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Submission on the Development of a Handbook for Optimised Deprival Valuation of Electricity Lines Businesses System Fixed Assets

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1. Executive summary

The Electricity Networks Association reviewed the Issues Paper released by the Commerce Commission on 11 September 2003, regarding the development of an optimised deprival valuation (ODV) handbook. Our views on the paper and the broader issue of asset valuation under a targeted control regime, are presented below.

Shortcomings of the Issues Paper

The ENA believes that the ODV Handbook Issues Paper suffers from a number of important shortcomings :

- The ODV methodology is only one component of asset valuation under the targeted control regime. It is not sensible to comment on the proposed ODV methodology and handbook without understanding their role in the broader valuation context. The Commission failed to set the full context within which the ODV methodology and handbook should be evaluated.
- The exact purposes to which asset valuation will be put under the targeted control regime and how it will be applied to achieve these purposes, are not well-defined or detailed.
- No guidelines were provided against which the ODV methodology (or any valuation methodology in general) should be evaluated. The desired attributes of an efficient valuation methodology were not described.
- Decisions taken by the Commission that impact on the role that asset valuation may play under the targeted control regime still have draft status. This implies that these may still change, which could influence the role that asset valuation is to play.
- The ODV methodology addresses only system fixed assets, which represent only a part of the asset base that lines companies require to operate their distribution businesses. Other fixed assets and intangible assets were ignored in the Issues Paper.

These shortcomings potentially limit the value of any submission on the Issues Paper. To overcome this, we were forced to make a number of assumptions. In addition, we commissioned a parallel paper by a valuation expert, Professor Tony van Zijl, to provide a set of guidelines for an efficient valuation methodology. The ODV valuation methodology and the Issues Paper are reviewed in terms of these guidelines.

Impact of asset valuation under a targeted control regime

The purposes of asset valuation as described in the Issues Paper are to :

- meet the purpose of Part 4A regulatory regime to establish robust opening asset valuations and for the purpose of ongoing asset valuations;
- accommodate any potential requirement for lines businesses to prepare asset valuations in relation to targeted control and information disclosure regimes, under Part 4A; and
- accommodate any potential requirement for lines businesses to prepare asset valuations in relation to the possible imposition of control under Part V of the Act.

In this regard, the Commission has indicated that if a lines company is investigated or placed under control, a cost building block approach may be used to determine acceptable levels of revenue or to determine efficient prices for that company. Such an approach

would rely on the asset value of the company as one of the key factors. The importance and impact of asset valuation under the targeted control regime will therefore be higher than under the current information disclosure regime and would be certain to greatly influence the behaviour of lines companies as they try to avoid control.

Given the increased importance of and emphasis on asset valuation as a regulatory tool, it is essential that the valuation methodology is sound and effective. Problems with the current ODV methodology therefore have to be addressed before it can be applied to a targeted control regime.

In addition, the full asset base used by lines companies in their distribution businesses should be taken into account, not only their system fixed assets. Other fixed assets and intangible assets are therefore included in our consideration of the Issues Paper and the ODV methodology.

Evaluation of an asset valuation methodology

The promotion of economic efficiency, especially dynamic efficiency should be the prime driving force for an efficient valuation methodology. Given the huge requirement for capital investment in the New Zealand electricity infrastructure over the next decade, it is essential that a valuation methodology promotes the most efficient form of investment and does not inhibit the adoption of innovative, or non-standard network solutions. In addition, lines companies should not be prevented from providing customised solutions to customers with increased requirements.

To promote dynamic efficiency, the attributes of an efficient valuation methodology, as proposed by Professor van Zijl in his accompanying submission, are :

- Well-specified
- Accurate
- Comprehensive
- Stable and consistent
- Transferable
- Low incremental cost to implement
- Ability to adapt over time
- Flexibility
- Reflect appropriate planning horizons

Consideration of the ODV methodology and handbook

In our evaluation, we applied the attributes listed above to the proposed ODV methodology and handbook. Important points arising from this are the following.

- a) The optimisation rules needs to be updated to accommodate alternative network solutions. Unavoidable stranded assets should not be excluded from a lines business' asset base. The optimisation requirement to force the use of overhead lines in preference to underground circuits is totally misguided.
- b) The economic value test should be discarded -this inhibits reticulation to low-density/low consumption areas and prevents lines businesses from recovering costs

in such areas where they are obliged to maintain a supply. In addition, it is expensive and complex to apply and has to date only resulted in minimal changes to the valuation base, thus adding nominal value only. We therefore recommend an Optimised Depreciated Replacement Cost (ODRC) valuation approach rather than ODV.

- c) Multipliers used to allow more accurate valuation of non-standard installations are inadequate and should be updated. Where appropriate, lines companies should be allowed to demonstrate and apply actual costs to their valuation base.
- d) All assets required by electricity lines businesses to provide an efficient distribution function should be included in the valuation base, in accordance with Generally Accepted Accounting Principles (GAAP). Non-system fixed assets should be included at cost and depreciated over their useful lives. Intangible assets, meeting the requirements of IAS-38, should be included at cost and amortised as appropriate. In the case of a merger or acquisition, the opportunity would arise to revalue the acquired intangible assets at market value.
- e) A method to regularly update the ODRC/ODV schedules is proposed. This also allows for interim updating when specific circumstances arise.
- f) The valuation methodology should be able to accommodate new asset classes (such as distributed generation) and new, or innovative businesses practices (such as probabilistic supply philosophies or demand curtailment).
- g) Non-standard customer requirements should be accommodated without the risk of the associated assets being optimised out of the ODRC/ODV asset base.
- h) Planning horizons should be expanded to allow the most economically efficient installation decisions to be taken.
- i) The accounting treatment of changes in the asset base was considered. In particular :
 - Revaluations should be offset against depreciation.
 - Newly discovered assets should be included in the asset base at ODRC value and not treated as a normal revaluation for the purpose of offsetting against depreciation.
 - Extension of asset lives would give rise to a revaluation of the asset.
 - Assets remaining in service at the end of their depreciated lives should retain a value of 5% of optimised replacement value and be finally written off when removed from service.

The submission concludes with a brief response to the questions posed by the Commission in the Issues Paper.

2. Introduction

The Electricity Networks Association (ENA) has considered the Issues Paper¹ released by the Commerce Commission on 11 September 2003, regarding the development of an optimised deprival valuation (ODV) handbook.

The Issues Paper is narrowly focussed on the ODV methodology and the proposed handbook. However, we believe that the topic cannot be addressed in isolation and has to be reviewed in a broader asset valuation context. Asset valuation is an important component of the wider regulatory regime being developed for electricity lines businesses. The Commission fails in particular to clearly define the purpose to which asset valuations will be put under the targeted control regime, the attributes of an efficient valuation methodology or the role of the ODV methodology in the overall valuation approach. In the absence of a clear framework, submissions on the ODV methodology and handbook may be of limited value.

To address some of these shortcomings and to assist us by providing a framework against which the ODV methodology could be evaluated, the ENA has commissioned a parallel report by a valuation expert, Prof Tony van Zijl. He focuses on asset valuation in the broader regulatory context and the attributes that a fair and robust valuation methodology requires to maximise economic efficiency, without commenting on any particular valuation method.²

In this submission, we respond to the Issues Paper and the ODV methodology, applying the attributes suggested by Prof van Zijl to the valuation methodology. However, since we believe the ODV handbook is too narrow in its focus on system fixed assets only and that this may become an important issue under a targeted control regime, we expanded our response to address the complete asset base used and required by lines businesses in running their electricity distribution operations.

Furthermore, as demonstrated in the paper, we believe that the Optimised Depreciated Replacement Cost (ODRC) valuation method is more appropriate for electricity lines businesses than the ODV method. As the ODV method is essentially the ODRC method with the addition of an economic value (EV) test, our submission would largely apply to both methodologies. In our submission therefore, we mostly use the terms "ODV" and "ODRC" approaches as being interchangeable. Lastly, we respond to the questions raised by the Commission in the Issues Paper and some of the aspects raised in the PB Associates closing report.³

3. Assumed context for the ODV handbook

3.1 Commissions draft decisions and other indications

In the Issues Paper⁴, the Commission indicates that an ODV handbook is required to :

¹ New Zealand Commerce Commission publication, *"Regulation of Electricity Lines Businesses : Development of a Handbook for Optimised Deprival Valuation of Electricity Lines Business System Fixed Assets"*, 11 September 2003

² van Zijl (2003)

³ Parsons Brinckerhoff Associates Ltd., *"Recalibration of Asset Values of Large Electricity Line Owners – Closing Report"*, 1 August 2002.

⁴ Par 6

- meet the purpose of Part 4A regulatory regime to establish robust opening asset valuations and for the purpose of ongoing asset valuations;
- accommodate any potential requirement for lines businesses to prepare asset valuations in relation to targeted control and information disclosure regimes, under Part 4A; and
- accommodate any potential requirement for lines businesses to prepare asset valuations in relation to the possible imposition of control under Part V of the Act.

These purposes follow from a number of draft decisions released by the Commerce Commission, of which the following are particularly relevant :

Lines businesses are required to :⁵

- a) derive opening values for their system fixed assets based on the ODV methodology; and
- b) commit to consistently using either ODV or Depreciated Historic Cost (DHC) for the valuation of their system fixed assets in their regulatory accounts going forward.

In terms of its proposed threshold regime⁶ for assessing lines businesses, the Commission has proposed the following steps.

- a) The current price thresholds against which the performance of lines businesses is assessed will be replaced at 1 April 2004 by a new set of price thresholds. These thresholds are proposed to be established through comparative benchmarking and as such, do not depend on the valuation of assets.^{7 8}
- b) If a lines business is found to be in breach of the thresholds, it may be investigated. For this purpose, the Commission may again use a comparative benchmarking approach, or it may decide to use a cost building block approach (or both).
- c) If, after investigation, it is found that a lines company is still in breach of the thresholds, the Commission may form an intention to declare control and publish that intention, inviting comment. If a business is subsequently placed under control, the level of efficient prices for that company will be determined. The Commission may again use a comparative benchmarking approach or a cost building-block approach (or both) to establish efficient prices.

Asset valuation is a key component of the cost building block approach, which, as indicated, may be used to determine the revenue that a lines business is allowed to earn before it is deemed to make excessive profits. Against this background, the Commission notes⁹ that the new ODV handbook may differ from the MED's ODV Handbook¹⁰

⁵ Commerce Commission publication, "Regulation of Electricity Lines Businesses : Targeted Control Regime, Draft Decisions", 23 December 2002

⁶ Commerce Commission Publication, "Regulation of Electricity Lines Businesses : Targeted Control Regime, Draft Assessment and Inquiry Guidelines (Process and Analytical Framework)", 7 August 2003

⁷ Although it has decided not to adopt a profit threshold, the Commission has left open the prospect of such a threshold if a satisfactory price and quality path threshold cannot be established in time for application by 1 April 2004.

⁸ It is however noted that the proposed method for setting the threshold (i.e. the C-factor) does require the use of ODV values from previous years.

⁹ Issues Paper, par 7

(hereafter referred to as the Current Handbook) and that these changes would to a large extent be driven by the extended scope and wider application of the proposed new handbook.

We note that the decisions are still in draft status, but to allow a sensible discussion of the ODV methodology and the proposed new handbook, we have assumed that the decisions will be ratified in their current form. We also assumed that the purposes stated above will be the only use that asset valuation will be put to under the regulatory regime.

3.2 Comprehensive valuation handbook

The Issues Paper is very narrow in its focus, dealing with the ODV handbook only. This in turn deals with the valuation of system fixed assets of the electricity distribution business of a lines business only.

Although the Information Disclosure Regulations (1999) provides for disclosure of all assets used for distribution businesses and also calculates returns based on the full assets base, the emphasis is very much on the ODV, and accordingly system fixed assets. PB Associates¹¹ for example noted that many lines businesses were unclear about which asset classes should form part of the ODV and whether lines businesses are permitted a return on assets not included in the ODV.

In a targeted control regime, asset valuation and the use to which it may be put has potentially far more serious implications than was the case hitherto, where it was used for information disclosure purposes only. We are concerned that by focussing on the proposed ODV handbook and methodology, without providing clear and detailed guidelines on the wider valuation context and the uses to which valuation will be put, other important aspects may be ignored. In particular, the existing emphasis on system fixed assets may be perpetuated and other assets may therefore not be sufficiently addressed.

Furthermore, we believe that the ODRC valuation methodology is more appropriate to electricity lines businesses, as discussed in section 5.1.2. All references to the ODV handbook should therefore rather be to an ODRC handbook.

An ODRC/ODV handbook should only be one section of a broader valuation handbook (hereafter referred to as the Valuation Handbook) and its interpretations should always be in the wider valuation context. Such a handbook would typically contain sections on the

- purposes to which asset valuation will be put under the regulatory regime,
- requirements for disclosing information on asset valuation,
- ODRC/ODV valuation methodology for system fixed assets, including schedules,
- historic cost valuation methodology,
- valuation of other fixed assets,
- valuation of intangible assets, and
- manner in which asset valuation will be applied when a lines business is investigated or placed under control.

¹⁰ Ministry of Economic Development, "Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Line Businesses", 4th Ed., October 2000

¹¹ Supra note 3, section 2.6

Even if the ODRC/ODV methodology is described in a separate publication, it would still be necessary to consider it as part of the wider context. In particular, it will be necessary to ensure that those assets not addressed by the methodology are also included in the total asset value used for regulatory and disclosure purposes.

For the purposes of this report, we therefore comment on the proposed ODV (or ODRC, as suggested) handbook in this wider context of a Valuation Handbook. We believe that non-system fixed assets and intangible assets are as much part of a lines business' essential asset base as system fixed assets, and that any application of an asset valuation should be consistent in its treatment of the total asset base. Alongside the ODRC/ODV methodology and system fixed assets, we therefore also address the treatment of non-system fixed assets and intangible assets.

4. Attributes of an efficient valuation methodology

As noted, the Commission released the Issues Paper without finalising guidelines of what it considers to be the attributes of an efficient valuation methodology. As we believe comment on the Issues Paper should be made against such a framework, our view in this regard is discussed below.

4.1 Economic efficiency

In the accompanying paper¹² by Professor van Zijl, the view is expressed that achieving maximum economic efficiency should be the primary driver when designing an asset valuation methodology. This view also appears to be held by the Commission, especially with regard to the importance of promoting dynamic efficiency.

Based on the experience of our members, we strongly concur with the view on the importance of dynamic efficiency. This importance is illustrated by a number of pertinent examples, as presented below.

4.1.1 Large capital investment programme over next ten years

Lines businesses are forecasting to spend approximately \$2.8 billion on capital improvements over the next ten years to expand their networks.¹³

A particular electricity distribution service can be delivered in a number of ways, using different network configurations or employing different technologies. The efficiency of network solutions can therefore vary greatly.

The actual level and efficiency of capital expenditure will to a large degree depend on the incentives that contractual arrangements with customers and the regulatory regime provide to the lines businesses. In this respect, the asset valuation methodology can play a critical role, in creating incentives or disincentives to invest and innovate.

For example, innovative techniques such as approaching network design from a probabilistic supply security perspective rather than a deterministic approach, could lead to significant reduction in the required asset investments during periods of load growth. It would however require significant intellectual input, specialised equipment (including

¹² Supra note 2, section 3

¹³ Estimated using disclosed capital expenditure figures from the asset management plans of four electricity distribution businesses (UnitedNetworks, Vector, Orion and Powerco) scaled up by their share of ODV for all distribution companies in 2001 (~58%, total of \$1.3 billion), plus an additional \$1.5 billion forecast by Transpower to be spent on the transmission system over the same period (refer to the presentation by Transpower to the ENA AGM on 28 October 2003.)

monitoring and control systems) and reconfiguration of networks. The resulting network may be substantially different from the conventional networks envisaged when optimisation techniques were determined.

If the valuation methodology, through for example its optimisation requirements or by not allowing all associated expenses and equipment to be recognised in the asset base, forces networks to conform to conventional standards, there is little incentive for businesses to follow the innovative route. From an overall economic and customer benefit perspective, this would be a highly negative and inefficient outcome.

4.1.2 The asymmetrical impacts on consumers of under and over investment

In general under-investment is likely to have a significantly higher economic cost than over-investment. The primary reason for this is that modest over-investment will typically lead to slightly higher prices than otherwise, but the consumer is able to access the desired service. Due to relatively inelastic demand for the service, this increase in price is unlikely to have significant impact on consumption decisions.

Under-investment on the other hand will typically lead to degraded services, and in some cases major disruption to the consumer's processes and businesses.

Put in economic terms, under-investment leads to the loss of the entire consumer and producer surplus associated with the output shortfall. In contrast, slight over-investment is equivalent to providing higher quality service than consumers demand, and hence the only economic loss is that associated with the difference between the consumer valuation of the higher service level and its opportunity cost. This loss is even less significant in an environment where consumption is growing, or quality requirements are increasing.

It is critical that regulatory interventions, including the manner in which assets are valued, do not impede lines businesses from investing to maintain and enhance services consistent with consumer demand. This investment is critical to the provision of an electricity infrastructure platform capable of supporting a growing economy.

4.1.3 Trade in network management services expected to improve productivity

There is an increasing trend for lines businesses to specialise in niches of their business and trade those services across network ownership boundaries. The development of trade in these services may in future raise the rate of productivity improvement and open up opportunities for earning revenue from other (competitive) services.

This trade is much more likely to flourish in a regulatory environment that places the responsibility for operational decision-making unambiguously with the lines business (and doesn't embroil the regulator in efficiency reviews), and retains incentives on these businesses to minimise costs. An efficient asset valuation methodology should not constitute a constraint in this regard.

For example, it is conceivable that it may be more cost effective for a lines business to outsource the maintenance and updating of its Geographic Information System (GIS) to another who already has the required structures in place to provide the service. If an asset valuation methodology under such circumstances does not recognise the significant value of the (intangible) asset to the owner (not the service provider), such outsourcing would be discouraged. This would clearly be an economically inefficient outcome.

4.1.4 Accommodating customers with increasingly sophisticated requirements

Over recent years, many manufacturing plants and other businesses have upgraded their processes and are also installing new, more energy efficient equipment. These

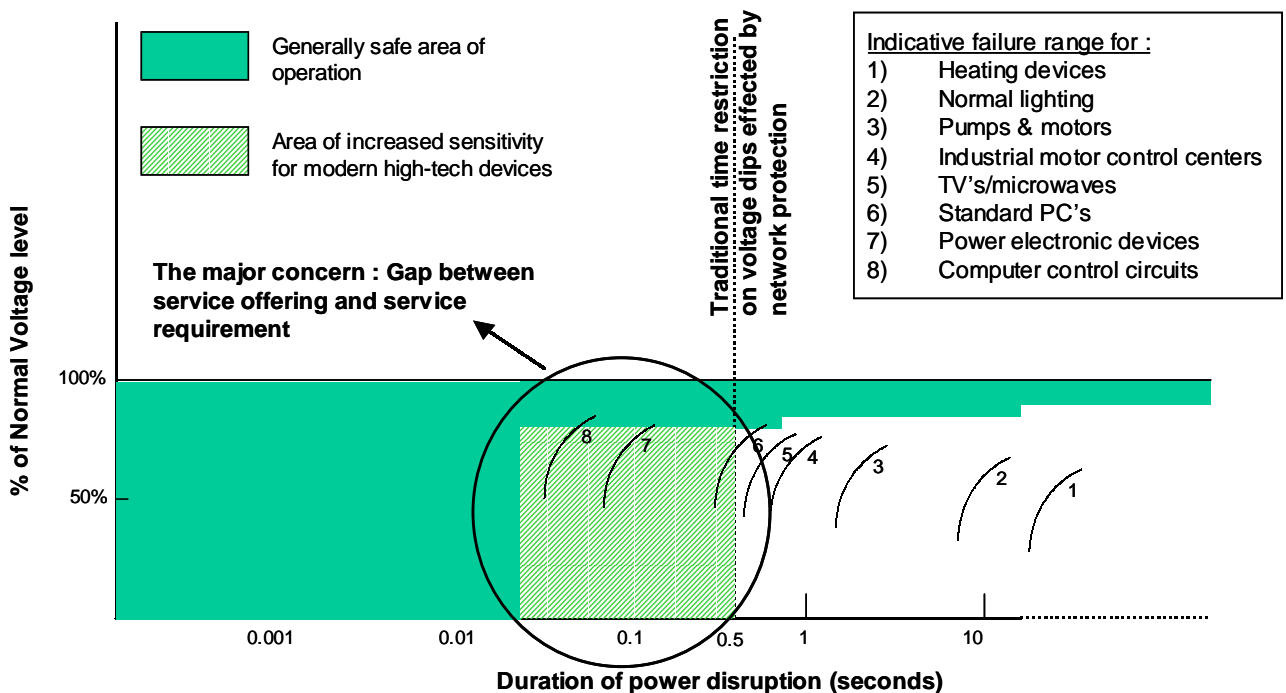
investments are essential to ensure their competitiveness in the international market. This new equipment relies increasingly on power electronic and computer devices, which are very sensitive to power quality service levels. Examples of consumers where this situation has occurred, range from dairy processors to a wide variety of manufacturing facilities.

If service levels were to remain unchanged, an increasing gap would arise between the service levels provided and the service levels demanded. The impact of supply interruptions on different types of electrical equipment, and the supply gap that is arising, using voltage dips as an example, is illustrated in figure 1 below.

Expenditure by lines companies to improve power quality to consumers with sensitive equipment has been significant, and in many cases assets in otherwise good order have had to be replaced to meet the increased requirements.

The extent of the investment required in the electricity networks has been however minor relative to the potential losses that the manufacturers would suffer due to serious process interruptions (in the short term) or non-competitiveness (in the longer term) due to an inability to employ modern equipment.

SENSITIVITY OF ELECTRICAL EQUIPMENT TO VOLTAGE DIPS



(Note : The time and voltage curves are indicative and for general situations only)

Figure 1 : Increasing service requirement of modern electrical and electronic equipment

Once again, it is critical that regulatory interventions (including the valuation practices used) do not impede lines businesses from investing to maintain and enhance services

consistent with consumer demand, as this investment is critical to the provision of an electricity infrastructure platform capable of supporting a growing economy.

4.2 Specific guidelines for asset valuation

In his paper¹⁴, Prof van Zijl discusses a number of specific desirable attributes of an economically efficient asset valuation methodology. These attributes are summarised below.

- a) Well specified – limiting the need for assumptions or case-specific interpretations, but allowing scope for innovation.
- b) Accurate – allocating a reliable and valid value to assets, as well as an accurate economic lifespan
- c) Comprehensive – addressing all assets required by electricity lines businesses for the efficient operation of the electricity networks, including the later inclusion of assets not initially identified.
- d) Stable and consistent – avoiding changes in the valuation methodology, thereby limiting unnecessary revenue or prices fluctuations and allowing efficient long-term planning and operations.
- e) Transferability – promoting, where practical, a single, consistent asset valuation for use throughout the company on multiple aspects.
- f) Low incremental cost to implement – avoiding major methodology changes that would involve significant set-up or longer term operational costs.
- g) Ability to adapt over time – accommodating technology changes or different businesses approaches, as these develop over time.
- h) Flexibility to incorporate non-standard assets or installations – allowing for differences between installations, or innovative network solutions.
- i) Reflect appropriate planning horizons – recognising that assets are often installed with higher capacity than initially required, to allow it to meet future demand.

5. Discussion of issues specific to the ODRC/ODV methodology

In this section, we discuss the implication of adhering to the attributes listed in 4.2 above on the ODRC/ODV methodology and the proposed Handbook.

5.1 Well specified

In its basic form, the specification of the ODRC/ODV methodology for deriving replacement value is relatively straightforward and therefore relatively simple to interpret and apply. Provided that the asset registers are comprehensive¹⁵, regularly updated¹⁶ and provision is made to accommodate non-standard assets or installations and innovative

¹⁴ Supra note 2, sections 3.1 to 3.8

¹⁵ This aspect is discussed further in section 5.3

¹⁶ This aspect is discussed further in section 5.4.1

network solutions¹⁷, valuation of the replacement value of assets should therefore not pose any difficulty or give rise to inconsistencies.

The optimisation process is potentially more difficult and open to wide interpretation, as is the calculation of the economic value of assets. These processes therefore either need to be made very simple, thereby limiting their scope of application, or specified in sufficient detail to cover all likely eventualities. We are particularly concerned about shortcomings in the Current Handbook, as listed below.

5.1.1 Current shortcomings with regard to optimisation of assets

- a) While it is recognised¹⁸ that some companies use probabilistic rather than deterministic measures in analysing the degree of security, the Handbook still requires lines businesses to express the degree of security in such a way that the optimisation process is transparent. No further guidelines are provided of the form this expression is required to take or what level of probabilistic security is considered “optimal”. In effect companies are therefore being forced to still use the level of in-built redundancy as measure, in spite of clear indications of the benefits of the probabilistic approach in terms of better network utilisation and associated deferral of capital expenditure.¹⁹
- b) The Current Handbook²⁰ allows for network equipment spares to be included in the ODV, as long as they are the same as assets installed in the network and the quantity is “reasonable” to meet disclosed quality of supply criteria. The definition of what is considered “reasonable” is left open. We believe that the Valuer’s²¹ decision in this regard would determine the reasonable level.²²
- c) The Handbook²³ considers stranded assets as avoidable by lines businesses and therefore not assignable to the system fixed assets. It does however allow the net realisable value (NRV) of such assets to be allocated to “other businesses” owned by lines businesses. Under a targeted control regime, where assets could form the basis for calculating revenue caps, this treatment of stranded assets is not acceptable.
 - In many cases the stranding of assets cannot be avoided by lines businesses or the risk of stranding not effectively managed, especially where such assets were erected to supply a specific client who then ceases to operate or to supply a sub-region where the demand profiles change.
 - Technology changes could lead to significant stranding of assets. For example the increased efficiency of micro-generators and the anticipated

¹⁷ This aspect is discussed further in section 5.3

¹⁸ Par 3.41 of the Current Handbook

¹⁹ This aspect is discussed further in section 5.7.2

²⁰ Par 3.51

²¹ The Current Handbook describes the “Valuer” as any party (or parties) responsible for the preparation of all or any part of the valuation.

²² The internal ODRC/ODV valuation is subject to auditing. In addition, the Commission may conduct regular independent reviews of the valuation of all lines businesses. These additional safeguards are considered sufficient to verify the accuracy and reasonableness of the Valuer’s decisions.

²³ Par 3.54

general availability and practicality of applying fuel cells in the near future, may make it more cost-efficient to provide localised power sources than to provide or maintain supply networks. Lines companies are now allowed to generate electricity at levels up to 10% of their network capacity. This opens significant opportunities for replacing distribution networks to remote or difficult to access areas. In future this could therefore make parts of existing supply networks redundant and cause stranding of the supply assets. Lines businesses have little control over this and should in fact be encouraged to seek out more efficient network solutions even if it involves stranding of existing assets.

Where stranding could not realistically have been foreseen or managed (by a prudent lines business), they should be allowed to recover their investment on these assets. This is especially true where stranding occurs as a result of increased economic efficiency.

Even in those cases where stranding could have been foreseen and avoided, and a lines company could therefore realistically be required to write down the stranded asset, the treatment of the NRV, in cases where such assets are actually sold, should be better defined. It is especially important that the income from such a sale is treated as a non-recurring revenue item and is not included in the restricted revenue allowed under a cost building-block approach.

The Government has a stated goal to promote the use of new technologies, renewable resources and in particular distributed generation to help address increased demand for electricity.²⁴ It would be counter-productive to this goal if an asset valuation methodology, due to its treatment of stranded assets, discouraged lines companies from investing in distributed generation or renewable resources, or from supporting other potential suppliers in this respect.

We note that it is also possible to provide investors with a degree of protection against stranding of assets by adjusting the allowed rate of return (WACC) on the asset value. However, this aspect is outside the scope of discussion of this report and will not be pursued here.

- d) The Current Handbook specifies²⁵ that underground cables should be valued as overhead lines unless there is specific evidence that the local authority would not, in normal circumstances, grant consent for overhead reticulation. We disagree totally with this approach, for a number of reasons, including the following.
- Local authorities are not the only parties that have requirements in this regard. For example, residents or developers of a particular area may also express a preference for underground reticulation.
 - In many cases, life-cycle analyses of underground vs. overhead reticulation systems indicate that in the medium to longer term, an

²⁴ For example, refer to the foreword by the Minister of Energy (Hon Pete Hodgson) to the Discussion Paper on "Facilitating Distributed Generation", September 2003. (Ministry of Economic Development, Resources and Networks Branch)

²⁵ Appendix C, Issue : Overhead/underground transmission or distribution

underground system may be more cost-effective. Overhead systems require significantly higher levels of maintenance and repair work. If they can demonstrate sufficient life-cycle benefits, lines companies should be allowed to use underground networks and include this in their optimised asset base.

- Overhead lines are far more subject to electrical faults than underground circuits, thus detracting from supply quality. As supply quality is one of the aspects to be measured under the proposed thresholds, this aspect cannot be summarily ignored.
- In developing the quality thresholds for lines companies that will form part of their targeted control regime, the Commerce Commission recognised that there is often a willingness by consumers to pay more for improved power quality. Where a desire for such a trade-off exists, lines businesses should be able to respond without the fear that the assets involved would not be recognised in their ODV asset base.

Lines businesses should therefore be allowed to manage the quality of supply without being subject to the level of prescription implied by forcing them to use overhead reticulation networks (or suffer a write-down if they do not.)

5.1.2 Current shortcomings with regard to determining economic value

We recommend that the application of the economic value (EV) test associated with the ODV methodology be discontinued. This implies that an ODRC asset valuation methodology should be used. The reasons for this recommendation are as follows.

- a) The (possibly) unintended outcome of the economic value concept is to discourage electricity distribution to marginal customers, or to areas with low consumption density. As the maximum line tariff is prescribed²⁶, even in cases where consumers may agree to use higher tariff schedules to compensate for the expense of providing their connections, lines businesses may be prevented from recovering the actual cost for such connections. We believe that lines businesses should be allowed to provide connections to marginal customers or areas where customers are prepared to meet the actual costs involved – the proposed ODRC/ODV handbook should therefore not be prescriptive in this regard.
- b) Until 2013 lines businesses are obliged to maintain connections to all customers that were connected in 1993. It is unreasonable to expect lines businesses to have to provide marginal connections but not allow them to recover their investment in the associated assets.
- c) The EV test is time-consuming, expensive to apply and very rarely results in changes to the asset valuation. Where such changes occur, they are marginal in respect of the overall asset base. Any value added by conducting the EV test is therefore far outweighed by the time and cost required to do so.

Our research of other jurisdictions where electricity industry regulators apply a building block approach to determine acceptable revenue, indicates that the ODRC valuation methodology is preferred to the ODV methodology. A typical example

²⁶ Current Handbook, par 3.76

would be the Australian Competition and Consumer Commission²⁷, who specifies a DORC (Depreciated Optimised Replacement Cost) valuation approach in its regulation of transmission service providers. Likewise, IPART²⁸ and the ESC²⁹ applied the ODRC method to determine the initial base asset values.

Implications for proposed Asset Valuation Handbook

- a) The optimisation processes should recognise that alternative networks solutions can be more efficient than the conventional approach and the scope of the process should therefore be widened to accommodate such alternatives.
- b) Where stranding of assets could not be realistically foreseen or managed, lines businesses should be allowed to recover their investment in these assets.
- c) The prescription that all circuits must be overhead unless otherwise forced by councils, is inappropriate and should be removed.
- d) Lines businesses should be allowed to recover their investment in marginal consumption areas, especially where forced to maintain connections or where customers are prepared to meet actual costs.
- e) The EV test should be discontinued, which will result in an ODRC valuation methodology, rather than the ODV methodology proposed by the Commission.

5.2 Accuracy

Accuracy is an obvious requirement for an efficient valuation methodology. With regard to the ODRC/ODV methodology, this implies that the replacement value ascribed to an asset in the schedules should be a reliable reflection of the actual average replacement value of such an asset. In addition, the lifespan prescribed should accurately reflect the average economic life expectancy of an asset when used in a normal fashion in a standard environment.

It is recognised that asset costs, especially installation costs, differ between regions and installation environments. Basic scheduled values can therefore only be for a standard installation performed under average conditions.

To accommodate non-standard installation conditions or environments, the Current Handbook allows multiplier factors to be applied to standard asset values. For the valuation methodology to be accurate, it is essential that these multipliers are realistic and allow for the actual cost of installations performed under unusual conditions.

At present, this is not the case. The following could for example be noted:

- a) For cables installed in rocky ground, allowance is made for a multiplier of 1.5 to 2.0 times the cost of a standard installation. However, there is wide evidence from our members that other soil conditions, in addition to rock, can also increase the overall cost of the overall installation, or parts of it, to well beyond this multiplier level. Examples of soil or surface types that add significantly to installation costs include :

²⁷ <http://www.accc.gov.au/electric/fs-elec.htm>

²⁸ Independent Pricing and Regulatory Tribunal, New South Wales, Australia (<http://www.ipart.nsw.gov.au>)

²⁹ Essential Service Commission in Victoria, Australia

- Broken rock formations with cavities in between. Not only does the rock need to be broken and removed during excavation³⁰, but additional backfill material is required to fill the surrounding cavities to ensure good thermal conductivity.³¹
 - Scale or gravel. This causes trench walls to collapse, thus requiring significant extra excavation and support of trench sides. In addition the material often have to be completely removed and replaced with material with better thermal conductivity.
 - Concrete road surface. Concrete road surfaces are not only much harder to excavate and remove than asphalt (or metal) surfaces, but also add substantially to the re-instatement costs.
- b) For cables in business districts, a multiplier of 1.15 to 1.25 the standard installation cost is allowed, to allow for more vehicle and pedestrian traffic, restricted access times, special reticulation requirements and substantial reinstatement requirements. These multiplier factors have been found to be totally inadequate in metropolitan business areas, where the proximity of numerous services in restricted areas often force installations to take place in carriageways, with major associated logistical, public safety, traffic and project management implications.
- c) The close proximity of other services adds significantly to the cost of underground cable and, to a lesser extent, overhead line installations. This can have a major impact on the cost of installations in dense urban areas or business districts.
- d) City Councils and Transit New Zealand are imposing increasingly stringent requirements for safety, trenching and reinstatement, adding significantly to the cost of installing cables. In addition, increasingly strict restrictions on allowed working hours are encountered.

In drawing up new schedules for the proposed ODRC/ODV Handbook, it is essential that the Commission conducts a thorough survey of actual installation costs throughout the country over the last five years. The findings from these surveys should then be accommodated in new multiplier schedules.

We also propose that, in those circumstances where even revised multipliers do not allow the actual cost of an installation to be accurately reflected, lines businesses should be allowed to demonstrate to the Valuer the actual cost of acquiring an asset. Assuming that a competitive tendering process was followed for the purchase and installation of the asset, that value should then be allowed as the ODRC/ODV value of the asset.

For non-schedule assets, accuracy would be ensured by using the actual acquisition and installation value, or development value as the basis for the asset valuation, as demonstrated by the lines businesses.

³⁰ Trenches cannot be refilled with rocky material, as this could cause cable damage, makes future cable access more difficult and creates compaction problems.

³¹ Underground cable circuits are highly temperature sensitive. Overall circuit capacity, using equivalent cables, is usually substantially higher in environments where heat can be effectively conducted away from the cable. The thermal conductivity of the material surrounding cables, a measure indicating the ability of the material to conduct heat, is therefore an important consideration in circuit design, or achieving optimum capacity from cable assets. (Thermal resistivity, another commonly used term, is the inverse of thermal conductivity.)

Implications for proposed Asset Valuation Handbook

- a) Great care should be taken during the preparation of the schedules to ensure that the replacement cost and lifespan values used are still reliable.
- b) Schedules for asset replacement value and lifespan should be regularly reviewed to ensure their accuracy.
- c) Multiplier factors should be updated in accordance with the actual installation costs incurred by lines businesses over the last five years.
- d) Lines business should be allowed to demonstrate and then use actual costs, where these were obtained during a competitive procurement process and are above that allowed by applying the multipliers.

5.3 Comprehensive

A comprehensive valuation methodology should address all assets that a lines business would require during the execution of its normal business of electricity distribution.

The Electricity Information Disclosure Regulations (1999) requires separate disclosure of assets in the following categories :³²

- Current assets
- Fixed assets
- Other tangible assets
- Intangible assets

In particular, fixed assets are to be disclosed in the following subcategories :

- System fixed assets
- Customer billing and information system assets
- Motor vehicles
- Office equipment
- Land and buildings
- Capital works under construction
- Other fixed assets

The Current Handbook addresses system fixed assets only – all other fixed assets are to be valued in terms of the Generally Accepted Accounting Principles (GAAP)³³. (The Current Handbook is silent on the treatment of intangible assets, but it is assumed that the GAAP should apply to these as well.)

As discussed before, we see the ODRC/ODV methodology as only a component of a broader valuation approach. A Valuation Handbook should make provision for the valuation of all assets required by a lines business to execute its normal electricity

³² Table 1, Electricity Information Disclosure Handbook, Ministry of Economic Development, 30 June 2000.

³³ Par 3 of the Current Handbook

distribution business, including where these assets cannot be sufficiently or practically captured in standardised schedules.

5.3.1 Accommodating all system fixed assets

The Current Handbook is limited to the valuation of system fixed assets only. Given the nature of distribution networks and the vast range of different assets and asset sizes being used by lines businesses, it is unpractical to assume that ODRC/ODV schedules will be able to capture all assets. The purpose of the basic schedules, as is also currently the case, should therefore be to capture the bulk of assets categories and asset sizes that are widely used in New Zealand and to provide accurate replacement and lifespan values for these, rather than to attempt to be comprehensive and therefore contain too much detail.

Accepting that certain assets (or asset sizes) will then not be covered in the schedules, the basis for valuing these assets should be included in a Valuation Handbook.

However, even accepting the principle of targeting widespread and standard assets only, there are currently certain classes of widely used assets that are not captured in the Current Handbook that we believe should be there. Examples of such significant exclusions include :

- Low voltage distribution pillars and service pillars
- Connection cables up poles
- Substation assets such as oil interceptors, fire protection systems, bunding and cranes
- Distribution line assets such as line fault indicators, surge arrestors, stay poles and animal guards

In developing the new schedules, PB Associates can survey our members about categories of assets that they use in their networks that are excluded from the ODV schedules. Where common categories are identified, these can then be considered for inclusion.

System fixed assets not identified in the ODRC/ODV schedules, whether existing or arising through the application of new technology or network solutions, should be valued in accordance with GAAP. This is discussed further in section 7.1.

5.3.2 Transmission assets used by lines businesses

The asset schedules in the Current Handbook differentiate between Transpower and Electricity Lines Business (ELB) assets. The cut-off appears arbitrary, as there are some lines businesses that own and operate transmission assets, or assets not covered under the ELB schedules. This situation needs to be clarified and, if there is any reason why assets should be rated at different values or lifespan when used by ELB's as opposed to Transpower, this should be clearly explained.³⁴

5.3.3 Other fixed assets

While the system fixed assets would form the bulk of a typical lines business' physical assets, as discussed before they are by no means the only assets required

³⁴ We are not aware of such reasons.

for the operation and management of electricity networks. The asset subcategories described in the introduction of this section (5.3) are all part of the asset base on which investors in lines businesses would expect a reasonable return and should therefore be included in the Valuation Handbook.

Since it will be unpractical to include these assets in a standard ODV schedule, they should be treated similarly to non-standard system fixed assets and be valued in accordance with GAAP. This is discussed further in section 7.1.

5.3.4 Intangible assets

For a growing number of businesses, the actual (market) value of the business far exceeds the value recorded in their financial statements, even if their physical assets are recorded at correct values. A major reason for this is the growing recognition of the intangible assets owned by businesses and the value that these add. The difference in value between similar businesses in similar markets can often almost completely be ascribed to their intangible assets and the opportunities, flexibility and sustainability of future income that these assets would imply.³⁵

Electricity lines businesses are not dissimilar to other businesses in their ownership of intangible assets and there is abundant proof of varying degrees of efficiency, ability to exploit opportunities, levels of innovation and market-recognition – all aspects which are closely interrelated with intangible assets.

The comprehensiveness principle requires that these assets, to the extent that they can be formally defined and valued, should be included in the asset base on which acceptable returns are calculated. An economically efficient regulatory environment should recognise the presence of these assets and the reasonable returns that investors would require on them.³⁶

Typical intangible assets that lines businesses own to varying degrees, or could potentially own, include :

- In-house developed software
- Databases, including geographical information systems (GIS), customer databases and asset registers
- Business systems and procedures

³⁵ The term “intangible assets” is a broad definition for the non-physical assets owned by a company that contribute to the company’s value. An intangible asset should by definition

- have come into existence at a definable point either through acquisition or development,
- be separately identifiable and describable,
- be subject to private ownership rights,
- be transferable, and
- be subject to being destroyed or terminated at an identifiable time or due to an identifiable event.

The commonly used expression “intellectual property”, or IP, is a subset of the larger intangible asset group and is often used to describe those assets that are offered special legal recognition and protection, such as patents, trademarks, copyrights, designs, trade secrets and registered proprietary software.

³⁶ While it is not contemplated here that a distinction should be made on the required rate of return within the overall assets base, including intangible assets, it should be noted that the returns on these assets are in fact generally much higher than on physical assets. Refer to Hitchner *et al* (2002) and Parr and Smith (2000) for a discussion.

- Easements, corridors, cable tunnels or ducts and rights to third-party property³⁷
- Established contracts, including supplier, customer and maintenance contracts
- Technical know-how and trade secrets
- Research and development
- Patents and registered designs
- Brands, trademarks and other reputation-related aspects

The very real value of these assets is demonstrated by the significant amounts that business in general, and lines businesses in particular, invest in creating and maintaining these assets.

As a further illustration of the value that intangible assets add to a business, it is worth considering a hypothetical situation where a new electricity lines company was handed a full suite of physical assets (system and non-system), but none of the associated intangible assets. Without these intangible assets, the new entrant would find it impossible to provide an effective distribution service.

In comparison, a company with identical physical assets, but also with the intangible assets noted above would be fully functional. The value of the latter would clearly be much higher than the former. Alternatively, the level of additional investment required from the former to attain the same value as the latter, would be substantial.

A regulatory regime that denies the presence or value of intangible assets would not only provide an inaccurate reflection of the actual company value and deny investors a reasonable return on their total investment, but would also provide a highly negative signal for strategic, innovative or efficiency-enhancing investments. The development of intangible assets is a key area where efficient and innovative lines businesses can distinguish themselves from others.

The suggested approach to the valuation of the intangible assets owned by lines businesses is discussed in section 7.2 below.

³⁷ This value could typically far exceed the nominal registration value of an easement, in view of the flexibility and future strategic options they offer. Likewise, the value of power corridors or road crossings can be substantially increased if the lines business owns cable ducts or tunnels in these positions.

Implications for proposed Asset Valuation Handbook

- a) The asset schedules should be expanded with new categories of currently unrecognised assets or more comprehensive size ranges, where such categories or additional sizes are widely used.
- b) The delineation between Transpower and lines business assets should be rationalised. Where assets are used by both sectors, this should be indicated.
- c) Non-schedule system fixed assets and other fixed assets used in the distribution businesses are part of the overall asset base and should be included in a lines business' asset value.
- d) Intangible assets, where meeting the required definition, are part of the overall asset base and should be included in a lines business' asset value.

5.4 Stable and consistent

The ODRC/ODV methodology is well understood and widely applied internationally. Provided that the initial methodology developed for the targeted control regime is sound and adheres to the principles discussed in section 4.2, there should therefore be little need for subsequent major changes.

It is recognised that there will be continual requirement for updating and expanding the asset schedules – this however would not constitute a change to the methodology. The suggested procedure for the regular updating of schedules, is described below.

5.4.1 Regular updating of schedules**a) Type of review**

A review can take one of four forms :

- Global review: a complete review of all of the schedules;
- Annual review : an adjustment of asset replacement costs by the CPI since the last global review was undertaken;
- Methodology adaptation : an addition or change to the basic ODRC/ODV methodology or addition of a completely new asset class; or
- Category review: a targeted review of particular categories of assets.

b) Triggers for review

The triggers for the four types of review will be as follows.

- For a global review : periodic review, for example once every 3 years, to coincide with the Commission's ODRC/ODV review period;
- For an annual review : at a set date every year, after the CPI figure for the previous year becomes available;
- For a methodology adaptation : the review could be instigated by one party (either Commission or lines business) by demonstrating changes in the valuation environment or the need for inclusion of a new asset class; or
- For a category review: the review could be instigated by one party (either Commission or lines business) by demonstrating inadequacy of the current information.

c) Conduct of the review

The review should fulfil the following requirements.

- It should be undertaken by an appropriately qualified expert independent of the Commission or lines businesses, to a clear purpose and terms of reference.
- The expert is to provide a draft determination, consistent with the purpose and terms of reference of the review, detailing the sources and reasons for that draft determination.
- Stakeholders (e.g., the Commission, lines businesses, and customers) are to be provided with an opportunity to review the expert's draft determination and respond to the expert on particular issues. Appropriate time should be allowed for this stage.
- The expert is to provide a final recommendation which would normally be accepted by the Commission. We acknowledge that in some cases the Commission may come to a different conclusion. In such cases, it is to state the reasons for its differing view and consult with industry before making a final decision. It may also decide to appoint a different expert and to repeat the reviewing process.

As the asset valuation methodology under a targeted control regime should be more comprehensive and reflect the total and accurate asset value on which returns can be earned, an initial step change from currently reported ODV values should be anticipated.

Implications for proposed Asset Valuation Handbook

- a) Major changes in the valuation methodology should be avoided once it has been implemented.
- b) A transparent procedure for regular review and updating of the ODRC/ODV schedules should be incorporated in the proposed handbook.

5.5 Transferability

Implementing an ODV methodology and maintaining the associated records is a significant and costly undertaking. It is therefore desirable that the results can be used for associated business practises as well. Two areas in particular would apply :

- In their financial statements, lines businesses have to report on the value of their fixed assets. General Accepted Accounting Practice (GAAP) allows for fixed assets to be included in financial statements at (depreciated) book-value or at fair value. While interpretations of fair value differ, ideally ODRC would be considered the fair value of the electricity distribution system fixed assets and other assets will be valued within the GAAP. It should then be possible to use the asset values thus obtained for the calculation of the valuation used in the lines business financial statements and reports.^{38 39} This would reduce the need for duplicated asset valuation.

³⁸ There may be instances where salvage value of assets is more than the ODRC/ODV, but as the ODRC/ODV value will (indirectly at least) determine the future value of cash-flows realizable from the asset, the ODRC/ODV would be considered a fair valuation. If the salvage value is higher however, a prudent lines

- To implement the ODRC/ODV methodology, lines businesses are required to maintain detailed asset records. Consistent and accurate record-keeping for the ODRC/ODV would imply that these records can also be used elsewhere. We envisage that, where available, lines businesses could use their geographical information systems (GIS) as the basis for their asset registers, supplemented with external databases, as required. These records should be directly applicable for asset valuation purposes.

It is recognised that, given the requirement to optimise, ODRC/ODV valuation is time-consuming and impractical to carry out frequently. This implies that new assets may initially have to be recorded at actual acquisition value. When the next valuation is carried out, these assets would then be reflected at ODRC/ODV costs. If the ODRC/ODV methodology is accurate and prudent design and installation practise had been followed, the difference in value should be nominal.

Implications for proposed Asset Valuation Handbook

- a) It is desirable that the ODRC/ODV methodology should be consistent with GAAP in as far as it provides a fair valuation of assets for use in financial reporting.
- b) The ODRC/ODV methodology should also be consistent with GAAP in the manner in which non-scheduled assets are included in the overall asset value and reflect all the assets an efficient new entrant would require to provide distribution services.
- c) The valuation methodology should not require unreasonable levels of record-keeping by lines companies, beyond what would for example be available through an up-to-date GIS system and some supplemental databases.

5.6 Low incremental cost to implement

All electricity lines businesses currently have to report the ODV value of their system fixed assets. They have therefore set up information and reporting systems for this requirement. Provided that the ODRC/ODV methodology under the targeted control regime does not differ substantially from the current methodology, the incremental cost to implement this methodology should be relatively low.

Accommodation of non-schedule items, including non-system fixed assets and intangible assets is already done for general financial reporting and accounting purposes. Ensuring that this value is reported as part of the total asset value of a lines business would therefore not require additional systems or expense.

The low incremental cost requirement is an important guideline if alternative valuation methodologies are considered. However, it should not preclude the Commission or lines businesses from pursuing improvements in the existing valuation methodology or prevent new, potentially superior methodologies from being investigated and implemented, where additional costs would be offset by increased economic efficiency and/or long-run savings.

business could be expected to rather salvage the asset and replace it with an asset approximating the "optimised" configuration.

³⁹ Depreciation will then also be based on replacement values rather than historical values.

In addition, we emphasise that while it is important to minimise the cost of asset valuation, this is a secondary consideration to aspects such as the accuracy, comprehensiveness, ability to be adapted or the well-specified nature of the valuation methodology.

Implications for proposed Asset Valuation Handbook/ODV Handbook

- a) Assuming that the basic ODRC/ODV methodology will remain unchanged, there should not be any major cost implications for lines businesses implicit to the proposed new handbook.

5.7 Ability to adapt over time

The main requirement to keep an efficient ODV methodology current would be the regular updating and expansion of asset schedules to keep track with technological changes and asset prices and life-span (as discussed in section 5.4.1). However, in addition to this, more fundamental changes may also be required to accommodate factors such as those discussed below.

5.7.1 New asset-classes

Technological developments, or changes in the rules for lines businesses, may create whole new asset classes that have to be accommodated in the schedules. For example:

- As mentioned before, recent changes in legislation means that lines businesses are now allowed to operate a substantial degree of embedded generation in their networks. Generators and associated assets are not currently recognised in the ODV schedules, as these were not generally allowed in the past.
- With developments of fuel cell technology, it is likely that in the future it would in many cases provide a cost efficient alternative to conventional, distributed electricity. A totally new asset class would then have to be recognised in the schedules.

5.7.2 New business practices

Innovative lines businesses are continually investigating alternative approaches to network solutions. In some cases this has resulted or can result in substantial savings over conventional installations, but require new asset types, or configurations of assets that were not envisaged when drawing up the optimisation rules. Examples include :

- Provision of portable generation units that could be installed at various times at various points in a network to provide additional capacity during peak consumption periods or when parts of the network is shut down for maintenance or repair. This may help to avoid the need for strengthening networks to cater for such eventualities.

- Installation of distributed generation installations at various points in the network. These may be used for “peak-opping”⁴⁰ or to provide the required degree of security for a network. In these cases, generation would usually only be required for relatively short and infrequent periods, thus making it an attractive alternative to increasing network capacity for short-term load or redundancy purposes.
- In more extreme cases, distributed generation installations could also be used to replace distribution networks or share in the base load⁴¹ of networks. As the cost of generation by small units usually exceeds the cost of electricity purchased from the national grid, these solutions would generally only be cost-effective in remote, or difficult to access areas.
- By adopting a probabilistic supply security philosophy (and agreeing to this with customers) instead of the conventional deterministic approach, lines businesses can achieve significant additional operational flexibility. This may require reconfiguration and increased automation of networks, but in overall terms, the capital expenditure that can be avoided or deferred by following this approach could be highly significant.
- Demand curtailment can be used as an equivalent alternative to increasing supply capacity. Lines companies have in the past negotiated load-shedding capacity with customers. More recently a demand-side exchange was launched where energy consumers who have the ability to shift or curtail demands for short periods, can sell this capacity to lines companies or other users. These types of arrangements provide further opportunities for avoiding or deferring investments to strengthen network capacity.

Implications for proposed Asset Valuation Handbook

- a) The handbook should recognise that completely new categories of assets could arise and that these would form part of the overall distribution business asset value.
- b) Until such asset classes have been included in the ODV schedules, the associated assets should be treated in accordance with GAAP, like all other non-standard assets.
- c) The handbook should also recognise that completely new business practices could arise, that would lead to network solutions not foreseen in the asset schedules or in the optimisation rules.
- d) Optimisation rules may have to be suspended where alternative supply security approaches are demonstrated by a lines business.

⁴⁰ Peak lopping refers to the reduction or elimination of short-term peaks in electricity demand, usually where the instantaneous demand would otherwise exceed the design capacity (or desired load) of a network or installation.

⁴¹ The base load can refer to electricity demand that would be experienced under average load conditions, or to loads that would be present (almost) continuously.

5.8 Flexibility within valuation methodology

Many of the desired attributes discussed above demonstrate the desirability for an efficient valuation methodology to incorporate all assets, allow for non-standard applications and to encourage innovation. These aspects all relate to the requirement of a valuation methodology to be flexible.

In addition to the aspects already discussed, it is also worth noting the following.

5.8.1 Non-standard customer requirements

As discussed in section 4.1.4, customer needs are changing over time and an above average quality of supply is often required. This requirement could relate both to avoiding power interruptions and maintaining a stable voltage supply (i.e. avoiding momentary voltage “dips” or “spikes”). Lines companies therefore often have to adapt their networks, or provide additional components, to guarantee such supplies.

In terms of the Current Handbook, such installations however stand the risk of being optimised to a lower quality level. By not allowing lines businesses the necessary flexibility to respond to individual customer requirements, the potential exist for the asset valuation methodology to inflict wide economic damage.

Where mass-market consumers are served and a minority require a higher than standard quality of supply, a grey area arises. If a lines company strengthens a section of their supply network to fulfil such minority requirements, the full cost for the network strengthening would typically not be borne only by the minority of customers who requested the service, although they will often be required to pay a premium for their lines service. The total cost would rather be spread through a total consumer category, which implies a degree of cross-subsidisation. It is not clear whether the network should in such a case be “optimised” to the lower supply quality level required by the majority of consumers.

Even if not linked to individual consumers, customer surveys may indicate a general willingness by customer groups to accept higher tariffs in return for a higher service quality. Lines businesses should be allowed the flexibility to accommodate this. (The Commission requires lines businesses to interact with customers and to take into account their views and feedback. It will therefore be counter-intuitive if the asset valuation methodology does not allow general customer preferences to be recognised or accommodated.)

Implications for proposed Asset Valuation Handbook

- a) The handbook should in general provide the flexibility required to accommodate new or non-standard process and assets, even where these cannot be envisaged at the time of preparation.
- b) Assets should not be optimised out when customers require, and are prepared to pay for, above-average quality of supply levels.
- c) Lines businesses should have the flexibility to respond to general customer requirements.

5.9 Reflect appropriate planning horizons

As a general rule in an environment where load growth is foreseen, it is more cost effective to oversize an asset at initial installation to accommodate future load growth than to replace or expand it at a later stage. The degree of benefit depends on various factors, but it is normally possible to forecast an optimum initial asset size.

The Current Handbook⁴² allows future load growth to be taken into account for the following periods when determining optimised capacity :

- Transmission networks : 10 years
- Sub-transmission networks and zone substations : 10 years
- HV and LV distribution and other network assets : 5 years
- Distribution transformers : no load growth

Compared to the actual life span of most of the assets in question, the planning windows allowed are short. In many cases this denies lines businesses the opportunity to fully optimise the size of an asset when installing it.

We recommend that the planning windows be significantly extended to allow the most economically efficient planning horizon. This includes realistic planning windows for distribution assets.

In addition, where lines businesses can demonstrate to the Commission that it is more cost-effective to install an asset with capacity based on a longer planning window than that prescribed, should be allowed to use the value as optimised for that longer planning window. In such a demonstration, standard tariffs, as foreseen under the company's price path, and the Commission's approved cost of capital figure should be applied.

Implications for proposed Asset Valuation Handbook

- a) The existing planning windows allowed to accommodate future load growth, should be expanded.
- b) Lines business should have the option to apply even longer planning windows where they can demonstrate to the Commission that initial installation of larger assets is more cost-effective than later upgrades or expansions.

6. Accommodating changes in asset values or lifespan

Viewed over the total life of an asset and assuming that revenue earned from an asset closely tracks the value of the asset, as envisaged under a building-block approach, changes in the asset value during its normal life would not materially affect the value of the asset to a lines business.⁴³ However, there are a number of practical problems associated with revenue measurement, especially over shorter periods.

⁴² Par 3.37

⁴³ In this context, value is measured as the net present value of the allowed free cash flow that could be derived from the asset, under a building-block approach to establishing revenue. Underlying this approach are assumptions that the discount rate used to determine the permissible return on assets and the time value of earnings are the same and will remain constant, that revaluations are offset against depreciation, and that operating and capital expenditure associated with the asset do not change.

- Under the proposed threshold regime, lines businesses will implement a smoothed price path, based on a CPI-X approach. There is no direct relationship between prices set in this manner and prices that would be set under a building-block approach such as may occur when a company is investigated or placed under control.
- Under a building-block approach, a revenue cap is determined based on asset value, the acceptable rate of return and operational expenses, including depreciation. However, actual revenue earned is based on actual electricity consumption and predetermined prices - the short-term correlation between the earnings allowed from an asset-base and the actual revenue earned from that base may fluctuate.
- A building-block approach would normally only be applied for a limited period (for as long as a business is placed under control). This period would be much shorter than the average lifespan of the assets applied by a lines company. However, over a short-term window, revenue earned could be higher or lower than that allowed by the asset value – depending on where in the lifetime of an asset (or asset base) the window view is taken. This would especially be a problem where revaluations, write-downs or extension in asset lives occur.
- Actual revenue earned can fluctuate greatly over the short term and lines business have only a limited ability to control these in the short term, especially if regular tariff resetting is to be avoided. Depending on the Commission’s window in the case that a business is investigated, the level of return measured may or may not reflect the average return over a longer period, that more closely represents the average lives of distribution assets.

As part of developing the Valuation Handbook, it is therefore necessary to describe the treatment of changes in asset value during the useful life of an asset as well as how it is intended to measure revenue and account for the potential distortion created by doing so over short windows. To date there has been no clear description by the Commission of how it intends to apply its measurements of asset value for a short control window.

6.1 Revaluation of assets

We recommend that any revaluation of an asset during its useful life be offset against the depreciation of that asset, in the period that the revaluation occurs.

To minimise the impact of possible distortions between actual revenue earned and revenue allowed, a future price path in a building-block environment would have to assume a realistic level of future revaluation. If the actual revaluation is below or over the assumed figure, this excess or shortfall should be ignored in assessing actual vs. allowed earnings. Alternatively, it may have to be accommodated in further future price settings.

Revaluation would normally arise from a varying (new) replacement cost for an asset. These changes would generally be small and would be spread over a very wide range of assets. On average we would therefore expect that incorporating a realistic average forecast factor for revaluation of the total asset base when determining a price path, would sufficiently accommodate the distortion problem.

6.2 Correction of asset values

Although the information disclosure regime and the associated ODV valuation have now been in place for a number of years, new asset “discovery” still happens relatively frequently. We recommend that such discovered assets should be added to the ODRC/ODV asset base, at the optimised replacement value of the asset, taking into

account the estimated remaining economic life of the asset. From that point forward, it should be treated like all other assets in the ODRC/ODV asset base.

Revenue calculations, based on the rate of return on assets for the period during which an asset was discovered should be adapted for the whole period, taking into account the asset as if it had been part of the overall asset base for the whole period.

While “discovered” assets will give rise to a revaluation of the overall asset base, this should not be treated like a normal revaluation in offsetting the increase in value against depreciation, as suggested in section 6.1. These assets would typically have been present at the time of the initial valuation and, by belatedly recognising them, there is no real rise in the asset value, rather a recognition of an earlier oversight.

Significant corrections to the value of assets already included in the ODRC/ODV asset base, for reasons other than ODRC revaluation, normal depreciation or discovery, should be treated similarly to revaluation or depreciation of assets. This includes assets that were damaged, resulting in a reduction of their remaining lifespan and an accelerated loss of value.

Given that the extent of “discovered” assets, or assets for which previous values have to be abnormally adjusted, would be small relative to the total asset base, the impact of such adjustments is expected to be minor.

6.3 Extending the lifespan of an asset

The ODV Handbook⁴⁴ specifies typical asset lives. An asset, having reached its full life span, is assumed to have no residual value, or at most a net realisable value equal to its scrap value.

In cases where assets have been refurbished however, the remaining lives of the assets are extended for valuation purposes, as decided by the Valuer.⁴⁵ If the remaining life of an asset is extended, this implies an immediate revaluation of the asset from its current depreciated base (the asset now has a bigger proportion of its useful life left, at the same new replacement value).

As before, provided that the value of the asset is considered over its remaining (extended) life and the revaluation implicit in extending its lifespan is treated as suggested above, extension of asset life does not change the value of the asset.⁴⁶ When viewed for shorter periods however, the same distortions as discussed above, will arise.

It is recommended that the revaluation implicit in the change in lifespan of an asset is treated similarly to a normal revaluation – i.e. balanced against depreciation.

The treatment of the refurbishment expense needs to be clarified further by the Commission. New asset-value, after refurbishment, is determined by the ODRC/ODV schedules and is completely independent of the actual refurbishment amount spent. The normal accounting practice of treating the refurbishment cost as capital expenditure and

⁴⁴ Par 3.27

⁴⁵ Paragraphs B.37 and B.38

⁴⁶ This is if measured from the moment of extending its life till the end of the extended life – the increased returns that are realisable during the longer future life of the asset are offset by the reduced depreciation in the period when the asset is refurbished. (In some cases, appreciation could in fact be possible.) If, of course, the value of the asset is only measured further down its (extended) life, this value would be increased as opposed to that of the original asset with no lifespan extension.

adding it to the value of the asset to determine the revised value of the asset, can therefore not be applied in the ODRC/ODV environment.

6.4 Treatment of assets at the end of their depreciated lives

In many cases, assets will be serviceable, and will be used, well beyond the end of their economic lives, even where these have been formally extended, as described in 6.3 above. If no value is attached to such assets, in spite of them actually being used to earn revenue, a perverse incentive may be created to replace these assets sooner than is actually necessary. Investors may view themselves as better off earning a return on a new asset, even if financial theory suggest that they would be impartial to whether the return is obtained from an electricity network or from an equivalent investment in the market. In the absence of any financial benefit in retaining the asset, the investment decision would be more influenced by factors such as the potentially higher risk of failure implicit to an old asset.

We therefore recommend that, in accordance with FRS-3, an asset approaching the end of its economic life should retain a value equal to 5 % of its optimised new replacement value. When the asset is finally removed from service, depreciation of that last 5 % value will occur. This will not create any distortion in the ODV value and would provide investors with a continual, if nominal, return on all assets, thus making them more attractive to maintain.⁴⁷

6.5 Disposal of an asset during its useful life

Situations may arise where an asset is well utilised and still within its useful economic life, but has to be replaced as part of an overall upgrading, automation or other similar action.

Assuming that an asset formed part of the ODV asset base up to the point of its disposal, any loss incurred during the disposal, as in the difference between its last recorded ODV value and its disposal value, should be recorded as a loss on disposal, an operating expense. This implies that the lines business should be able to recover the loss in the allowed revenue stream.

If the disposal value of the asset is more than its last ODV value, the excess should be recorded as revenue (gain from disposal) to the lines business, which will reduce the allowed revenue from the remainder of the asset base for that period.

The disposed asset would be removed from the overall asset base, at its recorded ODV value.

⁴⁷ We note that PB Associates, in their closing report (supra note 3) also addresses the issue and suggest that three years residual life should be allowed. It is not clear whether it is intended to retain a constant three-year value until the retirement of the asset, or whether the asset will be re-valued every time it depreciates to the end of its (potentially repeatedly) extended life. The latter approach would be less stable.

Implications for proposed Asset Valuation Handbook

- a) The problems inherent to measuring returns over a short period and trying to determine from this whether acceptable returns have been realised, should be addressed, especially where distortions in the measurement can arise from revaluations and other changes in asset value.
- b) Asset revaluations should be offset against depreciation.
- c) Newly “discovered” assets should be included in the overall ODRC/ODV asset base and treated similarly to those assets already included.
- d) Extending an asset lifespan will give rise to a revaluation, which should be treated similarly.
- e) The treatment of refurbishment expense is a grey area. At present we suggest that this be treated as an operational expense.
- f) Assets being used beyond their useful economic lives should be allocated a nominal value, equal to 5 % of its replacement value, until removed from service.
- g) Disposed assets would be removed from the valuation figure at their last recorded ODV value. Profits or losses arising from the transaction should be reflected in the operational expenses of a lines business.

7. Valuation of assets not included in ODV schedules

In section 5.3 it was suggested that under a targeted control regime, it is essential that the Valuation Handbook should incorporate all the assets a lines business would realistically require to execute its electricity distribution business. The value of a lines business should therefore reflect the optimised asset value of the whole of its distribution business.

The bulk of a lines business’ assets are network-related and therefore classified as system fixed assets, and would be included in the asset schedules forming part of the proposed ODRC/ODV handbook. Valuation of these assets would therefore be done in accordance with conventional ODRC/ODV methodology, applying the replacement values and lifespan included in the schedules.

However, as discussed, some system fixed assets do not lend themselves to easy standardisation and would therefore fall outside the schedules. In addition there are complete asset classes that are essential for the operation of a lines business, but is not classed as system fixed assets. The recommended manner in which these assets, categorised as physical and intangible assets, should be valued and included as part of the total asset value, is discussed below.

7.1 Physical assets

As a general rule, all physical assets required for the operation of a lines business, but not included in the ODRC/ODV schedules, should be valued in accordance with GAAP. In particular, the New Zealand Financial Reporting Standards FRS-03 (Property, Plant and Equipment) should be applied.⁴⁸

⁴⁸ It is noted that local accounting standards are scheduled to be replaced by international standards from 2005 onwards. FRS-03 will therefore be replaced by the International Accounting Standard IAS16.

The basic valuation principles thus suggested are :

- a) For the opening position of an asset, valuation should be at cost – the purchase price, or the cost to develop the asset.
- b) Subsequently, the benchmark treatment would be to use depreciated cost to reflect the asset value (with depreciation to occur over the asset’s useful life).
- c) An up-to-date, fair value of an asset can also be applied.
- d) Use of fair value may result in revaluations, which should be treated similarly to the method proposed in section 6.1 above.

While it is difficult to provide optimisation rules for the physical assets falling outside the system fixed assets, there are some guidelines that could be followed to prevent “gold-plating”.

- Acquisition of any significant asset should be done through a competitive process (tendering or equivalent). Where such a process is not feasible⁴⁹, the onus should be on lines businesses to justify to the Commission why the cost price for the asset should be considered reasonable. In the absence of such justification, the Commission may determine a realistic starting value for the asset.
- For internally developed assets, a competitive process should also be followed wherever practical. Lines businesses should be able to demonstrate to the Commission why it was necessary, or more cost effective to develop rather than acquire an asset externally.
- The Commission would reserve the right to require lines business to demonstrate why an asset is considered an essential part of the distribution business assets and if no satisfactory response is provided, would be able to exclude it from the total ODRC/ODV asset base.

In general, given the pressure that lines businesses are under to provide maximum returns to shareholders and the incentives that they have to not exceed the price thresholds that will apply in future, we do not believe that the acquisition of unnecessary or unnecessarily expensive assets will constitute a significant problem.

7.2 Intangible assets

No detailed New Zealand guidelines for accounting for intangible assets currently exist. However, with the planned adoption of international accounting standards from 2005 (for early adopters) and 2007 (for all others) onwards, IAS 38 (Intangible Assets)⁵⁰ will apply. This standard therefore provides a useful guide for how intangible assets should be treated and valued in the Valuation Handbook.⁵¹

Using the (amended) IAS 38 as guideline, intangible assets should be treated as follows.

⁴⁹For example due to lack of availability of competitive offers, operational issues or severe time constraints

⁵⁰ International Accounting Standards Board (<http://www.iasc.org.uk>)

⁵¹ An exposure draft was issued by the International Accounting Standards Board in December 2002 on proposed amendments to IAS 38. In our discussion, these amendments are assumed to have been accepted.

7.2.1 Including new acquired intangible assets into the ODV asset base

- a) For an intangible asset to qualify for inclusion into the ODV asset base, the asset should meet the definition of an intangible asset.⁵² Particularly, there should be an identifiable asset that is controlled and clearly distinguishable from an enterprise's goodwill; it should be probable that future economic benefits will be derived for the enterprise that can be attributed to the asset; and the cost of the asset must be reliably measurable.
- b) Newly acquired intangible assets should be recognised at cost. During an acquisition, intangible assets should be identified and valued separately from goodwill.

7.2.2 Including internally developed intangible assets into the ODV asset base

- a) IAS 38 proposed a research phase and development phase for internally generated intangible assets. The research phase generally refers to activities aimed at expanding knowledge, searching for solutions or evaluating several solutions before formulating a final outcome. Intangible assets can only arise from the development phase, which would normally follow a research phase and involve the formal development of a solution or outcome established during the research phase.
- b) An intangible asset arising from the development phase would only be recognised if a market existed for such an asset, or a beneficial internal use for the asset can be demonstrated, as well as the intention to use, license or sell the asset.
- c) The costs incurred to internally develop intangible assets should be reliably measured and captured. This will form the basis of the initial value of the asset. Such costs can only be measured from the time when the asset enters the development phase.

7.2.3 Treatment subsequent to initial inclusion

- a) The benchmark treatment for intangible assets is that, after initial recognition, these assets should be carried at cost less accumulated amortisation and any accumulated impairment loss.
- b) Certain intangible assets can be assumed to have an indefinite lifespan, while others would have a limited useful life. Where a finite lifespan is assumed, the value of the asset should be amortised over that period. Where a building-block approach to setting revenue levels is followed, amortisation expenses should be treated similarly to depreciation expenses.
- c) An asset deemed to have an indefinite life, should not be amortised. The useful life of such assets should however be regularly reviewed to assess whether circumstances still support the allocation of an indefinite life to the asset. If they do not, then amortisation over the expected remaining life should commence.
- d) Where additional development costs are expended on acquired or internally developed intangible assets, these costs are to be added to the value of that asset.

⁵² Refer to footnote 35 for a summary of the definition

- e) Alternatively, revaluation of intangible assets to a fair value is also allowed, but only where such revaluation can be substantiated with reference to an active market. This would typically imply that a benchmark for the value of similar assets would exist and that such assets can be traded, or licensed for use by external parties.

Implications for proposed Asset Valuation Handbook

- a) Physical assets not covered in the ODRC/ODV schedules should be treated in accordance with GAAP and FRS-3 (or IAS 16 when it becomes in force).
- b) All physical distribution-business related assets not contained in ODRC/ODV schedules should be entered at cost, provided they were obtained or developed as part of a competitive process.
- c) Intangible assets should be treated in terms of IAS 38. In general this means that such assets can be included in the asset base, if demonstrated that they meet the criteria for such assets. They would generally be entered at cost.
- d) Goodwill or other undefined intangible assets will not be recognised under the distribution business asset value.

8. Treatment of one-off events

For the purposes of this section, the ODRC/ODV value is once again taken to include non-schedule system fixed assets, other physical assets as well as recognised intangible assets.

8.1 Initial valuation

The Commission proposed that all lines business should derive opening values for their system fixed assets based on the ODV methodology⁵³. For the reasons discussed in section 5.1.2, we believe that this requirement should be changed to use the ODRC methodology. In addition, the asset base should be extended to include all relevant assets required for the operation of electricity distribution businesses, in accordance with our discussions above.

The initial valuation will be seen to set the tone for the Commission's future approach to asset valuation. If this valuation is seen to be incomplete, not systematically covering all relevant assets and not allowing a reasonable return on the true value of investments in lines businesses, a very negative signal about the Commission's future intent will be sent to investors.

Even if the Commission is to adapt the valuation methodology at a later stage, incorporating the full distribution-business asset base, this will lead to prolonged uncertainty and would mean that the initial valuation cannot be used as the basis for determining acceptable revenue levels, or for long-term tracking of the ODRC/ODV value.

We therefore strongly recommend that in establishing the initial opening values, the value of other physical assets and intangible assets that form part of a lines business' distribution business, as discussed in sections 7.1 and 7.2 respectively, should also be included.

⁵³ Supra note 9

Furthermore, since this is an opening valuation, not related to expenditure during any specific period, it provides the opportunity to include assets (other than system fixed assets) at fair value, rather than on a historical cost basis.

By implementing these suggestions, it would be ensured that the opening asset values for lines businesses would be as accurate, comprehensive and as close to their actual, fair value as could be realistically hoped for.

8.2 Mergers & Acquisitions

During the merging of two lines businesses, or the acquisition of one by another, we recommend that asset valuation should be treated in the following manner :

- a) As a first step, the last reported values for the system fixed assets and other fixed assets for both entities, whether determined through ODRC/ODV schedules or in terms of GAAP, should be added together to create a the new value for those assets. No adjustment of the asset values recorded by either party would be required.
- b) Goodwill arising from an acquisition should as far as possible be broken down into identifiable intangible assets and separately valued. This could imply that new intangible assets are recognised that did not exist in the overall asset base before, but also that existing assets could be revalued at their true value, rather than at the values recorded previously.
- c) All new intangible assets should meet the requirements for qualifying as intangible assets and their valuation, as well as the revaluation of existing intangible assets, should be accurate, detailed and fully explained and reasoned.
- d) New intangible assets arising from the acquisition should be added to the overall asset base of the acquirer, expanding the intangible asset category. Where similar intangible assets are acquired to those already included in the acquirer's asset base, the new value of those assets will be the sum of the original value recorded by the acquirer and the revalued figures for the new assets obtained.
- e) Residual goodwill, or intangible assets not meeting the requirements for inclusion, will not be recorded in the overall asset value.

Appendix A : Response to questions posed by the Commission in the Issues Paper

In this appendix, we respond briefly to the questions posed by the Commission in the Issues Paper. Where appropriate, cross-references to sections in the body of the report are provided.

Standard Asset Classes, Replacement Costs and Lives

ISSUES PAPER QUESTION	OUR RESPONSE
1(a) Are the standard asset classes specified by the MED's ODV Handbook in Table B.1 (for distribution businesses) and Tables B.2-B.8 (for Transpower) relevant and complete?	The classes are relevant, but not complete.
1(b) Are there any asset classes that should be added, removed or rearranged (submissions should include reasons and details)?	Yes. The ODV methodology should be sufficiently flexible to allow for continual updating with new asset classes as these arise. Refer to sections 5.7 and 5.8
1(c) Should zone substation transformers, switchgear, control buildings and other substation assets be included as separate assets?	In most cases, yes.
1(d) Are there any assets not covered by the MED's ODV Handbook that should be included in an ODV handbook ?	Yes. A wider valuation handbook should be created that extends not only to system fixed assets but also to other fixed assets and intangible assets. Refer to sections 3.2, 5.3, 5.7 and 7
2 How should the standard asset classes specified by the MED's ODV Handbook for distribution businesses and Transpower be rationalised to achieve consistent asset replacement costs and lives for similar system fixed assets owned by distribution businesses and Transpower?	We do not believe that there should be any difference in the replacement cost and lives of similar assets owned by Transpower and lines businesses.
3 What requirements and standards should be specified in an ODV handbook to ensure that system fixed assets owned by lines businesses are completely and accurately recorded in asset registers, and that integrity of asset registers is maintained over time?	An up-to-date and sufficiently detailed GIS system would form an ideal basis for an asset database and register. This would be supplemented by other databases as required, to address mobile or non-system fixed assets. Creating and maintaining an up-to-date GIS record of a network is however expensive and may be out of reach of some businesses. In such cases normal electronic databases, recording details of assets, linked to network drawing references, would have to be sufficient. Duplication of asset registers for ODV and for other purposes should be minimised – a single detailed GIS system is therefore preferred. Refer to section 5.5
4 What are the costs and benefits of requiring	Ideally, a GIS system would be the basis of the

ISSUES PAPER QUESTION	OUR RESPONSE
lines businesses to maintain up-to-date asset registers for their system fixed assets on an ongoing basis?	<p>asset register, in which case its use for ODV purposes would only add to the already considerable benefits it should confer to a lines business.</p> <p>In the absence of a GIS, maintaining up to date asset registers would still make the regular valuation exercise simpler and may also be useful for maintenance purposes.</p>
5 Which standard maximum replacement costs specified by the MED's ODV Handbook require updating?	Our members are better placed to respond directly to this question.
6 What should be the role of specifying maximum asset lives in an ODV handbook in the context of depreciation policies for system fixed assets?	As described in the Current Handbook
7 Which standard maximum asset lives specified by the MED's ODV Handbook require updating?	Should be derived by examining the actual average lifespan of assets as recorded by lines businesses
8 What are the appropriate standard maximum asset replacement costs and lives for zone substation transformers, switchgear, control buildings and other substation assets as appropriate?	Should be derived by examining the actual average costs incurred by lines businesses for such assets, making adequate provision for variances in installation conditions and environments.
9 What are the margins of error associated with estimating system fixed asset replacement costs and lives? What factors need to be considered in estimations?	<p>The margins of error for standard installations should be reasonably low. However, installation in non-standard environments will greatly affect the values.</p> <p>Refer to section 5.2</p>
10 Should multipliers and other factors specified by the MED's ODV Handbook be amended?	<p>Yes. The scope for multipliers needs to be broadened considerably and the ranges need to be updated to reflect actual costs for all lines businesses in all environments they encounter.</p> <p>Valuers should exercise their discretion in the choice of multiplier.</p> <p>Refer to section 5.2</p>
11 What process should be implemented whereby the Commission routinely and periodically reviews and updates the standard asset classes, replacement costs and lives in an ODV handbook? How often should an ODV handbook be reviewed and updated, and what factors should influence the frequency? What methodologies could be applied to routinely and periodically update standard asset replacement costs and lives? Are there any specific circumstances or factors which should trigger special, non-scheduled reviews?	Refer to section 5.4.1
12 Are there any other relevant issues or questions not identified above on which the	Our report generally focuses on such "other" issues.

ISSUES PAPER QUESTION	OUR RESPONSE
Commission should receive submissions from interested parties? (The Commission would appreciate receiving submissions on any additional issues or questions.)	
13 Is it possible for an ODV handbook to address the various reasons a lines business might be required to prepare asset valuations using the ODV methodology specified by the ODV handbook in relation to the regulatory regime under Part 4A of the Act; for example, in relation to the targeted control and information disclosure regimes and the imposition of control under Part V of the Act? What factors need to be considered in developing a single, multi-purpose ODV handbook?	<p>This is a core issue for our whole report. We believe that ODV valuation is only a part of a greater Valuation Handbook. This greater handbook (which we believe is envisaged at least in part in this question) should address the purposes to which ODV may be put, as well as other aspects such as the treatment of non-system fixed and intangible assets.</p> <p>See sections 3.1, 3.2, 5.3, 7.1 and 7.2</p>
14 What are the relevant principles and theoretical underpinnings of the ODV method for valuing system fixed assets that should be described in an ODV handbook?	See sections 4.1 and 4.2 as well as our accompanying report (van Zijl, 2003)
15 How frequently should lines businesses be required to prepare ODV valuations of their system fixed assets, and what events should trigger a revaluation outside these periods?	<p>Regular ODV valuations should only be done at three yearly intervals (given the cost and effort involved). In the interim, new assets should be carried at acquisition values.</p> <p>An ODV valuation outside this may be triggered by a company being investigated or placed under control, or when a merger or acquisition takes place.</p>
16 Compared to the MED's ODV Handbook, should an ODV Handbook be more or less prescriptive and how important is the level of prescription? (Interested parties should refer to specific areas of the ODV methodology and give reasons for their views).	<p>The importance of an ODV handbook under a targeted control regime will be much higher than under an information disclosure regime. The associated methodology should therefore be defined in more detail, but be sufficiently flexible to accommodate all assets used by lines companies and the different situations or practices under which these may be applied.</p> <p>See sections 4.2, 5.1, 5.2, 5.3, 5.7, 5.8, 7.1 and 7.2</p>
17 To what extent should, and how could, the ODV methodology in an ODV handbook be specified to be consistent with generally accepted accounting principles (GAAP), including the application of the Financial Reporting Standard No. 3 (FRS-3)?	<p>We envisage a situation where the ODV could be used to derive "fair value" in terms of the GAAP. In addition, the FRS-3 approach to valuating all physical assets not included in the ODV schedules is proposed. The ODV methodology should therefore, as far as practically possible, be generally consistent with the GAAP and FRS-03 (and its intended replacement, IAS 16).</p> <p>Intangible assets should be treated in terms of IAS 38.</p> <p>See sections 5.3, 5.7, 6, 7.1 and 7.2</p>
18 How should lines businesses account for all changes in their ODV valuations, including	See sections 6.1, 6.2, 6.3, 6.4 and 6.5

ISSUES PAPER QUESTION	OUR RESPONSE
changes due to additions and disposals of system fixed assets, optimisation or re-optimisation, economic value adjustments, changes to replacement costs, changes in assumptions about remaining asset lives, and “discovery” of physical assets previously unrecorded in asset registers.	
19 Is the straight-line depreciation methodology specified by the MED’s ODV Handbook the appropriate depreciation method to adopt in an ODV handbook? Should other depreciation methods be permitted or required?	Depreciation should mirror the period and pattern in which economic benefits are received from the use of the assets employed. Using forms of depreciation other than straight-line and using non-standard periods could give rise to distortions in the revenue allowance as opposed to actual earnings, when asset values are viewed for short periods only. It is therefore best to retain the straight-line depreciation method. Deviations from this should be disclosed in the valuation report.
20 How should system fixed assets which are fully depreciated, but still in service in an ODV valuation?	See sections 6.3 and 6.4
21 Should the age of pole lines for valuation be based on the date of commissioning of the line or some other indicator such as the average age of poles supporting the line as at the valuation date?	An age-weighted average could be considered, taking into account the installation dates of different poles.
22 What is the best approach to determine the remaining life of a system fixed asset where the asset has been refurbished, or where there is evidence that the asset’s remaining life is materially different to that previously estimated?	Identifying refurbished assets is often difficult (from existing asset registers), as is estimating remaining life. If a reasonable assessment of the increase in lifespan cannot be made, a standard percentage increase (typically 20%) could be considered. The judgement of the Valuer should apply.
23(a) How should an ODV handbook specify the difference between refurbishment of a system fixed asset, which results in increasing the service potential of the asset, and the maintenance of the asset, which preserves the asset’s service potential?	Generally maintenance expense ensures that an asset remains fully operational, regardless of age. Refurbishment extends the life of an asset beyond what it would otherwise realistically have been expected to operate.
23(b) What supporting evidence should be specified in an ODV handbook to support a refurbishment-based asset life extension?	Refurbishment record, recorded in asset register (or on GIS)
23(c) Should an ODV handbook specify the accounting treatment of the cost of refurbishment work which leads to the life of an asset being extend?	Given that refurbishment will extend the life of an asset and hence result in a revaluation, the conventional treatment of refurbishment expense is problematic. Refer to sections 6.3 and 6.4
24 To what extent and how should capital contributions be recognised in applying the ODV methodology to system fixed assets?	Capital contributions are normally treated as revenue and should not affect the ODV.
25 How should the treatment and valuation of easement rights be specified in an ODV handbook? What are the important factors	Easements are generally viewed as intangible assets and should be recorded at current cost.

ISSUES PAPER QUESTION	OUR RESPONSE
that should be taken into account with respect to easement rights?	
26 Does the optimisation methodology as specified by the MED's ODV handbook reflect the appropriate optimisation rules to incorporate in an ODV handbook, and if not, what changes should be made? What should be the underlying fundamental assumptions and principles of an optimisation methodology? How can the optimisation methodology be best designed and presented to ensure maximum consistency and transparency of its application, and that the results of applying it can be independently replicated? What should be the allowed planning periods for different parts of a network? What should be the criteria incorporated into the optimisation process for service level (quality of supply, including security of supply), forecast demand (load growth) and valuation of underground networks? What are the costs and benefits of a more or less prescriptive approach to optimisation?	<p>Refer to sections 5.1, 5.7 and 5.9</p> <p>In general, relatively little benefit is gained from optimisation, since most New Zealand networks do not contain much "fat".</p> <p>It is important that optimisation is carried out within long planning windows, allowing better utilisation of asset sizes. The current planning horizons are too short.</p> <p>Optimisation procedures should not be prescriptive to the extent that it inhibits alternative network solutions, or higher levels of quality of supply than conventionally encountered (where required by customers).</p>
27 Should the Economic Value (EV) assessment as specified by the MED's ODV Handbook be retained as part of a valuation methodology for system fixed assets (noting that the removal of the EV assessment would change the valuation methodology to the so-called ODRC methodology)? What are the costs and benefits of retaining an EV component?	<p>We recommend that the EV test be discontinued. The ODRC valuation methodology should be adopted.</p> <p>Refer to section 5.1.2</p>
28 Assuming that the ODV method is used to value system fixed assets (and therefore that an EV assessment is relevant) is the EV assessment as specified by the MED's ODV Handbook appropriate for an ODV Handbook? If the specification of the EV assessment by the MED's ODV Handbook is not appropriate, how could it be improved?	<p>Yes, it is probably appropriate, but impractical, expensive to implement and with nominal influence.</p> <p>Refer to section 5.1.2</p>
29 With respect to the disclosure of the system fixed asset valuations, what is the appropriate form and extent of information that should be included in valuation reports to ensure transparency and consistency between lines businesses, and the availability of meaningful and useful information for the uses of disclosure information?	<p>Our members will have varying views on this. In general, disclosure per asset class (totals) should not be sensitive.</p>
30 Are there any other relevant issues or questions not identified above on which the Commission should receive submissions from interested parties?	<p>See the body of the report</p>

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