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# CL-FC9014
# Participant Rolling Outage Plan

**Issue Version Number: 4.0**

Data Classification: Public

System Operator Approval Date: 14/07/2025

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Next Review Date: 14/07/2027

# CL-FC9014
# Participant Rolling Outage Plan

**Document purpose**

This Participant Rolling Outage Plan (PROP) is written to comply with:

- Part 9 of the Electricity Industry Participation Code 2010 (the Code), and
- the System Operator Rolling Outage Plan (SOROP).

The procedures described are in response to major generation shortages and/or significant transmission constraints. Typical scenarios include:

- unusually low inflows into hydro-generation facilities
- loss of multiple thermal generating stations, or
- multiple transmission failures.

**Requirements under the Code**

Under the Electricity Industry Participation Code 2010 (the Code), PROP must specify the actions that would be taken to:

- reduce electricity consumption when requested by the System Operator
- comply with the requirements and supplement the SOROP, and
- comply with the Electricity Industry Participation Code 2010.

**Supply of power**

Reducing demand by disconnecting supply to customers is a last resort. This will only occur after all other forms of savings, including voluntary savings are exhausted. Centralines will always endeavour to maintain supply to its customers.

**Intended audience**

This document applies to all Centralines' staff responsible for the implementation of the PROP as per *point 10.1*.

The document is also available to the public on Centralines' website.

**Document contributors**

| Contributors | Name and Position Title | Approval Date |
|---|---|---|
| Owner | Operational Engineering Team Lead | 30/06/2025 |
| Authoriser | General Manager Centralines<br>Relationship Manager Unison | 07/07/2025 |
| Approver | General Manager<br>Network and Operations | 11/07/2025 |
| System Operator Approval | System Operator<br>Transpower | 14/07/2025 |

**Key dates**

**System Operator Approval Date:** **14/07/2025**
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**Next Review Date:** **14/07/2027**

Recommended renewal period – at least every two years, or earlier if:

- there are changes in circumstances, and/or
- there are changes to the System Operator's Rolling Outage Plan (SOROP).

The procedures described are in response to major generation shortages and/or significant transmission constraints. Typical scenarios include:

- unusually low inflows into hydro-generation facilities
- loss of multiple thermal generating stations, or
- multiple transmission failures.

**Related references**

**Legislation**

- Electricity Industry Act 2010
- Electricity Industry Participation Code 2010

**Emergency Plans**

- FC9007 Incident Management Response Plan

**Form**

- CL-FC9014 Participant Rolling Outage Log

**Other Documents**

- Centralines' Load Shed Feeder Model

**Other References**

- System Operator Rolling Outage Plan – available on the Transpower website
- Electricity Authority – Electricity Information Exchange Protocols EIEP5A: Planned service interruptions – available on the Electricity Authority website
- AUFLS Technical Requirements Report – available on the Electricity Authority website

**Content** This document contains the following topics:

# Definitions/Abbreviations

| | |
|---|---|
| **AUFLS** | Automatic Under Frequency Load Shedding – an automated network operational control scheme required under the Code. It ensures the required level of load-shedding happens when the grid frequency drops below a pre-set value. This loss of load acts to stabilise the grid and recover the frequency. |
| **Authority** | For the purposes of this document refers to the Electricity Authority. |
| **Centralines staff** | For the purposes of this document includes Centralines and Unison Networks Limited (Unison) staff involved in the management and operation of Centralines' network under the Management Services Agreement between Centralines and Unison. |
| **CDEM** | Civil Defence Emergency Management – covers the four 'Rs' of reduction, readiness, response, and recovery from a disaster. |
| **Code** | For the purposes of this document refers to the Electricity Industry Participation Code 2010. |
| **Developing event** | An event that evolves over time that could lead the System Operator to declare a supply shortage. |
| **EIEP** | Electricity Information Exchange Protocols – a set of standardised formats for business-to-business information exchanges which are:<br>• supported and coordinated by the Electricity Authority, and<br>• informed by industry consultation and a panel of industry representatives. |
| **Feeder** | A section of the sub-transmission and distribution network. |
| **GEN** | Grid Emergency Notice |
| **Grid** | The network of high-voltage power lines between major power stations. The National Grid is part of the New Zealand electricity transmission system. It is operated by the Grid Operator, Transpower. |
| **GXP** | Grid Exit Point – any point of connection between Transpower's transmission system and the distributor's network. |

| | |
|---|---|
| **Immediate event** | An event that occurs with little or no warning, usually as a result of a transmission line or major generation failure. Such an event could lead the System Operator to declare a supply shortage. |
| **IR** | Instantaneous Reserve – generation capacity and interruptible load made available in the event of a sudden failure of a generating or transmission facility. It is made available to maintain system frequency at 50 Hz.<br><br>Instantaneous reserve is procured based on the size of the single largest contingent event that could occur during a trading period. Generators offer instantaneous reserves at the same time as they make energy offers. |
| **NOC** | Network Operations Centre – Unison's control room where Centralines' network is controlled in real-time 24 hours a day and seven days a week. |
| **PROP** | Participant Rolling Outage Plan – outlined in this document. |
| **Rolling outage** | Planned electricity disconnections spread over different parts of the network at differing times to avoid prolonged outages at any one location. |
| **Security** | A term used to describe the ability or capacity of a network to provide service after one or more equipment failures. |
| **SOROP** | System Operator Rolling Outage Plan |
| **Supply shortage declaration** | Declaration made by the System Operator after consultation with the Electricity Authority. |
| **System Operator** | Real time co-ordinator of the electricity system (Transpower). |

# 1. Background

## 1.1 Electricity Authority

The Electricity Authority (the Authority) is a Crown entity set up under the Electricity Industry Act 2010 to oversee New Zealand's electricity industry and markets.

In accordance with the Code the Authority must approve the System Operator Rolling Outage Plan (SOROP) submitted by the System Operator.

## 1.2 Transpower

Transpower is a State-Owned Enterprise, that owns and operates New Zealand's National Grid.

As the System Operator, Transpower manages the real-time operation of New Zealand's power system and operating the wholesale electricity market. To keep the right amount of energy flow to match generated supply with demand, Transpower:

- forecasts supply and demand
- develops and publishes guidelines of hydro levels for security of supply
- enters into contracts for reserve energy, and
- improves the ability for consumers to manage price risks in the market.

## 1.3 Centralines

Centralines Limited is the power lines company that safely delivers electricity to businesses and homes in Central Hawke's Bay.

Centralines has a single grid connection point at Transpower's Waipawa substatio. This has four 33kV feeders which supply substations situated in:

- Takapau
- Waipukurau
- Waipawa, and
- Porangahau.

An adjacent 33/11kV substation provides four 11kV feeders for the immediate area.

Centralines has a similar winter and summer peak of 20.5MW.

**1.4 Supply and demand**

The System Operator controls the power system and operates the transmission network to match generation with customer demand. Constraints on the ability to manage this can arise from insufficient generation or transmission capacity. The result is a shortage of supply. As an example, shortage of supply can be caused by:

- low lake levels which reduce hydro generation
- the failure of a large generator, or
- a fault on a critical transmission circuit.

**1.5 Supply shortage events**

The SOROP outlines how the Systems Operator will deal with security of supply situations based on the level of severity. Events that may lead the System Operator to make a supply shortage declaration can, in general terms, be categorised as follows:

- Developing event – an event that evolves over time, e.g., low hydro lake or fuel levels, or

- Immediate event – an event that occurs with little or no warning. It is usually a result of a transmission line or major generation failure.

**1.6 Major incident**

Developing or immediate events are classed by Centralines as a major incident. Centralines staff will:

- activate the appropriate contingency plan, and
- manage the incident accordingly.

Communication with electricity retailers, Civil Defence and other stakeholders will be managed following the procedures documented in:

- **FC9007 Incident Management Response Plan**.

Refer to *point 10.1* for details of Centralines staff appointed with responsibilities within this document.

# 2. Centralines' Network

## 2.1 The Network

Centralines is in the business of providing a safe, reliable, and cost-effective supply of electricity to their customers throughout the Central Hawke's Bay region. This is achieved through the provision, operation, and long-term management of their electricity distribution infrastructure, including overhead lines, underground cables, transformers, and substations. Centralines currently supplies electricity to over 9,000 consumers. Centralines supply area is shown in Figure 1.

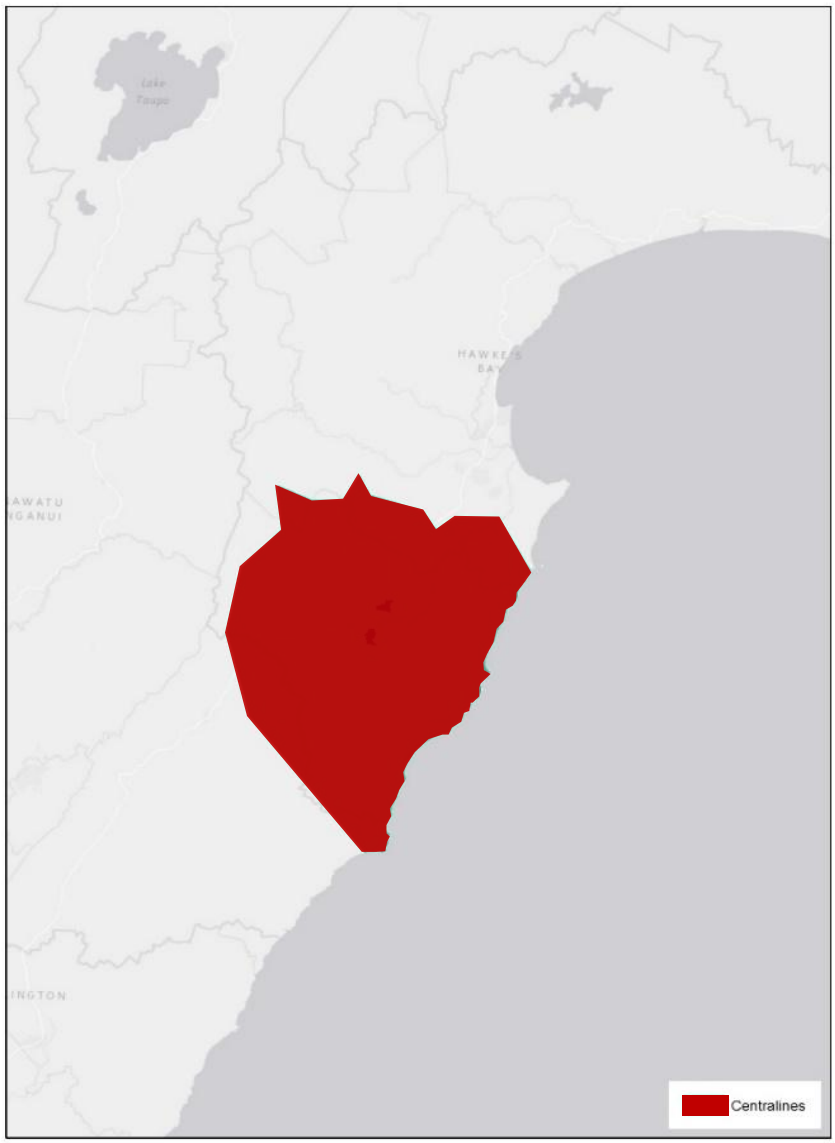


**Figure 1 –Centralines Network Area**

## 2.2 Means of reducing load

Centralines can reduce load by disconnecting customers or directly turning off water heating. In addition, Centralines may also reduce load through advertising, e.g., request customers to modify or reduce their electricity usage.

Water heating load shedding is generally not an option for sustained energy savings. It only defers, rather than reduces, energy demand. Additional load reductions would require disconnection of customers to achieve effective energy savings.

Automatic reduction can help to achieve this, either through:

- Automatic Under-Frequency Load Shedding (AUFLS), or
- disconnecting load.

The actions required to deal with an immediate event and a developing event respectively, are detailed in *Section 3* and *Section 4.*

# 3. Actions for Immediate Events

**3.1 Reserve generation**

The System Operator must ensure enough reserve generation is available as 'spinning reserve.' This will cover the risk of the largest connected generator tripping. The System Operator must also keep the system frequency at 50Hz. If a large generator trips, it may cause a reduction in frequency, that if not rectified, may result in other generators tripping. In turn, this could lead to cascade failure of the transmission system.

Reserve generation cannot immediately pick up the load of a disconnected generator. An immediate load reduction is required until an additional generation can pick up the load. AUFLS zones reduce load in stages until the frequency stabilises. These reductions are based on pre-determined levels of underfrequency prescribed in the Code.

To recover from an immediate event electricity consumption can be reduced by the actions described in *points 3.2* and *3.3*.

**3.2 Instantaneous Reserve (IR) market**

Instantaneous Reserve (IR) markets operated by the System Operator to procure interruptible load may be offered into by generators and load users. Interruptible load includes distribution networks control of hot water loads. The IR market capacity covers the risk of the largest generating unit or a critical transmission line tripping. The ability to do this is affected by the:

- number of frequency capable relays installed, and
- likely revenue stream from the market, less the compliance costs of participating in the reserve market.

**Note**
Centralines does not participate in the I/L market, however there is a third party that does provide some interruptible load on the Centralines network.

Loads which are offered occasionally into the IR markets must be excluded from AUFLS Zone load allocation. These loads may be unavailable if IR have been dispatched.

**3.3 Disconnecting customers**

If the load shed by the IR market dispatch is insufficient to stabilise the network, further automatic load reduction is required.

### 3.3.1 Automatic Under-Frequency Load Shedding (AUFLS)

It is a requirement of the Code that each distribution network company must always (unless exempted) have available four blocks of load for frequency-based load shedding. The total load of the four blocks must be 32%, split by 10%, 10%, 6%, 6%, which will be shed by automatic under-frequency relays.

In the Centralines network, the AUFLS tripping relays are located at zone substations, where individual feeders are tripped. Setpoints of each under-frequency relay are made in accordance with the AUFLS Technical Requirements Report.

### 3.3.2 Manual Shedding

If AUFLS tripping fails to stabilise frequency the System Operator will shed more load. This will be achieved by disconnecting:

- direct connect industrial customers, or
- distribution network GXP supplies.

Once the frequency has stabilised the System Operator will advise the Network Operations Centre (NOC) when the load can be restored.

**3.4 Declaration of an immediate event**

During an immediate event in a supply shortage, the System Operator will provide as much prior notice as reasonably practicable to Centralines. This will include 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.

*Refer to point 3.10 in Transpower System Operator Rolling Outage Plan.*

**3.5 Rolling outages during immediate event**

The System Operator may direct Centralines to undertake rolling outages during an immediate event. This may occur, for example, if a grid emergency is likely to extend for a sustained period.

**3.6 Communications**

It is expected that the System Operator will communicate with NOC, for urgent operational matters. Refer to *point 10.2* for all contact information.

| | |
|---|---|
| **3.7 Supply restoration** | Restoration of disconnected load must be undertaken in coordination with the System Operator to prevent:<br><br>• overloading the transmission grid, and/or<br>• creating further instability.<br><br>Refer to *point 5.8* for load variation limits. |
| **3.8 Transmission grid emergency** | The System Operator may request Centralines to reduce load under a Grid Emergency Notice (GEN).<br><br>Refer to *point 7.1* for details of the response in the event of a GEN. |

# 4. Actions for a Developing Event

**4.1 Introduction**

Rolling outages are a method of managing a developing event. Reduction in demand through disconnection of supply is considered only once all alternative methods of supply savings have been exhausted.

If the System Operator requests a load reduction for a developing event, Centralines must reduce demand to meet the energy savings targets. The targets are likely to be in the form of a weekly energy savings target that is reviewed each week.

Centralines' staff will disconnect feeders or groups of feeders, where they belong to a parallel or ring supply to reduce energy usage. This will be completed in a controlled manner to enable targets to be reached. These feeders are referred to as 'rolling outage feeders.'

**4.2 Declaration of a developing event**

The System Operator will endeavour to provide:

- at least 14 days' notice of a supply shortage declaration, and
- at least nine days' notice of a direction containing a savings target. This notice will include the times and dates the savings target will likely apply.

If the System Operator declares a developing event, they will:

- determine the energy savings target to be enforced for a specific region for a specified timeframe, and

- manage general media advertising of the need to conserve electricity and the impending rolling outages when they are requested.

If Centralines plans to issue a public message related to rolling outages, this will be sent to the Systems Operator for review before being released. Any such communication will set a time for response by the Systems Operator. This will enable the System Operators' feedback to be included before Centralines issues the message to the public.

# 5. Rolling Outage Strategy

## 5.1 Strategy overview

Centralines has developed a strategy to determine the level of load shedding to achieve the target savings required by the Authority. This includes the development and maintenance of a Load Shed Feeder Model, that:

- lists and groups the AUFLS and rolling outage feeders, and
- calculates potential energy savings for any given feeder group shedding strategy.

Actual selection of feeders during any outage will most likely diverge from any pre-determined plan due to operational considerations. The rolling outage feeders determined in the Load Shed Feeder Model are not made publicly available. This is to avoid confusion regarding which feeders are to be disconnected.

## 5.2 Forecasts and planning

Centralines will coordinate with the System Operator regarding the implementation of the Rolling Outage Plan. Once a savings target has been notified, Unison will make reasonable endeavours to:

- Provide, via email, a seven-day planned outage list, updated daily, including daily outage start and restore times per GXP, and
- Provide, via email, seven-day half-hourly GXP-level demand forecast information, updated daily

## 5.3 Allocating feeders

Centralines applies fundamental risk management principles to ensure the:

- health and safety of the public is preserved, and
- cost to the economy is minimised.

Table 1 outlines the desired criteria for the selection of rolling outage feeders, aligning with the guidelines outlined in point 6.8 of the SOROP.

| Group | Concern | Maintain Supply to... |
|---|---|---|
| 1 | Public health and safety | Hospitals, air traffic control centres and emergency operation centres |
| 2 | Important public services | Communication networks, water, and sewage pumping |
| 3 | Public health and safety | Minor health/medical centres, schools, and street lighting |

**5.3 Allocating feeders** (cont)

| Group | Concern | Maintain Supply to... |
|---|---|---|
| 4 | Food production | Dairy and food production facilities |
| 5 | Maintaining production | Central business districts, commercial and industrial premises |
| 6 | Avoiding disruption to households | Residential premises |

**Table 1 – Priority of Supply**

**5.4 Waipawa GXP (WPW)**

Transpower has only one GXP located at Waipawa zone substation (WPW) to supply the Centralines' network. As such, rolling outages may occur on this GXP.

## 5.5 Potential savings calculation

Centralines intends to meet energy savings targets and capacity savings targets via the disconnection of load as calculated with the Load Shedding Model. The tables below show how Centralines plans to achieve 5 - 25% energy savings target.

| 25% schedule | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Hours | Cuts per week | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Weekly savings (MWh) |
| 6 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 5 | 14 | 7 | 0.2 | 0.2 | | | 0.2 | 0.3 | 0.4 | 0.5 | | | | | 0.4 | 0.4 | | | 0.4 | 0.5 | 0.5 | 0.5 | | | 0.3 | 0.3 | 36 |
| 4 | 15 | 7 | 2.5 | 2.5 | 2.4 | 2.4 | | | 3.2 | | | | 3.2 | 3.1 | | | 3.1 | 3.1 | | | 3.2 | 3.1 | 2.9 | 2.9 | 2.7 | 2.6 | 301 |
| 3 | 12 | 7 | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.7 | 1.6 | | | | 1.4 | 1.4 | | 1.7 | 2.0 | | | | | 1.3 | 1.1 | 113 |
| 2 | 5 | 7 | 2.5 | 2.3 | 2.2 | | | | | | | | | | | | | | | | | 4.6 | 4.2 | | | | 111 |
| 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | **561** |
| | | | | | | | | | | | | | | | | | | | | | Average CENTRALINES winter load | | | | | | **2215.30** |
| | | | | | | | | | | | | | | | | | | | | | Estimated Percentage Savings | | | | | | **25%** |

**Table 2 – 25% Potential Energy Savings**

| 20% Schedule | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Hours | Cuts per week | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Weekly savings (MWh) |
| 6 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 5 | 14 | 7 | 0.2 | 0.2 | | | 0.2 | 0.3 | 0.4 | 0.5 | | | | | 0.4 | 0.4 | | | 0.4 | 0.5 | 0.5 | 0.5 | | | 0.3 | 0.3 | 36 |
| 4 | 15 | 7 | 2.5 | 2.5 | 2.4 | 2.4 | | | 3.2 | | | | 3.2 | 3.1 | | | 3.1 | 3.1 | | | 3.2 | 3.1 | 2.9 | 2.9 | 2.7 | 2.6 | 301 |
| 3 | 12 | 7 | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.7 | 1.6 | | | | 1.4 | 1.4 | | 1.7 | 2.0 | | | | | 1.3 | 1.1 | 113 |
| 2 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | **450** |
| | | | | | | | | | | | | | | | | | | | | | Average CENTRALINES winter load | | | | | | **2215.30** |
| | | | | | | | | | | | | | | | | | | | | | Estimated Percentage Savings | | | | | | **20%** |

**Table 3 – 20% Potential Energy Savings**

| 15% Schedule | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Hours | Cuts per week | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Weekly savings (MWh) |
| 6 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 5 | 13 | 7 | 0.2 | 0.2 | | | 0.2 | 0.3 | 0.4 | 0.5 | | | | | 0.4 | | | | 0.4 | 0.5 | 0.5 | 0.5 | | | 0.3 | 0.3 | 33 |
| 4 | 10 | 7 | | 2.5 | 2.4 | | | | | | | | 3.2 | 3.1 | | | 3.1 | 3.1 | | | 3.2 | 3.1 | | | 2.7 | 2.6 | 203 |
| 3 | 10 | 7 | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.7 | 1.6 | | | | 1.4 | 1.4 | | | | | | | | 1.3 | 1.1 | 88 |
| 2 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | **324** |
| | | | | | | | | | | | | | | | | | | | | | Average CENTRALINES winter load | | | | | | **2215.30** |
| | | | | | | | | | | | | | | | | | | | | | Estimated Percentage Savings | | | | | | **15%** |

**Table 4 – 15% Potential Energy Savings**

## 5.5 Potential savings calculation (cont)

| 10% Schedule | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Hours | Cuts per week | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Weekly savings (MWh) |
| 6 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 5 | 8 | 7 | 0.2 | 0.2 | | | | | | | | | | | 0.4 | | | | 0.4 | 0.5 | 0.5 | | | | 0.3 | 0.3 | 20 |
| 4 | 10 | 7 | | 2.5 | 2.4 | | | | | | | | 3.2 | 3.1 | | | 3.1 | 3.1 | | | 3.2 | 3.1 | | | 2.7 | 2.6 | 203 |
| 3 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 2 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | **223** |
| | | | | | | | | | | | | | | | | | | | | Average CENTRALINES winter load | | | | | | **2215.30** |
| | | | | | | | | | | | | | | | | | | | | Estimated Percentage Savings | | | | | | **10%** |

**Table 5 – 10% Potential Energy Savings**

| 5% Schedule | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Hours | Cuts per week | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Weekly savings (MWh) |
| 6 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 5 | 11 | 7 | 0.2 | 0.2 | | | 0.2 | 0.3 | 0.4 | 0.5 | | | | | | | | | 0.4 | 0.5 | 0.5 | | | | 0.3 | 0.3 | 27 |
| 4 | 5 | 7 | | 2.5 | 2.4 | | | | | | | | | | | | | | | | | 3.1 | | | 2.7 | 2.6 | 93 |
| 3 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 2 | 0 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | **120** |
| | | | | | | | | | | | | | | | | | | | | Average CENTRALINES winter load | | | | | | **2215.30** |
| | | | | | | | | | | | | | | | | | | | | Estimated Percentage Savings | | | | | | **5%** |

**Table 6 – Potential 5% Energy Savings**

### 5.6 Existing agreements

Centralines will not engage in agreements with retailers or consumers on its network which may adversely affect it from responding to a direction to reduce load. However, it does have several significant generators on the network that will be omitted from the Load Shedding Model.

### 5.7 Managing health and safety issues

In accordance with its agreements with retailers for the provision of Distribution Services, Centralines will supply retailers with a list of their affected customers supplied. Centralines will do this using the mandatory file format prescribed by the Electricity Authority – Electricity Information Exchange Protocols EIEP5A: Planned Service Interruptions. This will enable electricity retailers to take appropriate action regarding health and safety concerns.

### 5.8 Load variation

After receiving a direction, Centralines will use best endeavours to:

- not increase or decrease its demand by more than 25MW in any five-minute period without approval from the System Operator, and
- minimise the impact on frequency and voltage stability, and
- the disconnection and restoration of its demand during times when demand is typically ramping up or down.

Centralines will maintain load levels allocated to the AUFLS scheme as obligated under the Code.

# 6. Implementing the Participant Rolling Outage Plan

## 6.1 Process overview

The PROP will commence once the System Operator provides notice that an increase in weekly energy savings target is required. In this section, the implementation of the PROP (shown in Figure 2) is described.

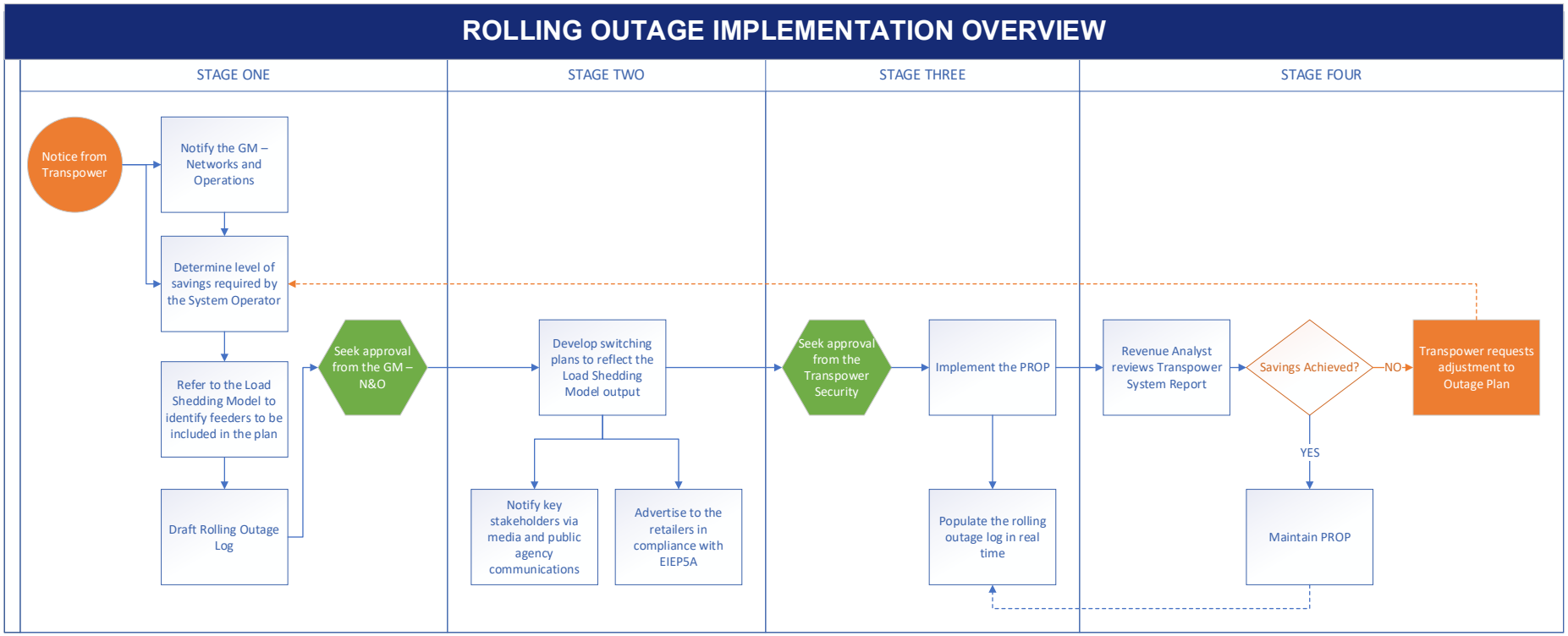


**Figure 2 – PROP Implementation**

**6.2 Stage One**

On receipt of the notice from the Transpower System Operator, the Operations Manager – Networks will:

- Within 48 hours, email the System Operator at [redacted] to acknowledge receipt of the notice
- notify the General Manager Network and Operations, General Manager Centralines, and Group Risk Manager
- review the energy savings target
- use Centralines' Load Shed Feeder Model to determine the number of feeders to be included in rolling outages, and
- prepare the Participant Rolling Outage Log supplied in *Appendix A – Rolling Outage Log. This lists the selected feeders and proposed outage times*

The Operations Manager – Networks and Operations is responsible for advising and seeking approval from the General Manager – Networks and Operations of the proposed Participant Rolling Outage Log before proceeding to Stage Two.

The General Manager – Networks and Operations, or their nominated representative, is the **only** Centralines authorised person able to implement the PROP.

**6.3 Stage Two**

The Operations Manager – Networks and Operations will:

- ensure switching plans, detailing how and when electricity will be disconnected and restored, are developed as per the Load Shed Feeder Model
- notify the Unison Distribution Network Controllers, and
- ensure the retailers are notified of their affected customers as outlined in EIEP5A.

The Centralines Project Management Administrator will notify the media and public agency communications in accordance with Centralines' policies and procedures. The media will be notified weekly of anticipated outages until the Rolling Outage Plan ends.

**Note**
Retailers are required to notify their vulnerable customers.

**6.4 Stage Three**

Before the Participant Rolling Outage Plan is implemented the Transpower System Operator Security Coordinator must give permission for the rolling outages to commence.

The Unison Distribution Network Controller is responsible for updating the Participant Rolling Outage Log. This includes disconnection and reconnection times. In addition, all actions will be recorded on the SCADA log.

**6.5 Stage Four**

The Revenue Analyst monitors the Transpower System Operator Report. This outlines Centralines' energy saving results against its target weekly savings. The Revenue Analyst will advise requirements for future load shedding needed to achieve the weekly target. Continued adjustments to the Load Shed Feeder Model will be made based on observed savings in the previous week.

Monitoring performance during the outage is detailed further in *Section 8*.2

**6.6 Other planned outages**

During the rolling outages Centralines will consider postponing planned outages for maintenance and project work.

**6.7 Contingent events**

If an unplanned event occurs that will alter planned rolling outages, the Operations Manager – Networks and Operations, or their nominated representative, will be responsible for all decisions. Where possible, any changes to the planned timetable should be published on Centralines' website and be communicated to retailers.

[1]

[1] SOROP section 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 the nature and extent of the rolling outages implemented by the specified participant.

# 7. Grid Emergency Coordination

**7.1 Grid emergency**

If the System Operator declares a grid emergency during a developing event, the grid emergency will take priority.

Water heating load is not used to reduce load in a developing event outside of winter demand peaks. However, Centralines does have water heating load available for load reduction when required for a grid emergency. In the event of a grid emergency, this load would be shed, and the System Operator advised. If more shedding is required, the System Operator can instruct the Grid Owner to disconnect load. After the grid emergency is cancelled the rolling outages pattern would not continue.

**7.2 Restoration of supply**

Restoration of disconnected load must be a coordinated effort alongside the System Operator. This is to prevent overloading the transmission network and creating further instability. Refer to *point 5.8* regarding load variation.

# 8. Maintaining and Monitoring Performance

**8.1 Assess performance**

At the end of each week an assessment will be made of the adopted Load Shed Feeder Model to identify areas for improvement for the following week, as detailed in *Figure 2.*

**8.2 Performance monitoring**

In parallel with the System Operator, the Revenue Analyst is responsible for daily and weekly reporting of consumption relative to target levels. This report uses the data provided daily by Transpower, as outlined in its SOROP, and Centralines' data sources.

The Operations Manager – Networks and Operations is responsible for providing information to the System Operator on the actual performance against the savings target. This will include the nature and extent of the rolling outages.

Reporting of daily or real time limits to the System Operator will be too slow for taking real time action. In these cases, the Operations Manager – Networks and Operations, with the assistance of the Commercial Manager, will monitor Centralines' savings. Adjustments will be made to the Load Shed Feeder Model when required.

These savings will be calculated using GXP loads measured by Centralines' metering and SCADA system. These will be compared with the targets supplied by the System Operator.

# 9. Load Restoration

**9.1 Revoke supply shortage declaration**

Direction from the System Operator to revoke the supply shortage declaration is first directed to the NOC. This must be followed up with an email to [redacted] to ensure all Centralines' staff who have a responsibility under this document are notified.

Any load still disconnected must be restored in conjunction with the System Operator as detailed in *point 10.1*

# 10. Communication

**10.1 Roles and responsibilities**

Table 7 identifies the roles and responsibilities of Centralines' staff involved in the implementation and communication of the PROP.

| Roles | Responsibilities |
|---|---|
| General Manager – Networks and Operations | • **Managerial contact** for the System Operator which includes all administrative matters and escalation.<br>• Reports overall compliance to Electricity Authority.<br>• Only authority to commence the PROP. |
| Operations Manager – Networks and Operations | • **Operational contact** for the System Operator.<br>• Notifies the General Manager – Networks and Operations to implement PROP.<br>• Prepares the load shedding schedules.<br>• Reports to CDEM and Lifelines.<br>• Provides information to the System Operator on the actual performance against the savings target. |
| General Manager – Centralines | • General retailer communications.<br>• Reports to and addresses enquiries from the media and public agencies. |
| Centralines Project Management Administrator | • General retailer communications.<br>• Reports to and addresses enquiries from the media and public agencies. |
| Outage Specialist | • Notifies retailer of affected customers in accordance with EIEP5A. |
| Distribution Network Controller | • Maintaining the log<br>• Executing the PROP |
| Revenue Analyst | • Reports weekly savings to the Operations Manager – Networks. |

**Table 7 – PROP Roles and Responsibilities**

**10.2 Contact information**

It is expected that the System Operators will communicate with NOC, in most cases. Table 8 provides contact information.

| Contact | Operational Contact | Managerial Contact | NOC (System Operator Contact) |
|---|---|---|---|
| **Name** | [redacted] | [redacted] | [redacted] |
| **Email** | [redacted] | [redacted] | [redacted] |
| **Phone** | [redacted] | [redacted] | [redacted] |
| **Address** | [redacted] | | |

**Table 8 – Contact Information**

**10.3 Shutdown notification**

When implementing the PROP, Centralines will notify outages using the EIEP5A information exchange protocol. Centralines will use the PLS notification code, reflecting the retailer's responsibility to directly notify consumers.

Centralines may also utilise public notices, such as advertisements in local newspapers, and direct communications with major customers as seen fit for any given event. Where this is used, Centralines will follow the template outlined in Appendix B

Where possible, Centralines will endeavour to provide at least seven (7) days' notice of all rolling outage plans, generally publishing and issuing notifications on a Monday to apply from the following Monday.

**10.4 Vulnerable customers and priority sites**

It is not possible for Centralines to prevent the rolling outages affecting individual vulnerable customers and priority sites. Centralines will communicate planned outage times for consumers to electricity retailers via the EIEP5A protocol, enabling retailers to take appropriate measures.

In addition to the prioritisation of rolling outage feeders, Centralines will endeavour to highlight the risks to vulnerable customers in any public notification undertaken.

# Appendix A - Participant Rolling Outage Log

## Participant Rolling Outage Log

CENTRALINES LIMITED
OUR PEOPLE | OUR POWER

**Day:** _____ **Date:** _____

**Total MW** **Off:** _____ **On:** _____

| Area/Location | Substation | Circuit Breaker or Device | Time Opened | Time Closed | Device Loading (AMPs) |
|---|---|---|---|---|---|
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Form Issued under CL-FC9014 Participant Rolling Outage Plan
Uncontrolled When Printed

Page 1 of 1
Classification – Public

# Appendix B - Draft Rolling Outage Public Notice

## Electricity Supply Interruptions

Please read - Your supply may be affected

Centralines is being required to reduce electricity consumption with rolling power outages across Central Hawke's Bay. This is to meet an x% savings target set by the System Operator in response to the current energy crisis.

Voluntary savings have already helped us reduce the impact of rolling outages, and further savings may allow us to reduce these planned cuts further.

Outages will occur within the time periods noted in the schedule below. Wherever possible, we will delay cuts and restore power early, **so please treat all lines as live**.

Within each area we have prioritised individual circuits to minimise the cost and disruption to our community, and timed outages accordingly.

**YOUR SAFETY AND PROTECTION**

It is important to ensure you keep safe around electricity even when it is off.

- Power may be restored at any time.
- Please leave all appliances off during power cuts, particularly ovens and cook tops.
- To prevent damage to computers and other electrical equipment turn power off at the wall prior to outages.

***Are you reliant on power?***

If your health may be affected by these outages, you will need to make alternative arrangements or contact your healthcare provider for assistance. Please note telephones that rely on a mains supply may not operate during outages, so plan in advance.

| Areas | Priority Group | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|---|
| A | 1 | 8pm-12am | 8pm-12am | 1pm-5pm | 1pm-5pm | |
| B | 2 | 8pm-12am | | 1pm-5pm | | |
| C | 1 | | 8pm-12am | | | 1pm-5pm |
| D | 2 | | 8pm-12am | | 1pm-5pm | |
| E | 1 | | 8pm-12am | | 1pm-5pm | |

Connections in priority groups other than those listed (and those with a 'reserved' priority) are not scheduled for rolling outages in this period.

# Appendix C - Summary of Document Changes

| Date | Version No. | Changes to Document | Creator | Authoriser | Approver |
|---|---|---|---|---|---|
| 31/03/2010 | 1.0 | New Plan | Unison Operations Manager | Area Services Manager (Centralines) | CEO |
| 21/05/2010 | 1.1 | 6.3 – description of CL Networks expanded.<br>References to Category A and Category B Events replaced.<br>18.0 Addition of Savings Schedules from 5% to 25% | Unison Operations Manager | Area Services Manager (Centralines) | CEO |
| 31/03/2016 | 2.0 | Full review and update into new template.<br><br>Document renamed from Security of supply Participant Outage Plan to Participant Rolling Outage Plan.<br><br>Updated to Definitions – Authority, Code, Supply shortage Declaration, Electricity Authority and Transpower.<br><br>Addition of:<br>• point 3.1 Supply and demand, and<br>• point 4.2 Authority to commence rolling outages.<br><br>Minor updates to points 2.1, 2.2, 3.1, 3.2, 4.1, 6.1, 6.2, 6.3, 6.5, 7.1, 8.1, 8.2, 8.3, and 9.3.<br><br>Deletion of point 12.7 Planned savings.<br><br>Reference to Commission replaced with either System Operator or the Authority.<br><br>Appendix C – Feeder Priorities deleted. | Operations Manager | GM Networks & Operations | GM Networks & Operations |

| Date | Version No. | Changes to Document | Creator | Authoriser | Approver |
|---|---|---|---|---|---|
| 06/04/2021 | 3.0 | Full review to comply with the revised SOROP and restructure of document.<br><br>Addition of points:<br><br>• 4.5 Rolling outages during immediate event<br><br>• 6.1 – Strategy overview<br><br>• 6.4 Feeder group – other services<br><br>• 6.6 Existing agreements, and<br><br>• 6.7 Managing health and safety issues<br><br>• 11.1 – Roles and responsibilities, and<br><br>• 11.2 – Contact information.<br><br>New Section 7 –Implementing Participating Rolling Outage Plan.<br><br>EIEP definition added.<br><br>Minor updates to points 5.2, 6.2, 6.3, 6.5, 6.8, 7.1 - 7.5, 10.1, 11.1, 11.2 and Appendix B. | Operations Manager - Networks | General Manager – Centralines | GM Networks & Operations |
| 01/09/2023 | 3.1 | Minor Review.<br>FC9001 Crisis Management Plan and FC9002 Crisis Communication replaced by FC9007 Incident Management Response Plan.<br>Added reference to Transpower's System operator Rolling Outage plan.<br>Transpower Approval received on 10 July 2023 | Operations Team Lead | General Manager – Centralines | General Manager Network and Operations<br><br>System Operator Transpower |
| 14/07/2025 | 4.0 | Full Review<br><br>There are changes to the System Operator's Rolling Outage Plan (SOROP) which requires Unison to update this document. Changes include: | Operations Team Lead | General Manager – Centralines | General Manager Network and Operations<br><br>System Operator Transpower |

| | | | | | |
|---|---|---|---|---|---|
| | | • Updates Key dates<br>• New Document owner<br>• Updated other References<br>• New network figures<br>• Updated Disconnecting customers info<br>• Amendments to forecast and planning<br>• Updated load variation info<br>• Operations manager responsibilities during unplanned outage updated<br>• Update Contact information<br>• Updated 10.1 Roles and Responsibilities | | | |