



**SUBMISSION TO  
COMMERCE COMMISSION**

**Regulation of Electricity Line  
Businesses Revised Draft Handbook  
for Optimised Deprival Valuation of  
Fixed Assets**

**30 July 2004**

**MARLBOROUGH LINES LIMITED**

Submissions on Revised Draft ODV Handbook  
Network Performance Group Requirements  
Commerce Commission  
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## **SUBMISSION OF MARLBOROUGH LINES LIMITED**

### **1. Introduction**

- 1.1 The Commerce Commission (“the Commission”) is required under Sections 57T and 57U of the Commerce Act 1986 to ensure large line owners and large electricity distributors (“ELBs”) disclose timely and reliable information about their operations and behaviour.
- 1.2 On July 2004, the Commission released and invited submissions on two papers:
  - The Revised Draft Optimised Deprival Valuation Handbook (“the Revised Handbook”)
  - The Review of Optimised Deprival Valuation Handbook Replacement Costs and System Fixed Assets (“Replacement Cost Report”) prepared by the Commissions advisors Parsons Brinckerhoff Associates (“PBA”).
- 1.3 In addition to these reports, the Commission released a third paper (“Invitation for Submissions on Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Business: Revised Draft for Consultancy (“Submission Invitation Paper”). This paper requested that submissions be limited to technical details of the Revised Handbook. It also provided further information on wider valuation issues raised during previous Optimised Deprival Valuation (“ODV”) Handbook consultations.
- 1.4 Marlborough Lines is party to, and fully supports, the submission prepared by PricewaterhouseCoopers (“the PWC Submission”) on behalf of 19 large ELB’s and the submission of the Electricity Networks Association.
- 1.5 This Marlborough Lines submission expands on some aspects of that PWC submission, and raises some other issues peculiar to Marlborough.

### **2. Background**

- 2.1 Marlborough Lines is a medium sized ELB, supplying 21,800 consumers over 3,290km of line located throughout Marlborough.
- 2.2 Marlborough Lines also owns:

- 50% of Nelson Electricity Limited, the network which supplies the city of Nelson;
- 51% of OtagoNet the network which supplies provincial Otago excluding Central Otago.

- 2.3 Nelson Electricity has the greatest consumer density of any network in New Zealand whilst OtagoNet is the least dense.
- 2.4 The Marlborough network extends to some remote areas which can only be reached by helicopter or boat.
- 2.5 Of the total Marlborough consumer base, 48% are located in Blenheim, a further 18% in smaller townships throughout Marlborough, and the remaining 34% throughout rural and sparsely populated areas such as the Marlborough Sounds and Upper Awatere Valley/Molesworth areas. Overall, 80% of consumers are supplied from 20% of the network.
- 2.6 Marlborough Lines has a single point of supply (GXP) connection with Transpower's system. The company has a significant 33kV sub-transmission system incorporating 325km of 33kV lines and 13 33/11kV zone substations.

### **3. Scope of ODV Handbook**

- 3.1 Section 19 of the invitation for submissions paper refers to the Commission using valuations derived from the 2004 handbook "as the starting point for its enquiry, but may then take into account the business-specific circumstances of any lines business that is the subject of an enquiry".
- 3.2 We acknowledge the Commission is attempting to allay concerns ELB's have regarding accuracy of ODV's established using the ODV methodology. However, we have some practical concerns regarding this provision. These relate to the timing of any breach of thresholds and therefore the post-breach enquiry by the Commission.
- 3.3 If that breach were to occur in say five years time, and in the meantime that ELB had adopted the DHC method of valuation going forward from March 2004, we foresee significant problems for both the Commission and the ELB in revisiting a five year old starting book value to establish whether that value were appropriate at that point in time, five years earlier than the investigation.
- 3.4 We urge the Commission to consider the practical difficulties which would occur should such a situation eventuate.

### **4. ODV Handbook Updating**

- 4.1 We submitted it is essential for the Commission, at some point, to clearly state the provisions for updating the ODV handbook on a regular basis.
- 4.2 Whilst we accept it may be the Commission's intention to include such provisions in some future publications, we suggest it may be more appropriate

to incorporate such provisions in the current Revised Handbook.

- 4.3 There is little doubt that the fact the previous MED handbook had not been updated for ten years, is one of the reasons that the current revision has taken so long. We suggest it is important the ELB's be given some certainty in this regard.

## **5. Valuation Asset Register**

- 5.1 We note Clause 2.7 excludes from the ODV;

- streetlight control relays and circuits or other equipment used exclusively for streetlight control; (underline added)

- 5.2 Clause A.25 and Table A1 referred to valuing streetlight circuits. We therefore presume the underlined words in the above exclusion should be deleted.

- 5.3 Further, Clause 2.7 excludes:

- mobile substations and generators

- 5.4 A number of ELB's have mobile substations set up on platforms or in containers ready to deploy to strategic points of the network in the event of failure of strategic components of the network. As such, these should properly be treated as "stores and spares" and should be included as separately categorised items in the ODV valuation asset register. As drafted, Clause 2.7 would appear to exclude such strategic elements from the ODV valuation.

## **6. Transpower Exemption of Optimisation**

- 6.1 We have some concerns with the final sentence of Clause 2.35, and request some explanation as to why Transpower should be treated differently to any other line company purely because it has Electricity Commission approval for some projects.

- 6.2 It is our understanding that the vast majority of Transpower's future investments will be approved by the Electricity Commission. Given Transpower's widely acknowledged need to upgrade significant portions of its network to meet current and projected loadings, this exemption is, over time, likely to result in a large portion on Transpower's assets falling outside the optimisation requirements.

- 6.3 If the purpose of the exemption is to allow Transpower to shift optimisation risk to its customers via its pricing, we submit this is confusing the issues of valuations and pricing unnecessarily.

## **7. Determination of Replacement Cost**

- 7.1 Clause 2.13 defines "significant scale of construction" for a distribution feeder

as the complete feeder constructed as a single project.

- 7.2 Whilst we accept this definition may be appropriate in a majority of cases, we submit it is totally inappropriate in the case of areas such as the Marlborough Sounds, where one feeder totals 285km of 11kV line, 315 distribution transformers with a total capacity of 8.45MVA and 65km of LV lines.
- 7.3 We have previously submitted in this regard that it would be unreasonable to use such quantities to define significant scale.
- 7.4 We submit significant scales for lines should be defined in kilometre length.

## **8. Optimisation**

- 8.1 We submit it is an unreasonable and unwarranted extension of the optimisation process to require all low voltage distribution system lines to be examined to determine whether a more cost effective design could meet the quality of supply criteria, as required by Clause 2.25.
- 8.2 Whilst we note the detail included in Clause B.12, we submit the time involved to carry out the necessary review of low voltage circuits as stipulated would not be cost effective, given that any resultant optimisation of low voltage networks is likely to be minimal, if any.
- 8.3 Clause 2.30 sets out the maximum planning periods over which future load growth can be allowed. We have earlier submitted, and reiterate that in our considered opinion the planning periods provided in the latest draft are inappropriate. We endorse and urge the Commission to adopt the alternative planning periods set out in the PWC submission.
- 8.4 The standard life of an MEA 11kV distribution line is 45 years. To suggest that such lines should be designed to be of sufficient capacity to meet only five years load growth is nonsensical. Long term assets require long term planning.
- 8.5 We have a very real situation in Marlborough where we are considering two alternatives to increase the capacity of an 11kV feeder in the Wairau Valley area. The existing medium 11kV conductor is loaded to the extent that it is insufficient to supply a new viticulture consumer who has requested supply for a 1,000kVA winery. We have identified two upgrade options to meet this increased demand, these being:
- Upgrade the existing medium 11kV conductor to heavy conductor operating at 11kV; or
  - Upgrade the existing 11kV to 22kV, retaining the existing conductor.
- 8.6 The first option, increase conductor size, will meet the new consumers estimated demand plus historic load growth on this feeder for approximately three years. The 22kV option would cater for historic growth for the next ten plus years.

- 8.7 Under the proposed rules, upgrading of the 11kV conductor to heavy would not result in any optimisation requirement. However, the upgrade to 22kV, which, given the long term life of the assets appears the more logical choice, would result in the existing medium conductor being required to be optimised to light conductor.
- 8.8 This is an example of where the Commission risks giving the wrong investment signals to ELB's. If shareholders cannot achieve an appropriate return on capital invested as a consequence of overly prescriptive ODV requirements, ELB's may elect to limit their investment to that on which they can achieve a return, to the long term detriment on the economy as a whole.
- 8.9 It is important to recognise that it is not cost effective to incrementally add small increases in capacity to match demand. Capacity increases are of a "step change" nature.
- 8.10 Similarly, for distribution transformers, the requirement that no future load growth be permitted is, in our view, unreasonable. We support, as a minimum, the five year planning period for distribution transformers included in the PWC submission.

### **8.11 Quality of Supply**

- 8.11.1 Clause 2.32 appears to require disclosure in the valuation report information which is already required to be disclosed in asset management plans. This is, we submit, an unnecessary duplication, and suggest this requirement be deleted.

### **8.12 Stranded Assets**

- 8.12.1 Clause 2.37 requires any system fixed assets not required to supply line services to existing customers to be optimised out. We suggest there should be a provision to provide that where there is a reasonable expectation that consumers will connect to that part of the network within a reasonable time frame, those assets should not be required to be optimised out.
- 8.12.2 We have a particular situation in Marlborough where reticulation in a rural subdivision was installed in early 2004, at a capital cost of approximately \$200,000. The first consumer in this subdivision was connected to the network on 26 March 2004. Therefore, under the draft rules, this section of the network can be included in the 31 March 2004 ODV. If, however, that consumer had not connected until one week later, under the provisions as drafted, that reticulation would be required to be optimised out.
- 8.12.3 We consider this a somewhat capricious situation which could be alleviated by a somewhat more pragmatic approach to optimisation.

### **8.13 Minimum Residual Life**

- 8.13.1 We support the submissions of PWC in this regard, however, would suggest that a minimum life equal to 10% of the total life of the asset would be more appropriate.

## 9. Economic Value

- 9.1 Clause 2.59 suggests a materiality threshold of 1% of the ODRC. We support the PWC submission that materiality thresholds are more generally set at 5%.

## 10. Appendix A – Standard Values etc

- 10.1 Clause 8.9 sets out multipliers available for a range of localities and terrain.

- 10.2 The PBA draft report to the Commission on 23 December 2003, included at the top of page 4-14 a statement:

*“It is noted, however, that additional costs incurred as a result of working in remote locations, occur in respect of all works undertaken in such locations and not just in respect of works associated with overhead lines. The draft new ODV handbook, therefore, allows for this particular multipliable factor to be applied to other construction works undertaken in remote locations, where appropriate”.*

- 10.3 We noted in our submission on the earlier draft ODV handbook that provisions in accord with this PBA statement were not included in that draft. We are surprised and disappointed to find that, similarly, Clause A.9 continues to allow application of remote area multipliers to overhead 33kV, 22kV and 11kV lines only.

- 10.4 It is patently absurd to suggest the cost of construction of a low voltage line, underground cable, or other equipment in a remote area accessible only by boat and/or helicopter is the same as for that equipment installed in a typical rural environment.

- 10.5 Similarly, we note the definition of “remote areas” is being those situated “more than 75km from the ELB’s nearest work depot”. As earlier submitted, we believe areas which may be within 75km of a nearest work depot, but which require boat and/or helicopter access, should logically be treated as remote areas.

- 10.6 We are also disappointed to note the Commission has failed to recognise that in most remote areas, distances are measured in hours not km.

### 10.7 Streetlighting

- 10.7.1 Clause A25 states:

*“Where LV reticulation is not available to supply streetlights, streetlighting mains owned by the ELB can be valued as a stand alone...”*

- 10.7.2 We can only presume from this statement that the Commission considers photo cells to be the MEA of streetlighting circuitry. If such is the case,

we suggest the Commission must reconsider this view. Our reasons for this are many and varied, including:

- the inherent long term unreliability of photo cells as they become subject to exposure to ultraviolet light, dust, vandalism etc.
- the significant increase in the cost of testing a block of lights, since with photo cells, each individual photo cell must be covered to check that the lamp is operative and/or switches on/off at the required light intensity.
- The intermittent on and off times of lighting as different photo cells react to different light levels. This has the potential to impact on traffic safety, as drivers go from light to dark and back to light areas on a street. It is a readily accepted streetlighting design factor that changes in lighting levels should be tapered to allow drivers eyesight to adjust to the changing light levels.
- The inability to change the on and off times of streetlighting in times of energy shortages.

10.7.3 One of the basic fundamentals around all the Commissions regulation of the electricity industry has been the responsiveness of ELB's to customer needs. In view of this, we have consulted the Marlborough District Council, the territorial authority responsible for most of the streetlighting in Marlborough, as to their views on the use of photo cells. The Council has advised they would be most unhappy if the system were to be changed from the current relay and circuit system to an individual photo cell system.

10.7.4 We therefore urge the Commission to accept that, whilst individual photo cells may be appropriate for isolated individual lights, they are totally inappropriate for the majority of urban and fringe urban area streetlighting.

## **11. Appendix B – Optimisation**

### **11.1 Substation Land and Buildings**

11.1.1 Clause B8, dealing with substation Land and Buildings, requires ELB's to "Optimise out any un-utilised or underutilised land..."

11.1.2 It is important the Commission recognises that substations located in residential areas are subject to noise level constraints, and hence land which is unutilised may be the most cost-effective method of increasing the distance between any noisy equipment and the boundary of adjoining properties.

11.1.3 The company is currently in the process of acquiring land adjacent to a substation for this very purpose.

### **11.2 Cable Trench**

- 11.2.1 It is disappointing to note that, contrary to numerous submissions from ourselves and numerous other ELB's, the Commission has prevailed with the requirement, in Clauses B.9 and B.12, to require "Cables running close together, or on the same side of any road or street, to be optimised to a single trench..."
- 11.2.2 In section 28 of the Submission Invitation Paper, the Commission recognised that dynamic efficiency is an important objective of the regulatory regime, and further that this objective will be a key principle underpinning the review of the regulatory accounting framework.
- 11.2.3 Whilst we take some comfort from these statements, the fact remains that requiring recently laid cables to be treated as if they were in an existing trench, does little to assure us that we will be able to achieve a reasonable return on any future investment of this type.
- 11.2.4 It would almost appear the Commission has placed this matter in the "too hard" basket in the meantime. Alternatively, this optimisation provision could be construed to be an attempt to provide very strong signals to ELB's to adopt the DHC valuation approach going forward.
- 11.2.5 It is unbelievable that territorial local authority would agree to ELB's constructing overhead lines in areas where the reticulation is currently underground when ultimately the time comes to upgrade the capacity in that area. Therefore, under the current optimisation provisions, ELB's would be faced with either providing the additional capacity at a cost far in excess of that they could achieve a return on, or refusing to supply any further consumers supplied via that part of the network.
- 11.2.6 We urge the Commission to reconsider the single trench optimisation requirement.

### **11.3 Distribution Transformer Capacity Utilisation**

- 11.3.1 We are disappointed the Commission and PBA have, in Clause B11, failed, to fully recognise the fact that distribution transformer capacity utilisation will be significantly effected by the presence, or not, of a single large consumer. We provided the Commission in our cross-submission following the previous ODV conference, details of two ELB's who are materially affected in this regard.
- 11.3.2 Additionally, differences between the areas supplied by ELB's will lead to differing capacity utilisations. It should be obvious that a tightly-knit network such as Nelson Electricity is able to capture the diversity in consumer demand in its installed transformer capacity to a much greater extent than is possible for companies such as Marlborough Lines with significant areas of rural and remote rural reticulation.
- 11.3.3 For example, 100 consumers in one street in an urban area could be supplied from a 200kVA transformer, and could be expected to have an after-diversity maximum demand of close to that transformer capacity rating. However, those same 100 consumers located in 50 different

locations in rural or remote rural areas, sufficiently far apart to require individual transformers, could be expected to have the same after-diversity maximum demand, but would in, all probability require at least fifty 15kVA transformers (the minimum standard size) to meet their individual maximum demands. Thus those same 100 consumers in a remote area utilise 750kVA of transformer capacity, 3.75 times the capacity required in the urban area.

- 11.3.4 The 30% capacity utilisation factor was incorporated in the MED handbooks, and it would appear that PBA and/or the Commission, have merely adopted that figure without any further investigation or explanation as to the justification or source of that factor. We submit it is important for the transparency of the process for further consideration and some explanation, to be provided in this regard.
- 11.3.5 We also note the exclusion provision in Clause B11, “unless a lower utilisation is provided for in a specific customer non standard contract”. We have some difficulty with how such a circumstance would be adjusted in a practical application.
- 11.3.6 We currently have a situation where a consumer has requested we provide 2,000kVA of transformer capacity where 1,500kVA would suffice for the load at the installation. The request for the additional 500kVA transformer capacity arises from the consumers desire to use the transformer to absorb harmonics generated by his installation.
- 11.3.7 From a practical perspective, it would appear the exclusion in Clause B11 would indicate we should, assuming we have a specific non-standard contract with this consumer, deduct the additional 500kVA transformer capacity from the total transformer capacity before establishing the capacity utilisation factor. Alternatively, the provision could be interpreted to indicate that the full 2,000kVA transformer capacity should be deducted from the total, together with that consumers demand at the time of maximum demand, to establish the overall capacity utilisation factor.
- 11.3.8 One further aspect in regard to this provision is the requirement to convert current peak load to MVA at an assumed power factor of 0.95. We suggest an addition to this to provide that where the actual MVA maximum demand on that network, substation or feeder is known, that actual MVA demand be used in the calculation.

## **12. Conclusion**

- 12.1 We thank you for the opportunity to comment on the revised draft ODV handbook. We would be happy to discuss any issues raised in this submission with the Commission.

DA Waters  
**Deputy Chief Executive**