

## Group 3 Pricing from 01 April 2011 and Load Control

### 1. INTRODUCTION

NTL has amended its Group 3 line pricing effective from 01 April 2011.

Group 3 pricing includes Categories 3.1, 3.3, 3.4 and 3.5.

All Group 3 customers have been notified by letter, dated 28 February 2011, of the new pricing for their particular connection(s).

The distribution component of NTL's Group 3 line charges increased by 3% from 01 April 2011

The letter also gave details of the Upper South Island RCPD demand for the year ending August 2010 along with each consumer's coincident RCPD demand used to determine the transmission component of their line charges for their connection(s) from 01 April 2011.

NTL's RCPD charge is the main pricing component used to recover Transpower's transmission charges attributable to Group 3 consumers. As noted in our letter, the dates and times of the USI critical peak loads for winter 2010 had more morning peaks than we would expect. This resulted in much higher coincident demand levels for most 3 consumers, so NTL has adjusted the RCPD price such that the transmission costs are not fully recovered from the Group.

The effect when both the change in Group 3 RCPD pricing and the change in RCPD demand levels are considered together is an increase in the **transmission component** of total Group 3 line charges of 20% on average (this will vary between individual customers). As transmission charges are only about 30% of the total line charge, the overall line charge increase for the 2011-12 year is about 8%.

The remainder of this document is intended to provide a more detailed background to NTL's Group 3 charges and to supply data to Group 3 consumers so they may manage their load patterns to help minimise their future transmission charges.

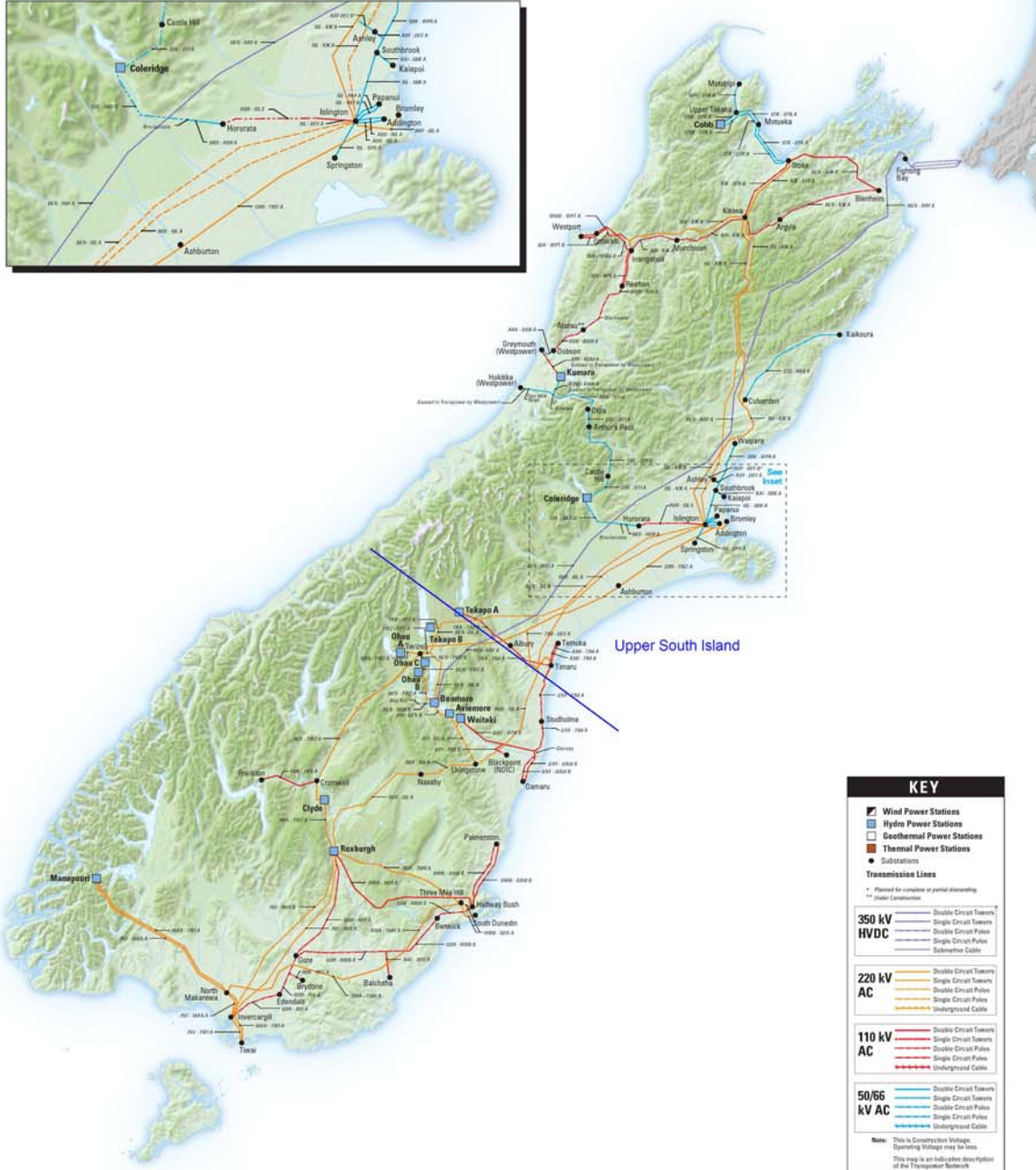
### 2. BACKGROUND TO TRANSPOWER'S TRANSMISSION PRICING.

Transpower's pricing methodology (TPM) became effective from 1 April 2008 after it was sanctioned by the Electricity Commission. This methodology redefined the core transmission grid, extended the definition of connection assets and applies Interconnection Charges on a Regional Coincident Peak Demand (RCPD) basis for the Upper South Island (USI) region. The USI region includes all Grid substations and HVAC lines from Timaru north and includes Network Tasman's entire supply area.



# TRANSPOWER

## TRANSPOWER TRANSMISSION NETWORK : SOUTH ISLAND



Transmission Network as at July 2006  
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### 3. TRANSMISSION CHARGE COMPONENTS – how Transpower charges NTL:

#### **Connection charge**

Transpower's Connection Charge recovers the annual cost of connection assets, typically at substations or HVAC lines dedicated to the supply of companies such as Network Tasman. These charges are allocated to all grid-connected parties, whether they are injection (generator) or off-take customers (such as Network Tasman). Connection Charges make up about 20% of NTL's transmission charges and have doubled under the new TPM. NTL is now required to pay the full costs of all dedicated grid connection assets within the Tasman region whereas previously some of these costs were pooled and averaged across all Transpower customers via the Interconnection Charge.

#### **Interconnection Charge**

Transpower's Interconnection Charge recovers the balance (80%) of the revenue required for Transpower's HVAC network (excludes the HVDC link across Cook Strait).

Since April 2008 the Interconnection charge has been levied on Network Tasman's total demand coincident with the USI top 12 RCPD peak load times for the 12 months to August of the preceding year. The chargeable USI RCPD peaks for the year commencing 1 April 2011 are the 12 highest kW demands measured between September 2009 and August 2010.

For example, NTL's Interconnection charge for Motueka GXP for the coming year commencing 1 April 2011 will be:

Motueka GXP peaks coincident with USI peaks to 31 August 2010:

<b>USI Peak Date</b>	<b>Half Hour Period</b>	<b>USI kW</b>	<b>Motueka kW</b>
01-Jun-10	36	1,031,890	16,722
23-Jun-10	36	1,027,394	16,746
08-Jun-10	36	1,026,898	16,000
01-Jul-10	17	1,025,388	14,780
10-Aug-10	17	1,024,306	13,744
01-Jun-10	37	1,024,146	16,086
10-Aug-10	16	1,023,954	13,696
12-Jul-10	16	1,022,888	14,632
12-Aug-10	16	1,022,484	14,368
12-Aug-10	20	1,022,172	13,606
12-Aug-10	36	1,022,148	15,416
27-May-10	35	1,021,838	16,696

Average Motueka kW demand	15,208
TPNZ Interconnection rate, \$/kW	\$76.14

NTL annual Interconnection Charge for Motueka:      \$1,157,937

#### 4. HOW NTL GROUP 3 PRICING WORKS (Category 3.4 shown below)

##### Charges from 01 April 2011 (new)

Category 3.4	Unit	Distribution	Transmission	Total
<b>Variable</b>				
Summer Day	c/kWh	1.28	0.00	<b>1.28</b>
Summer Night	c/kWh	0.67	0.00	<b>0.67</b>
Winter Day	c/kWh	3.43	0.00	<b>3.43</b>
Winter Night	c/kWh	0.67	0.00	<b>0.67</b>
<b>Demand</b>				
Anytime	c/kVA/day	11.83	2.02	<b>13.85</b>
Winter RCPD	c/kW/day	3.03	19.69	<b>22.72</b>

##### Charges from 1 April 2010 to 31 March 2011 (old)

Category 3.4	Unit	Distribution	Transmission	Total
<b>Variable</b>				
Summer Day	c/kWh	1.25	0.00	<b>1.25</b>
Summer Night	c/kWh	0.66	0.00	<b>0.66</b>
Winter Day	c/kWh	3.36	0.00	<b>3.36</b>
Winter Night	c/kWh	0.66	0.00	<b>0.66</b>
<b>Demand</b>				
Anytime	c/kVA/day	11.60	2.02	<b>13.62</b>
RCPD Demand	c/kW/day	3.03	18.75	<b>21.78</b>

#### NTL Charges

##### Anytime Demand Charge

The Anytime Demand Charge is levied on the consumer's highest kVA demand measured annually between 1<sup>st</sup> April and 31<sup>st</sup> March and has both distribution and transmission components.

Note: the minimum chargeable anytime demand for Group 3 is 150 kVA.

The distribution component recovers NTL's local distribution costs attributable to Group 3 consumers in proportion to each consumer's anytime peak demands placed on the distribution network.

The transmission portion of the Anytime Demand Charge recovers the share of NTL's transmission connection charges attributable to Group 3 consumers.

##### b. Winter RCPD Charge

This charge passes through Group 3 consumers' share of NTL's annual transmission Interconnection costs. Using the half-hour meter data NTL holds for all Group 3 customers, we determine each customer's kW demands coincident with the date and time of Transpower's USI top 12 chargeable demands. The Loss Factor adjusts for network losses between the customers own metering point and Transpower bulk supply metering point (GXP).

For example, for **Group 3 Consumer ABC**:

USI DATE	USI Peak Time	USI kW	Customer ABC Coincident kW
01-Jun-10	36	1,031,890	154
23-Jun-10	36	1,027,394	144
08-Jun-10	36	1,026,898	139
01-Jul-10	17	1,025,388	147
10-Aug-10	17	1,024,306	148
01-Jun-10	37	1,024,146	135
10-Aug-10	16	1,023,954	167
12-Jul-10	16	1,022,888	141
12-Aug-10	16	1,022,484	151
12-Aug-10	20	1,022,172	159
12-Aug-10	36	1,022,148	142
27-May-10	35	1,021,838	127

Consumer ABC Average kW coincident demand            146 kW  
 Consumer ABC Loss Factor                                        1.0535  
 Consumer ABC RCPD Chargeable Demand                    154 kW

NTL's charges are billed on a daily basis, so the RCPD charge for Customer ABC at 22.72c/kW/day, will be  $154 * 0.2272 = \$34.99$  per day (\$12,771 for the year).

There is no minimum (kW) level for the Winter RCPD charge.

**c. Variable charges**

Variable charges are used for the distribution component of NTL's line charges and are applied to kWh consumption levels recorded within each of the four time zones defined below. Consumption is measured on time of use meters installed by retailers at consumer's premises and the meter data is supplied to NTL by electricity retailers each month.

The four time zones are:

Summer Day            0700-2300 from 1 October to 30 April  
 Summer Night        2300-0700 from 1 October to 30 April  
 Winter Day            0700-2300 from 1 May to 30 September  
 Winter Night         2300-0700 from 1 May to 30 September

## 5. LOAD MANAGEMENT

Since NTL changed the Group 3 pricing structure on 1 April 2008 there has been a greater emphasis on Demand based charges and customers can gain more from careful load management at peak times.

### **Variable Charges**

Variable (consumption) charges were reduced on 1 April 2008 and the Day/Night differential has been widened. This means customers can make greater cost savings by shifting energy use from Day (0700 to 2300) to Night (2300 to 0700) than was the case in the past.

### **Anytime Demand Charge**

The total Anytime Demand charge is the most significant component of line charges for most Group 3 consumers, so minimising anytime peak loads and maintaining a power factor of at least 0.95 will provide material cost savings.

### **Winter RCPD Charge**

The RCPD charge from 01 April 2011 is based on the 12 highest USI peaks occurring between September 2009 and August 2010. Likewise, the charges from 1 April 2012 will be based on loads coincident with USI peaks measured from 1 September 2010 to 31 August 2011. Where customers can minimising their loads at critical peak USI grid times, future Winter RCPD charges will be reduced however it should be noted the USI peak times cannot be predicted with certainty.

### **Profile of USI Peak Loads**

NTL has USI load data for the grid, measured in kW per half hour, for the five years ending August 2006 to 2010. We have analysed this data to identify any trends that might support load control strategies for winter 2011 (which will impact on transmission RCPD charges from 1 April 2012).

What is evident is any ability to shed load or shift load away from expected peak times during the day will provide an opportunity to reduce future RCPD charges.

A summary of our analysis is provided below. Note that we have used the highest 50 peaks in each year to provide a wider perspective of the dates and time when the USI load tends to peak.

The largest population and load centre in the USI is Christchurch and inevitably its load profile determines the date and time of the USI peaks.

Normally the peaks occur in the winter months of June, July and early August, with a reasonable spread between the morning and evening periods on weekdays only. Occasionally there are peaks in late May but they very rarely occur on the weekends or Friday evenings. This is supported by 2006, 2007 and 2009 data.

In 2010 half of the peaks occurred in the morning, and this had the effect of increasing the coincident demand overall for Group 3, compared to last year where only 1 morning peak occurred. Group 3 as a whole tends to draw load from the network in the later afternoons.

## Top 50 Data Analysis Tables – for 2006, 2007, 2008, 2009 & 2010

### Distribution of top 50 by month, year ending August

Month	2006	2007	2008	2009	2010
May	0	0	26	1	7
June	6	25	14	13	9
July	25	18	0	32	22
August	19	7	10	2	12

### Distribution by time of day - am/pm

AM/PM	2006	2007	2008	2009	2010
am	27	21	42	20	24
pm	23	29	8	30	26

### Date Range over which top 50 peaks occur

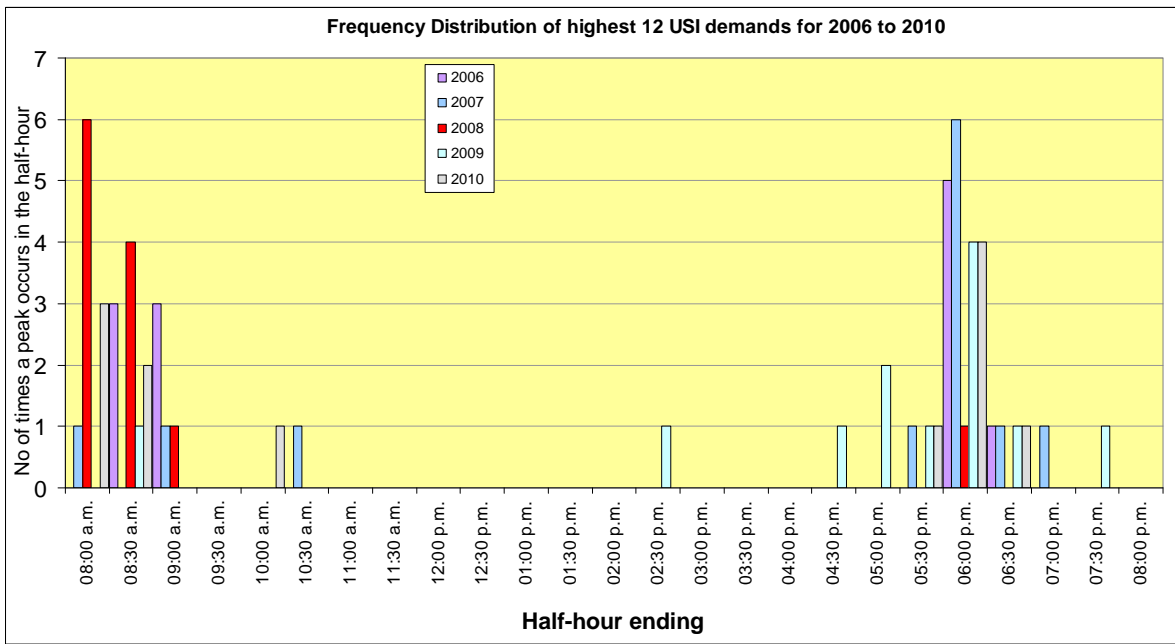
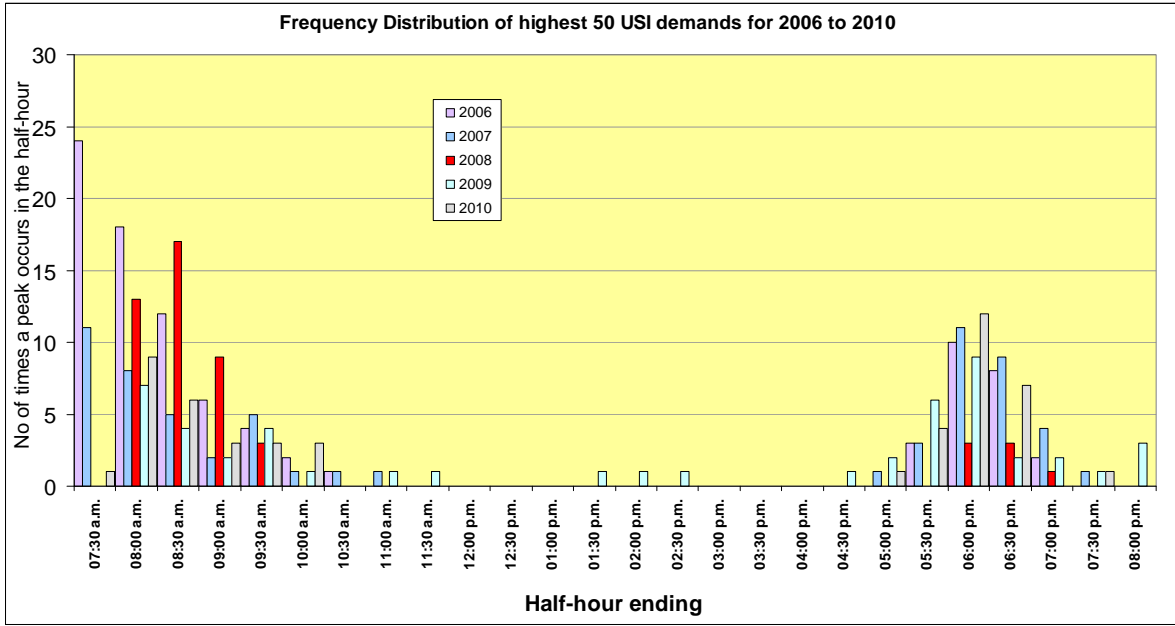
	2006	2007	2008	2009	2010
First	21-Jun-06	19-Jun-07	5-May-08	7-Nov-08	27-May-10
Last	24-Aug-06	15-Aug-07	21-Aug-08	7-Aug-09	23-Aug-10
Spread of days	64	57	108	273	88

### Distribution of top 50 by Weekday

Weekday	2006	2007	2008	2009	2010
Monday	4	11	8	18	10
Tuesday	9	13	14	8	14
Wednesday	17	12	11	13	5
Thursday	17	12	9	8	13
Friday	3	2	8	3	8
Saturday	0	0	0	0	0
Sunday	0	0	0	0	0
<b>TOTAL</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>

### Highest 50 USI peaks for years ending August 2006 to August 2010

Rank	2006		2007		2008		2009		2010	
	Date	Time	Date	Time	Date	Time	Date	Time	Date	Time
1	22-Jun-06	6:00 p.m.	28-Jun-07	6:00 p.m.	6-May-08	8:00 a.m.	29-Jun-09	6:00 p.m.	01-Jun-10	6:00 p.m.
2	21-Jun-06	6:00 p.m.	28-Jun-07	5:30 p.m.	6-May-08	8:30 a.m.	29-Jun-09	5:30 p.m.	23-Jun-10	6:00 p.m.
3	4-Jul-06	6:00 p.m.	09-Jul-07	6:00 p.m.	7-May-08	8:00 a.m.	20-May-09	6:00 p.m.	08-Jun-10	6:00 p.m.
4	5-Jul-06	6:00 p.m.	28-Jun-07	6:30 p.m.	29-May-08	8:00 a.m.	29-Jun-09	5:00 p.m.	01-Jul-10	8:30 a.m.
5	6-Jul-06	6:00 p.m.	20-Jun-07	6:00 p.m.	29-May-08	8:30 a.m.	29-Jun-09	2:30 p.m.	10-Aug-10	8:30 a.m.
6	10-Aug-06	8:30 a.m.	25-Jun-07	6:00 p.m.	28-May-08	8:00 a.m.	28-Jul-09	6:00 p.m.	01-Jun-10	6:30 p.m.
7	14-Aug-06	8:30 a.m.	15-Aug-07	8:00 a.m.	13-May-08	8:00 a.m.	07-Nov-08	8:30 a.m.	10-Aug-10	8:00 a.m.
8	16-Aug-06	8:30 a.m.	27-Jun-07	6:00 p.m.	7-May-08	8:30 a.m.	29-Jun-09	4:30 p.m.	12-Jul-10	8:00 a.m.
9	16-Aug-06	9:00 a.m.	28-Jun-07	9:00 a.m.	28-May-08	8:30 a.m.	02-Jul-09	6:00 p.m.	12-Aug-10	8:00 a.m.
10	14-Aug-06	9:00 a.m.	29-Jun-07	10:30 a.m.	30-May-08	8:00 a.m.	29-Jun-09	6:30 p.m.	12-Aug-10	10:00 a.m.
11	6-Jul-06	6:30 p.m.	28-Jun-07	7:00 p.m.	26-May-08	6:00 p.m.	02-Jul-09	5:00 p.m.	12-Aug-10	6:00 p.m.
12	5-Jul-06	9:00 a.m.	16-Jul-07	6:00 p.m.	6-May-08	9:00 a.m.	29-Jun-09	7:30 p.m.	27-May-10	5:30 p.m.
13	22-Jun-06	6:30 p.m.	26-Jun-07	6:00 p.m.	6:30 p.m.	6:00 p.m.	30-Jun-09	5:30 p.m.	22-Jul-10	6:00 p.m.
14	5-Jul-06	9:30 a.m.	09-Jul-07	6:30 p.m.	9:30 a.m.	6:30 p.m.	29-Jun-09	8:00 p.m.	13-Jul-10	9:00 a.m.
15	5-Jul-06	6:30 p.m.	17-Jul-07	9:30 a.m.	6:30 p.m.	9:30 a.m.	13-Jul-09	8:30 a.m.	12-Jul-10	6:00 p.m.
16	21-Jul-06	9:00 a.m.	27-Jun-07	8:00 a.m.	9:00 a.m.	8:00 a.m.	16-Jul-09	9:00 a.m.	08-Jun-10	5:30 p.m.
17	20-Jul-06	6:30 p.m.	19-Jun-07	6:00 p.m.	6:30 p.m.	6:00 p.m.	15-Jul-09	6:00 p.m.	11-Aug-10	8:00 a.m.
18	10-Aug-06	9:00 a.m.	15-Aug-07	8:30 a.m.	9:00 a.m.	8:30 a.m.	14-Jul-09	5:30 p.m.	06-Aug-10	8:00 a.m.
19	19-Jul-06	6:00 p.m.	17-Jul-07	9:00 a.m.	6:00 p.m.	9:00 a.m.	27-Jul-09	6:00 p.m.	13-Jul-10	8:30 a.m.
20	21-Jun-06	5:30 p.m.	17-Jul-07	8:30 a.m.	5:30 p.m.	8:30 a.m.	01-Jul-09	8:00 a.m.	01-Jul-10	8:00 a.m.
21	21-Jul-06	8:30 a.m.	28-Jun-07	9:30 a.m.	8:30 a.m.	9:30 a.m.	29-Jun-09	7:00 p.m.	10-Aug-10	6:30 p.m.
22	6-Jul-06	9:30 a.m.	28-Jun-07	8:00 a.m.	9:30 a.m.	8:00 a.m.	01-Jul-09	11:30 a.m.	27-May-10	6:30 p.m.
23	16-Aug-06	8:00 a.m.	21-Jun-07	6:00 p.m.	8:00 a.m.	6:00 p.m.	13-Jul-09	6:00 p.m.	10-Jun-10	8:30 a.m.
24	23-Aug-06	8:30 a.m.	15-Aug-07	9:30 a.m.	8:30 a.m.	9:30 a.m.	16-Jul-09	9:30 a.m.	13-Jul-10	6:00 p.m.
25	5-Jul-06	10:00 a.m.	28-Jun-07	7:30 p.m.	10:00 a.m.	7:30 p.m.	06-Jul-09	5:30 p.m.	31-May-10	6:00 p.m.
26	14-Aug-06	9:30 a.m.	09-Jul-07	5:30 p.m.	9:30 a.m.	5:30 p.m.	29-Jul-09	8:00 a.m.	23-Jun-10	5:00 p.m.
27	20-Jul-06	6:00 p.m.	28-Jun-07	8:30 a.m.	6:00 p.m.	8:30 a.m.	07-Nov-08	8:00 a.m.	23-Aug-10	6:30 p.m.
28	19-Jul-06	6:30 p.m.	28-Jun-07	10:00 a.m.	6:30 p.m.	10:00 a.m.	29-Jun-09	8:30 p.m.	12-Jul-10	9:30 a.m.
29	8-Aug-06	6:30 p.m.	16-Jul-07	8:30 a.m.	6:30 p.m.	8:30 a.m.	20-Jul-09	6:00 p.m.	01-Jul-10	9:00 a.m.
30	22-Aug-06	6:30 p.m.	27-Jun-07	6:30 p.m.	6:30 p.m.	6:30 p.m.	30-Jun-09	8:00 p.m.	09-Jul-10	9:30 a.m.
31	22-Aug-06	8:30 a.m.	16-Jul-07	9:30 a.m.	8:30 a.m.	9:30 a.m.	06-Aug-09	8:00 a.m.	09-Aug-10	8:00 a.m.
32	4-Jul-06	6:30 p.m.	23-Jul-07	8:00 a.m.	6:30 p.m.	8:00 a.m.	14-Jul-09	8:00 a.m.	30-Jul-10	8:00 a.m.
33	4-Jul-06	5:30 p.m.	14-Aug-07	6:30 p.m.	5:30 p.m.	6:30 p.m.	15-Jul-09	8:30 a.m.	10-Aug-10	7:30 a.m.
34	8-Aug-06	6:00 p.m.	29-Jun-07	11:00 a.m.	6:00 p.m.	11:00 a.m.	06-Jul-09	9:00 a.m.	15-Jul-10	8:30 a.m.
35	22-Jun-06	5:30 p.m.	15-Aug-07	6:30 p.m.	5:30 p.m.	6:30 p.m.	28-Jul-09	8:00 p.m.	28-May-10	7:30 p.m.
36	6-Jul-06	10:00 a.m.	20-Jun-07	6:30 p.m.	10:00 a.m.	6:30 p.m.	01-Jul-09	11:00 a.m.	15-Jul-10	9:00 a.m.
37	23-Aug-06	8:00 a.m.	08-Aug-07	8:00 a.m.	8:00 a.m.	8:00 a.m.	06-Jul-09	9:30 a.m.	09-Aug-10	6:30 p.m.
38	6-Jul-06	9:00 a.m.	27-Jun-07	8:30 a.m.	9:00 a.m.	8:30 a.m.	01-Jul-09	10:00 a.m.	12-Jul-10	6:30 p.m.
39	15-Aug-06	8:30 a.m.	17-Jul-07	6:00 p.m.	8:30 a.m.	6:00 p.m.	02-Jul-09	5:30 p.m.	23-Jun-10	5:30 p.m.
40	22-Jun-06	7:00 p.m.	19-Jun-07	6:30 p.m.	7:00 p.m.	6:30 p.m.	15-Jul-09	5:30 p.m.	28-May-10	6:30 p.m.
41	5-Jul-06	10:30 a.m.	10-Jul-07	6:00 p.m.	10:30 a.m.	6:00 p.m.	01-Jul-09	9:30 a.m.	09-Jun-10	6:00 p.m.
42	24-Aug-06	8:30 a.m.	17-Jul-07	8:00 a.m.	8:30 a.m.	8:00 a.m.	29-Jun-09	2:00 p.m.	13-Jul-10	8:00 a.m.
43	7-Aug-06	6:00 p.m.	09-Jul-07	7:00 p.m.	6:00 p.m.	7:00 p.m.	01-Jul-09	8:30 a.m.	12-Jul-10	10:00 a.m.
44	21-Jul-06	9:30 a.m.	23-Jul-07	9:30 a.m.	9:30 a.m.	9:30 a.m.	15-Jul-09	6:30 p.m.	15-Jul-10	6:00 p.m.
45	9-Aug-06	8:30 a.m.	16-Jul-07	6:30 p.m.	8:30 a.m.	6:30 p.m.	28-Jul-09	9:30 a.m.	20-Jul-10	6:00 p.m.
46	5-Jul-06	8:30 a.m.	14-Aug-07	7:00 p.m.	8:30 a.m.	7:00 p.m.	16-Jul-09	6:00 p.m.	28-May-10	5:30 p.m.
47	20-Jul-06	7:00 p.m.	20-Jun-07	5:30 p.m.	7:00 p.m.	5:30 p.m.	21-Jul-09	8:00 a.m.	13-Jul-10	9:30 a.m.
48	27-Jul-06	8:30 a.m.	28-Jun-07	5:00 p.m.	8:30 a.m.	5:00 p.m.	15-Jul-09	7:00 p.m.	09-Jul-10	10:00 a.m.
49	17-Aug-06	8:30 a.m.	17-Jul-07	7:00 p.m.	8:30 a.m.	7:00 p.m.	02-Jul-09	1:30 p.m.	12-Jul-10	8:30 a.m.
50	18-Jul-06	6:00 p.m.	17-Jul-07	6:30 p.m.	6:00 p.m.	6:30 p.m.	07-Aug-09	8:00 a.m.	28-May-10	6:00 p.m.



### **USI Load Data for Winter 2011**

Near real-time load data for the USI can be purchased from EMS, a subsidiary of Transpower, who have a web-based package call em<sup>6</sup>. NTL does not subscribe to the em<sup>6</sup> service.

Currently Transpower's System Operator makes USI load data publicly available on its website <http://www.systemoperator.co.nz/n1713.html> under "Upper and Top South Island Security". This USI load data is updated every 5 minutes or so. The information was originally set-up to assist lines companies and end users with load control during USI grid upgrades. Our understanding is that at this stage Transpower will continue to maintain this site over winter 2011.

Note also that 1MW = 1,000kW.

The front page of NTL's website also shows the level of load control NTL is deploying. NTL load control will approach 100% when peak grid loads are being recorded.

### **6. SUMMARY**

The information above is provided to help Group 3 consumers assess their options to control load and minimise their RCPD demand charges.

NTL has the full data set of the USI load for the last 5 years if required. Please contact Collin Just on (03) 989 3608 or [collin.just@networktasman.co.nz](mailto:collin.just@networktasman.co.nz).