embedded generating unit's** real and reactive power output or voltage output must be automatically controlled within limits agreed with the **distributor**. A nominal full load power factor of 0.8 lagging must be provided
 - (c) the **embedded generator's** voltage and frequency response times must be within the limits specified by the **distributor**. If the **embedded generator's** frequency rises above or falls below the system frequency for more than the time specified by the **distributor**, it must be disconnected from the **distribution network**
 - (d) the **embedded generating unit** must be fitted with necessary protection relays, as agreed with the **distributor**, in order to coordinate its ability to isolate itself from the **distribution network** in the event of a fault on either the **distributor's distribution network** or the **embedded generator's** electricity infrastructure
 - (e) the **embedded generating unit** must be equipped with lockable means of isolation from the **distribution network**
 - (f) unless otherwise agreed with the **distributor**, an **embedded generator** must allow for the **connection** of a communication link between the **embedded generation unit** and the **distributor's** substation to monitor and as necessary trip the generator in an **emergency**

- (g) asynchronous **embedded generating units** must be equipped with controlled power factor correction capacitors to support necessary VAR loading requirements, and
- (h) any other reasonable requirement of the **distributor**.

3.10 Capacity

- 3.10.1 The capacity of **embedded generator's** plant shall not exceed the capacity of the **distribution network** in terms of:
- (a) its capacity to accept export energy
 - (b) its capacity to provide **emergency** energy in the event of a generator trip, and
 - (c) its fault level.

3.11 Scheduling

- 3.11.1 Unless otherwise agreed with the **distributor**, a **large embedded generator** with an **embedded generating unit** over 1 MW must advise the **distributor** prior to **connection** or disconnection of the **embedded generating unit**.
- 3.11.2 The rate of change of an **embedded generating unit** over 1 MW must be agreed with the **distributor**.

3.12 Minimum requirements for Embedded Generating Units over 1 MW

- 3.12.1 Unless otherwise agreed with the **distributor**, any **embedded generating unit** over 1 MW must:
- (a) have an automatic excitation control system for volts and power factor
 - (b) have a governor control for speed (frequency) and load (MW) control, and
 - (c) be equipped with protection and auto synchronising equipment as defined by the **distributor**.

3.13 Delivery performance requirements of Embedded Generation Units

- 3.13.1 An **embedded generator's** plant shall be able to:
- (a) respond safely to network disturbances
 - (b) shut down safely without external electricity **supply**
 - (c) restart following loss and restoration of **supply**, and
 - (d) operate in a stable manner on the **distribution network** during system disturbances.

3.14 Voltage Quality

- 3.14.1 An **embedded generator** must ensure that its **embedded generating** plant does not contribute to the permitted levels of voltage unbalance, voltage fluctuation and harmonic content specified by the **distributor** being exceeded.

3.15 Fault Levels

- 3.15.1 An **embedded generating unit** must be designed to work within and not contribute (other than an agreed contribution) to the system maximum fault level and the **feeder** capacity to which it is connected.

3.16 Earthing

- 3.16.1 A **large embedded generator** must ensure that its **embedded generating units** are earthed in accordance with the **distributor's** earthing requirements. The **embedded generator** must provide earth fault protection to isolate each **embedded generating unit** from the **distribution network** under earth fault conditions.

3.17 Interference

- 3.17.1 If the **distributor** notifies the **embedded generator** that its **embedded generating unit** is causing interference above the limits set out in **AS/NZS 2344, AS2279, AS/NZS 61000 3.2, 3.3 or 3.5**, the **embedded generator** must reduce the level of interference to below these limits within 90 days.

Schedule 1 – Maps

Map 1 – Adelaide Business Area



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Map 2 – Greater Adelaide Metropolitan Area



This Industry Code was made by the **Commission** on [date to be inserted] pursuant to Part 4 of the Essential Services Commission Act 2002, to take effect on and from the date on which it is notified in the Gazette.

The **COMMON SEAL** of)
the **ESSENTIAL SERVICES**)
COMMISSION was hereunto affixed)
by authority of the **ESSENTIAL**)
SERVICES COMMISSION and)
in the presence of:)

.....
Commissioner

.....
Date

CONSULTATION DRAFT



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