

Independent Engineer's Report on the Asset Adjustment Process of: **Nelson Electricity**

27 May 2011



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GLOSSARY

EDB Electricity Distribution Business

DRC Depreciated Replacement Cost

EDB IM Electricity Distribution Input Methodologies

GIS Geographic Information System

ODRC Optimised Depreciated Replacement Cost

ODV Optimised Deprival Valuation
ORC Optimised Replacement Cost

RAB Regulatory Asset Base

RC Replacement Cost

SKM Sinclair Knight Merz



Executive Summary

On 22 December 2010 the Commerce Commission (Commission) released a document entitled "Commerce Act (Electricity Distribution Input Methodologies) Determination 2010" (EDB IM). The EDB IM outlines a set of modifications (referred to as the "asset adjustment process") that Electricity Distribution Businesses (EDBs) may choose to undertake to their disclosed 2004 ODVs as part of the process to establish an Initial Regulatory Asset Base (Initial RAB) as defined in clause 2.2.2 of the EDB IM.

On 16 March 2011 Nelson Electricity Ltd (NEL) received, from the Commission, a "Notice to supply information to the Commerce Commission Section - 53ZD of the Commerce Act 1986" (Section 53ZD Notice). Associated with this Section 53ZD Notice was the requirement that NEL supply an Independent Engineer's Report in respect of the asset adjustment process used for setting its Initial RAB. The exact requirements of this report are contained in "Schedule C: Information Requirements for Engineer's Report" of the Section 53ZD Notice.

Sinclair Knight Merz (SKM) was retained by NEL to review the changes to its 2004 ODV and to prepare an Independent Engineer's Report in accordance with Schedule C of the Section 53ZD Notice.

The following table outlines the differences between NEL's 2004 ODV and its adjusted 2004 ODV following the asset adjustment process ("Adjusted 2004 RAB").

	2004 ODV	ad	justed 2004 RAB	Movement
	31 March 2004		31 March 2004	
	(\$'000)		(\$'000)	(\$'000)
Replacement Cost (RC)	\$ 39,796	\$	45,282	\$ 5,486
Depreciated Replacement Cost (DRC)	\$ 20,397	\$	23,481	\$ 3,084
Optimised Replacement Cost (ORC)	\$ 37,464	\$	43,196	\$ 5,732
Optimised Depreciated Replacement Cost (ODRC)	\$ 19,393	\$	22,521	\$ 3,129
Optimised Deprival Value (ODV)	\$ 19,393	\$	22,521	\$ 3,129

The following table outlines the adjustments to NEL's disclosed valuation over the period 2004 through 2009 (year ending 31 March).

Year	2004	2005	2006	2007	2009
Value of Adjustments (ODV)	\$3.129m	\$0	\$0	\$0	\$0



1. Introduction

1.1. Background

Sinclair Knight Merz (SKM) was retained by Nelson Electricity Ltd (NEL) to undertake an independent review of the NEL asset adjustment process. SKM's review was undertaken to determine the appropriateness of the proposed adjustments in respect of the asset adjustment process as set out in clause 2.2.1 of the "Commerce Act (Electricity Distribution Input Methodologies) Determination 2010", 22 December 2010 (EDB IM).

This report details the findings of the independent review and has been prepared to comply with the requirements for the Independent Engineer's Report in Schedule C of the Commerce Commission's "Notice to supply information to the Commerce Commission Section 53ZD of the Commerce Act 1986 (Section 53ZD Notice), dated 16 March 2011. A copy of the signed statement required by the Section 53 ZD Notice is provided in Appendix C.

SKM's review principally considered the following elements of the asset adjustment process:

- the inclusion of load control relays;
- corrections for asset errors;
- the reapplication of asset multipliers; and
- the reapplication of optimisation or economic value.

1.2. Processes

The preparation of this report has been the responsibility of SKM. It has relied upon information and data prepared by NEL. Wherever possible, SKM has sought to verify this data and to check its accuracy and validity. SKM notes that it has recently assisted NEL in relation to a financial/accounting valuation (in accordance with NZ-IAS 16¹).

SKM specifically notes that, in undertaking the asset adjustment process, NEL has relied upon its original 2004 ODV database.

In the interests of accuracy and completeness, there has been significant interaction between SKM and NEL during the review. This has been undertaken via telephone discussions and e-mail correspondence.

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NZ IAS 16: Property, Plant and Equipment (IAS-16), as specified by the Financial Standards Board of the Institute of Chartered Accountants of New Zealand (http://www.nzica.com/).



2. Information Provided by NEL

NEL's asset register is contained in a suite of Microsoft Excel spreadsheets that was provided to SKM on 2 May 2011. The asset register had been developed specifically for the 2004 ODV valuation. Separate workbooks are kept for each asset class, with separate files showing the incremental breakdown of the movements due to each adjustment, where there is more than one adjustment to the same asset category.

NEL provided the following documents.

- Asset Management Plan.
- 2004 ODV Report.
- "Nelson Electricity Regulatory Asset Base: Information to Support Changes in Multiplier for the Base 2004 ODV", Nelson document dated 24 May 2011.
- MS-Excel File called "Average Trench Rates.xlsx", NEL file outlining historical projects.
- Google Maps file called "Multiplier Sites.kmz", NEL file outlining location of historical projects.



3. Consideration of RAB Adjustments

This section sets out the adjustments to the NEL 2004 RAB made under the asset adjustment process.

3.1. Load Control Relays

Reference EDB IM cl 2.2.1(2)(a). An EDB may designate a load control relay asset owned by an EDB, except a 2009 disclosed asset, as of 'included' type. Clause 2.2.1(3) goes on to say that assets to which sub-clause (2)(a) applies may be valued as:

- its depreciated historic cost as at 31 March 2009; or
- if there are insufficient records, then its depreciated carrying value from the general purpose financial statements.

NEL has not included load control relays in its Adjusted 2004 RAB.

3.2. Correct Asset Register Errors

3.2.1. Assets included in error

Reference EDB IM cl 2.2.1(2)(b). EDBs may correct asset related errors in the light of new information. The allowable corrections being due to:

- assets being omitted in error;
- assets being included in error;
- assets being incorrectly categorised; and
- asset ages, quantity, category or locations being incorrectly recorded.

NEL has not made any adjustments due to asset errors in establishing its Adjusted 2004 RAB.



3.3. Reapplication/Modification of Asset Multipliers

Reference EDB IM cl 2.2.1(2)(c) and (d). EDBs may reapply multipliers where more accurate information has become available and to make adjustments to multipliers in accordance with specific new multiplier ranges.

3.3.1. Re-apply/modify CBD multipliers

Figure 1 illustrates the CBD cable multiplier regions that NEL used to establish its original 2004 ODV. The multiplier was applied to two areas, incorporating:

- the Nelson central business district; and
- the Nelson port.

For the above areas, NEL had applied a CBD multiplier of 1.8 to all underground cables.

In order to establish its Adjusted 2004 RAB NEL proposes to adjust the areas to which the CBD multiplier is applied and the magnitude of the CBD multiplier. This proposal is based on its review of its cable installation projects over the period 2004 to 2010. In order to establish the magnitude of the Adjusted 2004 RAB CBD multiplier NEL has:

- established the average cable installation cost;
- accounted for economies of scale;
- discounted/indexed the costs back to 2004 dollars;
- compared with the standard ODV Handbook installation costs; and
- included an additional factor to arrive at a conservative (lower) CBD multiplier.

Having undertaken the above analysis NEL has proposed the use of three CBD multiplier areas, shown in Figure 2, and which are referred to as follows:

- CBD multiplier CBD Central : value of 2.1
- CBD multiplier CBD Surrounds : value of 1.72
- CBD multiplier Congested Hilly: value of 1.72

SKM has reviewed the information supplied by NEL and it is of the view that the approach taken is appropriate. We note that, at SKM's request, NEL modified/reduced the above CBD multipliers to account for the fact that a significant portion of CBD cable installation costs are due to opening trenches in hard concrete/asphalt surfaces and the subsequent reinstatement. This change was based on SKM being of the view that secondary cables (shared trench) should not attract as high a multiplier.



SKM also notes that NEL faces significant challenges associated with cable installation/construction in of the hilly suburb areas of Nelson. This is the basis for NEL's proposal to establish the "CBD multiplier - Congested Hilly" multiplier. In these suburbs the streets are narrow and the footpaths are small (if they exist). As a result cable installation is often in the road or under the concrete walkways. Furthermore, due to the hilly terrain there is little option but to install cables in the "road foundation" that is hard/rocky. SKM notes that other electrical distribution businesses (EDBs) have indicated the same difficulties in urban hilly terrain.

In contrast to the above NEL has indicated that there is little justification to support the use of the CBD multiplier of 1.8 that was applied to the port of Nelson and used to establish the 2004 ODV. Accordingly, for the Adjusted 2004 RAB NEL has elected to remove this multiplier from the cables located in the Nelson port area.

The effects of NEL's proposal to change the CBD multiplier to the areas shown in Figure 2 (and to change the multiplier magnitude) are shown in Table 1 below. This table shows that an additional 130 kms of underground cable² have had a CBD multiplier applied, resulting in an <u>increase</u> to the Adjusted 2004 RAB <u>of</u> \$2.4M, in terms of ODRC. Based on the information supplied by NEL SKM is of the view that the proposed adjustments are justified.

Table 1: CBD Multiplier: Impact of CDB multiplier changes

Asset	Quantity	RC		DRC	ORC		ODRC	
			(\$'000)		(\$'000)	(\$'000)		(\$'000)
Subtransmission cables	9.7	\$	1,224	\$	814	\$ 1,224	\$	814
11kV cables	9.1	\$	294	\$	234	\$ 540	\$	279
LV cables	111.6	\$	2,561	\$	1,276	\$ 2,561	\$	1,276
	-							
Total Movement	130.4	\$	4,078	\$	2,324	\$ 4,324	\$	2,369
2004 ODV - CBD Multiplier - Nelson CBD		\$	21,800	\$	11,572	\$ 20,185	\$	10,904
2004 RAB - CBD Multiplier - Central/Surrounds/Hilly		\$	25,878	\$	13,896	\$ 24,509	\$	13,273

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² This the Nett change in cables with the CBD multiplier applied, across NEL's entire asset base. It includes removing CBD multipliers to cables in the Nelson port area.



Figure 1 CBD multiplier regions: original 2004 ODV

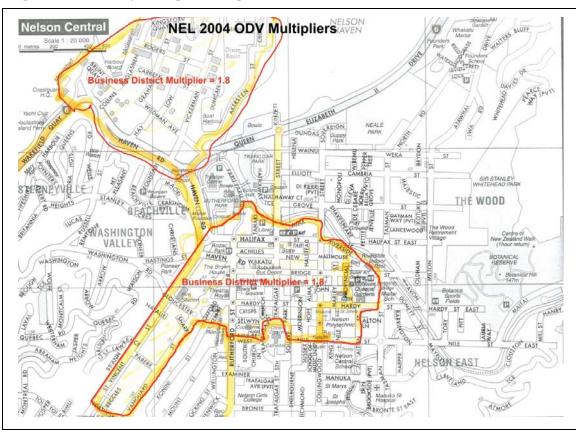
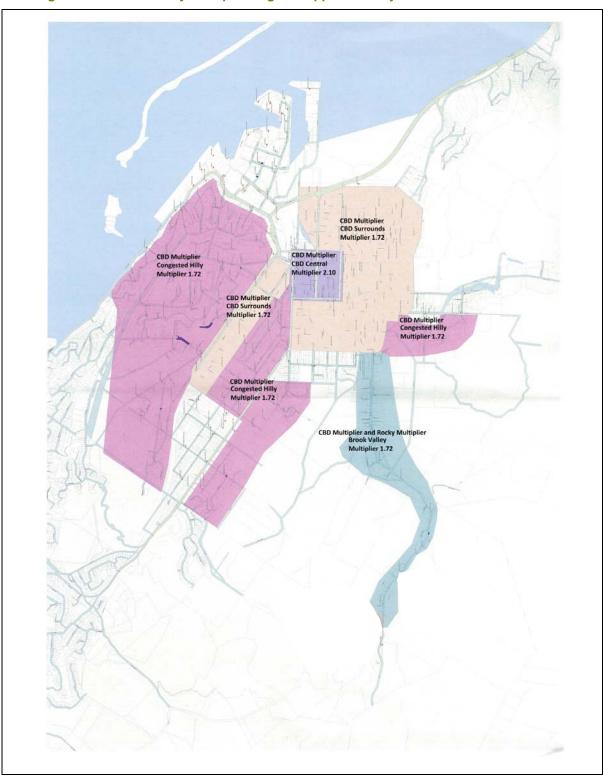




Figure 2 CBD and rocky multiplier regions applied in Adjusted 2004 RAB





3.3.2. Re-apply/modify rocky multipliers

NEL did not apply a rocky ground multiplier to cables in its 2004 ODV.

Since 2004 NEL has reassessed its franchise area for cable installation projects that have been challenging due to rocky conditions. In part this review has been driven by clause 2.2.1(2)(d) of the EDB IM which extends the application of rocky multipliers to cables installed in regions with loose rock. NEL has established that cable installation/construction in the Brook Valley region is challenging due to rocky conditions in the area. The Brook Valley region is shown in Figure 2 (blue region). The installation of cables in this area using thrusting is not possible. As evidence NEL provided SKM with cable trench pictures showing evidence of rocky conditions. It has also provided high level geological maps indicating the existence of gravel in the Brook Valley region.

Given the above, for its Adjusted 2004 RAB, NEL proposes to apply a rocky multiplier of 1.72 to cables in the Brook Valley region. The proposed changes are shown in the following Table 2 that illustrates that the multiplier is applied to 11km of underground cable with a total <u>increase</u> in the Adjusted 2004 RAB of \$0.8M, in terms of ODRC.

Table 2: Rocky Multiplier: Impact of multiplier applied in Brook Valley

Asset	Quantity	Quantity			DRC (\$'000)	ORC (\$'000)	ODRC (\$'000)	
Subtransmission cables	-	\$	-	\$	-	\$ -	\$	-
11kV cables	2.7	\$	476	\$	247	\$ 476	\$	247
LV cables	8.7	\$	932	\$	513	\$ 932	\$	513
Total Movement	11.4	\$	1,408	\$	760	\$ 1,408	\$	760
2004 ODV - Rocky Multiplier	-	\$	-	\$	-	\$ -	\$	-
2004 RAB - Rocky Multiplier	11.4	\$	1,408	\$	760	\$ 1,408	\$	760

3.4. Re-apply Optimisation and/or Economic Value Test

Reference EDB IM cl 2.2.1(2)(e). EDBs may reconsider the application of optimisation based on the network conditions during 2009.

NEL has not elected to make changes to the optimisation or EV adjustments in the 2004 RAB.



4. Summary

NEL's asset adjustment process has focused on two areas:

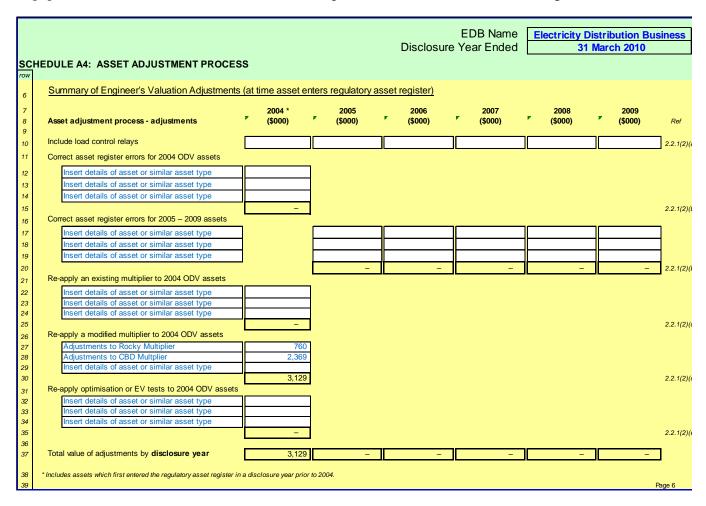
- adjusting the boundary and the magnitude of the CBD multipliers; and
- including the application of a rocky ground multiplier.

Table 3 below summarises the financial impact on NEL's Adjusted 2004 RAB ("2004 RAB" in table) arising from the asset adjustment process.

Table 3: Summary of asset adjustment process

Asset		RC (\$'000)	DRC (\$'000)	ORC (\$'000)	ODRC (\$'000)
2004 ODV	\$	39,796	\$ 20,397	\$ 37,464	\$ 19,393
Load Control Relays	\$	-	\$ -	\$ -	\$ -
Correct Asset Registor Errors	\$	-	\$ -	\$ -	\$ -
Re-apply Existing Multiplier	\$	-	\$ -	\$ -	\$ -
Re-apply Modified Multiplier	\$	5,486	\$ 3,084	\$ 5,732	\$ 3,129
Re-apply Optimisation or EV Test	\$	-	\$ -	\$ -	\$ -
2004 RAB	\$	45,282	\$ 23,481	\$ 43,196	\$ 22,521
Net Movement in RAB	\$	5,486	\$ 3,084	\$ 5,732	\$ 3,129

Appendix A Table Summary of Asset Value Adjustments: Schedule A4





Appendix B Instructions to Engineer

24 May 2011



Richard Fairburn
Manager, Power Systems
SKM
PO Box 9806
Newmarket 1149
Auckland

Dear Richard/SKM,

Initial RAB: Engineers Report

Thank you for your proposal to provide an Independent Engineers Report in relation to the establishment of Horizon's Initial Regulatory Asset Base (RAB).

We require you to review the changes that we have made to our 2004 ODV and confirm that they meet with the requirements of asset adjustment process outlined in Clause 2.2.1 of the Commerce Commission's Input Methodology Determination. These adjustments include:

- Asset error adjustments
- Replacement cost multipliers
- Optimisation

SKM's output would be in the form of an Independent Engineers Report that meets with the requirements specified in Schedule C of the "Notice to Supply Information to the Commerce Commission Section 53ZD of the Commerce Act 1986" which was issued to Horizon Energy on 16th March 2011.

In order to assist your review we would make available all the necessary information/resources and key personnel.

Regards,

Phil Goodall

General Manager



Appendix C Engineer's Certificate

Sinclair Knight Merz

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Phil Goodall General Manager Nelson Electricity Ltd 64 Haven Road PO Box 7083 Nelson New Zealand

27 May 2011

ZP01072

Dear Sir,

Statement Regarding Independent Engineer's Report on the Asset Adjustment Process of Nelson Electricity Ltd

Introduction

Sinclair Knight Merz Ltd (SKM) was requested by Nelson Electricity Ltd (NEL) to undertake an independent review of proposed adjustments to NEL's regulatory asset base as at 31st March 2004. This review was undertaken to determine the appropriateness of the proposed adjustments in respect of the process set out in clause 2.2.1 of the "Commerce Act (Electricity Distribution Input Methodologies) Determination 2010", 22 December 2010 (EDB IM).

SKM's findings are set out in the enclosed report which has been prepared to comply with the requirements for the Independent Engineer's report in Schedule C of the Commerce Commission's "Notice to supply information to the Commerce Commission Section 53ZD of the Commerce Act 1986 (Section 53ZD Notice) dated 16 March 2011. This letter incorporates the signed statement required by the Section 53ZD Notice.

Confirmation of Independence and Qualifications

I, as a chartered professional engineer (as defined in section 6 of the Chartered Professional Engineers Act 2002), can confirm that:

- 1) SKM has acted independently with respect to NEL and its subsidiaries and affiliates;
- 2) SKM has significant experience in New Zealand, Australia and the United Kingdom in relation to the valuation of electricity networks for both regulatory and financial reporting purposes. SKM's review and the preparation of the report have been undertaken by Dr Richard Fairbairn and Mr Stephen Wightman. Dr Fairbairn and Mr Wightman are professionally qualified and experienced in the type of work concerned and are familiar with the NEL network;
- 3) the report is in writing and accessible in electronic (PDF file-type) format and includes a copy of the written instructions provided to SKM by NEL (included as Appendix B to the enclosed report), including any subsequent variations or modifications;



- 4) the report includes a table summarising the various asset value adjustments corresponding to Schedule A4 of the Information Disclosure Notice Templates (please see Appendix A to the enclosed report);
- 5) the report provides the minimum information for each category of asset adjustment outlined in Table 1 of the Section 53ZD Notice, together with such additional information sufficient to allow a reader:
 - i. to understand the data, information, calculations and assumptions employed in respect of each category of asset adjustment;
 - ii. to understand the extent to which professional judgement was exercised by SKM and the effect of that judgement in deriving the resultant asset values;
 - iii. to verify the arithmetical accuracy of the asset adjustment calculations; and
- 6) the report may be publicly disclosed by NEL pursuant to an information disclosure determination in relation to NEL made by the Commission under section 52P of the Commerce Act (1986).

I can confirm that SKM is satisfied that:

- the ODV rules have been properly applied for assets which had not had an ODV valuation calculated originally, as required by clause 2.2.1 of the EDB IM;
- ii. where values under Generally Accepted Accounting Practice have been relied on, those values have been supplied or reviewed by an appropriately qualified party (e.g. accounting practitioner); and
- iii. the report meets the requirements of Schedule C of the Section 53ZD Notice.

SIGNED on behalf of Sinclair Knight Merz Limited by:

Designated Engineer

D.C. Smith, MIPENZ, CPEng

Assessors

R. Fairbairn, MIET Sinclair Knight Merz S. Wightman, MIPENZ Sinclair Knight Merz