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21 April 2004

Mr Calum Gunn
Commerce Commission
PO Box 2351
WELLINGTON

Dear Calum

During the ODV conference on 14 April, you requested some further information from us regarding transformer capacity utilisation. Additionally, the PBA representatives requested further information regarding the cabling costs for Nelson Electricity.

Distribution Transformer Capacity Utilisation (TCU)

Details of our actual transformer installed capacity, maximum demands and TCU for the 2003 and 2004 years are provided on the table below:

	2002/2003	**2003/2004**
Total installed transformer capacity	231,899	240,129
Less standard transformers	560	413
Total used transformer capacity	231,339	239,716
System maximum demand kW	55,092	54,514
Assumed power factor	0.95	0.95
System maximum demand kVA	57,992	57,699
Transformer Capacity Utilisation	**25.07%**	**24.07%**
Capacity to optimise to 30% - kVA	38,033	47,386
Average DRC per kVA 31 March 2003 ODV	$ 39.98	$ 39.98
Reduction in DRC to optimise to 30%	$ 1,520,602	$ 1,894,541

The actual average depreciated replacement costs per kVA in our March 2003 ODV was $39.98 per kVA. Hence, optimisation to 30% TCU would result in a write down of $1,520,602 in March 2003. If that same average value per kVA were applied to the March 2004 transformer capacity, a total write down of $1,894,541 would be required.

As advised during the conference, it is important to recognise that system maximum demand can be influenced by events outside a line company's control. As apparent from the above table, system maximum demand in the 2004 year was less than in the 2003 year, notwithstanding significant growth in the company's network. This reduction in maximum demand must be attributed to the governments call for energy reductions arising from the low lake levels experienced during the 2003 winter.

To demonstrate how capricious use of a hard and fast rule such as that contained in the Draft Handbook is, our system maximum demand on 8 April 2004 was 56,404kW, equivalent to 59,373kVA at 0.95 power factor. This demand was 2.9% greater than the maximum demand for the 2003/2004 year.

On the basis of that 8 April demand, and installed transformer capacity at 31 March 2004, the capacity required to be optimised to achieve a 30% TCU factor would reduce to 41,807kVA, a net $223,000 reduction in the value of optimisation.

It is obviously impossible to predict what the system maximum demand in the 2004 winter will be. However it is pertinent that the 8 April 2004 demand was 7.2% greater than the demand in April 2003. If the same percentage increase were to be applied to the winter 2003 maximum, winter 2004 maximum will be 61,853kVA.

Distribution transformer capacity optimisation to achieve 30% capacity utilisation would, on the basis of that possible winter 2004 demand be 206,177kVA, equivalent to optimisation value of $1.34m for the transformers installed at 31 March 2004.

It is also pertinent to point out to the Commission that most line company's system maximum demands are established when most if not all "controlled" demands, such as water, and space heating are switched off. One of the principle reasons for this control is to minimise transmission related maximum demand charges. Our maximum demand on 8 April was achieved with <u>all</u> controllable loads turned off for the whole half hour – if we had left 50% of these loads on, the system maximum would have been in the order of 65,000kW or 68,420kVA, resulting in a $465,600 TCU write-down.

It would be a perverse outcome indeed if line company's were to exercise less than optimum control of controllable loads at maximum demand times to achieve a higher maximum demand, consequential lower distribution TCU write down and increased transmission charges which are allowed as a pass-through under the Commissions price path threshold regime.

As submitted at the conference, we believe it is inappropriate to decide on some arbitrary percentage capacity utilisation requirement that does not recognise the unique characteristics of various networks throughout New Zealand. These unique characteristics include:

- Some companies, OtagoNet and Tasman are two examples, have one large (relative to that companies total load) consumer whose TCU would be expected to be 70-80% at least. Combining that utilisation with the remainder of the network will invariably result in the overall system capacity utilisation being higher than would be the case if that consumer were not present.

In the case of OtagoNet, the one large consumer has a maximum demand in excess of 15MW, around 33% of the total network demand. Removal of this one consumer would materially reduce the TCU, from the present 39% to possibly below the 30% threshold.

We note from the information disclosed by Buller Electricity that removal of one consumer who recently commenced taking supply directly from Transpower has resulted in TCU for that company reducing from around 55% to 29%. We believe this dramatically illustrates the point that the presence or not of one large consumer can have a material impact on capacity utilisation.

- Networks such as Nelson Electricity, an inner city area only, have numerous consumers supplied from most of their distribution substations. A properly designed system will capture the diversity inherent in such arrangements, leading to higher TCU.

- Companies such as Marlborough Lines with a wide spread rural area and no particularly large consumer, will generally have less than 30% TCU. This does not however necessarily indicate an "inefficient" design – it merely shows the effect of numerous single consumer transformers.

- The mix of load types supplied from a network. We mentioned capacity utilisation for a section of the Marlborough Sounds in our submission. The submission also included reference to irrigation, summer only loads, which generally do not contribute to system maximum demand. Additionally, in Marlborough there are a number of primary production industries whose consumption during winter months is minimal when compared to their consumption during the peak production months February to April. But the maximum demand on our system has traditionally occurred during winter, being caused primarily by domestic consumers "peaky" demands in the morning and evening.

We submit there is little rational for retaining a TCU provision in the draft handbook. If this is not acceptable, then it is important that the handbook allow some latitude to the valuer or auditor. For the reasons listed above, we submit a hard and fast rule is inappropriate.

Nelson Electricity Underground Cable

We attach a schedule that provides a brief description of each of the six underground cable jobs outlined in our submission.

We accept these jobs do not meet a "significant scale" of construction. There would be some economy of scale for larger scale construction. However, we cannot accept that cost of cable, trenching and restoration would reduce by around 35% for larger scale construction. It is this type of reduction that would be required to achieve actual costs in line with those in the draft handbook. In this regard, we sought an indication of cost for 10km of 300mm 3 phase 11kV cable from one supplier – their advice was that the cost would be the same as we currently pay for 1km of this cable.

We trust the above information provides adequate response to the Commissions queries at the conference. If there is any further information we can provide to assist in your deliberations, please do not hesitate to contact us.

Yours sincerely

David Waters
for Marlborough Lines

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