

Commerce Commission

## Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses

Submission by Jeffrey Wilson on behalf of  
Powerco Limited (Valuation Methodology,  
Handbook Drafting Issues, Asset Replacement  
Costs and Scope of Assets Covered)

15 April 2004

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Engineering and Management Consultants  
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## 1. Introduction

This submission is made by Jeffrey Wilson on behalf of Powerco Limited to the Commerce Commission for the purpose of the Commission's *ODV Handbook Conference* held in April 2004.<sup>1 2</sup>

In summary, it is submitted that:

- (a) the methodology proposed in the draft Handbook promulgated by the Commission in December 2003 has conceptual weaknesses stemming from its adoption, without adequate modification, from its earlier purpose. It needs revision if it is to be applied for the stated purpose;
- (b) the drafting of the Handbook is not up to the standards expected of New Zealand legislation, regulations and policy papers, containing conceptual errors and other mistakes;
- (c) the continued treatment of 'average' replacement costs, prepared for a different purpose, as 'maxima' was not appropriate in earlier Ministry versions of the Handbook and should be abandoned, as it has been in New South Wales;
- (d) The Handbook does not include, within its scope, all assets required by companies for their operation. It should.

## 2. Background, Qualifications and Experience

My full name is Jeffrey Webster Wilson. I was born in August 1947 and was educated in New Zealand. I hold the degrees of Bachelor of Engineering (Electrical Engineering with Honours), Master of Engineering and Bachelor of Commerce from the University of Auckland. I am a Chartered (UK) and Registered (NZ 2003) Engineer, a member of the professional electrical engineering institution (IEEE) of the USA, a fellow of the UK and New Zealand institutions (IEE and IPENZ) and a member of the New Zealand Association of Economists.

I am a Founding Director of Wilson Cook & Co Limited, Engineering and Management Consultants, Advisers and Valuers, of Auckland New Zealand. Prior to that I was a Director, then Chairman, of Worley Consultants Limited and held that position from 1981 until forming my present practice in 2003.

I have worked since 1971 on power system construction projects and on technical matters to do with power system and power utility operation and management. My experience covers a wide range of electrical and mechanical engineering projects in New Zealand and overseas including hydroelectric development, electrical reticulation, the design of electric transmission systems and other assignments.

From 1981 to 1983 I was seconded to the staff of the Asian Development Bank as a project engineer in the Bank's Power Division.

I have specialised in the last twenty years on matters to do with electric power system planning, electricity asset valuations, electricity tariff setting, operational and managerial improvements in electricity utilities, their strategic planning and development and the optimisation of their networks.

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<sup>1</sup> Unless the sense requires otherwise, reference throughout this submission to 'the Handbook' is to the Commission's draft Handbook dated 23 December 2003.

<sup>2</sup> Presented in person on 15 April 2004.

I am or have been a consultant to over forty electric power utilities worldwide (including in New Zealand, Australia, Europe, S.E. Asia, Africa, the Pacific, and the previous Russian Republic) and an adviser to the World Bank and several governments including the Governments of New Zealand, New South Wales and Western Australia on matters relating to electricity asset valuations, power sector reform and regulation.

I have published or presented approximately 21 papers on matters relating to these subjects in journals, international and local conferences and am frequently consulted by electricity utilities on related matters. I have appeared as an expert witness for clients on electrical engineering matters, assisted counsel with the preparation of evidence, investigated failures, advised on the settlement of claims and assisted with the resolution of disputes.

I was a founding director of Mercury Energy Limited and am presently a director of Counties Power Limited but I do not play any part in the formulation of that company's asset valuation.

Of particular relevance to the matter before the Commission is my broad international experience in electricity network planning, development and optimisation in the valuation for various purposes of electricity network assets including both competitive and monopoly elements. I have independently carried out or reviewed for clients the network asset valuations of approximately 30 of the electricity distribution companies in New Zealand and the assets of several electricity companies internationally. This experience has been recognised by the World Bank and the Asian Development Bank who have engaged teams led by me for such work.

I was one of the principal authors of the Ministry of Commerce's Handbook for Optimised Deprival Valuation of Electricity Lines Businesses (the original Handbook) and was subsequently retained by the Ministry until around 1989 to update the table of standard asset values and lives in the Handbook and to advise them on related matters. I was retained by the Electricity Council of NSW for a similar purpose and drafter their handbook which was subsequently adopted by the NSW Treasury.

I am independent of the parties in this conference, having carried out all my work to date in this field with electricity utilities as an independent adviser and valuer.

The views expressed are my own and not necessarily those of Powerco Limited.

### 3. Conceptual Weaknesses in Valuation Methodology

Madam Chair, I would like to recognise at the outset the difficulty that the authors of the draft Handbook must have faced when drafting its detailed provisions whilst, at the same time, the underlying valuation methodology either was or is still under discussion and clearly has conceptual weaknesses that I will explain.

By weaknesses I refer to those that arise through the declared use of the Handbook for a purpose for which it was not originally intended – namely the setting or controlling of prices or revenues as opposed to its original purpose, the preparation of comparative performance statistics – without incorporating changes to the extent required.

The relevant point in this regard, Madam Chair, is that the Handbook's methodology continues to reflect its 1993 purpose and method notwithstanding the different purpose for which it is now to be applied and the different method now required.<sup>3</sup>

The original Handbook was prepared solely to aid the preparation, cost-effectively, of comparable statistics for electricity lines companies in order for their performance to be judged against the background of an asset base valued, in a natural monopoly situation, in a way that was capable of giving a result consistent with contestable market outcomes – hence

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<sup>3</sup> By 1993 I refer to the original Handbook prepared in that year.

the use of a deprival valuation methodology: but the purpose for which the Handbook is now to be put – namely the control of prices or revenues – requires a different approach and methodology.

Firstly, the methodology. One of the main reasons why the deprival valuation methodology was not intended to be used for the setting or control of prices or revenues was the circular argument inherent in using a forward-looking price-limited (deprival) value for the determination of prices or revenues that are, in turn, an input in its calculation. Of particular relevance, the Ministry of Economic Development has always acknowledged this in its Handbook – see clause 10 of the preface of the October 2000 edition: “*Tariff setting is an independent process from preparation of ODVs. There is specifically no regulatory requirement that prices be determined on the basis of system assets being valued according to ODV*”.

A related point is this. The Commission’s consultants have proposed that economic testing be discontinued although it is central to the deprival valuation methodology. Whether economic testing results in material change is irrelevant – it does in some cases – the point is that it is inconsistent to continue to refer to the methodology as a deprival methodology when one of its key ingredients has, for practical purposes, been removed.

As far as the approach is concerned, the Handbook does not include all assets required for the operations. I suggest that it is wrong, as a matter of style, for the Commission to put forward a document that purports to define the asset base when it does not.

The Commission’s consultants acknowledge the point in their draft report of 23 December 2003 which states on page 3-8: “*While the Disclosure Handbook provides guidance on what assets should be included in the valuation, there is a grey area at the margins*”. That is a masterly understatement to say the least.

I do not think that that sort of thinking is good enough, Madam Chair.

I have no doubt that the Commission might have wished to minimise the impact of changes in the Handbook (and the cost of preparing valuations, which falls, of course, on customers) by minimising changes in the Handbook; and I have no doubt that the Commission and its consultants might also have wished to minimise uncertainty by retaining as much of the previous Handbook’s text as possible. However, the outcome is that the Handbook is not now suited to its intended purpose. Belated, therefore, more far-reaching changes should be made.

In summary, my opinion on the methodological questions is that:

- (a) At the least, the Handbook should acknowledge the nature of the other assets that are required to be added to the valuation for its intended purpose;
- (b) The exclusions listed in clause 2.7 should be removed;
- (c) The Handbook should be re-drafted to the full extent required to satisfy its new purpose;
- (d) In doing so its methodology should be confirmed as appropriate and then described and named more accurately.

I am prepared to assist with that process but an improved draft should be prepared by the Commission first.

In the meantime I suggest that it would be helpful to the industry if the Commission acknowledged this need more clearly than at present.

## 4. Drafting Errors and Inconsistencies

Turning to my second point, Madam Chair. The Handbook, as drafted, is not in my view up to the standards expected of New Zealand legislation, its accompanying regulations and policy papers, and the work of the Commission. To give you three examples:

- (a) Clause 2.24 of the main text lists the assets that are to be optimised but fails to mention transmission assets even though they comprise a very material portion of the industry's assets;
- (b) Clauses 1.5, 1.7 and others refer to the term 'service potential' without defining it. If the term is used in its normal sense – normal, that is, in the infrastructure accounting sense – it would relate principally to the 'capacity' of the network to deliver electricity to customers. The Handbook rightly acknowledges the time element associated with service potential but clause 2.12, in listing the factors that are considered relevant to service potential, omits reference to capacity at all. I submit that this is wrong, conceptually;
- (c) Thirdly, in Appendix B, the text still refers to the 'number' of circuits. However, the reference as presently drafted, could be construed as a 'piece count' rule – although it is not clear to the clients who have raised the issue with me how such a rule should be applied. If it were to override the company's criteria for security of supply it would be a retrograde step. If not, then re-wording is required.

Other examples could be cited: for example the table on page 47 is still not referred to in the main text and thus has no apparent authority; and Appendix B contains confusing statements about fixing line routes and optimal voltage levels in particular.

The problem with these weaknesses and errors is twofold: firstly, they will hinder application unless removed; secondly, and more importantly, they cast doubt on the robustness of the document and undermine its intellectual foundation.

The Commission should not take on the responsibility of power system planning, Madam Chair; nor should it encourage valuers to do so through the way the Commission drafts its documents.

It may, therefore, be better to restore the appendix to the form in which it was drafted previously and do away with the apparent attempt to control the situation by legislating for exceptions. That might solve a number of the problems that the authors have got into.

## 5. Asset Replacement Costs

My next point relates to asset replacement costs. The original Handbook foresaw the tabled values (which I prepared myself with the assistance of an industry committee in 1993) as 'averages' for application to the assets as a whole in order to facilitate cost-effective inter-company comparisons; but these 'averages' have been treated as maxima since the then Ministry of Commerce sought in or around 1990 to reduce asset values or control their apparent rising tendency by making the then Handbook more mandatory.

I recommended against those measures and I note for your information that the original, mandatory, provisions of the NSW handbook in respect of asset values have been removed. Clearly the two jurisdictions are moving in opposite directions in this regard, Madam Chair.

Given the stated intended purpose of the Handbook I submit that the use of maximum values should cease and companies, with the concurrence of their professional valuers, should be free to be to adopt whatever values reflect actual and efficient costs and are considered appropriate in their cases, as is done in most other sectors of the economy.

## 6. Other Assets

I have already mentioned that the draft Handbook omits the other assets that are required for the conduct of lines businesses. The exclusions in Clause 2.7, easements and work in progress are examples. The arbitrariness of the exclusions, appropriate though it may have been in the earlier inter-company comparison era, is in my opinion now quite inappropriate, given the intended purpose. My colleagues will discuss the related issues with you further today.

I come back to the first point I made today: the Handbook fails to encompass the broader scope required of it for its currently intended purpose.

## 7. Conclusion

Thank you, Madam Chair, for the opportunity to present this submission. I have no doubt that we will see considerable improvement in the Handbook if today's submissions are taken into account.

Thank you again.