Document Title
Top Energy Participant Rolling Outage Plan (PROP) **2026 Participation Year**

Document Number
OS01-01-028S

Document Author
Control Centre Manager

Document Reviewer
Distribution System Operations Manager

Approval Authority
General Manager Network

Table of Contents

1 INTRODUCTION 3
2 DEFINITIONS 3
3 AUTHORISATION TO RECEIVE DIRECTION AND ACTIVATE 4
3.1 Range Of Events 4
3.2 Major Incident 4
3.3 Developing Events 4
3.4 Declaration of Developing Events 4
3.5 Alternative method of load reduction compliance with System Operator directives 4
3.6 Top Energy Staff Responsibilities 5
3.7 Communication with System Operator 6
4 COMMUNICATING WITH STAKEHOLDERS 6
5 RESTRICTIVE AGREEMENTS 6
6 INTERRUPTIBLE LOAD FOR INSTANTANEOUS RESERVES 7
7 IMPLEMENTING ROLLING OUTAGES 7
7.1 Criteria for Rolling Outages 7
7.2 Vulnerable Customers and Priority Sites 9
7.3 Rolling Outages Strategy and Methodology 10
7.4 AUFLS Under Rolling Outages 14
8 COORDINATION WITH GRID EMERGENCIES 14
8.1 Transmission Grid Emergency response 14
8.2 Grid Emergency during a Developing Event 15
9 MAINTAINING PERFORMANCE OVER TIME 15
10 MONITORING AND REPORTING PERFORMANCE AGAINST TARGETS 15
10.1 Target Monitoring 15
10.2 Log of Rolling Outages 15
11 LOAD RESTORATION 16
12 COMMUNICATIONS STRATEGY 16
12.1 Shutdown Notification 16
12.2 Communication with the System Operator 16
13 PLAN MAINTENANCE AND UPDATING 16
APPENDIX A – ROLLING OUTAGE LOG 18
APPENDIX B – ROLLING OUTAGE PUBLIC NOTICE 19

1 INTRODUCTION

This plan was written to comply with the System Operator Rolling Outage Plan (SOROP).

The procedures outlined are in response to major generation shortages and/or significant transmission constraints. Typical scenarios include but not limited to, unusually low inflows into hydro generation facilities, loss of multiple thermal generating stations or multiple transmission failures.

How an event is declared and how the System Operator should communicate its requests are detailed.

The main energy-saving measure listed is rolling outages, and how these are structured and implemented is discussed.

Reducing Top Energy's contribution to demand from the National Grid by means of disconnecting supply to customers would be the last resort after all other forms of savings, including voluntary savings, had been exhausted. Top Energy will always endeavour to keep the supply on to customers.

This Participant Rolling Outage Plan (PROP) has been prepared as specified in sections 9.6 to 9.8 of the Electricity Industry Participation Code (The Code).

2 DEFINITIONS

AUFLS	Automatic Under Frequency Load Shedding
CB	Circuit Breaker
Code	Electricity Industry Participation Code
CDEM	Civil Defence Emergency Management (as defined in the CDEM Act 2002)
DHB	District Health Board
EIECL	Electricity Industry Emergency Contact List (in Top Energy Document Centre)
Feeder	A high voltage supply line typically supplying between 100 and 2000 customers
Industrial Customer	Consumes a large amount of electricity for manufacturing, production, or heavy operational activities
GXP	Transpower Grid Exit Point
GEN	Grid Emergency Notice
PROP	Participant Rolling Outage Plan (this plan)
The Regulations	Electricity Industry Act 2010 and Electricity Governance (Security of Supply) Amendment Regulations 2009
Rolling Outages	Planned electricity disconnections spread over different parts of the network at differing times to avoid prolonged outages at any one location
Security Coordinator	The person responsible for system security at the System Operator
SOROP	System Operator Rolling Outage Plan
Supply Shortage Declaration	Declaration made by System Operator under Regulation 9
System Operator	The operator of the national electricity transmission grid

3 AUTHORISATION TO RECEIVE DIRECTION AND ACTIVATE

3.1 Range Of Events

Events that could lead System Operator to make a supply shortage declaration can in general terms be categorised as;

- **Developing Events** – Events that evolve over time, for example, low hydro lake or fuel levels.
- **Immediate Events** – Events that occur with little or no warning, usually as a result of a transmission line or major generation failure.

3.2 Major Incident

Top Energy will class developing or immediate events as a major incident, and Top Energy's management team will activate the appropriate contingency plan and manage the incident accordingly.

Communication with Transpower, retailers, civil defence, and other stakeholders will be as per the Top Energy Emergency Management Plan's notification procedures.

3.3 Developing Events

Developing events are most likely to arise due to the predicted lack of stored energy available to meet national demand. This energy shortage will typically develop over time as consumption exceeds inflow. The System Operator is charged with ensuring that if such a situation develops energy savings are made to mitigate the impact on the economy.

If the System Operator requests a load reduction for a developing event, Top Energy must reduce supply to meet the System Operator's targets. The targets are likely to be a maximum MWh demand for a particular period or periods. To reduce energy usage, Top Energy would disconnect feeders or groups of feeders (rolling outage feeders) in a controlled manner to enable targets to be reached.

Automated water heating load shedding has limited energy saving application as the energy consumption is often delayed rather than reduced. The automated Load Control System will be manually controlled to achieve or contribute to achieving Load Reduction targets. **NOTE: CBs supplying load control (ripple control, backup generation) equipment are excluded from this plan.**

3.4 Declaration of Developing Events

The System Operator will endeavour to provide nine days prior notice of the weekly energy savings requirement and any increase in the weekly energy savings target.

To declare a developing event, the System Operator will specify the energy savings target to be enforced for a specific region and time frame.

The System Operator is responsible for general media advertising of the need to conserve electricity and the impending rolling outages when they are requested.

3.5 Alternative method of load reduction compliance with System Operator directives

In consultation with the Network General Manager, the Distribution Systems Operations Manager (DSOM) may determine if fixed site diesel generation will be employed to meet or contribute to meeting load reduction targets.

3.6 Top Energy Staff Responsibilities

ROLE	PERSONNEL
Authorised to implement this plan	CEO General Manager Networks Distribution Systems Operations Manager (DSOM) (Sharan Mansingh 027 270 9159)
Receive communication from System Operator regarding a supply shortage declaration	CEO Russel Shaw or General Manager Networks Claire Picking (027 248 5959) Distribution Systems Operations Manager (DSOM) (Sharan Mansingh 027 270 9159)
Dispatch email acknowledgement of receipt of a direction to implement this plan to SO.	Distribution Systems Operations Manager (DSOM) Duty Manager (0800867363)
Implement this plan	Distribution Systems Operations Manager (DSOM) Control Centre Manager, Duty Manager (Sharan Mansingh 027 270 9159) (Michael Boocock 027 563 1516)
Preparation of load shedding schedules	Control Centre Manager Michael Boocock (027 563 1516)
Customer notification	Operations Co Ordinator Heather Fitchett (027 572 0795)
Weekly savings reporting	Distribution Systems Operations Manager (DSOM) (Sharan Mansingh 027 270 9159)
Revoking rolling outages	Distribution Systems Operations Manager (DSOM) (Sharan Mansingh 027 270 9159)
Reporting to System Operator	General Manager Networks Claire Picking (027 248 5959)
Reporting to CDEM and Lifelines	Network Performance Manager Tony Smallman (027 481 0146)
Reporting to media, public agencies	CEO or General Manager Networks Claire Picking (027 248 5959)

3.7 Communication with System Operator

The System Operator can contact Top Energy using the following details:

Operational point of contact Top Energy Control Centre (24hours 7 days)	Managerial point of contact Business hours 08.00hrs to 17.00hrs weekdays
Top Energy Ltd PH +64 9 4070639 PH +64 9 4070629 ck@topenergy.co.nz P.O. Box 43, Kerikeri 0243	Top Energy PH 0800 867 363 (24/7 manned contact) (Ask to speak to the Distribution Systems Operations Manager (DSOM) during normal working hours or the Duty Manager after hours) alternatively email feedback@topenergy (for non immediate events) and request an urgent call back. (In the event of a failure to make contact refer to the Top Energy Emergency contacts listed in the EIECL.)

Operational point of contact for the System Operator

Transpower System Operator
Waikoukou
22 Bolcott Street Wellington
Email: system.operator@transpower.co.nz
Phone (04) 495 7000, (04) 590 7000

4 COMMUNICATING WITH STAKEHOLDERS

Top Energy will notify customers and stakeholders either by direct notice or public notices as soon as practicable in the event of implementing this plan.

Stakeholders include:

- Customers connected to the Distribution Network
- Community support service providers e.g. DHBs, police, ambulance, fire, local authorities and govt agencies, local media
- Electricity Retailers
- Major retail, commercial, industrial customers and embedded generators.
- Northland Lifelines Group, CDEM
- Transpower NZ

5 RESTRICTIVE AGREEMENTS

There are no restrictive agreements with Electricity Retailers or other parties currently in place that inhibit Top Energy's capability of complying with the System Operators, SOROP requirements. Any future agreements will consider and account for Top Energy's obligations to meet the requirements of the Code.

6 INTERRUPTIBLE LOAD FOR INSTANTANEOUS RESERVES

GXP	Percentage of average annual demand available for interruptible load (MW)
KOE	0% other than AUFLS

7 IMPLEMENTING ROLLING OUTAGES

7.1 Criteria for Rolling Outages

To ensure public health and safety are preserved, and costs to the economy are minimised, the following table shows a desired criteria for selecting rolling outage feeders included in rolling outages. Compliance with the Electricity Industry Participation Code 2010 and coordination with the System Operator Rolling Outage Plan

Priority	Priority Concern	Maintain Supply to	Examples
1	Public health and safety	Critical Health and disability services e.g. Major hospitals, Air Traffic Control and emergency operation centres	Kawakawa and Kaitaia hospitals (Energy main buildings). Bay of Islands airport, CDEM Emergency Operations Centres
2	Important public services and economic activities. (These will be targeted for voluntary savings)	Lifelines Infrastructure e.g. energy control centre, communication networks, water and sewerage pumping, fuel delivery systems, major ports, public passenger transport, major supermarkets	Lifelines infrastructure, industrial (AFFCO, Juken Nissho, Waipapa Pine, Mount Pokaka Timber), Emery Tableware, Lodestone (Solar) and Ngawha Corrections Facility
3	Public health and safety	Vulnerable sectors e.g. rest homes, medical centres, schools, streetlighting	As Required
4	Animal Health and food production/storage	Dairy Farms, milk production facilities, chicken sheds, cool stores	As Required
5	Maintaining production	Central Business Districts, Commercial and Industrial	As Required
6	Avoiding Disruption to households	Residential premises	As Required

Priorities in this table are based on information in section 13 of the National Civil Defence Emergency Management Act 2002.

Rolling outage feeders will all contain a variety of customers. Each rolling outage feeder's priority is based on the priority ratings assessed for the connections within each feeder.

Priority 1	Any feeder that has one or more priority-1 connections
Priority 2	Any feeder that has one or more priority-2 connections
Priority 3	All feeders that affect more than 30% of a nominated significant commercial area
Priority 4	Remaining feeders

Rolling outage plans will focus on lower priority feeders to the extent possible, and the higher priority feeders being selected only as required for the higher required savings levels.

With that in mind, rolling outage feeders with the same priority and in either region (Northern & Southern area) are grouped into rolling outage groups. This grouping simplifies the planning, management, and notification of rolling outages and allows for more accurate control of load on a relatively small network. Rolling outage feeder priority groupings are listed in the tables below:

CB No.	Feeder Name	Priority Group	Priority Concern
0207	Kawakawa	1	Public health and safety. Major hospitals and emergency operation centres (at CB level).
191712	Omaunu Rd		
051742	Rawene		
1107	Redan Rd		
171122	Crossroads		

CB No.	Feeder Name	Priority Group	Priority Concern
171112	Bulls Gorge	2	Important public services and economic activities. (These will be targeted for voluntary savings.) Major industries, Ngawha Corrections Facility, major emergency services.
171132	Timber Mill		
CB0106	NRCF		
CB0304	AFFCO		
CB0409	Aerodrome Rd		
CB1405	North Mill2		
CB1406	Awanui		
CB1407	Triboard1		
CB1409	Triboard2		
CB1410	North Mill1		
CB0410	WPA Business Park		

CB No.	Feeder Name	Priority Group	Priority Concern
181112	Kerikeri Rd	3	Public health and safety
181132	Cobham Rd		
181142	Inlet Rd		
181172	Ranui Ave		
181182	Hone Heke Rd		
181192	Shepherd Rd		
CB0107	Kaikohe		
CB0108	Awarua		
0111	Horeke		
0406	Riverview		
0407	Takou Bay		
051762	Opononi		
0606	Tii Bay		
0609	Joyces Rd		
151926	Broadwood		
1108	Oxford St		

CB No.	Feeder Name	Priority Group	Priority Concern
1207	Tokerau		
1305	Te Kao		
1306	Pukenui South		
191732	Matauri Bay		
191722	Orotere		

CB No.	Feeder Name	Priority Group	Priority Concern
CB0105	Rangiahua	4, 5, 6	Disruption to customers, general feeders.
CB0109	Taheke		
CB0110	Ohaewai		
CB0206	Towai		
CB0208	Opua		
CB0209	Russell Express		
CB0210	Karetu		
CB0305	Tau block		
CB0307	Pokapu		
CB0308	Moerewa		
CB0405	Puketi		
CB0408	Purerua		
051779	Waima		
CB0605	Te Kemara Ave		
CB0607	Puketona		
CB0608	Onewhero		
CB1106	Kaitaia West		
CB1109	Herekino		
CB1110	Pukepoto		
CB1206	Oruru		
CB1208	Mangonui		
CB1408	North Rd		
191722	Whangaroa		
191782	Totara North		
151806	Victoria Valley		
151826	Clough Road		
151906	Fairburn Road		
151916	Rangitihi		
1105	South Road		

7.2 Vulnerable Customers and Priority Sites

It is not possible to prevent rolling outages affecting individual vulnerable customers and all priority sites. In addition to the prioritisation of rolling outage feeders, Top Energy will:

- Provide information in its public notices, website and outage app, alerting vulnerable customers to the risks, and
- Request that retailers consider individually notifying their vulnerable customers.

- (Top Energy recommends that persons with a medical condition which means that they are critically dependant on electricity, work with their medical provider to create an emergency plan to ensure they can get advice, support or assistance during electricity outage or disruption events)

7.3 Rolling Outages Strategy and Methodology

Once the PROP is activated, the Distribution System Operations Manager (DSOM) and Control Centre Manager will review weekly targets and prepare weekly rolling outage plans and notices based on savings required.

The methodology is:

- When selecting feeders within a priority group review the megawatt/current readings for the feeder displayed on the ADMS screen to ascertain the potential load reduction by dropping a specific feeder. Megawatts when displayed will provide the load to match required reductions. Currents can be calculated by the following values (11kV @ 50amps = 1x Megawatt, therefore the load divided by or multiplied by 50 will give you the megawatts available)
- Each distribution feeder exiting a zone substation (or switching station, or group of feeders where they belong to a parallel or ring supply) will be named as a "Rolling outage feeder".
- Rolling outage feeders will be assigned a priority according to the criteria specified in section 9. Feeders that belong to AUFLS block 1 and 2, or alternative AUFLS feeders where implemented, will be excluded from rolling outage groups unless sufficient load has been shed to maintain the 16% AUFLS requirement.
- A set of switching instructions will be prepared for each rolling outage group by priority level, refer section 7.1 above.
- A plan will be prepared to target the required savings level, taking account of any under or over savings carried forward from earlier periods in the security of supply outage plan. As far as possible, groups should be selected depending on the saving level required, as follows:

Savings required	Priority groups used
0 to 5%	6, 5, 4
10%-15%	6, 5, 4, 3
Greater than 15%	6, 5, 4, 3, 2

Further, as far as sensible, the total outage durations should be determined to meet the following relationship:

Group Priority	Relative duration (hrs)
4	5 to 8
3	5 to 8
2	8 above 15% savings
1	0

Rolling outages will be implemented on Top Energy's 11/22kV feeders supplied out of our Zone Distribution Sub Stations, rather than directly at Top Energy's Kaikohe GXP or the 33kV sub transmission Network.

GXP	Rolling Outage May occur (yes/No)	Reasons for there being no rolling outage	Percentage of Interruptible load (MW)
Kaikohe (KOE)	Yes	n/a	nil

To the extent possible, outages should be programmed to be held during daylight hours, between 8 am and 6 pm, but extending into the evening where necessary to achieve the required savings levels or accommodate switching logistics and peak loading times. The Top Energy Control Centre will monitor and adjust expected loads occurring on the Network to ensure unnecessary customer outages are minimised. (i.e. natural load reductions outside of expected daily peaks) while maintaining our obligations to the System Operator's instructed requirements for load reductions. Where achievable load adjustments will occur outside of normal peak loads, in periods of normally stable load states.

Unless advised otherwise by the System Operator, the rolling outage plan must provide sufficient time for switching the load to ensure that Top Energy's load does not increase or decrease by more than 25MW in any 5-minute period. The Network Controllers carrying out switching are to monitor their activities concerning this limit.

Having established the week ahead rolling outage plan and despite significant uncertainty in predicting customer and embedded generator behaviour during these types of events, Top Energy will use best endeavours to produce a rolling week ahead half-hourly load for its total network. This will be updated daily to reflect any adjustments to our plan and forwarded electronically to the System Operator in spreadsheet format containing the following data and a separate sheet per day. Unless required to be advised via the SOROP website.

Date	Trading period	Top Energy Southern Load	Est. Southern Embedded Generation (Ngawha)	Kaikohe GXP Load	Total Network Mwh	Target MWh	Predicted Variance
	1	M.W. Load	M.W. Load	M.W. Load	M.W. Load		
	2	M.W. Load	M.W. Load	M.W. Load	M.W. Load		
	etc	etc	etc	etc	etc		
		etc	etc	etc	etc		
	48	M.W. Load	M.W. Load	M.W. Load	M.W. Load		

If Top Energy is unable for some reason to meet the load disconnection/restoration ramp rates, or if there is expected to be a material departure (greater than 20%) from the previously provided half-hourly Network load forecast / load profile, then Top Energy would communicate directly with the System Operator to ensure that real-time security issues can be managed.

Indicative plans for savings using this methodology are:

5% Saving schedule				
Priority Ranking	Outages per week	Outage durations	Total Hours	Weekly Savings %
6, 5,4	5	5	25	5.13%
3	0	0	0	0.00%
2	0	0	0	0.00%
1	0	0	0	0.00%
			Estimated savings	5.13%

10% Saving schedule				
Priority Ranking	Outages per week	Outage durations	Total Hours	Weekly Savings %
6, 5, 4	5	5	25	5.13%
3	5	5	25	4.90%
2	0	0	0	0.00%
1	0	0	0	0.00%
			Estimated savings	10.04%

15% Saving schedule				
Priority Ranking	Outages per week	Outage durations	Total Hours	Weekly Savings %
6, 5, 4	5	8	40	8.21%
3	5	7	35	6.86%
2	0	0	0	0.00%
1	0	0	0	0.00%
			Estimated savings	15.08%

20% Saving schedule				
Priority Ranking	Outages per week	Outage durations	Total Hours	Weekly Savings %
6, 5, 4	6	8	48	9.86%
3	5	8	40	7.85%
2	2	8	16	2.31%
1	0	0	0	0.00%
			Estimated savings	20.01%

25% Saving schedule				
Priority Ranking	Outages per week	Outage dura-tions	Total Hours	Weekly Savings %
6, 5, 4	6	8	48	9.86%
3	6	8	48	9.41%
2	5	8	40	5.76%
1	0	0	0	0.00%
			Estimated savings	25.03%

The following example illustrates this strategy in progress:

System Operator Request	Top Energy Action	Overall Load Reduction
Rolling Outages - Load Reduction required 5% for 1 week	In consultation with System Operator, identify outage times and requirements. Notify customers and Energy Retailers of intention to enact rolling outages in line with Top Energy's communication strategy. (Public Notices, Top Energy Webpage, Outage Centre and the Top Energy Outage App) On the outage days, load shed feeders relative to the priority 6 + 5 + 4 groups for 5 hours per day, for 5 days (normally Monday to Friday). At the end of each outage, restore the system to normal.	**5% system load reduction across the week**
Rolling Outages - Load Reduction required 10% for 1 week	In consultation with System Operator, identify outage times and requirements. Notify customers of intention to enact rolling outages in line with Top Energy's communication strategy. On the outage days, load shed feeders relative to the priority 6 + 5 + 4 groups, followed by the priority 3 group for 5 hours per day, for 5 days (normally Monday to Friday). At the end of each outage, restore the system to normal.	**10% system load reduction across the week**
Rolling Outages - Load Reduction required 15% for 1 week	In consultation with System Operator, identify outage times and requirements. Notify customers of intention to enact rolling outages in line with Top Energy's communication strategy. On the outage days, load shed feeders relative to: • Priority 6 + 5 + 4 groups for 8 hours per day, for 5 days (normally Monday to Friday), followed by • Priority 3 group for 7 hours, for 5 days (normally Monday to Friday). At the end of each outage, restore the system to normal.	**15% system load reduction across the week**
Rolling Outages - Load Reduction required 20% for 1 week	In consultation with System Operator, identify outage times and requirements. Notify customers of intention to enact rolling outages in line with Top Energy's communication strategy. On the outage days, load shed feeders relative to: • Priority 6 + 5 + 4 groups for 8 hours per day, for 6 days (normally Monday to Saturday), followed by • Priority 3 group for 8 hours, for 5 days (normally Monday to Friday), followed by • Priority 2 group for 8 hours, for 2 days (normally Monday and Tuesday)	**20% system load reduction across the week**

System Operator Request	Top Energy Action	Overall Load Reduction
	At the end of each outage, restore the system to normal.	
Rolling Outages - Load Reduction required 25% for 1 week	In consultation with System Operator, identify outage times and requirements. Notify customers of intention to enact rolling outages in line with Top Energy's communication strategy. On the outage days, load shed feeders relative to: • Priority 6 + 5 + 4 groups for 8 hours per day, for 6 days (normally Monday to Saturday), followed by • Priority 3 group for 8 hours, for 6 days (normally Monday to Saturday), followed by • Priority 2 group for 8 hours, for 5 days (normally Monday to Friday) At the end of each outage, restore the system to normal.	**25% system load reduction across the week**

For a developing event, Top Energy expects to implement this plan with direction from the System Operator within seven days, after receiving a formal Short Supply Declaration (refer to SOROP).

AUFLS Under Rolling Outages

Frequency is managed by our AUFLS relays on our dedicated AUFLS feeders, these relays are programmed to automatically respond to under frequency events in order to stabilise voltage and frequency at our GXP. Manual disconnection and restoration of load will be managed to minimise disruption to frequency and voltage. E.g. Allow time of voltages to settle and stabilise following each operation.

The level of AUFLS during rolling outages needs to be maintained. Top Energy will either:

- Include AUFLS feeder shedding but limit the shedding to ensure that two AUFLS blocks of at least 16% of remaining load are maintained. That is, if we shed 20% of our network load, we would also shed up to 20% of the AUFLS load or, if time permits,
- Arm additional higher value load feeders to supplement the AUFLS load and exclude these from its rolling outage plan.

8 COORDINATION WITH GRID EMERGENCIES

8.1 Transmission Grid Emergency response

In the event of a major transmission grid outage, the Grid's ability to deliver adequate power may require reductions to the load at some or all Grid exit points. The System Operator may request Top Energy to reduce load under a grid emergency notice (GEN). Top Energy will as a first step shed all water heating load, and the System Operator will be advised. Top Energy can currently shed a maximum of approximately 10% of concurrent water heating load dependant on the operation time. If more shedding is required, the System Operator will instruct Top Energy to reduce load, this in the first instance will be achieved by the use of fixed site Generators to match the required reduction. Following that disconnect load as per the emergency load shedding protocol. This will be carried out by feeder priority as detailed in section 7 of this document.

The reduction in load required to meet a grid emergency would be used to offset any load reduction required by the System Operator to meet a concurrent frequency or energy-initiated event.

8.2 Grid Emergency during a Developing Event

If the System Operator declares a grid emergency during a developing event, the grid emergency will take priority. As water heating load generally would not be used to reduce the load in a developing event, Top Energy would have water heating load available for load reduction when required for the grid emergency. This load would be shed, and the System Operator advised. If more shedding is required, the System Operator will instruct Top Energy to disconnect load as per the list of emergency load shedding feeders in section 7 of this document.

After the grid emergency is cancelled, the rolling outages pattern would continue at a reduced level reflecting any extra energy savings made during the grid emergency.

Execution of the above (8.1, 8.2) shall be done in accordance with Top Energy's Grid Emergency Response Guide: OS01-01-28W - Grid Emergency Management.docx (reference for internal use only)

9 MAINTAINING PERFORMANCE OVER TIME

Metering information is collected from 11kV feeders and substations on Top Energy's network, allowing tracking of individual loads.

If an unplanned event occurs that will alter planned rolling outages, the Control Centre Manager will be responsible for all decisions. Where possible, any changes to the planned timetable should be published on the Top Energy website and communicated to retailers.

10 MONITORING AND REPORTING PERFORMANCE AGAINST TARGETS

10.1 Target Monitoring

To avoid discrepancy over different data sources' accuracy, the System Operator will report on actual demand versus the target.

For load shedding to a weekly target, the Commercial and Pricing Manager will monitor the System Operator report of Top Energy's savings results compared to our target. Together with the General Manager Network or Distribution Systems Operations Manager (DSOM), they will review future load shedding to increase or decrease rolling outages to enable the weekly target to be met. In parallel (as a check) with the System Operator, the Commercial and Pricing Manager will be responsible for reporting the consumption relative to target levels (using our data sources) as required by the System Operator's Directive.

In the case of daily or real-time limits where the System Operator reporting will be too slow for real-time action to be taken, the Distribution Systems Operations Manager (DSOM) with the Commercial and Pricing Manager's assistance will monitor our savings and adjust accordingly. These savings will be calculated using GXP loads measured by our ADMS/SCADA system and compared with the targets supplied by the System Operator when they are made available.

10.2 Log of Rolling Outages

Network Controllers will enter in the Rolling Outage Log, times of disconnection and reconnection of all feeder interruptions. The log sheet to be used by Network Controllers is shown in Appendix A.

11 LOAD RESTORATION

After any event, the restoration of the disconnected load must be restored in conjunction with the System Operator. This is to prevent overloading the transmission grid and / or creating further frequency or voltage instability. This requires direct communication between the Top Energy Control Centre and SO.

12 COMMUNICATIONS STRATEGY

12.1 Shutdown Notification

With the wide-scale impact of rolling outages, it is not feasible to use our standard planned outage notification process. When implementing a rolling outage plan, Top Energy will notify the outages in several ways:

- Public notices – Top Energy will place public notice advertisements (see APPENDIX B – ROLLING OUTAGE PUBLIC NOTICE)
- Provide a rolling outage timetable showing the times and areas affected by rolling outages. The advertisement will provide details of our website page and contact details for customers seeking more information.
- Top Energy website - The Outage Centre on the Top Energy webpage will show rolling outages in an event as they enter the outage (SOROP) schedule.
- Retailer notification – Top Energy will provide the rolling outage timetable to all electricity retailers together with a schedule showing the rolling outage group for all ICPs. It is not appropriate to filter the schedule for an individual retailer's ICPs as this places switching ICPs at risk.

Where possible, Top Energy will provide seven days notice of all rolling outage plans, generally publishing and issuing notifications on a Monday to apply from the following Monday.

12.2 Communication with the System Operator

All communications with the System Operator will be between Top Energy's Control Centre and Transpower's Regional Operating Centre using Transpower's TSX telephone or normal communication systems. Top Energy will acknowledge, via email, receipt of a direction to save energy from the System Operator

Before notifying and implementing a rolling outage plan, Top Energy will consult with the System Operator Security Coordinator to establish a process for shedding and restoration, which may include a M.W. load cap to operate under during restoration phases.

Top Energy will use best endeavours to:

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

If Top Energy wishes to issue a public message related to the requested rolling outages, then the message will be sent to the System Operator for review before being released. Any such communication will give time for a response from the System Operator, so as their feedback can be included before Top Energy issues the message to the public.

13 PLAN MAINTENANCE AND UPDATING

When reviewing and updating this Top Energy Participant Rolling Outage Plan refer to the guidance and instructions

located on the Transpower website

Link

https://www.transpower.co.nz/system-operator/security-supply/rolling-outage-plans

APPENDIX A – ROLLING OUTAGE LOG (populated from ADMS Switching event record)

SUBSTATION _____ DATE _____

TOTAL MW OFF _____ ON _____

Feeder Name	C.B. Number	Time Opened	Time Closed	Load Shed A	Load Shed B

APPENDIX B – ROLLING OUTAGE PUBLIC NOTICE

Medically Dependent Consumer Notice (Developing Event pre-notice)

Top Energy has been advised by the System Operator (Transpower NZ) of a pending requirement to reduce consumption through Rolling Outages on our Electricity Network, commencing (DATE/TIME). Top Energy strongly recommends that persons with a medical condition which means that they are critically dependant on electricity, work with their medical provider to create an emergency plan to ensure they can get advice, support or assistance during electricity outage or disruption events

(copy of Media notice to Northland DHB). *NOTE: This notice should be dispatched through all public communication channels at the first notice of a developing event.*

Top Energy notify Electricity Retailers of rolling outages affecting ICPs to notify their Medically Dependant Customers

Electricity Supply Notified Interruptions

Please read - your supply may be affected

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

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

We have prioritised individual circuits within each area to minimise the cost and disruption to our community and timed outages accordingly. Further details can be found on our website (www.topenergy.co.nz) or call your electricity retailer.

YOUR SAFETY AND PROTECTION

It is important to ensure you keep safe around electricity, even during outages.

- Power may be restored at any time, treat lines as live at all times.
- Please leave all appliances off during power outages, particularly ovens and cook tops.
- To prevent damage to computers and other electrical equipment turn power off at the wall prior to outages.
- Avoid using elevators (lifts).
- Ensure you have sufficient water to meet your needs.
- Ensure your vehicles have sufficient fuel or charge to meet your needs (as fuel may not be accessible from your normal fuel outlet).
- Charge communication devices i.e. phones etc.

Are you reliant on power?

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

Useage Note: This is to be distributed to the Top Energy Public Communications Team upon notification of situation from Transpower NZ (System Operator). This may require formatting to Top Energy Communications Standards by the team, for distribution to General Public and/or Social Media communications.

APPENDIX C – ROLLING OUTAGE PUBLIC NOTICE (Radio)

Radio Notice template script

:Due to National energy constraints advised by TranspowerNZ the following affected areas (list affected districts) will be experiencing power outages, for detailed information of affected areas schedules go to the Top Energy website www/dot/topenergy/dot/co/dot/nz"

Outage Schedule

Areas Affected	Priority Group	Monday (date)	Tuesday (date)	Wed (date)	Thursday (date)	Friday (date)	Saturday (date)	Sunday (date)
e.g. Okaihau Rangiahua, Mangamuka Streets etc	6, 5, 4	8am - 11am	9am- 12pm	1pm - 4pm	2pm- 5pm	3pm - 6pm	8am -11am	9am- 12pm
e.g. Towai, Hukerenui Streets	6, 5, 4	9am- 12pm	1pm - 4pm	2pm- 5pm	3pm -6pm	8am - 11am	9am- 12pm	8am -11am

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