SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

1 GENERAL

1.1 Scope

This plan (hereinafter referred to as *220S032*) provides a means of compliance with the System Operator Rolling Outage Plan (SOROP), prepared by the System Operator and issued by the Electricity Authority. It details Powerco's planned response to a major electricity supply shortage resulting from major generation shortages or significant transmission constraints.

1.2 Application

220S032 shall apply if the System Operator declares a shortage of electricity supply.

Note: The *Electricity Industry Participation Code 2010* details the empowering provisions of the System Operator in declaring a supply shortage.

1.3 Objective of *220S032*

The objective of *220S032* is to prescribe the actions taken to:

- Reduce electricity consumption in the event of a declared shortage of supply by the System Operator.
- Comply with the requirements of the System Operators Rolling Outage Plan (SOROP).
- Comply with the requirements of the Electricity Industry Participation Code 2010 – Part 9.

1.4 Referenced Documents

1.4.1 Legislation

Electricity Industry Participation Code 2010
Electricity Industry Act 2010

1.4.2 Industry Rules and Standards

Emergency Management Policy - (published by the System Operator on 19 June 2016.
System Operator Rolling Outage Plan.

1.4.3 Powerco Standards

Reference	Title
100R001	Risk Management Framework
160P002	Communications Policy
220F009	Switching Instruction Sheet (Planned)
220S002	Powerco Standard Definitions – Electricity Networks
220S025	Grid Emergency GXP Load Shedding Plan
310S001	Security of Supply Classification – Zone Substations
310S003	Distribution Feeder Security and Reliability Classification
310S035	Powerco Environmental Management System.
393S045	Automatic Under Frequency Load Shedding Equipment - Maintenance

393S131	Electricity Networks – Emergency Response Plan

1.5 Definitions

Unless stated otherwise, all words and phrases used in *220S032* shall have the meanings as defined in:

- Electricity Industry Act 2010
- *220S002 Powerco Standard Definitions – Electricity Networks*
- Common English language definitions

Automatic Under Frequency Load Shedding (AUFLS)	An automatic system that sheds load from the transmission (at the distribution system level) if a significant system frequency decay is detected. Load is shed in these circumstances in order to support system frequency and stabilise the transmission system in order to avoid a complete system collapse
Distribution	Means the conveyance of electricity on lines other than lines that are part of the national grid (Electricity Industry Act 2010 definition).
Distributor	Means a business engaged in distribution (Electricity Industry Act 2010 definition).
Electricity Authority (EA)	The Electricity Authority (Authority) is an independent Crown entity established under the Electricity Act to regulate New Zealand's electricity industry and markets. The Authority regulates the operation of the electricity industry and markets, to ensure electricity is produced and delivered to all consumers in an efficient, fair, reliable and environmentally sustainable manner. The Authority also promotes and facilitates the efficient use of electricity.
EMP	Emergency Management Policy – sets out the steps the System Operator will take, as a reasonable and prudent operator, and encourage participants to take at various stages during and extended emergency (the system operator is required to prepare and publish an Emergency Management Policy under clause 7.3(3)(a) of the Electricity Industry Participation Code 2010).
Energy Efficiency and Conservation Authority (EECA)	EECA is the main body responsible for helping to deliver the Government's extensive energy efficiency agenda. Its function is to encourage, promote and support energy efficiency, energy conservation and the use of renewable energy sources.
Government Policy Statement (GPS) on Electricity Governance	A document that specifies the Minister of Energy's sets of objectives and outcomes the government wants the Electricity Authority to give effect to in relation to governance of the electricity industry, and against which the Authority must report and be examined. The Authority is required to operate in a manner that is consistent with the GPS, which outlines the government's expectations for effective operation of the electricity market and identifies three priority areas: ▪ security of supply and reserve generation ▪ priority investment in the transmission grid

- hedge-market arrangements and demand-side participation

Participant

(Extract from The Electricity Industry Act 2010)

7 Industry participants

- (1) The following are industry participants for the purposes of this Act:
  - (a) a generator:
  - (b) Transpower:
  - (c) a distributor:
  - (d) a retailer:
  - (e) any other person who owns lines:
  - (f) a person who consumes electricity that is conveyed to the person directly from the national grid:
  - (g) a person, other than a generator, who generates electricity that is fed into a network:
  - (h) a person who buys electricity from the clearing manager:
  - (i) any industry service provider identified in subsection (2).

  (2) The following industry service providers are industry participants:
  - (a) a market operation service provider:
  - (b) a metering equipment provider:
  - (c) a metering equipment owner:
  - (d) an ancillary service agent:
  - (e) a person that operates an approved test house:
  - (f) a load aggregator:
  - (g) a trader in electricity:
  - (h) any other industry service provider identified in regulations made under section 109.

  (3) The Authority is not an industry participant, except to the extent that it performs functions as an industry service provider.
  Compare: SR 2003/374 r 4

Powerco outage planning tool	Simple response planning tool aligned with feeder priorities identified in *220S032* section *12 Appendix A Powerco Priority Feeder List* enabling a feeder outage plan to be quickly established.
Immediate Event	Shortage of supply event that occurs with little or no warning such as a major generator failure or transmission line failure.
Evolving Event	Shortage of supply event that evolves over time, for example low hydro lake or fuel levels.

Security of Supply Emergency	Means the energy security of supply level at which the risk of shortage is at least 10% (Definition from: Security of Supply For-casting and Information Policy – issued by the Electricity Authority on 30 September 2010).
Specified Participant	(Definition from The Electricity Industry Act 2010) - specified participant for the purposes of Part 9,— (a) means any of the following: (i) distributor: (ii) retailer: (iii) a line owner; and (b) includes a person who uses electricity that is conveyed to the person directly from the grid.
System Operator	System operator means the person who ensures the real-time co-ordination of the electricity system, and is the person referred to in section 8 (Electricity Industry Act 2010) The System Operator is Transpower (refer Electricity Industry Act 2010, Section 8).
Transpower	Transpower means Transpower New Zealand Limited or any subsidiary of, or successor to, that company (Electricity Industry Act 2010 definition).

1.6 Risk Identification and Management

A systematic method of identifying all risks shall be applied to all design, construction, maintenance and operation activities undertaken on Powerco's networks, generally as required by Powerco's *100R001 Risk Management Framework*. Appropriate risk elimination, mitigation or reduction methods shall be implemented before work commences on any network asset.

1.7 Environmental Considerations

Environmental considerations shall be in accordance with the requirements of *310S035 Powerco Environmental Management System*.

1.8 Copyright

1.9 Document Owner

Contact Person: Network Operations Manager

2 BACKGROUND

The *Electricity Industry Act 2010* requires the system operator to manage supply emergencies. As required by the Electricity Industry Participation Code (Code), the System Operator has prepared a System Operator Rolling Outage Plan (SOROP) approved and issued by the Electricity Authority.

Transpower, the System Operator, controls the electricity transmission network and balances generation with electricity demand. Influences and potential causes of shortage of supply include:

- Low lake level, reducing hydro generation capacity.
- Generator failure.
- A fault on a critical transmission circuit.

The System Operator Rolling Outage Plan (SOROP) details the System Operators Response to a Security of Supply Emergency and declaring a supply shortage. Guidelines for Distributors participant rolling outage plans are also included (refer SOROP *Appendix A Guidelines for Distributors' Participant Rolling Outage Plans)*. *220S032* is written in accordance with the SOROP.

Upon the System Operator declaring a shortage of supply, participants are required to respond accordingly with planned measures in reducing consumer electricity consumption.

The SOROP indicates that 'Rolling Outages' are an extreme measure with potential to impact on public health and safety and the economy. Rolling outages are therefore regarded as being a 'last resort' measure taken in an attempt to balance electricity supply and demand. Electricity conservation is expected to be applied before last resort rolling outages.

Note that 'rolling outages' is a common industry term. The SOROP identifies that the term 'rolling outages' is 'a convenient way of referring to outages under the Code, even though it is acknowledged some outages may not be rolling in nature' (refer SOROP, section 1).

The System Operator has developed and published, under Part 7 of the Code, an Emergency Management Policy (EMP). The policy details the process that the System Operator will take to manage supply emergencies such as initiate an official conservation campaign and coordinate planned outages.

The EMP and SOROP indicates that the System Operator would typically determine that emergency measures are required, and declare a shortage of supply, in circumstances categorised as the following events:

- Developing Event: Evolving over time, such as low hydro generation lake levels.
- Immediate event: Sudden occurrence, such as critical transmission line or major generator failure.

The EMP details the staged approach to management of extended emergencies, and implemented emergency measures such as a conservation campaign and rolling outages.

Effective management of a supply emergency situation is dependent on the role or participants. Part 9 of the Code prescribes the System Operator and Participant roles and obligations in the event of an emergency situation. Powerco's Participant Rolling Outage Plan is a response to such obligations.

Part 9 of the Code requires:

- Participants to develop a rolling outage plan.
- Submit the plan the System Operator for Approval.
- Make the rolling outage plan available to the public, at no cost, on an internet site maintained by or on behalf of the participant.
- Re-submit the plan to the System Operator for approval not later than 2 years after the date on which it was last approved.

3 GENERAL PRINCIPLES

In response to a security of supply emergency situation the following general principles apply:

- Powerco will endeavour to align any response to that of key industry groups and the Electricity Authority to ensure that the collective national response to the situation is effective.
- Operations will be in accordance with applicable legislation, codes of practice and safety requirements.
- All reasonable steps shall be taken to minimise any adverse impacts derived from the situation on Powerco's business, owners and stakeholders.
- Be well prepared to act swiftly should it be necessary, to mitigate the effects of a shortage of supply situation.
- Take all appropriate action in a proactive and timely manner.
- Provide relevant details and/or measurements of the impact of actions taken to the appropriate parties.
- Powerco's operational response will be aligned with its general guidelines for responding to emergency events that affect its electrical networks – namely: *393S131 Electricity Networks – Emergency Response Plan.*
- Powerco will ensure System Operator notification of a Grid Emergency will be responded to independent of any System Operator supply shortage initiatives for an evolving or immediate event.
- Powerco will only shed hot water heating load in response to a declared Grid Emergency unless specifically directed by the System Operator to shed hot water load for the purposes of mitigating a security of supply situation.
- Powerco will ensure 32% of system load is reserved for AUFLS at all times. However, under rolling outages where demand reduces it may be possible for Powerco to include low priority AUFLS feeders in outage planning thereby preserving outages of higher priority feeders.

4 ROLES AND RESPONSIBILITIES

Once it has been determined that an operational response is required the roles and responsibilities shall be determined in accordance with Powerco's *393S131 Electricity Networks – Emergency Response Plan.*

393S131 is Powerco's top level document in a hierarchy of electricity network emergency response plans. It contains processes, guidelines and information to be adopted in the event of a major emergency or natural disaster that affects Powerco's electricity networks.

393S131 is based on *The New Zealand Coordinated Incident Management System (CIMS) 2nd Edition.*

4.1 Customer and Communications Strategy Manager (CCSM)

The Corporate Affairs Manager will be responsible for the following activities:

- Communicate details of Powerco's Response Plan to the media and other interested parties as necessary.
- Maintain awareness of the Security of Supply situation and communicate updates to Powerco personnel as necessary.
- Manage all activities associated with the support and/or promotion of an industry initiated or System Operator initiated electricity conservation campaign.
- Communicate with public local authorities, emergency services and civil defence authorities regarding the plan.

4.2 Electricity Commercial and Retailer Manager (ECRM)

The Electricity Customer Relations Manager will be responsible for the following activities:

- Communicate details of Powerco's Response Plan to the Retailers and Major load Customers.
- Liaise with retailers who identify medically dependant and vulnerable customers, to clarify changes, outage area, times, and communicate special arrangements.
- Maintain awareness of Security of Supply situation status and communicate updates to Retailers, their customers and Major load Customers as necessary.
- Manage all direct communication with Retailers and Major Customers regarding the support and/or promotion of an industry initiated or System Operator initiated electricity conservation campaign.
- Manage communication activities associated with the extended control of domestic hot water and thermal storage heating loads that may impact customers (via Retailers).

4.3 Network Operations Manager (NOM)

The Network Operations Manager, responsible for management of Powerco network operations centre (NOC), will be responsible for the following:

- Communicate details of Powerco's Plan to the Network Co-ordination Manager, the Network Operations Team, and the System Operator.
- Maintain awareness of Security of Supply situation status and communicate updates and potential for activating an operational response to the Network Operations Team as necessary.
- Prepare and plan outages for the purpose of reducing electricity consumption (involving rolling distribution feeder outages) and communicate the plan to the System Operator.
- Maintain communication with the System Operator during planning and implementation of rolling outages and communicate the anticipated and actual effect of outages with the System Operator.
- Manage the impacts, communication and subsequent restoration of a Transpower initiated or AUFLS initiated tripping event in accordance with Powerco's normal emergency response procedures.

4.4 Executive Management Team (EMT)

The Executive Management Team will be responsible for the following activities:

- Liaison with key industry participants and development of co-ordinated industry response to the particular Security of Supply situation
- Authorisation of Powerco-specific responses to the Security of Supply situation (refer Section 5 *Escalating Sequence of Activities*).

4.5 Network Co-ordination Manager (NCM)

The Network Co-ordination Manager is responsible for the day to day management of Powerco network control room. In relation to a grid Emergency or a security of supply declaration, the Co-ordination Manager will be responsible for the specific following activities:

- Maintain awareness of Security of Supply situation and as required brief the Network Operations Team on their specific response requirements.
- Implement extended control of domestic hot water and thermal storage loads in accordance with legislative requirements.
- Ensure the Network Operations Team implement planned outages for the purpose of reducing electricity consumption (involving rolling distribution feeder outages).
- Monitor restoration of load following an outage and direct the Network Coordinators to maintain SO requirement to limit demand increase through time.
- Generate switching instruction sheets for rolling outages.

4.6 Network Co-ordinator (NC)

The Network Co-ordinator is responsible for day to day operational activity within the Powerco network control room and in relation to in *220S032* will specifically be required to:

- Carry out specific actions and control functions as required by the feeder outages plan switching sheets.

- Report and record actions and status of the system during the implementation of a feeder outage plan.
- Implement restoration of load following an outage under supervision of the Network Coordination manager.

5 ESCALATING SEQUENCE OF ACTIVITIES

Figure 1 below provides an overview of an escalating sequence of actions that Powerco may undertake as part of its overall response to the prospect or actual development of a national security of supply situation. The initial industry-wide response focuses on the corrective forces applied by the market and other demand-side management techniques. As the severity of the situation increases, supply-side management techniques will become necessary. It is important, however, that these strategies are activated at the appropriate point in the escalation of an event, so that the effectiveness of the overall response is maximised.

Figure 2 below provides an overview of the restoration process following a Security of Supply or Grid Emergency event that has required supply-side management activity.

Figure 1

Scenario	Powerco Response	Indicators	Authority to Implement	Responsibility to Implement
1	Support and/or promotion of a Public Voluntary Electricity Conservation Campaign initiated by the System Operator.	EA EMP	EMT	CCSM
2	Planned outages for the purposes of reducing electricity consumption (involving rolling distribution feeder outages, etc.)	EA EMP - SOROP	NOM	NOM
3	Transpower / System Operator Initiated event (Grid Emergency) Powerco Invoke Major Network Incident and Severe Weather Event Procedures as required.	System Operator notification	N/A	NOM
4	Automatic Under Frequency Load Shedding	Grid Emergency – UF Event	N/A	Automatic

Figure 2

Powerco Response	Indicators	Authority to Implement	Responsibility to Implement
Retract of supply shortage deceleration requiring a return to normal operations	System Operator notification	NOM	NCM

Restoration of supply to feeders	NOM	NCM	NC

6 COMMUNICATION STRATEGY

Powerco's goal for any communications relating to a System Operator conservation campaign is to be perceived as being responsive and reliable. Powerco, as a network owner/operator, with a relatively low profile in the public arena, will work closely with retailers/generators to ensure messages to the public are consistent and fit with the overall industry and/or the System Operator objectives for the campaign.

Powerco's communications on electricity savings will be by way of supporting prudent industry-wide measures, responding to media queries with relevant information, and ensuring stakeholders are advised of developments as they eventuate:

- Where the situation reaches Scenario 1 as described in Figure 1 above, Powerco will work closely with industry members and the Electricity Authority to ensure the messages being sent to consumers are consistent and achievable at household levels. Powerco would expect the System Operator to take the lead on publicising any campaign and provide support by way of information on network loadings (estimated load reductions/voluntary savings) and answer media queries with the relevant information and/or industry/EA contacts.
- Where the situation reaches scenario 2, 3 and 4 as described in Figure 1 above, Powerco will:
    - Issue media statements advising key media, local authorities, civil defence, emergency services and other stakeholders of measures being undertaken.
    - Powerco will follow the guidance provided by 160P002 *Communications Policy*.
    - Notify retailers of rolling outage timetables and indicative areas being affected.
    - Reproduce all media and outage schedules on Powerco web site.
    - Advise media callers to contact Transpower and/or the Electricity Authority for contextual background.

See Figure 3 below for Communications outputs for Scenarios 1 to 4.

Figure 3

Scenario	Target Stakeholders	Communication leader
1	General public, media, city, district and regional councils, MPs, Chambers of Commerce.	System Operator.
2	General public, city, district and regional councils, MPs, Transit, Police, District Health Boards, Chambers of Commerce, Media, Civil defence.	Powerco on regional specifics / System Operator on situation.
3 and 4	General public, city, district and regional councils, MPs, Transit, Police, District Health Boards, Chambers of Commerce, Media, civil defence.	Powerco on regional specifics / Transpower at national level / Electricity Authority on situation.

Communication procedures and performance shall be in accordance with Powerco's *160P002 Communications Policy.* Principles promoted in *160P002* include: trust, empathy, equity, honesty and timeliness. *160P002* includes Powerco's policy on the following:

- Media Relations.
- News Releases.
- Outages Communications.

Note: Powerco will endeavour to maintain electricity supply to customers with particular/vital health and safety needs (medically dependant or vulnerable customers), however, Powerco cannot guarantee them an uninterrupted supply. Such customers need to have an independent contingency plan to be applied in the event of an electricity outage.

7 COMMUNICATION WITH POWERCO

7.1 Communication with The System Operator.

The System Operator can contact Powerco using the following details:

Powerco Ltd.
2nd Floor Council Building
84 Liardet Street
Private Bag 2061
New Plymouth 4342
New Zealand
Telephone: +64 6 759 6200
Facsimile: +64 6 759 6287

Powerco will contact the System Operator for administration and reporting of targets using the following details:

Market Security Services Manager

Operations Division

Transpower New Zealand Ltd

Waikoukou

22 Boulcott Street

PO Box 1021, Wellington

M +64 21 241 2793

P +64 4 590 7293

7.2 Communication with the System Operator

For most circumstances Powerco operational communication with the System Operator is maintained via Transpower's Regional Operating Centre of Wellington and Auckland (RCN and RCC), using normal communication systems. However, Powerco will communicate direct with the System Operator for consultation purposes during planning and restoration

stages of rolling outages and to communicate any unexpected change to forecast for any GXP of more than 20% for any trading period.

Powerco shall provide the System Operator with a daily week - a - head forecast of half hourly load, at each GXP, during any period in which rolling outages are scheduled.

Unless agreed otherwise Powerco will ensure the restoration process does not increase demand more than 25MW in any five (5) minutes.

The System Operator via the Transpower Regional Control Centre, or direct as they wish, can contact Powerco Control Centre using the following details;

Powerco Regional Control Centre
35 Junction Street
Private bag 2065
New Plymouth 4342
Telephone:

- Eastern region: 0508333855
- Western region: 0508333856

Facsimile 06 968 7231

7.3 Civil Defence

Taranaki Regional Council
47 Cloton Road
Stratford 4700
Phone: (06) 7657127
Fax: (06) 7655097

Emergency Management Office
45 Robe Street
New Plymouth
Phone: (06) 7581110
Freephone: 0800 900 049
Fax: (06) 7578019

8 PUBLIC VOLUNTARY SAVINGS

Powerco will play a support role as part of any public voluntary savings campaign by working closely with industry members and the System Operator to ensure the messages sent to consumers are consistent and achievable at household levels.

Powerco would expect the System Operator to take the lead on publicising any campaign and provide support by way of information on network loadings (estimated load reductions/voluntary savings) and answer any media queries with the relevant information and/or industry/ System Operator contacts.

9 STRATEGY

9.1 Strategy adopted for Grid Emergency during Immediate or Evolving events

Where the System Operator requests Powerco to reduce load under a Grid Emergency notice, Powerco will cooperate with the System Operator and endeavour to reduce demand utilising accepted methods of control such as exerting hot water off signal to reduce demand.

If the grid emergency is not resolved, Powerco under direction of the System Operator, will disconnect load in a controlled manner as per Powerco standard 220S025 Grid Emergency GXP load shedding plan.

If load shed is insufficient to stabilise the network, then automatic 11 kV feeder disconnection will occur via the AUFLS system.

A description of the Powerco AUFLS system is detailed in *220S032* section *10 Automatic Under-Frequency Load Shedding.*

9.2 Strategy adopted for immediate events

If the Electricity Authority declares a supply shortage requiring rolling outages during or immediately following a Grid Emergency or similar event requiring urgent action then Powerco will implement rolling outages as described in *220S032* section *9.3 Strategy for Evolving Events.*

9.3 Strategy for evolving events

Mid July energy values have been estimated from daytime average demand profiles and presented in tables of appendix A. The tables are arranged per GXP and in priority of disconnection where lowest priority for disconnection is at the bottom of each GXP of the table. Priority has been aligned with the guide provided by the EA SOROP and indicated in Figure 4, where high priority feeders are to be left until last for any disconnection.

AUFLS data is excluded from the feeder selection process but is shown in the tables of appendix A for information purposes.

The Network Operations Manager will prepare outage plans for weekly rolling outages. The outage plan will aim to provide an estimated weekly MWh energy value that can be conserved to implement 5, 10, 15, 20 or 25% energy reduction.

The tables of figure 5 will be used to provide estimated disconnection times to achieve the necessary % energy reduction.

To aid the formation of outage plans and to improve the implementation and restoration, process feeders have been formed in to groups where each feeder has the same priority value.

Groups are also arranged in loading priority where normal demand of each group does not exceed 25MW. Where feeder demand exceeds 25MW another group of the same priority is formed, leading to several groups of similar priority feeders.

220S032 section 13 Appendix B Feeder Groups (25MW or Less) contains the loading groups to be utilised by the Operations Manager when formulating rolling outages.

Figure 4

Priority	Priority Concern	Maintain Supply to:
1	Public health and safety	Major hospitals, air traffic control centres, and emergency operation centres.
2	Important public services	Energy control centres, communication networks, water and sewage pumping, fuel delivery systems, major ports, public passenger transport and major supermarkets.
3	Public health and safety	Minor hospitals, medical centres, schools, and street lighting.
4	Animal health and food production/storage	Dairy farms, milk production facilities, chicken sheds and cool stores.
5	Domestic production	Commercial and industrial premises.
6	Disruption to consumers	Residential premises.

220S032 section 14 Appendix C *Disconnection and Reconnection Tables* contains a disconnection and reconnection table. The table provides the basis of a switching plan, indicating feeder groups to be disconnected and proposed disconnection and reconnection times. The table is arranged to allow sufficient time for switching, restoration, load normalisation, and excessive change of load, spreading switching of groups across the day.

Powerco has a feeder classification system. *220S032* section *15 Appendix D Powerco Priority Feeder Selection Criteria* provides guidance on alignment of System Operator priorities and Powerco's feeder classification system.

The applied approach to producing a rolling outage is:

- All distribution HV feeders connected to zone substation 11 kV and below will be considered to be part of the plan.
- Energy volume is estimated from mid-winter average demand.
- Feeders will be assigned a priority according to Table 4 and arranged in order of priority per GXP.
- Groups of similar priority feeders are to be arranged in rolling outages as in *220S032* section *13 Appendix B Feeder Groups (25MW or Less)*.
- AUFLS zone 1 and 2 feeders will be excluded from the plan.

- Plans will be prepared that meet targeted saving level of *Figure 5 Weekly Target Saving Schedule* below.
- Where possible the plan should ensure groups are not interrupted for longer than:

Priority	Outage Duration	
6	10	Hours
5	8	Hours
4	6	Hours
3	5	Hours
2	3	Hours
1	2	Hours

From the above approach the following tables indicate schedule of load interruption for weekly energy saving targets;

Figure 5 Weekly Target Saving Schedule

5% Savings Plan				
Feeder	Outage Plan		Feb	July
Priority	Hours per day	Days per week	Total savings (MWh)	Total savings (MWh)
6	6	7	1759.57	2329.53
5	4	7	835.28	1008.87
4	2	7	2191.13	2274.59
3	0	7	0.00	0.00
2	0	7	0.00	0.00
1	0	7	0.00	0.00
	Total Weekly Saving:		4785.98	5612.99
	Total Weekly Load:		90036.27	101158.36
	% Saving :		5.3%	5.5%

10% Savings Plan				
Feeder	Outage Plan		Feb	July
Priority	Hours per day	Days per week	Total savings (MWh)	Total savings (MWh)
6	8	7	2346.09	3106.04
5	6	7	1252.93	1513.30
4	5	7	5477.82	5686.47
3	0	7	0.00	0.00
2	0	7	0.00	0.00
1	0	7	0.00	0.00
	Total Weekly Saving:		9076.84	10305.81
	Total Weekly Load:		90036.27	101158.36
	% Saving :		10.1%	10.2%

15% Savings Plan				
Feeder	Outage Plan		Feb	July
Priority	Hours per day	Days per week	Total savings (MWh)	Total savings (MWh)
6	10	7	2932.62	3882.55
5	8	7	1670.57	2017.74
4	8	7	8764.51	9098.35
3	1	7	245.43	265.70
2	0	7	0.00	0.00
1	0	7	0.00	0.00
	Total Weekly Saving:		13613.12	15264.34
	Total Weekly Load:		90036.27	101158.36
	% Saving :		15.1%	15.1%

20% Savings Plan				
Feeder	Outage Plan		Feb	July
Priority	Hours per day	Days per week	Total savings (MWh)	Total savings (MWh)
6	12	7	3519.14	4659.06
5	10	7	2088.21	2522.17
4	10	7	10955.64	11372.94
3	8	7	1963.43	2125.58
2	0	7	0.00	0.00
1	0	7	0.00	0.00
	Total Weekly Saving:		18526.41	20679.75
	Total Weekly Load:		90036.27	101158.36
	% Saving :		20.6%	20.4%

25% Savings Plan				
Feeder	Outage Plan		Feb	July
Priority	Hours per day	Days per week	Total savings (MWh)	Total savings (MWh)
6	12	7	3519.14	4659.06
5	12	7	2505.85	3026.61
4	12	7	13146.76	13647.53
3	10	7	2454.29	2656.97
2	5	7	1568.05	1540.19
1	0	7	0.00	0.00
	Total Weekly Saving:		23194.09	25530.36
	Total Weekly Load:		90036.27	101158.36
	% Saving :		25.8%	25.2%

For all events requiring rolling outages Powerco will invoke Powerco's *393S131 Electricity Networks – Emergency Response Plan*.

The completed rolling outage plan and at least a week ahead estimated half hourly load forecast per GXP will be forwarded to the System Operator to agree the disconnection and restoration process (refer *220S032* section *7.2 Communication with the System Operator*). Copy plans will also be forwarded to the Powerco Corporate Affairs Manager and Customer Relations Manager for onward briefing to stakeholders. A copy will also be forwarded to the Network Co-ordination Manager who will generate a switching instruction sheet (Powerco's *220F009 Switching Instruction Sheet - Planned*). The Network Coordination Manager will ensure Network Co-ordinators disconnect load indicated on the switching instructions sheet, recording time off (and on) supply and the demand shed by each action as indicated by Powerco SCADA.

The Network Coordination Manager will monitor and report the effects of load shedding to the Network Operations Manager who communicates the effects of load shedding to the System Operator (refer to *220S032* section *11.2 Reporting the Effects*)

9.4 Management of Feeder Outages

In general terms, the Network Operation Centre (NOC) under supervision of the Network Operations Manager will manage outages on a similar basis to other major network incidents and emergency situations as defined by Powerco's *393S131 Electricity Networks – Emergency Response Plan.*

The aim of these procedures is to sustain electricity network capabilities through abnormal and emergency situations. Specifically with reference to the SOROP the procedures will establish relationship channels within Powerco and third parties and raise awareness of the proposed outages to appropriate levels of authority. It will also allow those directly involved with the implementation of rolling outages to be relieved of superfluous duties and other distractions as much as is possible so that they are able to focus on the implementation and restoration of outages.

9.5 Restoration of feeder supply

To ensure Powerco adhere to the 25MW in five minute rule proposed in the SOROP careful staged disconnection and restoration will be required when considering feeders and groups.

Time must be allowed to implement outages and to allow load to normalise on restoration.

Powerco have drafted a connection and disconnection table that provides a timetable for outage and restoration of groups of feeders.
The table is attached in appendix C of this document to provide expected disconnection and reinstatement times to meet the requirements of Figure 5 tables in *220S032* section *9.3 Strategy for Evolving Events*.

The focus here will be on ensuring sufficient time is allowed between groups of feeders to implement the outage and that when restoring supply Powerco meets customer expectations of the advertised outage timeframe.

The ability to notify affected parties should restoration time increase will be limited. Powerco will endeavour to provide regular updates during any emergency and once the situation has passed.

10 AUTOMATIC UNDER-FREQUENCY LOAD SHEDDING

10.1 Overview

The Automatic Under-Frequency Load Shedding (AUFLS) system is an automatic system that sheds load from the transmission (at the distribution system level) if a significant system frequency decay is detected. Load is shed in these circumstances in order to support

system frequency and stabilise the transmission system in order to avoid a complete system collapse. The Code stipulate that where the Distributor installs an Automatic Under-Frequency Load Shedding (AUFLS) system, the Distributor must ensure that the AUFLS system operates to shed demand in two blocks of 16% of the total demand at any one point in time as specified in the table below.

Demand Block	Frequency to Operate	Time Delay
Block 1	47.8 Hz	0.4 seconds
Block 2	47.8 Hz	15 seconds
	or 47.5 Hz	0.4 seconds

To achieve the required demand reduction and stabilise system frequency, frequency monitoring relays, timers, and trip relays, have been installed on selected feeders throughout the Powerco network. The equipment will shed load upon the frequency decaying and remaining at or below the threshold points for the specified time period.

The feeders provided for the AUFLS system, have been selected to give the required two blocks of 16% (exclusive of controllable load) of the total GXP load for the time and seasonal period. The seasonal periods are defined as Winter Day, Winter Weekend, Summer Day, and Summer Weekend with summer being the period 20 October to 9 May and winter being 10 May to 19 October. An AUFLS event is considered to be a Grid Emergency and all feeders other than those with major hospitals or airports have been considered for inclusion in the scheme.

Further details of the AUFLS system are provided in Powerco's *393S045 Automatic Under-Frequency Load Shedding Equipment - Maintenance*.

10.2 AUFLS in the Context of a Security of Supply Situation

Powerco will ensure any response to a System Operator either as part of a Grid Emergency or System Operator notification of shortage of supply (immediate or evolving events) will maintain the levels of available AUFLS.
Powerco will either;

Exclude current AUFLS from its rolling outages plan and use only the groups of non AUFLS feeders as identified in *220S032* section *13 Appendix B Feeder Groups (25MW or Less)*, or

Include AUFLS feeder shedding but limit shedding to ensure, at all times, two 16% blocks are available as system load reduction is brought about by rolling outages. That is if Powerco shed 20% of network load we would be able to shed up to 20% of AUFLS load.

Where Powerco utilise AUFLS designated feeders in rolling outages Powerco will produce new load groups similar to *220S032* section *13* Appendix B. The new load groups will include AUFULS feeders and exclude higher priority feeders but will maintain as a minimum maintain 32% AUFLS control of system demand.

11 MEASURING AND REPORTING THE EFFECTS OF CONSERVATION ACTIVITIES

11.1 Measuring the Effects

The Network Operations Manager, as indicated in *220S032* section *9.3 Strategy for Evolving Events*, will monitor the effects of load reduction utilising Powerco SCADA data. However, to avoid discrepancy over the accuracy of differing data sources the System Operator will report on actual demand verses the target.
Powerco will review the System Operator report of savings and will, as required, amend rolling release plans to increase or decrease target volumes.

Where a report is not available Powerco will utilise SCADA demand profiles to provide an estimate of energy used during the outage. A comparison of the preceding week's data will be compared to measure the effectiveness of rolling outages against desired System Operator targets.

11.2 Reporting the Effects

The Network Operations Manager will make available the report identified in *220S032* section *11.1 Measuring the Effects* to the System Operator at least on a weekly basis.

12 APPENDIX A - POWERCO PRIORITY FEEDER LIST

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Manawatu	LINTON	Pascal Street	12	Feeder 12	11	1	1008	3	1,448	1,938	4.72%	5.11%
Manawatu	LINTON	Kairanga	22	Kopane	11	1	956	4	556	1,470	1.81%	3.88%
Manawatu	LINTON	Kairanga	23	Taikorea	11	1	782	4	1,433	1,230	4.67%	3.24%
Manawatu	LINTON	Kairanga	24	Tremaine	11	1	671	4	1,362	1,537	4.44%	4.05%
Manawatu	LINTON	Kairanga	14	Pioneer	11	2	1824	3	1,640	1,659	5.35%	4.38%
Manawatu	LINTON	Pascal Street	5	Feeder 5	11	2	1340	3	1,522	1,916	4.96%	5.05%
Manawatu	LINTON	Pascal Street	9	Feeder 9	11	2	1994	3	1,441	2,456	4.70%	6.48%
Manawatu	LINTON	Turitea	4	Aokautere	11	2	843	5	904	1,315	2.95%	3.47%
Manawatu	LINTON	Kairanga	13	Takaro	11	2	1172	6	662	1,080	2.16%	2.85%
Manawatu	LINTON	Pascal Street	6	Feeder 6	11	2	1407	6	1,496	2,058	4.88%	5.43%
Manawatu	LINTON	Kairanga	12	Awapuni	11		209	1	1,345	1,320	4.39%	3.48%
Manawatu	LINTON	Kairanga	21	Dairy Factory	11		199	2	2,666	2,541	8.70%	6.70%
Manawatu	LINTON	Pascal Street	4	Feeder 4	11		600	3	2,154	2,696	7.03%	7.11%
Manawatu	LINTON	Pascal Street	7	Feeder 7	11		1277	3	1,197	1,869	3.91%	4.93%
Manawatu	LINTON	Turitea	5	Summer hill	11		663	3	3,295	4,085	10.75%	10.77%
Manawatu	LINTON	Pascal Street	8	Feeder 8	11		255	4	1,308	1,357	4.27%	3.58%
Manawatu	LINTON	Pascal Street	11	Feeder 11	11		365	4	1,600	1,773	5.22%	4.68%
Manawatu	LINTON	Turitea	8	Linton	11		859	4	1,992	2,446	6.50%	6.45%
Manawatu	LINTON	Turitea	9	Massey	11		179	4	2,636	3,166	8.60%	8.35%
								Total	30,658	37,912	100.00%	100.00%
										AUFLS	41%	44%
										Non-AUFLS	59%	56%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kW per hou	Jul kW	% of GXP Load (Feb)	% of GXP Load (Jul)
Manawatu	BUNNYTHORPE	Keith Street	23	Brightwater TCE	11	1	851	1	1,538	1,811	2.64%	2.57%
Manawatu	BUNNYTHORPE	Feilding	24	Denbigh	11	1	1325	3	1,047	1,615	1.80%	2.29%
Manawatu	BUNNYTHORPE	Keith Street	12	Featherston Street	11	1	1056	3	864	1,356	1.48%	1.93%
Manawatu	BUNNYTHORPE	Keith Street	14	Cessna Rd & Ruahine St.	11	1	520	3	1,217	592	2.09%	0.84%
Manawatu	BUNNYTHORPE	Keith Street	21	Fitzory Street	11	1	1430	3	1,180	1,868	2.03%	2.65%
Manawatu	BUNNYTHORPE	Keith Street	22	Vogel Street	11	1	684	3	432	687	0.74%	0.98%
Manawatu	BUNNYTHORPE	Feilding	13	Colyton	11	1	1203	4	1,316	1,579	2.26%	2.24%
Manawatu	BUNNYTHORPE	Keith Street	11	Main Street	11	1	328	4	658	414	1.13%	0.59%
Manawatu	BUNNYTHORPE	Kelvin Grove	8	Pohangina	11	1	990	4	1,204	1,310	2.07%	1.86%
Manawatu	BUNNYTHORPE	Kimbolton	5	Apiti	11	1	497	4	661	585	1.13%	0.83%
Manawatu	BUNNYTHORPE	Kimbolton	6	Rangiwahia	11	1	240	4	161	223	0.28%	0.32%
Manawatu	BUNNYTHORPE	Kimbolton	7	Waituna	11	1	685	4	841	825	1.44%	1.17%
Manawatu	BUNNYTHORPE	Milson	9	Te Arakura	11	1	699	4	973	1,076	1.67%	1.53%
Manawatu	BUNNYTHORPE	Feilding	21	West Town	11	2	1931	3	1,730	2,587	2.97%	3.67%
Manawatu	BUNNYTHORPE	Keith Street	13	Napier Road	11	2	1127	3	1,349	1,575	2.32%	2.24%
Manawatu	BUNNYTHORPE	Kelvin Grove	12	Karamea	11	2	802	3	2,922	2,950	5.02%	4.19%
Manawatu	BUNNYTHORPE	Kelvin Grove	11	Stoney Creek	11	2	246	4	319	444	0.55%	0.63%
Manawatu	BUNNYTHORPE	Milson	10	Bunnythorpe	11	2	376	4	1,105	1,190	1.90%	1.69%
Manawatu	BUNNYTHORPE	Milson	11	Milson	11	2	529	4	668	953	1.15%	1.35%
Manawatu	BUNNYTHORPE	Sanson	5	Mt. Stewart	11	2	696	4	797	971	1.37%	1.38%
Manawatu	BUNNYTHORPE	Sanson	6	Oroua Downs	11	2	938	4	1,598	1,269	2.74%	1.80%
Manawatu	BUNNYTHORPE	Sanson	8	Rongatea	11	2	739	4	1,779	854	3.05%	1.21%
Manawatu	BUNNYTHORPE	Feilding	22	Makino	11	2	1046	6	1,256	1,683	2.16%	2.39%
Manawatu	BUNNYTHORPE	Kelvin Grove	7	Roberts Line	11	2	1805	6	1,855	2,924	3.18%	4.15%
Manawatu	BUNNYTHORPE	Milson	4	Gemini	11	2	1298	6	1,025	1,831	1.76%	2.60%
Manawatu	BUNNYTHORPE	Feilding	12	Kawakawa	11		67	1	1,246	957	2.14%	1.36%
Manawatu	BUNNYTHORPE	Keith Street	24	Keith Street	11		632	1	437	736	0.75%	1.05%
Manawatu	BUNNYTHORPE	Milson	6	Ruahine (Kensington)	11		227	2	1,552	1,684	2.67%	2.39%
Manawatu	BUNNYTHORPE	Sanson	10	Skyhawk	11		?	2	139	315	0.24%	0.45%
Manawatu	BUNNYTHORPE	Feilding	14	Residential	11		1188	3	1,082	1,623	1.86%	2.31%
Manawatu	BUNNYTHORPE	Feilding	11	Business	11		308	4	1,324	1,517	2.27%	2.15%
Manawatu	BUNNYTHORPE	Feilding	15	Crown	11		42	4	857	814	1.47%	1.16%
Manawatu	BUNNYTHORPE	Feilding	23	Works	11		374	4	1,912	1,807	3.28%	2.57%

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Manawatu	BUNNYTHORPE	Kelvin Grove	5	Malden	11		33	4	253	315	0.44%	0.45%
Manawatu	BUNNYTHORPE	Kelvin Grove	13	Armstrong	11		106	4	1,424	1,688	2.44%	2.40%
Manawatu	BUNNYTHORPE	Main St	12		11		2018	4	1,511	2,998	2.59%	4.26%
Manawatu	BUNNYTHORPE	Main St	13		11		39	4	90	106	0.16%	0.15%
Manawatu	BUNNYTHORPE	Main St	22		11		137	4	641	1,059	1.10%	1.50%
Manawatu	BUNNYTHORPE	Main St	23		11		1210	4	2,218	3,480	3.81%	4.94%
Manawatu	BUNNYTHORPE	Milson	8	Rangitikei	11		836	4	1,750	2,178	3.01%	3.09%
Manawatu	BUNNYTHORPE	Sanson	4	Kakariki	11		208	4	382	348	0.66%	0.49%
Manawatu	BUNNYTHORPE	Sanson	9	Ohakea	11		324	4	1,215	1,432	2.09%	2.03%
Manawatu	BUNNYTHORPE	Kelvin Grove	4	Ind Estate	11		?	5	466	1,436	0.80%	2.04%
Manawatu	BUNNYTHORPE	Main St	11		11		471	5	463	1,061	0.79%	1.51%
Manawatu	BUNNYTHORPE	Main St	15		11		553	5	2,116	2,353	3.63%	3.34%
Manawatu	BUNNYTHORPE	Main St	24		11		117	5	1,091	1,141	1.87%	1.62%
Manawatu	BUNNYTHORPE	Main St	25		11		108	5	554	752	0.95%	1.07%
Manawatu	BUNNYTHORPE	Milson	5	Fairs	11		458	5	1,722	774	2.96%	1.10%
Manawatu	BUNNYTHORPE	Kelvin Grove	10	Ashhurst	11		1389	6	1,661	1,972	2.85%	2.80%
Manawatu	BUNNYTHORPE	Main St	14		11		696	6	1,462	1,955	2.51%	2.78%
Manawatu	BUNNYTHORPE	Main St	21		11		950	6	866	1,550	1.49%	2.20%
Manawatu	BUNNYTHORPE	Main St	26		11		4	6	1,302	1,193	2.24%	1.69%
								Total	58,229	70,418	100.00%	100.00%
										AUFLS	49%	47%
										Non-AUFLS	51%	53%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Manawatu	MANGAMAIRE	Mangamutu	4	Mangatainoka	11	1	247	4	571	455	6.49%	7.84%
Manawatu	MANGAMAIRE	Mangamutu	6	Mangamarie	11	1	343	4	488	299	5.54%	5.15%
Manawatu	MANGAMAIRE	Parkville	1	Hukanui	11	1	233	4	394	194	4.48%	3.34%
Manawatu	MANGAMAIRE	Parkville	2	Eketahuna	11	1	394	6	357	394	4.05%	6.78%
Manawatu	MANGAMAIRE	Mangamutu	5	Pahiatua	11	2	1724	4	2,044	2,437	23.21%	41.93%

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Manawatu	MANGAMAIRE	Mangamutu	9	TMP	11		9	2	3,075	333	34.93%	5.74%
Manawatu	MANGAMAIRE	Alfredton	I41	Ihuraua	11		77	4	32	32	0.36%	0.55%
Manawatu	MANGAMAIRE	Alfredton	I15	Castlehill	11		43	4	25	25	0.28%	0.43%
Manawatu	MANGAMAIRE	Alfredton	I23	Brooklands	11		46	4	172	172	1.95%	2.95%
Manawatu	MANGAMAIRE	Alfredton	I32	Rongomai	11		125	4	172	172	1.95%	2.95%
Manawatu	MANGAMAIRE	Mangamutu	8	Coonoor	11		293	4	316	317	3.58%	5.46%
Manawatu	MANGAMAIRE	Mangamutu	10	Konini	11		188	4	284	206	3.22%	3.54%
Manawatu	MANGAMAIRE	Parkville	3	Mauriceville	11		237	4	331	231	3.76%	3.98%
Manawatu	MANGAMAIRE	Parkville	4	Rongokokako	11		95	4	188	105	2.13%	1.81%
Manawatu	MANGAMAIRE	Pongaroa	1	Horoeka	11		109	4	73	101	0.83%	1.74%
Manawatu	MANGAMAIRE	Pongaroa	2	Waione	11		213	4	124	144	1.41%	2.48%
Manawatu	MANGAMAIRE	Pongaroa	3	Coast Road	11		178	4	122	116	1.39%	1.99%
Manawatu	MANGAMAIRE	Pongaroa	4	Tiraumea	11		134	4	37	79	0.42%	1.35%
								Total	8,803	5,812	100.00%	100.00%
										AUFLS	44%	65%
										Non-AUFLS	56%	29%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Taranaki	CARRINGTON	Bell Block	7	Circuit No. 7	11	1	926	2	988	1,233	2.65%	2.87%
Taranaki	CARRINGTON	City	3	Circuit No. 3	11	1	457	3	1,533	1,698	4.12%	3.96%
Taranaki	CARRINGTON	Brooklands	6	CB6	11	1	1077	4	835	1,248	2.24%	2.91%
Taranaki	CARRINGTON	City	7	Circuit No. 7	11	1	302	4	1,462	1,490	3.92%	3.47%
Taranaki	CARRINGTON	City	8	Circuit No. 8	11	1	291	4	1,697	1,680	4.56%	3.92%
Taranaki	CARRINGTON	Bell Block	5	Circuit No. 5	11	2	89	2	1,287	1,525	3.46%	3.56%
Taranaki	CARRINGTON	City	9	Circuit No. 9	11	2	695	2	1,847	2,052	4.96%	4.79%
Taranaki	CARRINGTON	Bell Block	8	Circuit No. 8	11	2	552	4	1,157	1,085	3.11%	2.53%
Taranaki	CARRINGTON	Brooklands	14	CB14	11	2	233	4	88	137	0.24%	0.32%
Taranaki	CARRINGTON	City	5	Circuit No. 5	11	2	530	4	1,687	1,861	4.53%	4.34%
Taranaki	CARRINGTON	Brooklands	17	CB17	11	2	0	5	8	-	0.02%	0.00%
Taranaki	CARRINGTON	Brooklands	18	CB18	11	2	11	5	1,422	1,232	3.82%	2.87%
Taranaki	CARRINGTON	Bell Block	2	Circuit No. 2	11	2	802	6	1,283	1,424	3.45%	3.32%

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Taranaki	CARRINGTON	Brooklands	15	CB15	11		0	1	-	-	0.00%	0.00%
Taranaki	CARRINGTON	Bell Block	3	Circuit No. 3	11		93	2	2,752	2,710	7.39%	6.32%
Taranaki	CARRINGTON	Bell Block	4	Circuit No. 4	11		416	2	572	808	1.54%	1.88%
Taranaki	CARRINGTON	Bell Block	6	Circuit No. 6	11		19	2	2,001	2,001	5.37%	4.66%
Taranaki	CARRINGTON	Brooklands	9	CB9	11		1450	2	1,194	1,687	3.21%	3.93%
Taranaki	CARRINGTON	Brooklands	12	CB12	11		2156	2	1,776	2,649	4.77%	6.18%
Taranaki	CARRINGTON	Katere Rd	6	Katere Rd CB6	11		119	2	1,719	1,729	4.62%	4.03%
Taranaki	CARRINGTON	Katere Rd	11	Katere Rd CB11	11		290	2	1,150	991	3.09%	2.31%
Taranaki	CARRINGTON	Brooklands	5	CB5	11		1222	3	2,067	2,170	5.55%	5.06%
Taranaki	CARRINGTON	Brooklands	7	CB7	11		724	3	860	913	2.31%	2.13%
Taranaki	CARRINGTON	City	4	Circuit No. 4	11		676	3	2,113	2,263	5.67%	5.28%
Taranaki	CARRINGTON	Bell Block	9	Circuit No. 9	11		2	4	102	154	0.27%	0.36%
Taranaki	CARRINGTON	Brooklands	10	CB10	11		1627	4	1,304	1,961	3.50%	4.57%
Taranaki	CARRINGTON	Brooklands	16	CB16	11		0	4	-	-	0.00%	0.00%
Taranaki	CARRINGTON	Katere Rd	5	Katere Rd CB5	11		269	5	355	381	0.95%	0.89%
Taranaki	CARRINGTON	Katere Rd	12	Katere Rd CB12	11		908	5	915	1,240	2.46%	2.89%
Taranaki	CARRINGTON	Brooklands	8	CB8	11		1192	6	761	1,148	2.04%	2.68%
Taranaki	CARRINGTON	Brooklands	13	CB13	11		350	6	291	453	0.78%	1.06%
Taranaki	CARRINGTON	City	6	Circuit No. 6	11		0	6	-	-	0.00%	0.00%
Taranaki	CARRINGTON	City	10	Circuit No. 10	11		637	6	481	771	1.29%	1.80%
Taranaki	CARRINGTON	Katere Rd	7	Katere Rd CB7	11		31	6	308	353	0.83%	0.82%
Taranaki	CARRINGTON	Katere Rd	8	Katere Rd CB8	11		0	6	-	-	0.00%	0.00%
Taranaki	CARRINGTON	Katere Rd	10	Katere Rd CB10	11		1398	6	1,229	1,847	3.30%	4.31%
								Total	37,243	42,892	100.00%	100.00%
										AUFLS	41%	39%
										Non-AUFLS	60%	62%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Taranaki	HAWERA	Kapuni	KA7	Matapu	11	1	254	1	1,571	1,529	8.49%	6.79%
Taranaki	HAWERA	Livingstone	LI7	Kakaramea	11	1	410	4	735	460	3.97%	2.04%
Taranaki	HAWERA	Manaia	MA1	Auroa	11	1	364	4	775	446	4.19%	1.98%
Taranaki	HAWERA	Manaia	MA2	Otakeho	11	1	375	4	633	526	3.42%	2.34%
Taranaki	HAWERA	Manaia	MA4	Okaiawa	11	1	238	4	612	333	3.31%	1.48%
Taranaki	HAWERA	Whareroa	WH1	Manutahi	11	1	268	4	617	315	3.34%	1.40%
Taranaki	HAWERA	Whareroa	WH2	Whakamara	11	1	364	4	761	1,262	4.11%	5.60%

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Taranaki	HAWERA	Cambria	8800/8	Argyle Street	11	2	1158	2	1,358	1,600	7.33%	7.11%
Taranaki	HAWERA	Cambria	8800/11	Glover Road East	11	2	1008	3	811	1,237	4.38%	5.49%
Taranaki	HAWERA	Livingstone	LI6	Portland Quay	11	2	342	3	213	281	1.15%	1.25%
Taranaki	HAWERA	Cambria	8800/6	Tawhiti Road	11	2	1131	4	450	1,722	2.43%	7.65%
Taranaki	HAWERA	Livingstone	LI1	Otautu	11	2	239	4	413	298	2.23%	1.32%
Taranaki	HAWERA	Livingstone	LI2	Patea Borough	11	2	365	4	307	401	1.66%	1.78%
Taranaki	HAWERA	Cambria	8800/9	Glover Road West	11	2	1390	6	1,257	1,947	6.79%	8.65%
Taranaki	HAWERA	Cambria	8800/7	Cambria Street	11		489	1	1,444	1,739	7.80%	7.72%
Taranaki	HAWERA	Cambria	8800/10	Lowe Walker	11		1	2	2,219	1,469	11.99%	6.52%
Taranaki	HAWERA	Manaia	MA5	Manaia	11		475	2	1,622	1,277	8.76%	5.67%
Taranaki	HAWERA	Kapuni	KA1	Kapuni	11		27	4	78	51	0.42%	0.22%
Taranaki	HAWERA	Kapuni	KA2	Petrochem No.1(Ammonia Urea Plant)	11		1	4	436	1,894	2.36%	8.41%
Taranaki	HAWERA	Kapuni	KA6	Petrochem No.2 (Ammonia Urea Plant)	11		3	4	430	1,917	2.32%	8.51%
Taranaki	HAWERA	Whareroa	WH8	Manawhapou Road	11		920	4	1,767	1,814	9.55%	8.06%
								Total	18,510	22,519	100.00%	100.00%
										AUFLS	57%	55%
										Non-AUFLS	43%	45%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Taranaki	STRATFORD	Cloton Rd	S11	Central	11	1	154	4	475	589	2.83%	3.76%
Taranaki	STRATFORD	Cloton Rd	S61	South	11	1	666	4	1,120	1,200	6.67%	7.67%
Taranaki	STRATFORD	Eltham	R51	Mangatoki	11	1	337	4	2,896	2,071	17.25%	13.22%
Taranaki	STRATFORD	Kaponga	T11	Duthie Road	11	1	286	4	543	419	3.23%	2.67%
Taranaki	STRATFORD	Kaponga	T21	Manaia	11	1	243	4	402	238	2.39%	1.52%
Taranaki	STRATFORD	Cloton Rd	S31	North	11	2	891	4	1,406	493	8.37%	3.15%
Taranaki	STRATFORD	Cloton Rd	S41	Industrial	11	2	995	4	1,487	1,789	8.86%	11.43%
Taranaki	STRATFORD	Cloton Rd	S51	West	11	2	795	4	715	1,087	4.26%	6.94%
Taranaki	STRATFORD	Kaponga	T31	Riverlea	11	2	232	4	453	232	2.70%	1.48%
Taranaki	STRATFORD	Kaponga	T41	Palmer Road	11	2	60	4	300	269	1.79%	1.72%
Taranaki	STRATFORD	Eltham	R21	Town North	11		600	2	1,071	1,494	6.38%	9.54%
Taranaki	STRATFORD	Eltham	R41	Town South	11		361	3	905	877	5.39%	5.60%
Taranaki	STRATFORD	Waihapa	5845	T7	11		1	3	837	837	4.98%	5.35%
Taranaki	STRATFORD	Waihapa	5841	T2	11		3	3	363	363	2.16%	2.32%
Taranaki	STRATFORD	Cardiff	Q11	Cardiff	11		235	4	396	260	2.36%	1.66%

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Taranaki	STRATFORD	Cardiff	Q21	Mahoe	11		142	4	193	127	1.15%	0.81%
Taranaki	STRATFORD	Cardiff	Q31	Climie Road	11		146	4	184	121	1.09%	0.77%
Taranaki	STRATFORD	Douglas	D11	Strathmore	11		417	4	248	281	1.48%	1.79%
Taranaki	STRATFORD	Douglas	D21	Huiroa	11		183	4	167	132	1.00%	0.85%
Taranaki	STRATFORD	Eltham	R11	Ngaere	11		211	4	367	234	2.19%	1.50%
Taranaki	STRATFORD	Eltham	R31	Rawhitiroa	11		198	4	349	183	2.08%	1.17%
Taranaki	STRATFORD	Eltham	R61	Te-Roti	11		334	4	608	492	3.62%	3.14%
Taranaki	STRATFORD	Strathmore	7111		11		?	4	7	8	0.04%	0.05%
Taranaki	STRATFORD	Strathmore	7121		11		?	4	33	47	0.20%	0.30%
Taranaki	STRATFORD	Strathmore	7131		11		?	4	110	113	0.66%	0.72%
Taranaki	STRATFORD	Cloton Rd	S21	North East	11		671	6	716	1,388	4.26%	8.87%
Taranaki	STRATFORD	Douglas	D31	Toko	11		303	6	439	312	2.61%	1.99%
								Total	16,790	15,656	100.00%	100.00%
										AUFLS	58%	54%
										Non-AUFLS	42%	46%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Taranaki	HUIRANGI	Waitara East	U20	Princess Street	11	1	808	4	325	398	2.90%	3.19%
Taranaki	HUIRANGI	Waitara East	U30	Main Road Motunui	11	1	991	4	1,358	1,255	12.11%	10.07%
Taranaki	HUIRANGI	Waitara East	U40	Tikorangi	11	1	366	4	668	709	5.96%	5.69%
Taranaki	HUIRANGI	Waitara West	F11	Brown Street	11	1	637	5	546	777	4.87%	6.23%
Taranaki	HUIRANGI	Waitara West	F21	Blake Street	11	2	905	3	728	1,041	6.49%	8.35%
Taranaki	HUIRANGI	Waitara West	F31	West Quay	11	2	910	3	1,130	1,453	10.08%	11.66%
Taranaki	HUIRANGI	Waitara West	F61	Affco-West Quay	11	2	1	4	-	-	0.00%	0.00%
Taranaki	HUIRANGI	Inglewood	I21	Kaimata	6.6	2	210	6	411	272	3.67%	2.18%
Taranaki	HUIRANGI	Inglewood	I61	Brookes St	6.6	2	750	6	741	1,010	6.61%	8.11%
Taranaki	HUIRANGI	Inglewood	I31	Rata St	6.6		577	2	568	766	5.07%	6.15%
Taranaki	HUIRANGI	McKee	A21	Mckee No.1	11		5	2	1,071	1,494	9.56%	11.99%
Taranaki	HUIRANGI	Inglewood	I11	Mountain Rd	6.6		397	4	709	508	6.33%	4.08%
Taranaki	HUIRANGI	Inglewood	I51	Bristol Rd	6.6		134	4	283	205	2.53%	1.65%
Taranaki	HUIRANGI	McKee	A11	Otaraoa Road	11		146	4	208	202	1.85%	1.62%
Taranaki	HUIRANGI	Motukawa	H11	Ratapiko	6.6		190	4	34	34	0.31%	0.28%
Taranaki	HUIRANGI	Motukawa	H21	Kohete Rd	6.6		70	4	171	171	1.53%	1.38%

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Taranaki	HUIRANGI	Waitara East	U10	Waitara East Town	11		25	4	-	-	0.00%	0.00%
Taranaki	HUIRANGI	Waitara West	F51	Affco-Queen Street	11		1	4	1,622	1,456	14.48%	11.68%
Taranaki	HUIRANGI	Inglewood	I41	Elliot St	6.6		255	6	382	458	3.41%	3.68%
Taranaki	HUIRANGI	Motukawa	H41	Tarata	6.6		160	6	251	251	2.24%	2.02%
Taranaki	HUIRANGI	Waitara West	F41	Domett Street	11		0	6	-	-	0.00%	0.00%
								Total	11,207	12,462	100.00%	100.00%
										AUFLS	53%	55%
										Non-AUFLS	47%	45%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Taranaki	NEW PLYMOUTH	Moturoa	3	Circuit No. 3	11	1	1292	4	1,476	1,743	13.80%	14.02%
Taranaki	NEW PLYMOUTH	Moturoa	5	Circuit No. 5	11	1	2428	5	1,674	2,456	15.65%	19.76%
Taranaki	NEW PLYMOUTH	Moturoa	2	Circuit No. 2	11	2	1568	4	1,851	2,429	17.31%	19.55%
Taranaki	NEW PLYMOUTH	Moturoa	8	Circuit No. 8	11	2	1401	6	935	1,367	8.74%	11.00%
Taranaki	NEW PLYMOUTH	Moturoa	7	Circuit No. 7	11		583	1	1,218	1,503	11.39%	12.09%
Taranaki	NEW PLYMOUTH	Moturoa	6	Circuit No. 6	11		764	3	722	1,010	6.75%	8.13%
Taranaki	NEW PLYMOUTH	Moturoa	4	Circuit No. 4	11		369	4	1,132	1,101	10.58%	8.86%
Taranaki	NEW PLYMOUTH	Moturoa	9	Circuit No. 9	11		656	6	1,687	820	15.78%	6.60%
								Total	10,694	12,429	100.00%	100.00%
										AUFLS	55%	64%
										Non-AUFLS	45%	36%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Taranaki	OPUNAKE	Ngariki	NG4	Ngariki Rd	11	1	152	4	272	123	4.04%	2.64%
Taranaki	OPUNAKE	Pungarehu	PU4	Parihaka	11	1	322	4	662	299	9.84%	6.39%
Taranaki	OPUNAKE	Tasman	TA2	Opunake	11	2	817	3	766	909	11.38%	19.46%
Taranaki	OPUNAKE	Ngariki	NG2	Rahotu	11	2	237	4	416	251	6.17%	5.37%
Taranaki	OPUNAKE	Tasman	TA1	Ihaia Road	11	2	204	4	536	221	7.96%	4.74%
Taranaki	OPUNAKE	Tasman	TA9	Te Keri	11	2	283	4	553	304	8.21%	6.51%

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Taranaki	OPUNAKE	Tasman	TA3	STOS	11		1	2	1,079	972	16.03%	20.82%
Taranaki	OPUNAKE	Ngariki	NG3	South Rd	11		204	4	439	228	6.52%	4.88%
Taranaki	OPUNAKE	Pungarehu	PU2	Warea	11		373	4	530	361	7.88%	7.73%
Taranaki	OPUNAKE	Pungarehu	PU3	Pungarehu	11		216	4	296	175	4.39%	3.74%
Taranaki	OPUNAKE	Tasman	TA7	Oanui	11		197	4	481	390	7.14%	8.35%
Taranaki	OPUNAKE	Tasman	TA8	Pihama	11		307	4	702	438	10.43%	9.37%
								Total	6,732	4,671	100.00%	100.00%
										AUFLS	48%	45%
										Non-AUFLS	52%	55%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Tauranga	TAURANGA 33	Aongatete	1	Matakana	11	1	260	4	254	299	0.58%	0.53%
Tauranga	TAURANGA 33	Aongatete	2	Katikati	11	1	258	4	167	202	0.38%	0.36%
Tauranga	TAURANGA 33	Aongatete	3	Apata	11	1	402	4	482	827	1.10%	1.46%
Tauranga	TAURANGA 33	Katikati	4	Wharawhara Rd	11	1	330	4	796	1,513	1.81%	2.68%
Tauranga	TAURANGA 33	Omokoroa	4	Te Puna	11	1	1310	4	800	1,267	1.82%	2.24%
Tauranga	TAURANGA 33	Katikati	5	Mural Town	11	1	729	5	1,089	1,373	2.48%	2.43%
Tauranga	TAURANGA 33	Waihi Road	7	5th Ave	11	1	595	5	1,817	1,976	4.13%	3.50%
Tauranga	TAURANGA 33	Katikati	2	Tetley Rd	11	1	1341	6	1,226	2,394	2.79%	4.24%
Tauranga	TAURANGA 33	Matua	3	Beach Road	11	1	963	6	796	1,287	1.81%	2.28%
Tauranga	TAURANGA 33	Matua	4	Bureta Rd	11	1	1051	6	731	1,163	1.66%	2.06%
Tauranga	TAURANGA 33	Aongatete	4	Wills Road	11	2	194	4	1,214	1,424	2.76%	2.52%
Tauranga	TAURANGA 33	Kauri Point	1	Lindemanns Road	11	2	472	4	851	1,032	1.93%	1.83%
Tauranga	TAURANGA 33	Kauri Point	2	Bowen Town	11	2	746	6	544	632	1.24%	1.12%
Tauranga	TAURANGA 33	Matua	1	Matua Point	11	2	1245	6	1,045	1,644	2.38%	2.91%
Tauranga	TAURANGA 33	Matua	2	Bellevue	11	2	1137	6	1,014	1,455	2.30%	2.58%
Tauranga	TAURANGA 33	Waihi Road	4	10th Ave	11	2	310	6	2,357	2,407	5.36%	4.26%
Tauranga	TAURANGA 33	Hamilton St	4	Sulpher Pt	11		4	2	2,723	2,281	6.19%	4.04%
Tauranga	TAURANGA 33	Hamilton St	6	Chapel St	11		199	2	2,070	1,786	4.71%	3.16%
Tauranga	TAURANGA 33	Otumoetai	1	Central	11		639	2	1,142	1,639	2.60%	2.90%
Tauranga	TAURANGA 33	Otumoetai	7	Vale Street	11		490	2	460	669	1.05%	1.19%
Tauranga	TAURANGA 33	Hamilton St	7	Selwyn St	11		244	3	790	899	1.80%	1.59%
Tauranga	TAURANGA 33	Otumoetai	6	Wairoa	11		1213	3	1,807	2,251	4.11%	3.99%
Tauranga	TAURANGA 33	Aongatete	5	Lockington Rd	11		290	4	184	211	0.42%	0.37%
Tauranga	TAURANGA 33	Hamilton St	1	Wharf St	11		78	4	517	546	1.18%	0.97%

Tauranga	TAURANGA 33	Hamilton St	2	Elizabeth St W	11		1	4	-	-	0.00%	0.00%
Tauranga	TAURANGA 33	Hamilton St	3	Spring St	11		393	4	1,542	1,526	3.51%	2.70%
Tauranga	TAURANGA 33	Hamilton St	5	Harrington St	11		69	4	312	586	0.71%	1.04%
Tauranga	TAURANGA 33	Hamilton St	8	Cliff Rd	11		285	4	1,329	1,424	3.02%	2.52%
Tauranga	TAURANGA 33	Omokoroa	2	Omokoroa	11		988	4	831	1,066	1.89%	1.89%
Tauranga	TAURANGA 33	Omokoroa	3	Whakamarama	11		599	4	1,252	1,956	2.85%	3.46%
Tauranga	TAURANGA 33	Omokoroa	6	Plummers Point	11		210	4	229	311	0.52%	0.55%
Tauranga	TAURANGA 33	Waihi Road	6	Takitimu Dr	11		276	4	745	735	1.69%	1.30%
Tauranga	TAURANGA 33	Waihi Road	2	Koromiko St	11		800	5	936	1,309	2.13%	2.32%
Tauranga	TAURANGA 33	Waihi Road	5	Waihi Rd	11		1124	5	1,725	2,292	3.92%	4.06%
Tauranga	TAURANGA 33	Waihi Road	8	18th Ave	11		1052	5	1,925	2,319	4.38%	4.11%
Tauranga	TAURANGA 33	Omokoroa	1	Pahoia	11		830	6	1,634	2,392	3.72%	4.24%
Tauranga	TAURANGA 33	Otumoetai	2	Cherrywood	11		1060	6	942	1,327	2.14%	2.35%
Tauranga	TAURANGA 33	Otumoetai	3	Pilans Point	11		783	6	584	925	1.33%	1.64%
Tauranga	TAURANGA 33	Otumoetai	4	Brookfield	11		1384	6	905	1,259	2.06%	2.23%
Tauranga	TAURANGA 33	Otumoetai	5	Carmichael Rd	11		1498	6	1,198	2,059	2.72%	3.65%
Tauranga	TAURANGA 33	Waihi Road	1	11th Ave	11		752	6	1,550	1,870	3.52%	3.31%
Tauranga	TAURANGA 33	Waihi Road	3	13 Ave	11		842	6	1,466	1,932	3.33%	3.42%
								Total	43,980	56,463	100.00%	100.00%
										AUFLS	35%	37%
										Non-AUFLS	65%	63%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Tauranga	TAURANGA 11	Tauranga 11	19	Bethlehem	11	1	1686	3	1,839	2,637	11.78%	13.56%
Tauranga	TAURANGA 11	Tauranga 11	14	Gate Pa	11	1	1009	6	710	1,105	4.55%	5.68%
Tauranga	TAURANGA 11	Tauranga 11	11	Kaimai Drive	11	2	1220	4	1,732	1,757	11.10%	9.03%
Tauranga	TAURANGA 11	Tauranga 11	18	Cambridge Rd	11	2	859	6	824	1,090	5.28%	5.60%
Tauranga	TAURANGA 11	Tauranga 11	12	Ripple Plant	11		2	1	475	476	3.04%	2.45%
Tauranga	TAURANGA 11	Tauranga 11	13	Oropi Rd	11		1280	2	1,436	1,868	9.20%	9.60%
Tauranga	TAURANGA 11	Tauranga 11	15	Cameron Rd	11		852	2	1,868	2,145	11.97%	11.03%
Tauranga	TAURANGA 11	Tauranga 11	16	Green Park	11		1291	2	1,547	2,306	9.91%	11.86%
Tauranga	TAURANGA 11	Tauranga 11	17	Maleme St	11		712	4	1,245	1,412	7.97%	7.26%
Tauranga	TAURANGA 11	Tauranga 11	20	Pooles Rd	11		1311	5	2,341	2,310	15.00%	11.88%
Tauranga	TAURANGA 11	Tauranga 11	21	Maleme Express	11		994	5	1,593	2,344	10.21%	12.05%
								Total	15,610	19,450	100.00%	100.00%
										AUFLS	33%	34%
										Non-AUFLS	67%	66%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Tauranga	MT MAUNGANUI	Te Maunga	6	Sandhurst St	11	1	883	2	414	414	1.03%	0.84%
Tauranga	MT MAUNGANUI	Papamoa	3	Black Stump	11	1	776	4	479	1,126	1.20%	2.29%
Tauranga	MT MAUNGANUI	Papamoa	4	Kairua	11	1	149	4	1,035	1,246	2.59%	2.54%
Tauranga	MT MAUNGANUI	Te Maunga	5	Bruce Rd	11	1	308	4	26	26	0.06%	0.05%
Tauranga	MT MAUNGANUI	Mataphihi	3	Mount	11	1	989	5	609	819	1.52%	1.67%
Tauranga	MT MAUNGANUI	Te Maunga	3	Gloucester Rd	11	1	169	5	722	722	1.80%	1.47%
Tauranga	MT MAUNGANUI	Triton Ave	3	Central	11	1	624	5	727	908	1.82%	1.85%
Tauranga	MT MAUNGANUI	Mataphihi	4	Arataki	11	1	1100	6	1,693	1,929	4.23%	3.93%
Tauranga	MT MAUNGANUI	Omanu	6	Golf Rd	11	1	881	6	793	1,183	1.98%	2.41%
Tauranga	MT MAUNGANUI	Omanu	8	Tui Street	11	1	1345	6	1,450	1,992	3.62%	4.06%
Tauranga	MT MAUNGANUI	Papamoa	5	Beach Road West	11	1	1043	6	1,423	2,050	3.56%	4.18%
Tauranga	MT MAUNGANUI	Te Maunga	4	Grenada St	11	1	183	6	604	604	1.51%	1.23%
Tauranga	MT MAUNGANUI	Papamoa	1	Tara Road	11	2	1376	3	1,730	1,919	4.32%	3.91%
Tauranga	MT MAUNGANUI	Mataphihi	7	Te Maunga	11	2	815	6	1,249	1,522	3.12%	3.10%
Tauranga	MT MAUNGANUI	Papamoa	2	Domain	11	2	882	6	1,750	1,986	4.37%	4.05%
Tauranga	MT MAUNGANUI	Papamoa	6	Mangatawa Lane	11	2	1314	6	1,135	1,773	2.84%	3.61%
Tauranga	MT MAUNGANUI	Te Maunga	1	Evans Rd	11	2	824	6	502	502	1.25%	1.02%
Tauranga	MT MAUNGANUI	Te Maunga	2	Palm Beach	11	2	702	6	859	859	2.15%	1.75%
Tauranga	MT MAUNGANUI	Triton Ave	4	Wharf Crane	11		65	1	1,097	1,624	2.74%	3.31%
Tauranga	MT MAUNGANUI	Triton Ave	5	Wharf	11		36	1	1,442	1,580	3.60%	3.22%
Tauranga	MT MAUNGANUI	Triton Ave	8	South	11		52	1	1,463	1,835	3.66%	3.74%
Tauranga	MT MAUNGANUI	Triton Ave	7	Totara Street North	11		1358	3	1,977	2,268	4.94%	4.62%
Tauranga	MT MAUNGANUI	Omanu	1	Concorde Ave	11		828	4	602	961	1.50%	1.96%
Tauranga	MT MAUNGANUI	Papamoa	7	Junction	11		915	4	863	1,328	2.16%	2.71%
Tauranga	MT MAUNGANUI	Papamoa	8	Reid Rd	11		596	4	481	635	1.20%	1.29%
Tauranga	MT MAUNGANUI	Triton Ave	1	Hull Road	11		284	4	1,818	1,853	4.54%	3.78%
Tauranga	MT MAUNGANUI	Triton Ave	2	Hewletts Road	11		69	4	1,830	1,799	4.57%	3.67%
Tauranga	MT MAUNGANUI	Mataphihi	1	Eversham Rd	11		906	5	637	1,040	1.59%	2.12%

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Tauranga	MT MAUNGANUI	Mataphihi	6	Aerodrome	11		141	5	1,424	1,354	3.56%	2.76%
Tauranga	MT MAUNGANUI	Mataphihi	2	Matapihi Rd	11		263	5	220	261	0.55%	0.53%
Tauranga	MT MAUNGANUI	Omanu	2	MacDonald St	11		72	5	197	241	0.49%	0.49%
Tauranga	MT MAUNGANUI	Omanu	3	Newton St	11		171	5	505	680	1.26%	1.39%
Tauranga	MT MAUNGANUI	Omanu	4	Bayfair	11		182	5	2,349	2,106	5.87%	4.29%
Tauranga	MT MAUNGANUI	Papamoa	9	Gravatt Rd	11		2063	5	1,954	2,709	4.88%	5.52%
Tauranga	MT MAUNGANUI	Triton Ave	9	Portside	11		15	5	56	79	0.14%	0.16%
Tauranga	MT MAUNGANUI	Mataphihi	5	Omanu	11		0	6	-	-	0.00%	0.00%
Tauranga	MT MAUNGANUI	Mataphihi	8	Aviation Dr	11		82	6	361	439	0.90%	0.89%
Tauranga	MT MAUNGANUI	Omanu	5	Flyover	11		254	6	829	1,296	2.07%	2.64%
Tauranga	MT MAUNGANUI	Omanu	7	Central Parade	11		562	6	605	850	1.51%	1.73%
Tauranga	MT MAUNGANUI	Triton Ave	10	Tawa St	11		1484	6	2,117	2,552	5.29%	5.20%
								Total	40,030	49,069	100.00%	100.00%
										AUFLS	43%	44%
										Non-AUFLS	57%	56%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Tauranga	TE MATAI	Te Puke	5	Papamoa	11	1	788	3	1,233	2,144	8.68%	10.31%
Tauranga	TE MATAI	Pongakawa	1	Tainui	11	1	813	4	1,095	1,440	7.71%	6.93%
Tauranga	TE MATAI	Pongakawa	3	Rotoehu	11	1	413	4	886	657	6.24%	3.16%
Tauranga	TE MATAI	Pongakawa	4	Old Coach Road	11	1	343	4	583	598	4.11%	2.88%
Tauranga	TE MATAI	Te Puke	1	Roads	11	1	594	4	467	2,138	3.29%	10.29%
Tauranga	TE MATAI	Te Puke	4	Paengaroa	11	2	247	4	1,021	1,739	7.19%	8.37%
Tauranga	TE MATAI	Te Puke	2	Central	11	2	829	6	1,419	1,673	9.99%	8.05%
Tauranga	TE MATAI	Te Puke	6	Rangiuru	11		19	1	2,318	1,915	16.32%	9.21%
Tauranga	TE MATAI	Atuaroa Ave	2	No 3 Rd	11		113	3	720	1,089	5.07%	5.24%
Tauranga	TE MATAI	Atuaroa Ave	4	Te Puke Nth	11		13	4	567	828	3.99%	3.98%
Tauranga	TE MATAI	Atuaroa Ave	6	Te Puke Quarry Rd	11		55	4	308	1,419	2.17%	6.83%
Tauranga	TE MATAI	Pongakawa	2	Otamarakau	11		1026	4	949	981	6.68%	4.72%
Tauranga	TE MATAI	Te Puke	3	Maketu	11		131	4	756	1,432	5.33%	6.89%
Tauranga	TE MATAI	Te Puke	8	Te Matai Rd	11		468	4	703	1,324	4.95%	6.37%
Tauranga	TE MATAI	Atuaroa Ave	1	Jellicoe St	11		12	6	792	847	5.57%	4.07%
Tauranga	TE MATAI	Te Puke	7	Manoeka	11		494	6	386	562	2.72%	2.71%
								Total	14,203	20,784	100.00%	100.00%
										AUFLS	47%	50%
										Non-AUFLS	53%	50%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Tauranga	KAITIMAKO	Welcome Bay	3	Welcome Bay	11	1	38	3	1,323	1,968	18.23%	18.04%
Tauranga	KAITIMAKO	Welcome Bay	4	Kaitemako Rd	11	1	666	4	602	875	8.30%	8.02%
Tauranga	KAITIMAKO	Welcome Bay	5	Poike	11	1	1228	4	743	1,533	10.23%	14.06%
Tauranga	KAITIMAKO	Welcome Bay	2	Mangatapu	11	2	42	6	1,418	2,120	19.54%	19.44%
Tauranga	KAITIMAKO	Welcome Bay	7	Ohauiti Rd	11	2	1226	6	1,293	1,597	17.82%	14.64%
Tauranga	KAITIMAKO	Welcome Bay	6	Victory St	11		1032	3	861	1,351	11.86%	12.38%
Tauranga	KAITIMAKO	Welcome Bay	1	Waimapu	11		195	6	1,017	1,465	14.02%	13.43%
								Total	7,258	10,909	100.00%	100.00%
										AUFLS	74%	74%
										Non-AUFLS	26%	26%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Valley	KINLEITH	Baird Road	4	Campbell St	11	1	309	3	1,333	1,595	1.65%	1.97%
Valley	KINLEITH	Baird Road	5	Harris block	11	1	586	4	1,130	1,023	1.40%	1.26%
Valley	KINLEITH	Baird Road	6	Papanui St	11	1	442	4	535	654	0.66%	0.81%
Valley	KINLEITH	Baird Road	1	Rata St	11	1	293	6	182	337	0.23%	0.42%
Valley	KINLEITH	Baird Road	3	Kauri Street	11	1	488	6	700	756	0.87%	0.93%
Valley	KINLEITH	Maraetai Road	4	Mossops Road	11	1	713	6	1,544	1,784	1.91%	2.20%
Valley	KINLEITH	Maraetai Road	5	Thompson Drive	11	1	453	6	326	583	0.40%	0.72%
Valley	KINLEITH	Maraetai Road	6	Duke Street	11	1	265	6	150	327	0.19%	0.40%
Valley	KINLEITH	Maraetai Road	8	Arawa Street	11	1	795	6	619	983	0.77%	1.21%
Valley	KINLEITH	Maraetai Road	2	Lomond Avenue	11	2	908	4	1,293	1,741	1.60%	2.15%
Valley	KINLEITH	Maraetai Road	3	Old Cambridge Road	11	2	347	4	1,080	737	1.34%	0.91%
Valley	KINLEITH	Baird Road	8	Dalmeny St	11	2	712	6	954	1,272	1.18%	1.57%
Valley	KINLEITH	Maraetai Road	1	Balmoral Drive	11	2	336	6	212	383	0.26%	0.47%
Valley	KINLEITH	Kinleith	1	No 1 Oxygen Delignifier	11		0	4	2,811	2,590	3.48%	3.20%
Valley	KINLEITH	Kinleith	2	Chemical Plant/No 2 Paper Mach	11		0	4	-	-	0.00%	0.00%
Valley	KINLEITH	Kinleith	3	No 3 Oxygen Delignifier	11		0	4	2,387	2,383	2.96%	2.94%
Valley	KINLEITH	Kinleith	4	No 4 Paper Machine	11		0	4	1,901	2,197	2.36%	2.71%
Valley	KINLEITH	Kinleith	5	No 5 Paper Machine	11		0	4	2,253	2,284	2.79%	2.82%
Valley	KINLEITH	Kinleith	6	No 5 Paper Machine	11		0	4	-	-	0.00%	0.00%
Valley	KINLEITH	Kinleith	7	Thickener Station	11		0	4	3,800	3,253	4.71%	4.02%

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Valley	KINLEITH	Kinleith	8	Chemical Plant	11		0	4	4,546	4,150	5.63%	5.13%
Valley	KINLEITH	Kinleith	9	Chemical Plant	11		0	4	4,614	4,214	5.72%	5.20%
Valley	KINLEITH	Kinleith	10	No 5 Paper Machine	11		0	4	883	799	1.09%	0.99%
Valley	KINLEITH	Kinleith	11	No 1 Paper Mill	11		0	4	3,044	3,218	3.77%	3.97%
Valley	KINLEITH	Kinleith	12	TP_Kinleith CB12 Current	11		0	4	-	-	0.00%	0.00%
Valley	KINLEITH	Kinleith	13	No 2 Pulp Machine	11		0	4	4,839	4,917	6.00%	6.07%
Valley	KINLEITH	Kinleith	14	NSSC Plant	11		0	4	1,773	1,663	2.20%	2.05%
Valley	KINLEITH	Kinleith	15	No 2 Pulp Group	11		0	4	2,221	2,081	2.75%	2.57%
Valley	KINLEITH	Kinleith	16	No 2 Pulp Group	11		0	4	4,476	4,090	5.55%	5.05%
Valley	KINLEITH	Kinleith	17	No 2 Power/Causticising	11		0	4	1,354	1,471	1.68%	1.82%
Valley	KINLEITH	Kinleith	18	No 2 Power Group	11		0	4	4,631	4,415	5.74%	5.45%
Valley	KINLEITH	Kinleith	19	No 1 & 5 Boilers	11		0	4	2,665	2,765	3.30%	3.41%
Valley	KINLEITH	Kinleith	20	CB20 Current	11		0	4	-	-	0.00%	0.00%
Valley	KINLEITH	Kinleith	21	No 2 Pulp Machine	11		0	4	1,757	1,719	2.18%	2.12%
Valley	KINLEITH	Kinleith	22	No 5 Recovery Boiler	11		0	4	1,815	1,962	2.25%	2.42%
Valley	KINLEITH	Kinleith	23	Old Taupo Rd Fdr	11		0	4	-	-	0.00%	0.00%
Valley	KINLEITH	Kinleith	24	No 6 Paper Machine	11		0	4	2,382	2,437	2.95%	3.01%
Valley	KINLEITH	Kinleith	25	No 3 Pulp Log End	11		0	4	2,149	2,027	2.66%	2.50%
Valley	KINLEITH	Kinleith	26	No 6 Paper Machine	11		0	4	4,107	3,750	5.09%	4.63%
Valley	KINLEITH	Kinleith	28	No 1 SMLE Chipping/Barking	11		0	4	548	781	0.68%	0.96%
Valley	KINLEITH	Kinleith	29	No 6 Paper Machine	11		0	4	3,012	2,919	3.73%	3.60%
Valley	KINLEITH	Kinleith	30	No 1 SMLE Chipping/Plywood	11		0	4	2,575	2,633	3.19%	3.25%
Valley	KINLEITH	Kinleith	31	Water Centre Fdr	11		0	4	1,544	1,350	1.91%	1.67%
Valley	KINLEITH	Kinleith	32	Effluent Line Fdr	11		0	4	966	1,047	1.20%	1.29%
Valley	KINLEITH	Lakeside	T125	CHH Lakeside	11		0	5	327	377	0.41%	0.47%
Valley	KINLEITH	Midway		CHH Midway	3.3		0	5	327	377	0.41%	0.47%
Valley	KINLEITH	Baird Road	2	Ashworth St	11		280	6	932	932	1.16%	1.15%
								Total	80,695	80,977	100.00%	100.00%
										AUFLS	12%	15%
										Non-AUFLS	88%	85%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Valley	HINUERA	Browne Street	3	Smith St	11	1	730	2	1,048	1,400	3.83%	5.16%
Valley	HINUERA	Browne Street	5	Station Rd	11	1	283	4	429	491	1.57%	1.81%
Valley	HINUERA	Lake Road	1	Totmans Road	11	1	167	4	481	437	1.76%	1.61%
Valley	HINUERA	Putaruru	2	Bent Street	11	1	841	4	932	1,334	3.41%	4.92%
Valley	HINUERA	Putaruru	3	Taumangi Road	11	1	314	4	859	718	3.14%	2.65%
Valley	HINUERA	Tower Road	4	Burwood Road	11	1	511	4	768	1,270	2.81%	4.68%
Valley	HINUERA	Browne Street	7	Elizabeth St	11	1	987	6	1,459	1,990	5.34%	7.34%
Valley	HINUERA	Tower Road	5	Rawhiti Avenue	11	1	931	6	832	1,419	3.05%	5.23%
Valley	HINUERA	Waharoa	1	Mowbray Rd	11	1	416	6	996	857	3.65%	3.16%
Valley	HINUERA	Waharoa	3	Factory Rd	11	1	38	6	947	784	3.46%	2.89%
Valley	HINUERA	Putaruru	1	Arapuni Street	11	2	623	1	1,187	1,435	4.34%	5.30%
Valley	HINUERA	Browne Street	1	Tainui St Ls	11	2	326	3	1,039	1,270	3.80%	4.69%
Valley	HINUERA	Lake Road	3	Rangitanutu Road	11	2	514	4	1,404	1,025	5.14%	3.78%
Valley	HINUERA	Lake Road	5	Buckland Road	11	2	416	4	1,184	1,004	4.33%	3.70%
Valley	HINUERA	Putaruru	4	Lichfield	11	2	403	4	1,259	865	4.61%	3.19%
Valley	HINUERA	Putaruru	5	Waotu	11	2	577	4	1,194	1,132	4.37%	4.18%
Valley	HINUERA	Putaruru	8	Kennedy Drive	11	2	661	4	1,629	1,796	5.96%	6.63%
Valley	HINUERA	Tirau	5	Cambridge Road	11	2	696	4	1,394	1,194	5.10%	4.41%
Valley	HINUERA	Tirau	7	Prospect Street	11	2	413	4	477	556	1.75%	2.05%
Valley	HINUERA	Tirau	9	Okoroire	11	2	278	4	448	438	1.64%	1.62%
Valley	HINUERA	Tower Road	1	Gordon	11	2	397	4	1,106	921	4.05%	3.40%
Valley	HINUERA	Tower Road	2	Te Poi	11	2	679	4	1,229	1,428	4.50%	5.27%
Valley	HINUERA	Tower Road	3	Banks Street	11	2	135	4	471	581	1.73%	2.14%
Valley	HINUERA	Putaruru	6	Local Service	11		12	1	7	9	0.02%	0.03%
Valley	HINUERA	Tirau	1	NZDC "A"	11		1	1	778	261	2.85%	0.96%
Valley	HINUERA	Tirau	3	NZDC "B"	11		0	1	775	262	2.84%	0.97%
Valley	HINUERA	Waharoa	5	Cheese Factory	11		1	3	2,576	1,782	9.43%	6.58%
Valley	HINUERA	Browne Street	9	Firth St	11		123	6	420	442	1.54%	1.63%
								Total	27,326	27,101	100.00%	100.00%
										AUFLS	83%	90%
										Non-AUFLS	17%	10%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Valley	KOPU	Tairua	1	Pepe Road	11	1	758	3	703	826	2.50%	2.55%
Valley	KOPU	Thames	1	Rolleston Street	11	1	886	3	1,016	1,769	3.62%	5.45%
Valley	KOPU	Kerepehi	1	Kaihere	11	1	501	4	839	886	2.99%	2.73%
Valley	KOPU	Matakoki	1	Kopu	11	1	366	4	1,385	1,658	4.94%	5.11%
Valley	KOPU	Thames	3	Queen Street	11	1	1334	4	2,028	2,586	7.23%	7.97%
Valley	KOPU	Thames	6	Pollen St	11	1	452	4	1,075	1,174	3.83%	3.62%
Valley	KOPU	Whitianga	1	Owera Road	11	1	1760	4	1,085	1,132	3.87%	3.49%
Valley	KOPU	Whitianga	4	Coroglen	11	1	570	4	785	737	2.80%	2.27%
Valley	KOPU	Tairua	4	Pauanui	11	1	919	6	508	568	1.81%	1.75%
Valley	KOPU	Whitianga	2	Cook Drive	11	1	1240	6	1,342	1,563	4.78%	4.82%
Valley	KOPU	Kerepehi	4	County Water	11	2	5	1	266	237	0.95%	0.73%
Valley	KOPU	Matakoki	5	Carter H.H	11	2	1	1	617	670	2.20%	2.07%
Valley	KOPU	Thames	5	A & G Price	11	2	1	2	931	961	3.32%	2.96%
Valley	KOPU	Coromandel	5	Ls Manaia	11	2	848	3	322	799	1.15%	2.46%
Valley	KOPU	Whitianga	3	Kuaotunu	11	2	1028	3	662	712	2.36%	2.20%
Valley	KOPU	Coromandel	1	Colville	11	2	1378	4	1,025	1,267	3.65%	3.90%
Valley	KOPU	Coromandel	3	Wyuna Bay	11	2	439	4	631	676	2.25%	2.08%
Valley	KOPU	Kerepehi	3	Hauraki Road	11	2	758	4	1,183	1,120	4.22%	3.45%
Valley	KOPU	Kerepehi	5	Mangatarata	11	2	515	4	1,043	1,106	3.72%	3.41%
Valley	KOPU	Matakoki	3	Puriri	11	2	459	4	745	847	2.66%	2.61%
Valley	KOPU	Tairua	3	Hikuai	11	2	636	4	652	628	2.32%	1.94%
Valley	KOPU	Kerepehi	6	Ngatea	11	2	950	6	1,441	1,698	5.14%	5.24%
Valley	KOPU	Thames	4	Thames Coast	11	2	1418	6	1,341	1,747	4.78%	5.39%
Valley	KOPU	Kerepehi	2	Awaiti	11		429	4	906	941	3.23%	2.90%
Valley	KOPU	Tairua	2	Pleasant Point	11		1053	6	443	494	1.58%	1.52%
Valley	KOPU	Tairua	5	Tairua North	11		915	6	485	566	1.73%	1.74%
Valley	KOPU	Thames	2	Totara	11		618	6	932	1,231	3.32%	3.80%
Valley	KOPU	Whitianga	5	Purangi	11		1723	6	1,125	956	4.01%	2.95%
Valley	KOPU	Whitianga	6	Buffalo Beach	11		1165	6	882	1,160	3.14%	3.58%
Valley	KOPU	Whitianga	7	Joan Gaskell Dr	11		1056	6	1,652	1,723	5.89%	5.31%
								Total	28,051	32,438	100.00%	100.00%
										AUFLS	77%	78%
										Non-AUFLS	23%	22%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Valley	WAIHOU	Mikkelson	1	Maungakawa Road	11	1	285	4	805	821	2.82%	3.80%
Valley	WAIHOU	Mikkelson	5	Ngarua	11	1	55	4	2,655	2,403	9.31%	11.13%
Valley	WAIHOU	Mikkelson	6	Te Aroha Borough	11	1	1124	4	1,618	2,111	5.67%	9.78%
Valley	WAIHOU	Mikkelson	8	Mountain	11	1	456	4	991	1,099	3.47%	5.09%
Valley	WAIHOU	Tahuna	2	Mangateparu	11	1	416	4	781	690	2.74%	3.20%
Valley	WAIHOU	Tahuna	3	Te Puninga	11	1	428	4	1,147	1,031	4.02%	4.77%
Valley	WAIHOU	Inghams	2	Waihekau Rd	11	1	0	6	-	-	0.00%	0.00%
Valley	WAIHOU	Mikkelson	10	Springdale	11	2	468	4	1,201	1,059	4.21%	4.91%
Valley	WAIHOU	Mikkelson	2	McCabe Road	11	2	318	4	779	900	2.73%	4.17%
Valley	WAIHOU	Mikkelson	3	Thomas Road	11	2	316	4	842	852	2.95%	3.95%
Valley	WAIHOU	Tahuna	1	Hoe-Patetonga	11	2	680	4	1,308	1,228	4.58%	5.69%
Valley	WAIHOU	Mikkelson	4	Stanley Avenue	11	2	883	6	682	1,099	2.39%	5.09%
Valley	WAIHOU	Farmers Road	2	Woods Road	11		1	1	1,212	1,098	4.25%	5.09%
Valley	WAIHOU	Farmers Road	6	Tatuanui	11		110	1	2,716	1,438	9.52%	6.66%
Valley	WAIHOU	Farmers Road	4	Township	11		257	3	1,581	1,387	5.54%	6.42%
Valley	WAIHOU	Waitoa	1	Fonterra Inc CB2	11		0	4	3,922	1,116	13.75%	5.17%
Valley	WAIHOU	Waitoa	2	Fonterra Inc CB1	11		1	4	3,851	1,080	13.50%	5.00%
Valley	WAIHOU	Inghams	1	Inghams 1	11		1	5	2,432	2,177	8.53%	10.08%
Valley	WAIHOU	Inghams	3	Inghams 2	11		0	5	-	-	0.00%	0.00%
								Total	28,523	21,588	100.00%	100.00%
										AUFLS	45%	62%
										Non-AUFLS	55%	38%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Valley	PIAKO	Morrinsville	3	Alexandra Ave	11	1	527	3	1,796	836	8.53%	4.78%
Valley	PIAKO	Piako	2	Morrinsville South	11	1	1144	3	1,294	2,032	6.14%	11.62%
Valley	PIAKO	Morrinsville	1	Lorne Street	11	1	604	4	1,828	2,148	8.68%	12.28%
Valley	PIAKO	Piako	4	Motumaoho	11	1	476	4	932	1,060	4.43%	6.06%
Valley	PIAKO	Walton	1	Wairere Road	11	1	200	4	432	329	2.05%	1.88%
Valley	PIAKO	Piako	8	Du Pont	11	2	1	1	1,602	780	7.61%	4.46%
Valley	PIAKO	Piako	3	Horrels Road	11	2	364	4	763	680	3.62%	3.89%
Valley	PIAKO	Piako	5	Kiwitahi	11	2	357	4	707	745	3.36%	4.26%
Valley	PIAKO	Piako	6	Kereone	11	2	691	4	1,425	1,463	6.77%	8.36%
Valley	PIAKO	Walton	2	Campbell Road	11	2	307	4	778	603	3.70%	3.45%

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Valley	PIAKO	Walton	3	Piakoiti Road	11	2	416	4	874	797	4.15%	4.55%
Valley	PIAKO	Walton	4	Wardville	11	2	406	4	927	876	4.40%	5.01%
Valley	PIAKO	Piako	1	Morrinsville North	11	2	838	6	734	1,259	3.49%	7.20%
Valley	PIAKO	Morrinsville	2	Dairy Co. A	11		1	1	2,626	1,194	12.47%	6.82%
Valley	PIAKO	Morrinsville	4	Studholme St	11		223	3	1,395	699	6.63%	4.00%
Valley	PIAKO	Tatua	1	Tatua A	11		0	3	1,467	1,467	6.97%	8.39%
Valley	PIAKO	Tatua	3	Tatua B	11		0	3	1,168	386	5.55%	2.20%
Valley	PIAKO	Tatua	5	Tatua C	11		0	3	305	138	1.45%	0.79%
								Total	21,052	17,492	100.00%	100.00%
										AUFLS	67%	78%
										Non-AUFLS	33%	22%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Valley	WAIKINO	Paeroa	5	Bennett Street	11	1	998	4	989	1,286	4.96%	4.88%
Valley	WAIKINO	Paeroa	9	Tirohia-Karangahake	11	1	581	4	727	369	3.64%	1.40%
Valley	WAIKINO	Waihi	3	Gilmour Street	11	1	772	6	1,374	1,676	6.88%	6.36%
Valley	WAIKINO	Waihi	4	Victoria Street	11	1	1429	6	1,316	1,918	6.59%	7.27%
Valley	WAIKINO	Waihi Beach	1	Beach Road	11	1	777	6	769	991	3.85%	3.76%
Valley	WAIKINO	Waihi Beach	3	Wilson Road	11	1	867	6	388	493	1.95%	1.87%
Valley	WAIKINO	Waihi Beach	5	Athenree	11	1	1291	6	846	1,121	4.24%	4.25%
Valley	WAIKINO	Whangamata	3	Opoutere	11	1	1225	6	1,208	1,431	6.05%	5.43%
Valley	WAIKINO	Whangamata	7	Otahu Road	11	1	1100	6	498	602	2.50%	2.28%
Valley	WAIKINO	Paeroa	1	Willoughby Street	11	2	598	4	1,180	1,319	5.92%	5.00%
Valley	WAIKINO	Waihi	1	Waihi North	11	2	699	4	1,068	1,106	5.35%	4.20%
Valley	WAIKINO	Waihi	2	Waihi Beach	11	2	379	4	808	841	4.05%	3.19%
Valley	WAIKINO	Waihi	6	Waitawheta	11	2	546	4	952	1,065	4.77%	4.04%
Valley	WAIKINO	Paeroa	3	Railway Street	11	2	647	6	974	1,244	4.88%	4.72%
Valley	WAIKINO	Paeroa	7	Shaw Avenue	11	2	322	6	602	823	3.02%	3.12%
Valley	WAIKINO	Whangamata	5	Port Road	11	2	742	6	1,300	1,479	6.52%	5.61%
Valley	WAIKINO	Whangamata	9	Achilles Ave	11	2	1489	6	1,026	1,093	5.14%	4.15%

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Valley	PIAKO	Morrinsville	2	Dairy Co. A	11		1	1	2,626	1,194	12.47%	6.82%
Valley	PIAKO	Morrinsville	4	Studholme St	11		223	3	1,395	699	6.63%	4.00%
Valley	PIAKO	Tatua	1	Tatua A	11		0	3	1,467	1,467	6.97%	8.39%
Valley	PIAKO	Tatua	3	Tatua B	11		0	3	1,168	386	5.55%	2.20%
Valley	PIAKO	Tatua	5	Tatua C	11		0	3	305	138	1.45%	0.79%
								Total	21,052	17,492	100.00%	100.00%
										AUFLS	67%	78%
										Non-AUFLS	33%	22%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Valley	WAIKINO	Paeroa	5	Bennett Street	11	1	998	4	989	1,286	4.96%	4.88%
Valley	WAIKINO	Paeroa	9	Tirohia-Karangahake	11	1	581	4	727	369	3.64%	1.40%
Valley	WAIKINO	Waihi	3	Gilmour Street	11	1	772	6	1,374	1,676	6.88%	6.36%
Valley	WAIKINO	Waihi	4	Victoria Street	11	1	1429	6	1,316	1,918	6.59%	7.27%
Valley	WAIKINO	Waihi Beach	1	Beach Road	11	1	777	6	769	991	3.85%	3.76%
Valley	WAIKINO	Waihi Beach	3	Wilson Road	11	1	867	6	388	493	1.95%	1.87%
Valley	WAIKINO	Waihi Beach	5	Athenree	11	1	1291	6	846	1,121	4.24%	4.25%
Valley	WAIKINO	Whangamata	3	Opoutere	11	1	1225	6	1,208	1,431	6.05%	5.43%
Valley	WAIKINO	Whangamata	7	Otahu Road	11	1	1100	6	498	602	2.50%	2.28%
Valley	WAIKINO	Paeroa	1	Willoughby Street	11	2	598	4	1,180	1,319	5.92%	5.00%
Valley	WAIKINO	Waihi	1	Waihi North	11	2	699	4	1,068	1,106	5.35%	4.20%
Valley	WAIKINO	Waihi	2	Waihi Beach	11	2	379	4	808	841	4.05%	3.19%
Valley	WAIKINO	Waihi	6	Waitawheta	11	2	546	4	952	1,065	4.77%	4.04%
Valley	WAIKINO	Paeroa	3	Railway Street	11	2	647	6	974	1,244	4.88%	4.72%
Valley	WAIKINO	Paeroa	7	Shaw Avenue	11	2	322	6	602	823	3.02%	3.12%
Valley	WAIKINO	Whangamata	5	Port Road	11	2	742	6	1,300	1,479	6.52%	5.61%
Valley	WAIKINO	Whangamata	9	Achilles Ave	11	2	1489	6	1,026	1,093	5.14%	4.15%
Valley	WAIKINO	Waihi	7	Waihi Gold	11		1	1	1,902	3,572	9.53%	13.55%
Valley	WAIKINO	Whangamata	1	Whiritoa	11		597	4	103	339	0.52%	1.28%
Valley	WAIKINO	Waihi	8	Waihi Gold 2	11		0	5	1,924	3,600	9.64%	13.65%
Valley	WAIKINO	Whangamata	11	Hetherington Rd	11		0	6	-	-	0.00%	0.00%
								Total	19,956	26,367	100.00%	100.00%
										AUFLS	80%	72%
										Non-AUFLS	20%	28%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Wairarapa	MASTERTON	Akura	818	Coradine Street	11	1	626	3	737	1,145	2.60%	3.43%
Wairarapa	MASTERTON	Chapel	855	South Road	11	1	1197	4	1,160	1,959	4.09%	5.87%
Wairarapa	MASTERTON	Te Oreore	822	Bideford	11	1	339	4	763	584	2.69%	1.75%
Wairarapa	MASTERTON	Akura	810	Miro Street	11	1	754	6	1,146	1,390	4.03%	4.16%
Wairarapa	MASTERTON	Clareville	839	Park Road	11	1	658	6	1,602	1,303	5.64%	3.90%
Wairarapa	MASTERTON	Chapel	862	Essex Street	11	2	418	3	418	718	1.47%	2.15%
Wairarapa	MASTERTON	Akura	816	Mt Bruce	11	2	662	4	779	927	2.74%	2.78%
Wairarapa	MASTERTON	Awatoitoi	843	Rorokoko	11	2	49	4	39	39	0.14%	0.12%
Wairarapa	MASTERTON	Awatoitoi	844	Mangapakeha	11	2	53	4	40	40	0.14%	0.12%
Wairarapa	MASTERTON	Awatoitoi	850	Blairlogie	11	2	487	4	320	320	1.13%	0.96%
Wairarapa	MASTERTON	Chapel	863	Head Office	11	2	393	4	1,197	2,096	4.22%	6.28%
Wairarapa	MASTERTON	Te Oreore	823	Colombo Road	11	2	826	4	628	765	2.21%	2.29%
Wairarapa	MASTERTON	Te Oreore	830	Weraiti	11	2	312	4	334	252	1.18%	0.75%
Wairarapa	MASTERTON	Clareville	832	Belvedere	11	2	277	6	428	424	1.51%	1.27%
Wairarapa	MASTERTON	Chapel	864	Local Service	11		?	1	3	12	0.01%	0.03%
Wairarapa	MASTERTON	Tinui	937	Castlepoint	11		420	1	490	490	1.72%	1.47%
Wairarapa	MASTERTON	Norfolk	874	Upper Manaia Road	11		1	2	1,570	1,499	5.53%	4.49%
Wairarapa	MASTERTON	Te Oreore	821	Totara Street	11		83	2	569	679	2.00%	2.03%
Wairarapa	MASTERTON	Akura	820	Edith Street	11		766	3	623	708	2.19%	2.12%
Wairarapa	MASTERTON	Chapel	856	Cornwall Street	11		560	3	510	766	1.79%	2.29%
Wairarapa	MASTERTON	Chapel	865	High Street	11		843	3	998	1,405	3.51%	4.21%
Wairarapa	MASTERTON	Clareville	838	Taverner Street	11		1380	3	1,554	1,633	5.47%	4.89%
Wairarapa	MASTERTON	Gladstone	944	Gladstone Road	11		0	3	1	1	0.00%	0.00%
Wairarapa	MASTERTON	Akura	811	Ngaumutawa Road	11		383	4	879	1,320	3.10%	3.95%
Wairarapa	MASTERTON	Akura	812	Hope Street	11		207	4	1,017	447	3.58%	1.34%
Wairarapa	MASTERTON	Akura	819	Renall Street	11		26	4	1,365	1,074	4.81%	3.22%
Wairarapa	MASTERTON	Chapel	857	Masonic	11		239	4	1,030	1,264	3.63%	3.78%
Wairarapa	MASTERTON	Chapel	858	Workshop Road	11		421	4	534	944	1.88%	2.83%
Wairarapa	MASTERTON	Clareville	833	Wyndham Street	11		1119	4	1,240	1,715	4.37%	5.14%
Wairarapa	MASTERTON	Clareville	834	Chester Road	11		355	4	385	424	1.35%	1.27%
Wairarapa	MASTERTON	Gladstone	945	Longbush	11		287	4	419	419	1.48%	1.26%
Wairarapa	MASTERTON	Gladstone	946	Puketiro	11		168	4	362	362	1.27%	1.08%
Wairarapa	MASTERTON	Gladstone	947	Kourarau	11		2	4	5	5	0.02%	0.01%
Wairarapa	MASTERTON	Gladstone	948	Westmere	11		177	4	171	171	0.60%	0.51%
Wairarapa	MASTERTON	Norfolk	875	Waingawa Road	11		41	4	1,415	1,661	4.98%	4.98%

Wairarapa	MASTERTON	Norfolk	881	Holdsworth	11		201	4	187	220	0.66%	0.66%
Wairarapa	MASTERTON	Te Oreore	828	Tauweru	11		110	4	323	203	1.14%	0.61%
Wairarapa	MASTERTON	Tinui	935	Langdale	11		86	4	269	269	0.95%	0.80%
Wairarapa	MASTERTON	Tinui	936	Annedale	11		122	4	177	177	0.62%	0.53%
Wairarapa	MASTERTON	Akura	817	Oxford Street	11		860	6	797	1,197	2.81%	3.58%
Wairarapa	MASTERTON	Clareville	831	Somerset Road	11		227	6	615	546	2.17%	1.64%
Wairarapa	MASTERTON	Te Oreore	827	Gordon Street	11		664	6	543	767	1.91%	2.30%
Wairarapa	MASTERTON	Te Oreore	829	Church Street	11		833	6	757	1,049	2.67%	3.14%
								Total	28,831	33,823	100.00%	100.00%
										AUFLS	35%	37%
										Non-AUFLS	65%	63%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Wairarapa	GREYTOWN	Featherston	912	South Featherston	11	1	139	4	405	161	4.30%	1.59%
Wairarapa	GREYTOWN	Tuhitarata	926	Pirinoa	11	1	85	4	1,014	579	10.76%	5.73%
Wairarapa	GREYTOWN	Tuhitarata	927	Kumenga	11	1	253	4	60	34	0.64%	0.34%
Wairarapa	GREYTOWN	Tuhitarata	928	Burnside	11	1	594	4	667	381	7.08%	3.77%
Wairarapa	GREYTOWN	Tuhitarata	929	Otaraia	11	1	43	4	38	5	0.40%	0.05%
Wairarapa	GREYTOWN	Kempton	954	East Street	11	1	667	6	704	1,048	7.47%	10.38%
Wairarapa	GREYTOWN	Martinborough	890	Cologne Street	11	1	670	6	626	948	6.65%	9.39%
Wairarapa	GREYTOWN	Martinborough	892	Naples Street	11	1	228	6	413	528	4.38%	5.23%
Wairarapa	GREYTOWN	Kempton	955	Ponatahi	11	2	254	4	447	371	4.74%	3.68%
Wairarapa	GREYTOWN	Featherston	916	Revans Street	11	2	1110	6	1,012	880	10.74%	8.71%
Wairarapa	GREYTOWN	Featherston	917	Dairy Factory	11		300	4	817	584	8.67%	5.78%
Wairarapa	GREYTOWN	Hau Nui	642	Tuturumuri	11		175	4	356	356	3.78%	3.53%
Wairarapa	GREYTOWN	Kempton	956	Moroa	11		217	4	400	295	4.24%	2.92%
Wairarapa	GREYTOWN	Martinborough	893	Tawaha	11		106	4	345	129	3.66%	1.27%
Wairarapa	GREYTOWN	Featherston	911	Waite Street	11		432	6	521	1,193	5.53%	11.82%
Wairarapa	GREYTOWN	Kempton	953	West Street	11		748	6	870	1,267	9.23%	12.54%
Wairarapa	GREYTOWN	Martinborough	894	Dyerville	11		864	6	729	1,339	7.74%	13.26%
								Total	9,424	10,101	100.00%	100.00%
										AUFLS	57%	49%
										Non-AUFLS	43%	51%

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Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Wanganui	MARTON	Arahina	5	Tutaenui	11	1	758	4	923	1,088	8.39%	9.98%
Wanganui	MARTON	Arahina	7	Marton	11	1	1178	4	1,406	1,926	12.78%	17.66%
Wanganui	MARTON	Pukepapa	3	Henderson Road	11	1	115	4	120	139	1.09%	1.27%
Wanganui	MARTON	Pukepapa	4	Turakina	11	1	677	4	745	779	6.77%	7.14%
Wanganui	MARTON	Pukepapa	6	Bulls	11	1	38	4	514	298	4.68%	2.73%
Wanganui	MARTON	Rata	1327	Factory 1	11	2	1	4	1	0	0.00%	0.00%
Wanganui	MARTON	Rata	1350	Factory 2 (to 11/22 kV Transformer)	11	2	752		889	891	8.08%	8.17%
Wanganui	MARTON	Arahina	9	Ngatawa	11		362	3	1,135	1,021	10.32%	9.36%
Wanganui	MARTON	Arahina	6	Broadway	11		264	4	372	446	3.39%	4.09%
Wanganui	MARTON	Arahina	8	Crofton	11		419	4	666	813	6.05%	7.46%
Wanganui	MARTON	Bulls	2	State Highway 3	11		34	4	6	15	0.05%	0.14%
Wanganui	MARTON	Bulls	3	Parewanui	11		865	4	1,808	1,388	16.43%	12.72%
Wanganui	MARTON	Bulls	4	Racecourse	11		456	4	1,795	1,404	16.31%	12.88%
Wanganui	MARTON	Pukepapa	5	Lake alice	11		305	4	284	397	2.58%	3.64%
Wanganui	MARTON	Pukepapa	1133	Hunterville (22 kV Outgoing)	22		188	6	339	302	3.08%	2.77%
								Total	11,003	10,907	100.00%	100.00%
										AUFLS	42%	47%
										Non-AUFLS	58%	53%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Wanganui	WANGANUI	Beach Road	4	Gilberd Street	11	1	16	4	1,132	985	6.04%	4.57%
Wanganui	WANGANUI	Blink Bonnie	4	Fordell	11	1	615	4	636	605	3.40%	2.80%
Wanganui	WANGANUI	Wanganui East	10	No.3 Line	11	1	238	4	408	343	2.18%	1.59%
Wanganui	WANGANUI	Wanganui East	8	Eastown Road	11	1	734	4	654	1,028	3.49%	4.77%
Wanganui	WANGANUI	Blink Bonnie	2	Durie hill	11	1	567	6	348	601	1.86%	2.78%
Wanganui	WANGANUI	Wanganui East	6	Ikitara road	11	1	710	6	882	1,039	4.71%	4.81%
Wanganui	WANGANUI	Wanganui East	7	Wanganui East	11	1	856	6	920	1,490	4.91%	6.91%
Wanganui	WANGANUI	Wanganui East	9	Kiwi Street	11	1	454	6	356	625	1.90%	2.90%
Wanganui	WANGANUI	Taupo Quay	7	Gonville	11	2	616	1	1,341	1,794	7.16%	8.31%
Wanganui	WANGANUI	Taupo Quay	8	Taupo 1	11	2	68	1	216	183	1.15%	0.85%
Wanganui	WANGANUI	Taupo Quay	5	Carlton	11	2	675	2	375	905	2.00%	4.20%
Wanganui	WANGANUI	Hatricks Wharf	10	Bell St	11	2	872	3	500	1,496	2.67%	6.93%
Wanganui	WANGANUI	Blink Bonnie	3	Union line	11	2	199	4	552	603	2.95%	2.79%

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Wanganui	WANGANUI	Hatricks Wharf	5	Plymouth St	11	2	420	4	119	395	0.63%	1.83%
Wanganui	WANGANUI	Taupo Quay	6	Taupo 2	11	2	120	4	785	446	4.19%	2.07%
Wanganui	WANGANUI	Taupo Quay	9	Guyton	11	2	48	4	304	330	1.62%	1.53%
Wanganui	WANGANUI	Beach Road	2	Imlay	11		1	2	3,058	1,413	16.33%	6.55%
Wanganui	WANGANUI	Beach Road	3	Beach Road	11		26	4	858	756	4.58%	3.51%
Wanganui	WANGANUI	Beach Road	5	Kings Ave	11		1099	4	1,813	1,676	9.68%	7.77%
Wanganui	WANGANUI	Hatricks Wharf	8	Drews Ave	11		568	4	1,068	1,494	5.70%	6.92%
Wanganui	WANGANUI	Taupo Quay	4	Ridgway	11		123	4	473	554	2.53%	2.57%
Wanganui	WANGANUI	Hatricks Wharf	4	Wanganui Engineering	11		0	5	0	0	0.00%	0.00%
Wanganui	WANGANUI	Hatricks Wharf	6	Taupo Quay 1	11		85	5	-	-	0.00%	0.00%
Wanganui	WANGANUI	Hatricks Wharf	7	Opera House	11		251	5	1,259	1,313	6.72%	6.08%
Wanganui	WANGANUI	Hatricks Wharf	9	Taupo Quay 2	11		85	5	17	6	0.09%	0.03%
Wanganui	WANGANUI	Hatricks Wharf	11	Marangai	11		998	6	657	1,496	3.51%	6.93%
								Total	18,730	21,575	100.00%	100.00%
										AUFLS	51%	60%
										Non-AUFLS	49%	40%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Wanganui	BRUNSWICK	Castlecliff	6	Bryce Street	11	1	11	2	1,102	1,014	7.27%	5.32%
Wanganui	BRUNSWICK	Castlecliff	5	Heads road	11	1	1390	4	1,134	1,785	7.48%	9.37%
Wanganui	BRUNSWICK	Roberts Ave	4	Makirikiri	11	1	868	4	650	901	4.29%	4.73%
Wanganui	BRUNSWICK	Peat Street	6	College	11	1	590	5	1,948	2,170	12.85%	11.39%
Wanganui	BRUNSWICK	Peat Street	5	Westmere	11	1	317	6	870	862	5.74%	4.52%
Wanganui	BRUNSWICK	Roberts Ave	5	Peat Street Inland	11	1	479	6	308	568	2.03%	2.98%
Wanganui	BRUNSWICK	Roberts Ave	7	Peat Street Riverside	11	1	210	6	109	218	0.72%	1.14%
Wanganui	BRUNSWICK	Castlecliff	7	Cornfoot Street	11	2	916	3	604	880	3.98%	4.62%
Wanganui	BRUNSWICK	Castlecliff	4	Polson Street	11	2	426	4	293	447	1.93%	2.35%
Wanganui	BRUNSWICK	Peat Street	7	Aramoho Inland	11	2	225	4	497	684	3.28%	3.59%
Wanganui	BRUNSWICK	Peat Street	10	Pitt Street	11	2	534	6	944	527	6.22%	2.77%
Wanganui	BRUNSWICK	Peat Street	4	Aramoho Riverside	11	2	419	6	588	738	3.87%	3.87%
Wanganui	BRUNSWICK	Peat Street	9	Springvale	11	2	1682	6	1,725	2,191	11.38%	11.50%

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Wanganui	BRUNSWICK	Castlecliff	8	Puriri Street	11		1040	2	1,271	1,668	8.38%	8.75%
Wanganui	BRUNSWICK	Kai Iwi	6	Maxwell	11		237	4	255	280	1.68%	1.47%
Wanganui	BRUNSWICK	Kai Iwi	7	Waterworks	11		160	4	370	285	2.44%	1.50%
Wanganui	BRUNSWICK	Kai Iwi	8	Mission Road	11		354	4	314	415	2.07%	2.18%
Wanganui	BRUNSWICK	Roberts Ave	6	Brunswick Road	11		330	4	436	496	2.87%	2.60%
Wanganui	BRUNSWICK	Peat Street	8	St.Johns	11		1747	6	1,478	2,497	9.75%	13.11%
Wanganui	BRUNSWICK	Roberts Ave	8	Cemetery	11		421	6	267	427	1.76%	2.24%
								Total	15,163	19,053	100.00%	100.00%
										AUFLS	71%	68%
										Non-AUFLS	29%	32%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Wanganui	MATAROA	Waiouru	5	Camp	11		15	2	863	1,132	21.02%	21.51%
Wanganui	MATAROA	Taihape No.1	5	Mangaweka	11		627	4	451	576	10.98%	10.94%
Wanganui	MATAROA	Taihape No.1	6	Mataroa "A"	11		377	4	283	312	6.90%	5.93%
Wanganui	MATAROA	Taihape No.1	7	Papakai	11		203	4	159	189	3.87%	3.59%
Wanganui	MATAROA	Taihape No.1	8	Moawhango	11		401	4	485	625	11.82%	11.87%
Wanganui	MATAROA	Waiouru	6	Ruapehu	11		440	4	510	640	12.43%	12.15%
Wanganui	MATAROA	Waiouru	7	Irirangi	11		219	4	127	156	3.09%	2.97%
Wanganui	MATAROA	Taihape No.1	4	Taihape CB4	11		944	6	1,227	1,634	29.89%	31.04%
								Total	4,104	5,263	100.00%	100.00%
										AUFLS	0%	0%
										Non-AUFLS	100%	100%

Region	GXP	Substation	CB	Feeder	Voltage	AUFLS	ICPs	Priority	Feb kWh	Jul kWh	% of GXP Load (Feb)	% of GXP Load (Jul)
Wanganui	OHAKUNE	TP_OHAKUNE	4400/2	Raetihi	11		1022	4	730	1,240	72.37%	92.13%
Wanganui	OHAKUNE	TP_OHAKUNE	4400/3	Parapara	11		329	4	279	106	27.63%	7.87%
								Total	1,009	1,346	100.00%	100.00%
										AUFLS	0%	0%
										Non-AUFLS	100%	100%

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Zone	GXP	Sub	Feeder	ICP count	AUFLS	Priority	kW per hour	% of GXP load
Wanganui	Waverley	TP_WAVERLEY	WAITOTARA	705		4	921.01	48.85%
Wanganui	Waverley	TP_WAVERLEY	WAVERLEY	530		4	571.43	30.31%
Wanganui	Waverley	TP_WAVERLEY	RANGIKURA	321		4	392.94	20.84%
	Total						1885.38	100.00%
							AUFLS:	100.00%
							Non-AUFLS:	0.00%

13 APPENDIX B – FEEDER GROUPS (25MW OR LESS)

Valley	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Feilding	12	Kawakawa	11	67	1	1,246	957	
Manawatu	BUNNYTHORPE	Keith Street	24	Keith Street	11	632	1	437	736	
Taranaki	CARRINGTON	Brooklands	15	CB15	11	0	1	0	0	
Taranaki	HAWERA	Cambria	8800/7	Cambria Street	11	489	1	1,444	1,739	
Manawatu	LINTON	Kairanga	12	Awapuni	11	209	1	1,345	1,320	
Wairarapa	MASTERTON	Tinui	937	Castlepoint	11	420	1	490	490	
Wairarapa	MASTERTON	Chapel	864	Local Service	11	?	1	3	12	
Tauranga	MT MAUNGANUI	Triton Ave	8	South	11	52	1	1,463	1,835	
Tauranga	MT MAUNGANUI	Triton Ave	5	Wharf	11	36	1	1,442	1,580	
Tauranga	MT MAUNGANUI	Triton Ave	4	Wharf Crane	11	65	1	1,097	1,624	
Taranaki	NEW PLYMOUTH	Moturoa	7	Circuit No. 7	11	583	1	1,218	1,503	
Valley	HINUERA	Tirau	1	NZDC "A"	11	1	1	778	261	
Valley	HINUERA	Tirau	3	NZDC "B"	11	0	1	775	262	
Valley	HINUERA	Putaruru	6	Local Service	11	12	1	7	9	
Valley	PIAKO	Morrinsville	2	Dairy Co. A	11	1	1	2,626	1,194	
Tauranga	TAURANGA 11	Tauranga 11	12	Ripple Plant	11	2	1	475	476	
Tauranga	TE MATAI	Te Puke	6	Rangiuru	11	19	1	2,318	1,915	
Valley	WAIHOU	Farmers Road	6	Tatuanui	11	110	1	2,716	1,438	
Valley	WAIHOU	Farmers Road	2	Woods Road	11	1	1	1,212	1,098	
Valley	WAIKINO	Waihi	7	Waihi Gold	11	1	1	1,902	3,572	ICPs
							Group1 =	22,995	22,020	2,700

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Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Milson	6	Ruahine (Kensington)	11	227	2	1,552	1,684	
Manawatu	LINTON	Kairanga	21	Dairy Factory	11	199	2	2,666	2,541	
Taranaki	CARRINGTON	Katere Rd	11	Katere Rd CB11	11	290	2	1,150	991	
Taranaki	CARRINGTON	Brooklands	12	CB12	11	2156	2	1,776	2,649	
Taranaki	CARRINGTON	Bell Block	3	Circuit No. 3	11	93	2	2,752	2,710	
Taranaki	HAWERA	Manaia	MA5	Manaia	11	475	2	1,622	1,277	
Taranaki	HUIRANGI	McKee	A21	Mckee No.1	11	5	2	1,071	1,494	
Taranaki	STRATFORD	Eltham	R21	Town North	11	600	2	1,071	1,494	
Wairarapa	MASTERTON	Norfolk	874	Upper Manaia Road	11	1	2	1,570	1,499	
Wanganui	BRUNSWICK	Castlecliff	8	Puriri Street	11	1040	2	1,271	1,668	
Wanganui	MATAROA	Waiouru	5	Camp	11	15	2	863	1,132	
Tauranga	TAURANGA 11	Tauranga 11	15	Cameron Rd	11	852	2	1,868	2,145	
Tauranga	TAURANGA 33	Otumoetai	7	Vale Street	11	490	2	460	669	
Tauranga	TAURANGA 33	Hamilton St	4	Sulpher Pt	11	4	2	2,723	2,281	ICPs
							Group2A =	22,414	24,235	6,447

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Sanson	10	Skyhawk	11	?	2	139	315	
Manawatu	MANGAMAIRE	Mangamutu	9	TMP	11	9	2	3,075	333	
Taranaki	CARRINGTON	Bell Block	4	Circuit No. 4	11	416	2	572	808	
Taranaki	CARRINGTON	Bell Block	6	Circuit No. 6	11	19	2	2,001	2,001	
Taranaki	CARRINGTON	Brooklands	9	CB9	11	1450	2	1,194	1,687	
Taranaki	CARRINGTON	Katere Rd	6	Katere Rd CB6	11	119	2	1,719	1,729	
Taranaki	HAWERA	Cambria	8800/10	Lowe Walker	11	1	2	2,219	1,469	
Taranaki	HUIRANGI	Inglewood	I31	Rata St	6.6	577	2	568	766	
Taranaki	OPUNAKE	Tasman	TA3	STOS	11	1	2	1,079	972	
Wairarapa	MASTERTON	Te Oreore	821	Totara Street	11	83	2	569	679	
Wanganui	WANGANUI	Beach Road	2	Imlay	11	1	2	3,058	1,413	
Tauranga	TAURANGA 11	Tauranga 11	13	Oropi Rd	11	1280	2	1,436	1,868	
Tauranga	TAURANGA 11	Tauranga 11	16	Green Park	11	1291	2	1,547	2,306	
Tauranga	TAURANGA 33	Otumoetai	1	Central	11	639	2	1,142	1,639	
Tauranga	TAURANGA 33	Hamilton St	6	Chapel St	11	199	2	2,070	1,786	ICPs
							Group2B =	22,387	19,771	6,085

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Feilding	14	Residential	11	1188	3	1,082	1,623	
Manawatu	LINTON	Pascal Street	7	Feeder 7	11	1277	3	1,197	1,869	
Manawatu	LINTON	Pascal Street	4	Feeder 4	11	600	3	2,154	2,696	
Taranaki	CARRINGTON	City	4	Circuit No. 4	11	676	3	2,113	2,263	
Taranaki	NEW PLYMOUTH	Moturoa	6	Circuit No. 6	11	764	3	722	1,010	
Taranaki	STRATFORD	Waihapa	5845	T7	11	1	3	837	837	
Wairarapa	MASTERTON	Akura	820	Edith Street	11	766	3	623	708	
Wairarapa	MASTERTON	Chapel	856	Cornwall Street	11	560	3	510	766	
Wairarapa	MASTERTON	Gladstone	944	Gladstone Road	11	0	3	1	1	
Wanganui	MARTON	Arahina	9	Ngatawa	11	362	3	1,135	1,021	
Tauranga	MT MAUNGANUI	Triton Ave	7	Totara Street North	11	1358	3	1,977	2,268	
Tauranga	TAURANGA 33	Hamilton St	7	Selwyn St	11	244	3	790	899	
Valley	HINUERA	Waharoa	5	Cheese Factory	11	1	3	2,576	1,782	
Valley	PIAKO	Tatua	5	Tatua C	11	0	3	305	138	
Valley	PIAKO	Tatua	1	Tatua A	11	0	3	1,467	1,467	ICPs
							Group3A =	17,488	19,348	7,797

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	LINTON	Turitea	5	Summer hill	11	663	3	3,295	4,085	
Taranaki	CARRINGTON	Brooklands	7	CB7	11	724	3	860	913	
Taranaki	CARRINGTON	Brooklands	5	CB5	11	1222	3	2,067	2,170	
Taranaki	STRATFORD	Eltham	R41	Town South	11	361	3	905	877	
Taranaki	STRATFORD	Waihapa	5841	T2	11	3	3	363	363	
Wairarapa	MASTERTON	Chapel	865	High Street	11	843	3	998	1,405	
Wairarapa	MASTERTON	Clareville	838	Taverner Street	11	1380	3	1,554	1,633	
Tauranga	KAITIMAKO	Welcome Bay	6	Victory St	11	1032	3	861	1,351	
Tauranga	TAURANGA 33	Otumoetai	6	Wairoa	11	1213	3	1,807	2,251	
Tauranga	TE MATAI	Atuaroa Ave	2	No 3 Rd	11	113	3	720	1,089	
Valley	PIAKO	Morrinsville	4	Studholme St	11	223	3	1,395	699	
Valley	PIAKO	Tatua	3	Tatua B	11	0	3	1,168	386	
Valley	WAIHOU	Farmers Road	4	Township	11	257	3	1,581	1,387	ICPs
							Group3B =	17,574	18,608	8,034

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Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Feilding	23	Works	11	374	4	1,912	1,807	
Manawatu	LINTON	Turitea	8	Linton	11	859	4	1,992	2,446	
Manawatu	MANGAMAIRE	Mangamutu	10	Konini	11	188	4	284	206	
Taranaki	CARRINGTON	Brooklands	16	CB16	11	0	4	0	0	
Taranaki	HAWERA	Kapuni	KA1	Kapuni	11	27	4	78	51	
Taranaki	HUIRANGI	Inglewood	I11	Mountain Rd	6.6	397	4	709	508	
Taranaki	OPUNAKE	Pungarehu	PU3	Pungarehu	11	216	4	296	175	
Taranaki	STRATFORD	Cardiff	Q21	Mahoe	11	142	4	193	127	
Taranaki	STRATFORD	Eltham	R61	Te-Roti	11	334	4	608	492	
Wairarapa	MASTERTON	Akura	812	Hope Street	11	207	4	1,017	447	
Wairarapa	MASTERTON	Tinui	935	Langdale	11	86	4	269	269	
Wairarapa	MASTERTON	Gladstone	945	Longbush	11	287	4	419	419	
Wanganui	MARTON	Bulls	4	Racecourse	11	456	4	1,795	1,404	
Tauranga	MT MAUNGANUI	Triton Ave	1	Hull Road	11	284	4	1,818	1,853	
Tauranga	TAURANGA 33	Hamilton St	2	Elizabeth St W	11	1	4	0	0	
Tauranga	TAURANGA 33	Omokoroa	6	Plummers Point	11	210	4	229	311	
Valley	KINLEITH	Kinleith	2	Chemical Plant/No 2 Paper Mach	11	0	4	0	0	
Valley	KINLEITH	Kinleith	17	No 2 Power/Causticising	11	0	4	1,354	1,471	
Valley	KINLEITH	Kinleith	5	No 5 Paper Machine	11	0	4	2,253	2,284	
Valley	KINLEITH	Kinleith	19	No 1 & 5 Boilers	11	0	4	2,665	2,765	
Valley	KINLEITH	Kinleith	13	No 2 Pulp Machine	11	0	4	4,839	4,917	ICPs
							Group4A =	22,729	21,952	4,068

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Kelvin Grove	13	Armstrong	11	106	4	1,424	1,688	
Manawatu	BUNNYTHORPE	Main St	13		11	39	4	90	106	
Manawatu	LINTON	Pascal Street	8	Feeder 8	11	255	4	1,308	1,357	
Manawatu	MANGAMAIRE	Alfredton	I32	Rongomai	11	125	4	172	172	
Manawatu	MANGAMAIRE	Pongaroa	1	Horoeka	11	109	4	73	101	
Taranaki	HAWERA	Whareroa	WH8	Manawhapou Road	11	920	4	1,767	1,814	
Taranaki	HUIRANGI	Motukawa	H21	Kohete Rd	6.6	70	4	171	171	
Wairarapa	GREYTOWN	Martinborough	893	Tawaha	11	106	4	345	129	
Wairarapa	MASTERTON	Norfolk	875	Waingawa Road	11	41	4	1,415	1,661	
Wanganui	BRUNSWICK	Kai Iwi	7	Waterworks	11	160	4	370	285	
Wanganui	MARTON	Arahina	8	Crofton	11	419	4	666	813	
Wanganui	OHAKUNE	TP_OHAKUNE	4400/3	Parapara	11	329	4	279	106	
Wanganui	MATAROA	Taihape No.1	7	Papakai	11	203	4	159	189	
Wanganui	WANGANUI	Taupo Quay	4	Ridgway	11	123	4	473	554	
Tauranga	MT MAUNGANUI	Omanu	1	Concorde Ave	11	828	4	602	961	
Tauranga	TAURANGA 33	Hamilton St	5	Harrington St	11	69	4	312	586	
Tauranga	TAURANGA 33	Omokoroa	2	Omokoroa	11	988	4	831	1,066	
Tauranga	TE MATAI	Te Puke	3	Maketu	11	131	4	756	1,432	
Valley	KINLEITH	Kinleith	12	TP_Kinleith CB12 Current	11	0	4	0	0	
Valley	KINLEITH	Kinleith	21	No 2 Pulp Machine	11	0	4	1,757	1,719	
Valley	WAIHOU	Waitoa	2	Fonterra Inc CB1	11	1	4	3,851	1,080	
Valley	KINLEITH	Kinleith	16	No 2 Pulp Group	11	0	4	4,476	4,090	
Valley	KOPU	Kerepehi	2	Awaiti	11	429	4	906	941	ICPs
							Group4B =	22,202	21,021	5,451

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Main St	23		11	1210	4	2,218	3,480	
Manawatu	MANGAMAIRE	Parkville	3	Mauriceville	11	237	4	331	231	
Manawatu	MANGAMAIRE	Pongaroa	2	Waione	11	213	4	124	144	
Taranaki	CARRINGTON	Bell Block	9	Circuit No. 9	11	2	4	102	154	
Taranaki	HAWERA	Kapuni	KA6	Petrochem No.2 (Ammonia Urea Plant)	11	3	4	430	1,917	
Taranaki	HUIRANGI	McKee	A11	Otaraoa Road	11	146	4	208	202	
Taranaki	OPUNAKE	Tasman	TA8	Pihama	11	307	4	702	438	
Taranaki	STRATFORD	Cardiff	Q31	Climie Road	11	146	4	184	121	
Taranaki	STRATFORD	Eltham	R11	Ngaere	11	211	4	367	234	
Wairarapa	GREYTOWN	Featherston	917	Dairy Factory	11	300	4	817	584	
Wairarapa	MASTERTON	Chapel	857	Masonic	11	239	4	1,030	1,264	
Wanganui	MARTON	Bulls	2	State Highway 3	11	34	4	6	15	
Wanganui	MATAROA	Waiouru	7	Irirangi	11	219	4	127	156	
Wanganui	WANGANUI	Beach Road	5	Kings Ave	11	1099	4	1,813	1,676	
Tauranga	MT MAUNGANUI	Papamoa	8	Reid Rd	11	596	4	481	635	
Tauranga	TAURANGA 33	Hamilton St	3	Spring St	11	393	4	1,542	1,526	
Tauranga	TE MATAI	Atuaroa Ave	4	Te Puke Nth	11	13	4	567	828	
Valley	KINLEITH	Kinleith	23	Old Taupo Rd Fdr	11	0	4	0	0	
Valley	KINLEITH	Kinleith	22	No 5 Recovery Boiler	11	0	4	1,815	1,962	
Valley	KINLEITH	Kinleith	3	No 3 Oxygen Delignifier	11	0	4	2,387	2,383	
Valley	KINLEITH	Kinleith	30	No 1 SMLE Chipping/Plywood	11	0	4	2,575	2,633	
Valley	KINLEITH	Kinleith	9	Chemical Plant	11	0	4	4,614	4,214	ICPs
							Group4C =	22,440	24,798	5,368

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Feilding	11	Business	11	308	4	1,324	1,517	
Manawatu	BUNNYTHORPE	Main St	22		11	137	4	641	1,059	
Manawatu	MANGAMAIRE	Mangamutu	8	Coonoor	11	293	4	316	317	
Taranaki	STRATFORD	Eltham	R31	Rawhitiroa	11	198	4	349	183	
Taranaki	HAWERA	Kapuni	KA2	Petrochem No.1(Ammonia Urea Plant)	11	1	4	436	1,894	
Taranaki	CARRINGTON	Brooklands	10	CB10	11	1627	4	1,304	1,961	
Taranaki	HUIRANGI	Motukawa	H11	Ratapiko	6.6	190	4	34	34	
Wairarapa	GREYTOWN	Hau Nui	642	Tuturumuri	11	175	4	356	356	
Wairarapa	MASTERTON	Akura	819	Renall Street	11	26	4	1,365	1,074	
Wairarapa	MASTERTON	Gladstone	947	Kourarau	11	2	4	5	5	
Wanganui	MATAROA	Taihape No.1	6	Mataroa "A"	11	377	4	283	312	
Wanganui	OHAKUNE	TP_OHAKUNE	4400/2	Raetihi	11	1022	4	730	1,240	
Wanganui	WANGANUI	Beach Road	3	Beach Road	11	26	4	858	756	
Wanganui	MARTON	Pukepapa	5	Lake alice	11	305	4	284	397	
Tauranga	MT MAUNGANUI	Papamoa	7	Junction	11	915	4	863	1,328	
Tauranga	TAURANGA 33	Waihi Road	6	Takitimu Dr	11	276	4	745	735	
Tauranga	TE MATAI	Te Puke	8	Te Matai Rd	11	468	4	703	1,324	
Valley	KINLEITH	Kinleith	6	No 5 Paper Machine	11	0	4	0	0	
Valley	KINLEITH	Kinleith	31	Water Centre Fdr	11	0	4	1,544	1,350	
Valley	KINLEITH	Kinleith	4	No 4 Paper Machine	11	0	4	1,901	2,197	
Valley	KINLEITH	Kinleith	1	No 1 Oxygen Delignifier	11	0	4	2,811	2,590	
Valley	KINLEITH	Kinleith	26	No 6 Paper Machine	11	0	4	4,107	3,750	ICPs
							Group4D =	20,960	24,381	6,346

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Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Feilding	15	Crown	11	42	4	857	814	
Manawatu	LINTON	Turitea	9	Massey	11	179	4	2,636	3,166	
Manawatu	MANGAMAIRE	Alfredton	I15	Castlehill	11	43	4	25	25	
Manawatu	MANGAMAIRE	Parkville	4	Rongokokako	11	95	4	188	105	
Taranaki	STRATFORD	Strathmore	7111		11	?	4	7	8	
Taranaki	OPUNAKE	Pungarehu	PU2	Warea	11	373	4	530	361	
Taranaki	HUIRANGI	Waitara West	F51	Affco-Queen Street	11	1	4	1,622	1,456	
Wairarapa	MASTERTON	Gladstone	948	Westmere	11	177	4	171	171	
Wairarapa	MASTERTON	Te Oreore	828	Tauweru	11	110	4	323	203	
Wairarapa	MASTERTON	Tinui	936	Annedale	11	122	4	177	177	
Wairarapa	MASTERTON	Akura	811	Ngaumutawa Road	11	383	4	879	1,320	
Wanganui	BRUNSWICK	Kai Iwi	6	Maxwell	11	237	4	255	280	
Wanganui	MARTON	Bulls	3	Parewanui	11	865	4	1,808	1,388	
Tauranga	TAURANGA 33	Hamilton St	1	Wharf St	11	78	4	517	546	
Tauranga	TE MATAI	Atuaroa Ave	6	Te Puke Quarry Rd	11	55	4	308	1,419	
Tauranga	MT MAUNGANUI	Triton Ave	2	Hewletts Road	11	69	4	1,830	1,799	
Valley	KINLEITH	Kinleith	20	CB20 Current	11	0	4	0	0	
Valley	KINLEITH	Kinleith	32	Effluent Line Fdr	11	0	4	966	1,047	
Valley	KINLEITH	Kinleith	15	No 2 Pulp Group	11	0	4	2,221	2,081	
Valley	KINLEITH	Kinleith	11	No 1 Paper Mill	11	0	4	3,044	3,218	
Valley	KINLEITH	Kinleith	8	Chemical Plant	11	0	4	4,546	4,150	ICPs
							Group4E =	22,911	23,735	2,829

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Kelvin Grove	5	Malden	11	33	4	253	315	
Manawatu	BUNNYTHORPE	Main St	12		11	2018	4	1,511	2,998	
Manawatu	LINTON	Pascal Street	11	Feeder 11	11	365	4	1,600	1,773	
Manawatu	MANGAMAIRE	Alfredton	I23	Brooklands	11	46	4	172	172	
Manawatu	MANGAMAIRE	Pongaroa	4	Tiraumea	11	134	4	37	79	
Taranaki	STRATFORD	Strathmore	7121		11	?	4	33	47	
Taranaki	OPUNAKE	Tasman	TA7	Oanui	11	197	4	481	390	
Taranaki	NEW PLYMOUTH	Moturoa	4	Circuit No. 4	11	369	4	1,132	1,101	
Wairarapa	GREYTOWN	Kempton	956	Moroa	11	217	4	400	295	
Wairarapa	MASTERTON	Clareville	833	Wyndham Street	11	1119	4	1,240	1,715	
Wanganui	BRUNSWICK	Kai Iwi	8	Mission Road	11	354	4	314	415	
Wanganui	WANGANUI	Hatricks Wharf	8	Drews Ave	11	568	4	1,068	1,494	
Wanganui	MARTON	Arahina	6	Broadway	11	264	4	372	446	
Tauranga	TE MATAI	Pongakawa	2	Otamarakau	11	1026	4	949	981	
Tauranga	TAURANGA 33	Aongatete	5	Lockington Rd	11	290	4	184	211	
Tauranga	TAURANGA 33	Omokoroa	3	Whakamarama	11	599	4	1,252	1,956	
Valley	KINLEITH	Kinleith	28	No 1 SMLE Chipping/Barking	11	0	4	548	781	
Valley	KINLEITH	Kinleith	25	No 3 Pulp Log End	11	0	4	2,149	2,027	
Valley	KINLEITH	Kinleith	24	No 6 Paper Machine	11	0	4	2,382	2,437	
Valley	KINLEITH	Kinleith	18	No 2 Power Group	11	0	4	4,631	4,415	ICPs
							Group4F =	20,707	24,048	7,599

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Milson	8	Rangitikei	11	836	4	1,750	2,178	
Manawatu	BUNNYTHORPE	Sanson	4	Kakariki	11	208	4	382	348	
Manawatu	MANGAMAIRE	Pongaroa	3	Coast Road	11	178	4	122	116	
Taranaki	STRATFORD	Douglas	D11	Strathmore	11	417	4	248	281	
Taranaki	STRATFORD	Cardiff	Q11	Cardiff	11	235	4	396	260	
Taranaki	HUIRANGI	Inglewood	I51	Bristol Rd	6.6	134	4	283	205	
Wairarapa	MASTERTON	Chapel	858	Workshop Road	11	421	4	534	944	
Wairarapa	MASTERTON	Norfolk	881	Holdsworth	11	201	4	187	220	
Wanganui	MATAROA	Taihape No.1	5	Mangaweka	11	627	4	451	576	
Wanganui	MATAROA	Waiouru	6	Ruapehu	11	440	4	510	640	
Tauranga	TAURANGA 33	Hamilton St	8	Cliff Rd	11	285	4	1,329	1,424	
Valley	KINLEITH	Kinleith	14	NSSC Plant	11	0	4	1,773	1,663	
Valley	WAIHOU	Waitoa	1	Fonterra Inc CB2	11	0	4	3,922	1,116	
Valley	WAIKINO	Whangamata	1	Whiritoa	11	597	4	103	339	
Manawatu	BUNNYTHORPE	Sanson	9	Ohakea	11	324	4	1,215	1,432	
Manawatu	MANGAMAIRE	Alfredton	I41	Ihuraua	11	77	4	32	32	
Taranaki	HUIRANGI	Waitara East	U10	Waitara East Town	11	25	4	0	0	
Taranaki	OPUNAKE	Ngariki	NG3	South Rd	11	204	4	439	228	
Taranaki	STRATFORD	Douglas	D21	Huiroa	11	183	4	167	132	
Taranaki	STRATFORD	Strathmore	7131		11	?	4	110	113	
Wairarapa	MASTERTON	Clareville	834	Chester Road	11	355	4	385	424	
Wairarapa	MASTERTON	Gladstone	946	Puketiro	11	168	4	362	362	
Wanganui	MATAROA	Taihape No.1	8	Moawhango	11	401	4	485	625	
Wanganui	BRUNSWICK	Roberts Ave	6	Brunswick Road	11	330	4	436	496	
Tauranga	TAURANGA 11	Tauranga 11	17	Maleme St	11	712	4	1,245	1,412	
Valley	KINLEITH	Kinleith	10	No 5 Paper Machine	11	0	4	883	799	
Valley	KINLEITH	Kinleith	29	No 6 Paper Machine	11	0	4	3,012	2,919	
Valley	KINLEITH	Kinleith	7	Thickener Station	11	0	4	3,800	3,253	ICPs
							Group4G =	24,560	22,536	7,358

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Kelvin Grove	4	Ind Estate	11	?	5	466	1,436	
Manawatu	BUNNYTHORPE	Main St	25		11	108	5	554	752	
Manawatu	BUNNYTHORPE	Main St	15		11	553	5	2,116	2,353	
Taranaki	CARRINGTON	Katere Rd	5	Katere Rd CB5	11	269	5	355	381	
Tauranga	MT MAUNGANUI	Mataphihi	2	Matapihi Rd	11	263	5	220	261	
Tauranga	MT MAUNGANUI	Mataphihi	1	Eversham Rd	11	906	5	637	1,040	
Tauranga	MT MAUNGANUI	Omanu	4	Bayfair	11	182	5	2,349	2,106	
Tauranga	MT MAUNGANUI	Omanu	2	MacDonald St	11	72	5	197	241	
Tauranga	MT MAUNGANUI	Triton Ave	9	Portside	11	15	5	56	79	
Tauranga	TAURANGA 11	Tauranga 11	20	Pooles Rd	11	1311	5	2,341	2,310	
Tauranga	TAURANGA 33	Waihi Road	8	18th Ave	11	1052	5	1,925	2,319	
Valley	KINLEITH	Lakeside	T125	CHH Lakeside	11	0	5	327	377	
Valley	WAIHOU	Inghams	3	Inghams 2	11	0	5	0	0	
Valley	WAIKINO	Waihi	8	Waihi Gold 2	11	0	5	1,924	3,600	
Wanganui	WANGANUI	Hatricks Wharf	4	Wanganui Engineering	11	0	5	0	0	
Wanganui	WANGANUI	Hatricks Wharf	7	Opera House	11	251	5	1,259	1,313	ICPs
							Group5A =	14,727	18,568	4,982

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Main St	11		11	471	5	463	1,061	
Manawatu	BUNNYTHORPE	Main St	24		11	117	5	1,091	1,141	
Manawatu	BUNNYTHORPE	Milson	5	Fairs	11	458	5	1,722	774	
Taranaki	CARRINGTON	Katere Rd	12	Katere Rd CB12	11	908	5	915	1,240	
Tauranga	MT MAUNGANUI	Mataphihi	6	Aerodrome	11	141	5	1,424	1,354	
Tauranga	MT MAUNGANUI	Omanu	3	Newton St	11	171	5	505	680	
Tauranga	MT MAUNGANUI	Papamoa	9	Gravatt Rd	11	2063	5	1,954	2,709	
Tauranga	TAURANGA 33	Waihi Road	2	Koromiko St	11	800	5	936	1,309	
Tauranga	TAURANGA 11	Tauranga 11	21	Maleme Express	11	994	5	1,593	2,344	
Tauranga	TAURANGA 33	Waihi Road	5	Waihi Rd	11	1124	5	1,725	2,292	
Valley	KINLEITH	Midway		CHH Midway	3.3	0	5	327	377	
Valley	WAIHOU	Inghams	1	Inghams 1	11	1	5	2,432	2,177	
Wanganui	WANGANUI	Hatricks Wharf	6	Taupo Quay 1	11	85	5	0	0	
Wanganui	WANGANUI	Hatricks Wharf	9	Taupo Quay 2	11	85	5	17	6	ICPs
							Group5B =	15,105	17,463	7,418

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Kelvin Grove	10	Ashhurst	11	1389	6	1,661	1,972	
Taranaki	CARRINGTON	Brooklands	13	CB13	11	350	6	291	453	
Taranaki	CARRINGTON	City	10	Circuit No. 10	11	637	6	481	771	
Taranaki	CARRINGTON	Katere Rd	8	Katere Rd CB8	11	0	6	0	0	
Taranaki	HUIRANGI	Waitara West	F41	Domett Street	11	0	6	0	0	
Taranaki	NEW PLYMOUTH	Moturoa	9	Circuit No. 9	11	656	6	1,687	820	
Tauranga	MT MAUNGANUI	Mataphihi	8	Aviation Dr	11	82	6	361	439	
Tauranga	MT MAUNGANUI	Omanu	5	Flyover	11	254	6	829	1,296	
Tauranga	TE MATAI	Te Puke	7	Manoeka	11	494	6	386	562	
Tauranga	TAURANGA 33	Omokoroa	1	Pahoia	11	830	6	1,634	2,392	
Tauranga	TAURANGA 33	Otumoetai	2	Cherrywood	11	1060	6	942	1,327	
Valley	KINLEITH	Baird Road	2	Ashworth St	11	280	6	932	932	
Valley	KOPU	Tairua	2	Pleasant Point	11	1053	6	443	494	
Valley	KOPU	Whitianga	5	Purangi	11	1723	6	1,125	956	
Wairarapa	GREYTOWN	Featherston	911	Waite Street	11	432	6	521	1,193	
Wairarapa	MASTERTON	Te Oreore	829	Church Street	11	833	6	757	1,049	
Wanganui	MARTON	Pukepapa	1133	Hunterville (22 kV Outgoing)	22	188	6	339	302	
Wanganui	BRUNSWICK	Peat Street	8	St.Johns	11	1747	6	1,478	2,497	ICPs
							Group6A =	13,868	17,456	12,008

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Region	GXP	Substation	CB	Feeder	Voltage	ICPs	Priority	Feb kWh	Jul kWh	
Manawatu	BUNNYTHORPE	Main St	21		11	950	6	866	1,550	
Manawatu	BUNNYTHORPE	Main St	26		11	4	6	1,302	1,193	
Taranaki	CARRINGTON	Katere Rd	10	Katere Rd CB10	11	1398	6	1,229	1,847	
Taranaki	HUIRANGI	Inglewood	I41	Elliot St	6.6	255	6	382	458	
Taranaki	STRATFORD	Cloton Rd	S21	North East	11	671	6	716	1,388	
Tauranga	MT MAUNGANUI	Triton Ave	10	Tawa St	11	1484	6	2,117	2,552	
Tauranga	TAURANGA 33	Otumoetai	4	Brookfield	11	1384	6	905	1,259	
Tauranga	TAURANGA 33	Waihi Road	1	11th Ave	11	752	6	1,550	1,870	
Valley	WAIKINO	Whangamata	11	Hetherington Rd	11	0	6	0	0	
Valley	KOPU	Tairua	5	Tairua North	11	915	6	485	566	
Valley	KOPU	Whitianga	7	Joan Gaskell Dr	11	1056	6	1,652	1,723	
Wairarapa	GREYTOWN	Martinborough	894	Dyerville	11	864	6	729	1,339	
Wairarapa	MASTERTON	Akura	817	Oxford Street	11	860	6	797	1,197	
Wairarapa	MASTERTON	Te Oreore	827	Gordon Street	11	664	6	543	767	
Wanganui	WANGANUI	Hatricks Wharf	11	Marangai	11	998	6	657	1,496	ICPs
							Group6B =	13,932	19,205	12,255

14 APPENDIX C – DISCONNECTION AND RECONNECTION TABLES

	25% savings plan (12, 12, 12, 10, 5, 0)		20% savings plan (12, 10, 10, 8, 0, 0)		15% savings plan (10, 8, 8, 1, 0, 0)		10% savings plan (8, 6, 5, 0, 0, 0)		5% savings plan (6, 4, 2, 0, 0, 0)	
Time	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
6:00:00										
6:05:00										
6:10:00										
6:15:00	Group 5A									
6:20:00										
6:25:00										
6:30:00					Group 6A		Group 6A		Group 6A	
6:35:00										
6:40:00										
6:45:00	Group 5B		Group 5A							
6:50:00										
6:55:00										
7:00:00					Group 6B		Group 6B		Group 6B	
7:05:00										
7:10:00										
7:15:00	Group 4A		Group 5B				Group 5A			
7:20:00										
7:25:00	Group 4B									
7:30:00					Group 6C		Group 6C		Group 6C	
7:35:00	Group 4C									
7:40:00										
7:45:00	Group 4D		Group 6A				Group 5B		Group 5A	
7:50:00										
7:55:00	Group 4E									
8:00:00			Group 4A		Group 3A					
8:05:00	Group 4F									
8:10:00										
8:15:00	Group 4G		Group 6B						Group 5B	
8:20:00										

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

8:25:00	Group 6A									
8:30:00			Group 4B		Group 3B					
8:35:00	Group 6B									
8:40:00										
8:45:00	Group 6C		Group 6C							
8:50:00										
8:55:00	Group 3A									
9:00:00			Group 4C			Group 3A				
9:05:00	Group 3B									
9:10:00										
9:15:00					Group 5A					
9:20:00										
9:25:00										
9:30:00			Group 4D			Group 3B				
9:35:00										
9:40:00										
9:45:00					Group 5B					
9:50:00										
9:55:00										
10:00:00			Group 4E							
10:05:00										
10:10:00										
10:15:00										
10:20:00										
10:25:00										
10:30:00			Group 4F							
10:35:00										
10:40:00										
10:45:00			Group 3A							
10:50:00										

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

10:55:00										
11:00:00			Group 4G		Group 4A					
11:05:00										
11:10:00										
11:15:00			Group 3B							
11:20:00					Group 4B					
11:25:00										
11:30:00										
11:35:00										
11:40:00					Group 4C					
11:45:00										Group 5A
11:50:00										
11:55:00										
12:00:00					Group 4D					
12:05:00										
12:10:00										
12:15:00										Group 5B
12:20:00					Group 4E					
12:25:00										
12:30:00										Group 6A
12:35:00										
12:40:00					Group 4F					
12:45:00										
12:50:00										
12:55:00										
13:00:00	Group 2A				Group 4G					Group 6B
13:05:00										
13:10:00										
13:15:00							Group 5A			
13:20:00										

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

13:25:00										
13:30:00	Group 2B						Group 4A			Group 6C
13:35:00										
13:40:00										
13:45:00								Group 5B		
13:50:00										
13:55:00							Group 4B			
14:00:00										
14:05:00										
14:10:00										
14:15:00										
14:20:00							Group 4C			
14:25:00										
14:30:00								Group 6A		
14:35:00										
14:40:00										
14:45:00							Group 4D			
14:50:00										
14:55:00										
15:00:00								Group 6B		
15:05:00										
15:10:00							Group 4E			
15:15:00										
15:20:00										
15:25:00										
15:30:00								Group 6C	Group 4A	
15:35:00							Group 4F			
15:40:00										
15:45:00										
15:50:00										

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

15:55:00										
16:00:00							Group 4G		Group 4B	
16:05:00										
16:10:00										
16:15:00										
16:20:00										
16:25:00										
16:30:00						Group 6A			Group 4C	
16:35:00										
16:40:00										
16:45:00				Group 5A						
16:50:00										
16:55:00										
17:00:00						Group 6B			Group 4D	
17:05:00										
17:10:00										
17:15:00				Group 5B		Group 5A				
17:20:00										
17:25:00										
17:30:00						Group 6C			Group 4E	Group 4A
17:35:00										
17:40:00										
17:45:00						Group 5B				
17:50:00										
17:55:00										
18:00:00		Group 2A		Group 4A					Group 4F	Group 4B
18:05:00										
18:10:00										
18:15:00		Group 5A								
18:20:00										

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

18:25:00									
18:30:00		Group 2B		Group 4B			Group 4A	Group 4G	Group 4C
18:35:00									
18:40:00									
18:45:00		Group 5B		Group 3A					
18:50:00									
18:55:00		Group 3A					Group 4B		
19:00:00				Group 4C		Group 4A			Group 4D
19:05:00		Group 3B							
19:10:00									
19:15:00		Group 4A		Group 3B					
19:20:00						Group 4B	Group 4C		
19:25:00		Group 4B							
19:30:00				Group 4D					Group 4E
19:35:00		Group 4C							
19:40:00						Group 4C			
19:45:00		Group 4D		Group 6A			Group 4D		
19:50:00									
19:55:00		Group 4E							
20:00:00				Group 4E		Group 4D			Group 4F
20:05:00		Group 4F							
20:10:00							Group 4E		
20:15:00		Group 4G		Group 6B					
20:20:00						Group 4E			
20:25:00		Group 6A							
20:30:00				Group 4F					Group 4G
20:35:00		Group 6B					Group 4F		
20:40:00						Group 4F			
20:45:00		Group 6C		Group 6C					
20:50:00									
20:55:00									
21:00:00				Group 4G		Group 4G	Group 4G		

Summary of groups

SECURITY OF SUPPLY – PARTICIPANT ROLLING OUTAGE PLAN (2018)

Priority	kW per hour (Feb)	kW per hour (Jul)	Calculation (Feb)	Calculation (Jul)	Groups req'd
6	41,895	55,465	1.68	2.22	3
5	29,832	36,031	1.19	1.44	2
4	156,509	162,471	6.26	6.50	7
3	35,061	37,957	1.40	1.52	2
2	44,801	44,006	1.79	1.76	2
1	22,995	22,020	0.92	0.88	1
			TOTAL NUMBER OF GROUPS:		17

15 APPENDIX D – POWERCO PRIORITY FEEDER SELECTION CRITERIA

Powerco observe a security rating of its feeders, however, there is no direct comparison of Powerco security class with the Electricity Authority priority feeder classification system. Refer the following Powerco standards:

- *310S001 Security of Supply Classification – Zone Substations.*
- *310S003 Distribution Feeder Security Reliability classification.*

To ensure feeders from the Powerco classification system align with that of the System Operator a new reference table has been generated to align the terminology. Refer *Table 6* below.

Please note Power security classification provides a general classification of connected load, however, to assist in implementing *220S032* (this plan) and to align as closely as possible with System Operator guidance Powerco has also assigned a sensitivity rating to each feeder.

A high sensitivity rating (10) reflects a priority concern connected to the feeder should not be affected by rolling outages, if at all possible.

Table 6

EA SOROP Priority	Priority Concern	Maintain Supply to:	Sensitivity rating
1	Public health and safety	Major hospitals, air traffic control centres, and emergency operation centres.	F 1 Sensitivity >8
2	Important public services	Energy control centres, communication networks, water and sewage pumping, fuel delivery systems, major ports, public passenger transport and major supermarkets.	F3 Sensitivity >8 F1 Sensitivity >5 or = 8
3	Public health and safety	Minor hospitals, medical centres, schools, and street lighting.	F3 Sensitivity >5 or = 8 F1 Sensitivity <5
4	Animal health and food production/storage	Dairy farms, milk production facilities, chicken sheds and cool stores.	F4 Sensitivity 1-10 F5 Sensitivity 1-10 F2 Sensitivity >5
5	Domestic production	Commercial and industrial premises.	F2 Sensitivity <5
6	Disruption to consumers	Residential premises.	F3 Sensitivity ratings <5

An example might be a regional airport connected to a residential feeder (F3). By security classification alone an F3 security class of feeder may be considered for disconnection, however, by appending a sensitivity rating of 10 it would become a high priority feeder and not considered for early disconnection. Hence this feeder would become a System Operator priority 2 as indicated by Table 6 above.

16 DOCUMENT REVIEW HISTORY:

Version Number	Reviewed By.	Review Date	Reason
1	R. Dixon	28/ 4/2008	First issue of document to BMS
2	P. Marsh	17/ 2/2010	Document Title changed. Significant changes to the document. This is version 2.9 which was agreed with the Electricity Commission on 16 March 2010.
3	S. Corbitt	14/11/2013	Replaced references to Electricity Commission with Electricity Authority. Changes and additional information - Sections: 2 & 3. Title changed. Updated tables in sections: 5, Appendix A, B, C. Additional definitions. Updated titles in section 4 to 'Corporate Affairs Manager' and 'Electricity Customer Relations Manager'. Minor wording changes throughout document.
4	P. Marsh S. Corbitt	26/ 1/2015	Updated to reflect System Operator control of rolling outages
5	S. Corbitt	4/10/ 2018	Updated reference to some Powerco standards. Updated reference to some Powerco roles and responsibilities – position titles. Update to some contact information.

17 POWERCO STANDARD - DOCUMENT CHANGE REQUEST

Memo To: **Network Operations Manager.**
Junction Street,
New Plymouth.

Change Details: (Attach separate sheets as necessary).	
Paragraphs Affected:	

Priority: **Urgent** (Within 1 week) ☐ **Routine** (Within 12 months) ☐ **Low** (Next Review) ☐

Submitted By (Print Name)	**Date**

Document Change Request - Acknowledgement

Dear ……

Thank you for your suggestion regarding changes to the above mentioned document.

Your request has been noted and added to our works program. Should we require any additional information regarding your notification then we will be in contact with you.
Thank you for your contribution to improving the quality of Powerco's documentation.
Regards,

…… ……..
Network Operations Manager **Date**

***220S032* Ends**