

Appendix 1: PROPOSED SOROP

System Operator Rolling Outage Plan

Effective from DD MMMM 2024

1. Background

- 1.1 This Plan is the **system operator rolling outage plan**, which the **system operator** is required to prepare and **publish** under clause 9.2 of the **Code**. ~~This Plan replaces the system operator rolling outage plan issued by the Electricity Commission on 30 September 2010 or 19 June 2016.~~
- 1.2 This Plan provides for the management and co-ordination of planned outages as an emergency measure during energy shortages.
- 1.3 Other policies and procedures detail how the **system operator** will provide security of supply related information and respond in other ways to emergencies and security of supply situations. These include the **security of supply forecasting and information policy**, the **emergency management policy**, the **policy statement**, and the clauses of the **Code** relating to **grid emergencies**.

2. Glossary

- 2.1 In this Plan, unless the context otherwise requires-

capacity savings target means a **savings target** expressed as a maximum instantaneous demand (in MW) during a period.

Code refers to the Electricity Industry Participation Code 2010

~~controlled-available~~ **hydro storage** has the meaning given to that term in the **security of supply forecasting and information policy**.

contingent hydro storage has the meaning given to that term in the **security of supply forecasting and information policy**.

developing event ~~has the meaning given to that term in paragraph 3.3~~ means an event arising over time that could cause a **supply shortage**. An example of a **developing event** is an extended period of reduced generating capacity.

direction means a direction given by the **system operator** to a **specified participant** under clause 9.15(1) of the **Code**.

energy savings target means a **savings target** expressed ~~maximum level of~~ as a percentage of the **specified participant's forecast** electricity consumption (in MWh) ~~as forecast~~ over a period of time.

extended emergency has the meaning given to that term in the **emergency management policy**.

full information plan has the meaning given to that term in paragraph 6.17

immediate event ~~has the meaning given to that term in paragraph 3.3~~ means an event arising with little or no time that could cause a **supply shortage**. An example of an **immediate event** is an unexpected outage of a major transmission line or **generating plant**.

outage means a reduction in demand or electricity consumption by specified participants due to a lack of electricity supply or transmission capacity.

rolling outages means reductions in **demand** or **electricity** consumption implemented by **specified participants** in order to comply with **directions**.

savings target means a **demand** or **electricity** consumption target contained within a **direction**.

supply shortage ~~has the meaning given to that term in paragraph 3.1 of this Plan.~~ means a situation when the **system operator** considers that the normal operation of the spot market for electricity is, or will soon be, unlikely to facilitate the adjustment of supply and **demand** necessary to ensure supply matches **demand** for extended periods of time and if planned **outages** are not implemented, unplanned **outages** are likely.

- 2.2 In Part 9 of the **Code** and this Plan a **grid owner** is a **distributor**.
- 2.3 References in this Plan to a **distributor's demand** or **electricity** consumption mean the **demand** or **electricity** consumption on the **distributor's network**.
- 2.4 Any term in bold that is defined in the **Code** and used but not defined in this Plan has the same meaning as in the **Code**.
3. **Supply shortages and supply shortage declarations** ~~(clauses 9.4(a) and 9.4(b) of the Code)~~

Supply shortages

- 3.1 Clause 9.14(2) of the **Code** provides that the **system operator** may make a **supply shortage declaration**. ~~only if there is a shortage of **electricity** supply or transmission capacity such that the **system operator** considers-~~

- (a) ~~the normal operation of the spot market for electricity is, or will soon be, unlikely to facilitate the adjustment of supply and demand necessary to ensure that supply matches demand; and~~
- (b) ~~if planned outages are not implemented, unplanned outages are likely.~~

~~This situation is referred to in this Plan as a **supply shortage**.~~

3.2 A **supply shortage** is different from a ~~shortage situation~~, which is a condition for scarcity pricing under Part 13 of the **Code** does not constitute an **unsupplied demand situation**. A **supply shortage** may coincide with such a situation.

3.3 ~~There is a range of events that could cause a **supply shortage**. Some events may develop over time (a **developing event**) and some events may arise with little or no warning (an **immediate event**). Examples of events that could contribute to a **supply shortage** are a period of low hydro inflows or an extended outage of a major transmission line or **generating plant**.~~
[Revoked]

3.4 A **supply shortage** is a condition of an **extended emergency**. The **emergency management policy** sets out various means available to the **system operator** to manage **extended emergencies**, which include **rolling outages**.

Thresholds for supply shortage declarations

3.5 Under clause 9.14(1) of the **Code** the **system operator** has discretion to make a **supply shortage declaration** when there is a **supply shortage**. The **system operator** will make a **supply shortage declaration** for a shortage of electricity supply if-

- (a) an **official conservation campaign** has commenced; and
- (b) an extended period of unplanned **outages** at any **GXP** is forecast to occur within the next 35 days under current modelling forecasts.

3.5A The **system operator** will make a **supply shortage declaration** for a shortage of transmission capacity if an extended period of unplanned **outages** at any **GXP** is forecast to occur within the next 35 days under current modelling forecasts.

3.5B The **system operator** will revoke the **supply shortage declaration** when an extended period of unplanned **outages** at all **GXP**s will not occur within the next 35 days under current modelling forecasts.

- (a) ~~make a **supply shortage declaration** when it considers the probability of unplanned outages occurring as a result of a **supply shortage** is greater than 50%; and~~
- (b) ~~revoke the **supply shortage declaration** when it considers the probability of unplanned outages occurring as a result of the **supply shortage** is 50% or less.~~

3.6 The **system operator's** determination of ~~the likelihood of~~ unplanned outages will take into account the following factors-

- (a) ~~controlled~~ available hydro storage.
- (b) **contingent hydro storage**
- (c) ~~historical~~ forecast hydro inflows for the next five weeks, assuming minimal (1 percentile) daily inflows after the next seven days
- (d) ~~weather and climate forecasts relating to future hydro inflows~~ profiled wind, solar, geothermal, thermal, and run of river hydro generation using weather and climate forecasts.
- (e) expected generation availability, based on the planned outage co-ordination process.
- (f) ~~expected~~ forecast electricity consumption over the next 35 days.
- (g) thermal fuel availability.
- (h) transmission configuration and capacity.

3.7 If a **supply shortage** is caused by a power system event, it is likely any **supply shortage declaration** will be preceded by a **grid emergency** caused by a ~~deficit~~ shortfall of energy or **instantaneous reserve**. If the **grid emergency** is likely to persist for a sustained period, the **system operator** will make a **supply shortage declaration** if it considers the **supply shortage** would be more appropriately managed by **rolling outages**.

Notice period

3.8 During a **developing event** the **system operator** will endeavour to provide at least ~~14~~ seven days' notice to **specified participants** in the region affected by the **supply shortage** of a **supply shortage declaration**, including the time and date the **supply shortage declaration** is likely to be made. If it is not reasonably practicable to provide ~~14~~ seven days' notice, the **system operator** will provide as much prior notice as reasonably practicable.

3.9 During an **immediate event** the **system operator** will provide as much prior notice as reasonably practicable to **specified participants** in the region affected by the **supply shortage** of a **supply shortage declaration**, including the time and date the **supply shortage declaration** is likely to be made. However, it is likely a **supply shortage declaration** for an **immediate event** will need to be made without prior notice.

4. **Directions** ~~(clause 9.4(c) of the Code)~~

Savings targets

4.1 A **direction** may contain a **savings target** for the **specified participant** to whom it is given. The **system operator** will set **savings targets** as follows-

- (a) The **system operator** will determine the total **demand** or **electricity** consumption savings required in the region affected by the **supply shortage**. The savings targets will be set so that there is no extended period of unplanned outages forecast at any GXP within the next 35 days.
- (b) The **system operator** will determine any **energy savings target** for a **specified participant** in the affected region as a percentage of the **specified participant's forecast electricity** consumption ~~for the equivalent period in the previous year over the next 35 days.~~ Specified participants may provide feedback by email to the system operator on their 35-day forecast electricity consumption within 48 hours of receipt of any such forecast if they believe the forecast is inaccurate. The **system operator** will generally set the same **energy savings target** in percentage terms for all ~~distributors~~ specified participants in the affected region.
- (c) A **savings target** will typically be an **energy savings target** per week, updated weekly on a rolling basis. In some cases (for example, an **immediate event** limited to a particular area) a **savings target** in the form of a **capacity savings target** may be applied for particular peak periods in addition to, or instead of, a **savings target** in the form of an **energy savings target**.

4.2 The **system operator** ~~will~~ may amend the **savings targets** for all or some **specified participants** if it considers there are circumstances that justify it, for example-

- (a) a **grid** reconfiguration
- (b) to manage power system stability
- (c) to minimise the use of hydro storage (by increasing thermal generation elsewhere)
- (d) specified participant feedback, for any reason that the system operator accepts, indicates a need to amend savings for that participant.

Notice period

4.3 During a **developing event** the **system operator** will endeavour to provide at least ~~nine~~ seven days' notice to relevant **specified participants** of a **direction** containing a **savings target**, including the times and dates the **savings target** will likely apply. If it is not reasonably practicable to provide ~~nine~~ seven days' notice, the **system operator** will provide as much prior notice as reasonably practicable.

- 4.4 During an **immediate event** the **system operator** will provide as much prior notice as reasonably practicable to relevant **specified participants** of a **direction** containing a **savings target**, including the times and dates the **savings target** will likely apply. However, it is likely a **direction** for an **immediate event** will need to be given without prior notice.

Monitoring

- 4.5 The **system operator** will use information provided by **specified participants** and information otherwise available to the **system operator** to continuously monitor **specified participants'** performance against **savings targets**.
- 4.6 The **system operator** will provide, on a daily basis, each **distributor** (other than **grid owners**) or **direct consumer** to whom a **direction** containing a **savings target** applies, with actual **electricity** consumption data for the **grid exit points** at which the **distributor's** or **direct consumer's assets** are connected to the **grid**. The data will be the **distributor's** or **direct consumer's electricity** consumption (in MWh) during the previous 24 hours (beginning at midnight) for each **grid exit point** at which the **distributor's** or **direct consumer's assets** are connected to the **grid**.

5. Specified participants required to develop participant rolling outage plans ~~(clause 9.4(d) of the Code)~~

- 5.1 Each **distributor** (other than **grid owners**) and **direct consumer** must develop a **participant rolling outage plan** unless the **distributor's** or **direct consumer's electricity** consumption is less than 60 GWh per calendar year.

6. Criteria, methodologies, and principles ~~(clauses 9.4(e) and 9.4(f) of the Code)~~ to be provided for in participant rolling outage plans

- 6.1 This paragraph 6 sets out the criteria, methodologies and principles to be-
- (a) applied by **specified participants** (whether or not they have developed a **participant rolling outage plan**) in implementing **rolling outages**, or taking any other action, in accordance with **directions**.
 - (b) provided for in **participant rolling outage plans** for those **specified participants** which are required to develop them.

Coordination with system operator

- 6.2 **Specified participants** must coordinate the implementation of their **rolling outages** with the **system operator** using the contact information specified in clause 6.5. This is in order to ensure that **rolling outages** across an affected region do not have unexpected power system outcomes.

6.2A Specified participants must provide a rolling seven days planned outage list, updated daily, once their savings targets have been notified. These lists will include daily outage start and restore times per GXP.

6.2B Specified participants must provide half hourly GXP level demand forecast information for conforming GXPs for the week ahead on a rolling daily basis, once their savings targets have been notified.

6.2C Specified participants must provide updated bid information for non-conforming GXPs for the week ahead submitted via WITS in the usual manner, once their savings targets have been notified.

6.2D Participant rolling outage plans must include the requirement for specified participants to provide the information in clauses 6.2A and 6.2B to the system operator by email, updated on a daily basis.

6.2E The system operator must advise participants of any requested changes to the start or end times of rolling outages. It is possible that restrictions on the timing and location of rolling outages may need to be stipulated by the system operator.

6.3 Each participant rolling outage plan must ~~describe the specified participant's arrangements for disconnecting and restoring demand state that~~ after receiving a direction a specified participant must use best endeavours to-

- (a) not increase or decrease its demand by more than 25 MW in any five-minute period without the system operator's prior approval
- (b) minimise the impact on frequency and voltage stability
- (c) minimise the disconnection and restoration of its demand during times when demand is typically ramping up or down in the region affected by the supply shortage (for example, either side of morning and evening peaks).

6.4 Each participant rolling outage plan must ~~list in a table format-~~

- (a) ~~list~~ the specified participant's GXPs at which rolling outages may occur
- (b) ~~list~~ the specified participant's GXPs at which rolling outages will not occur along with reasons why rolling outages will not occur at those GXPs.

Communications

6.5 ~~Each participant rolling outage plan must identify at minimum two key personnel for the system operator to contact about matters relating to supply shortages, supply shortage declarations, directions and rolling outages, being-~~

- (a) ~~an operational contact for all operational matters (typically an operations manager)~~

- (b) ~~a managerial contact for all administrative matters and escalation (typically a senior manager or regulatory specialist).~~

Each **participant rolling outage plan** must specify all personnel of the **specified participant** who will be involved in implementing the **participant rolling outage plan** and their roles, including-

- (a) a minimum of two key personnel (including contact details and any preferred means of communication with these key personnel) for the **system operator** to contact about matters relating to **supply shortages, supply shortage declarations, directions and rolling outages**, being:
- i. an operational contact for all operational matters (typically an operations manager)
 - ii. a managerial contact for all administrative matters and escalation (typically a senior manager or regulatory specialist).
- (b) any other personnel responsible for reporting to the **system operator** on the **specified participant's** performance against **savings targets**
- (c) the personnel responsible for communicating with public agencies (for example, police, civil defence, and local authorities) and the media (if required).
- (d) contact details for the **system operator** including a general email for administrative matters and email and phone number for operational matters.

The **system operator** notices under paragraphs 3.8, 3.9, 4.3 and 4.4 will be sent to the operational contact and managerial contact, unless the **participant rolling outage plan** specifies otherwise. **Directions** will typically be sent to the operational contact only.

- 6.6 ~~Each **participant rolling outage plan** must contain contact details for the key personnel referred to in paragraph 6.5 and note any preferred means of communication with them. Contact details for the key personnel may be withheld or redacted before being published publicly on the **participant's** website but must be included in the **participant rolling outage plan** sent to the **system operator** for approval. Contact details should include phone and email or alternatively a 24-hour email.~~
- 6.7 As well as complying with any **system operator** information requirements under clause 9.18 of the **Code**, each **specified participant** to whom a **direction** containing a **savings target** applies must regularly provide information to the **system operator** about the **specified participant's** performance against the **savings target**, including:
- (a) the nature and extent of the **rolling outages** implemented by the **specified participant**

- (b) [any other information requested by the system operator in order to monitor specified participants' performance against savings targets.](#)

Prioritisation of demand to be disconnected by distributors

- 6.8 A **distributor** should disconnect **demand** on its **network** for **rolling outages** in accordance with the following priorities. Priority 1 is the **demand** that should least readily be disconnected and priority 6 is the **demand** that should most readily be disconnected.

Priority	Priority Concern	Maintain-Supply to:
1	Critical public health and safety	Critical health and disability services e.g. major hospitals, air traffic control centres, emergency operation centres.
2	Maintaining Important public services	Lifelines infrastructure e.g. energy control centres, communication networks, water and sewage pumping, fuel delivery systems, major ports, public passenger transport, major supermarkets
3	Public health and safety	Vulnerable sectors e.g. rest homes, prisons, medical centres, schools, street lighting.
4	Animal health and food production/storage	Dairy farms, milk production facilities, chicken sheds, cool stores.
5	Maintaining Domestic Production	Central business districts, commercial and industrial premises.
6	Avoiding Disruption to households	Residential premises.

*Reference: priorities in this table are based on information contained in section 13 of the National Civil Defence Emergency Management Plan 2015.

These priorities are intended as a guide. They do not prevent **distributors** making pragmatic decisions based on particular circumstances and their knowledge of local communities.

- 6.9 Distributors are responsible for communicating and co-ordinating with retailers, major consumers on their networks, police, health authorities and other major infrastructure providers who may be affected by rolling outages. ~~and for managing the impact of rolling outages on any consumers identified as having health and safety issues.~~

6.9A Each **distributor's participant rolling outage plan** must ~~describe~~ [outline](#) the arrangements in place between the **distributor** and **retailers** for identifying and managing health and safety issues affecting **consumers** on the **distributor's network**.

- 6.10 A **distributor's participant rolling outage plan** must include ~~(a)~~ information about any agreements between the **distributor** and **retailers** or **consumers** on its **network** that may adversely affect the **distributor's** ability to comply with **directions** [or state if there is no such agreement.](#)

~~(b) whether any of the demand on the participant's network is for the provision of other services, such as interruptible load or extended reserves (including AUFLS).~~

- 6.11 The **system operator** will not determine which **consumers' demand** on a **distributor's network** is disconnected for **rolling outages**. Feeder level information does not need to be provided in participant rolling outage plans.

Capability of achieving savings targets

- 6.12 In order for **specified participants** to demonstrate they are capable of meeting **directions** each **participant rolling outage plan** must-

- (a) describe how the **specified participant** intends to meet **energy savings targets** and **capacity savings targets**
- (b) demonstrate the **specified participant** will be capable of achieving an **energy savings target** of up to a 25% reduction of its forecast **electricity** consumption for the same period in the previous year. based on the load from the most recent month of August prior to the current date. This information must be provided in a table format showing:
 - i. how energy savings targets of 5%, 10%, 15%, 20% and 25% reductions would be achieved.
 - ii. the priority loads (using the table in clause 6.9 as a guide) to be disconnected.
 - iii. the duration each priority load is to be disconnected on each day.

For the avoidance of doubt, an **energy savings target** may be more than a 25% reduction of the **specified participant's forecast electricity** consumption. ~~for the same period in the previous year.~~

- 6.13 Each **participant rolling outage plan** must describe the **specified participant's** methodology for implementing **rolling outages** that includes-

- (a) Acknowledgment, within 48 hours of receipt of a **direction** by return email to the system operator, unless otherwise specified in the direction. If no acknowledgement is received within 48 hours the system operator will call the person or persons listed in clause 6.5.
- (b) for **developing events**, the methodology for planning for disconnection of **demand** (~~nine~~ seven days out to real time)
- (c) how disconnection of **demand** will be implemented (real time)
- (d) how restoration of **demand** will be implemented (real time)
- (e) monitoring of compliance with the **direction**.

6.14 A ~~distributor~~ is **Specified participants** are not required to include a list of ~~all~~ feeders, or the sequence of outages to be applied to those feeders, in its **participant rolling outage plan**.

6.15 ~~In addition to the key personnel described in paragraph 6.5 of this Plan, each participant rolling outage plan must specify all personnel of the specified participant who will be involved in implementing the participant rolling outage plan and their roles, including-~~

- (a) ~~the personnel responsible for reporting to the system operator on the specified participant's performance against savings targets~~
- (b) ~~the personnel responsible for communicating with public agencies (for example, police, civil defence and local authorities) and the media (if required). [Revoked]~~

Continuing compliance with other Code obligations

6.16 A **specified participant** to which a **direction** applies must continue to comply with all of its other obligations under the **Code**. Without limitation:

- (a) the **specified participant** must make and revise its **bids** and **reserve offers** to take into account its obligation to comply with the **direction**
- (b) if there is a **grid emergency**, the **specified participant** must comply with its obligations under the **Code** that apply in **grid emergencies**
- (c) despite the **direction**, the **specified participant** must remain capable of providing any **automatic under-frequency load shedding** ~~or extended reserve~~ it is obliged to provide under the **Code**. Specified participants may move automatic under-frequency load shedding between feeders to maintain this obligation.

~~Full information plans for direct consumers~~ Energy Savings Targets for specified participants

6.17 A ~~full information plan~~ is a **direct consumer's participant rolling outage plan** that contains the following information-

- (a) ~~the nature of the direct consumer's demand~~
- (b) ~~whether any of the demand is for the provision of other services, such as interruptible load or extended reserve (including AUFLS)~~
- (c) ~~constraints on the disconnection of the demand (for example, notice periods and maximum durations)~~
- (d) ~~the extent to which different levels of target savings could be achieved (for example, whether a 10% energy savings target is significantly more easily achieved than a 20% energy savings target)~~
- (e) ~~the costs associated with achieving different levels of target savings. [Revoked]~~

- 6.18 ~~A **direct consumer** may, at any time, update its **participant rolling outage plan** with information that meets the requirements of a **full information plan**. *[Revoked]*~~
- 6.19 ~~If a **direct consumer's participant rolling outage plan** is a **full information plan**, the **system operator** may set **energy savings targets** for the **direct consumer** different in percentage terms to the **energy savings targets** for **distributors** in the region affected by the **supply shortage**, taking into account the information in the **full information plan**. Otherwise, the **energy savings targets** for the **direct consumer** will likely be the same in percentage terms as the **energy savings targets** for **distributors** in the affected region. *[Revoked]*~~
- 6.20 All **specified participants** within the region affected by the **supply shortage** will likely be set the same **energy savings targets** (in percentage terms) unless **specified participant feedback on energy savings targets** (as per clause 4.2) indicate strong system security or economic reasons to vary those targets. The **system operator** may (at its sole discretion) vary or amend the **energy savings targets** for any **specified participants** after considering any **specified participant feedback**.