Meridian Energy Cross-Submission

Transmission Pricing Methodology:
Second issues paper – Supplementary 'Refinements' Consultation

24 March 2017

INTRODUCTION

The Electricity Authority seeks cross-submissions on refinement #4.[1] Refinement #4 was discussed in paragraphs [3.37] to [3.67] of its 13 December 2016 Supplementary Consultation Paper.

In refinement #4 the Authority proposed that:

1. Indexed historic cost (**IHC**) would be used as the valuation method for determining the amount to be recovered under the AoB charge for new investments which would result in a charge that was levelled in real terms.

2. For existing investments, IHC valuations would also be used to set a levelled charge as if such charges had applied when the asset was commissioned, but using a contemporary estimate of the asset's total life.

3. The Authority provided, however, that another method or methods could be developed by Transpower if they were service-based and cost-reflective, and would better promote the Authority's statutory objective.

In terms of each aspect of this refinement:

1. Meridian was broadly comfortable with the use of IHC valuations for new investments.[2]

2. In respect of existing assets, Meridian was strongly opposed to switching from the current depreciated historic cost (**DHC**) valuations used by the Commerce Commission to new IHC valuations.[3] Adopting the fiction that an IHC-based charge had applied since the asset was commissioned, and disregarding the depreciation that has been funded to date through a DHC-based approach which front-loads the recovery of deprecation, would breach the fundamental principle of regulatory economics that the total revenue collected should be set on the basis of a "normal" or "NPV=0" return.[4] The resulting charges would over-recover the cost of historic assets and so could not be said to be "cost reflective".[5] In respect of Pole 2 and Pole 3 alone, we estimated that over-recovery might be in the order of $400m.[6] The proposed use of a contemporary estimate of the asset's total life has the potential to exacerbate the problem of over-recovery.[7]

3. Meridian was also strongly opposed to leaving Transpower the discretion to adopt some other approach to asset valuation. The Authority is better placed (in terms of role, incentives, expertise and information) than Transpower to develop an asset valuation approach and a failure by the Authority to make decisions about such matters creates a high level of uncertainty as to the outcomes that will be produced by the new TPM.[8]

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1 Electricity Authority "Special Market Brief" (10 March 2017).

2 Meridian *Submission – TPM: Second Issues Paper: Supplementary consultation* (24 February 2016) (**Meridian submission**) at [36].

3 See Meridian submission at [35]-[101] and accompanying references.

4 Meridian submission at [49]-[69]; NERA Economic Consulting *Transmission pricing methodology – review of supplementary paper* (24 February 2017) (**NERA Report**) at section 3.2; Professor Stephen Littlechild *Report on the Electricity Authority's Supplementary Consultation Paper* (19 February 2017) (**Littlechild Report**) at [5]-[23].

5 Meridian submission at [49]-[69].

6 Meridian submission at [45] and Appendix 1.

7 Meridian submission at [40] and Appendix 1; NERA Report at [54]-[56].

8 Meridian submission at [95]-[98]; NERA Report at section 4.

Refinement #4 as applied to historic assets

This cross-submission focuses on the issue of switching to IHC valuations for existing assets. Meridian maintains its submissions on the other aspects of refinement #4.

Submitters on the Supplementary Consultation Paper suggested two advantages in applying IHC-based charges to existing assets.

First, it was submitted that the resulting charges would have the desirable quality of being time-neutral,[9] in that charges for a particular asset will not depend on the age of that asset.

Second, it was submitted that a levelled charge (such as one based on an IHC valuation) is more service-based than a charge based on a DHC valuation; this is said to be appropriate or important because the service provided by an asset at a particular time does not change, so neither should the charge for that asset.[10]

However, neither of these justifications withstands scrutiny.

In terms of time-neutrality, Meridian accepts that there are potential benefits from like assets being treated alike. However, the issue here is that an existing asset for which Transpower has recovered depreciation from transmission customers is not the same as a new asset. Respecting cost-reflectivity means that the charges for the existing asset must take into account the depreciation that has been funded to date.

The Authority itself expressed this view in the Second Issues Paper in reaching its original view that DHC values would be used for existing assets:[11]

> In particular, moving from DHC to RC [or IHC] for customers with heavily depreciated assets would result in those customers being charged more than the full cost of the assets they use, seriously breaching the principle of cost-reflectiveness discussed in chapter 5. This is because the costs of heavily depreciated assets would have already been largely recovered through existing charges. In addition, they may affect perceptions of fairness, and so reduce the durability of the proposed TPM. As with other factors that could undermine durability, this could give rise to uncertainty and therefore adversely affect investment efficiency.

Theoretical concerns about boundary issues between charges for existing and new assets cannot outweigh the "fundamental principle of regulatory economics"[12] that the total revenue collected for an asset should match the cost of the asset plus the capital cost of holding the asset (in other words, a "normal" or NPV=0 return).[13] There are also many other sources of potential boundary issues in any realistic TPM including assumptions about asset lives and the ex ante estimation of benefits. AoB charges to particular customers for similar assets will also vary greatly depending on the benefits that other transmission customers receive from each of the assets. The advocacy for time-neutral charges seems to be based on false scientism and not informed by the overall pragmatic nature of the TPM.

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9 Electricity Networks Association *Transmission pricing review: Second issues paper: Supplementary consultation* (24 February 2017) at [35].

10 Houston Kemp *Memo: Changes to the TPM proposed by the EA* (22 February 2017) at section 2.4 (for Trustpower *A submission on the Electricity Authority's 13 December 2016 Transmission Pricing Methodology – Second issues paper: supplementary consultation* (24 February 2017) Appendix G); Vector *Transmission pricing methodology: second issues paper – supplementary consultation* (24 February 2017) at [24].

11 Electricity Authority *Transmission Pricing Methodology: Issues and proposal second issues paper* (17 May 2016) (**Second Issues Paper**) at [7.161].

12 NERA Report at [39].

13 Electricity Authority *Transmission Pricing Methodology: Second issues paper: Supplementary consultation* (13 December 2016) (**Refinements Paper**) at [3.43]-[3.44].

Meridian estimated the over-payments that might arise from the proposed switch to IHC valuations in relation to the HVDC as a case study. Over-payments arise both by disregarding the front-loading of depreciation which has occurred through the DHC-based approach and where the asset life is extended by using a new estimate. Using a stylised model of Pole 2 and Pole 3 represented by a $750m asset with a 40 year life commissioned in 1992 and 2013, we estimated overpayments of $310m and $85m respectively.

Such outcomes would be inconsistent with standard principles of price regulation and with the Authority's own articulation of what it means for a charge to be cost-reflective.[14] The Authority's approach would amount to revaluation of assets without treating the revaluation gain as income. This is an approach that has been rejected by the Commerce Commission and the courts.

As discussed in our submission,[15] adopting IHC valuations for historic assets (and in particular the HVDC assets) would be at risk of a legal challenge on the basis that the proposed treatment of HVDC assets was inconsistent with the Part 4 price control regime and/or unlawful in the same way that the Commerce Commission's approach to charging was found to be unlawful in the *Vodafone TSO* case. Accordingly, Meridian considers that the Authority must specify in the guidelines that AoB charges for existing assets must account for depreciation on those assets as reflected in the present RAB values.

In terms of the submission that a levelled charge is "service-based" because the service provided by a transmission asset does not generally change over time, Meridian notes that providing depreciation that has been funded to date is taken into account (i.e. so that recovery is capped at the present RAB value), the recovery of the remaining revenue can be levelled over the remaining life of the asset.

The only objection to this could be if it resulted in a levelled charge that was not at the "correct" level. In workably competitive markets, charges tend towards NPV=0 returns, which is consistent with setting a levelled charge which takes into account past depreciation. Beyond this, such markets do not imply a "correct" level of charging in terms of particular prices that will apply at particular times.

As Stephen Littlechild notes:[16]

17. While real world competitive markets will tend towards normal (or NPV=0) returns, such markets do not produce strong predictions about how charges will vary over time. Furthermore, in such markets, different assets may have charges set on different bases.
18. In relation to transmission and distribution, the risk of technological change (such as solar and batteries) is one reason for charging a greater proportion of the cost in the near future, when demand is clearer, and a correspondingly lower price in the more distant future, when the nature of demand is less clear and may be weaker or even non-existent. Or if provider and customer mutually prefer some other pricing profile, by all means let them agree it, provided this does not adversely affect other customers.
19. In the case of historic assets, it seems to me that the case for insisting on uniform pricing over time is weakened, rather than strengthened, by basing it on the fiction that IHC-based charging had applied from the date of commissioning (para 3.61), which I understand was not the charging policy that actually obtained.
20. The proposal to apply IHC-based levelled charges appears to be driven by the assumption that, in workably competitive markets, charges are constant over time. This seems to me an abstract proposition that is not characteristic of real competitive markets, particularly when benefits, demand and technologies are changing over time. This assumption should not be allowed to compromise the achievement of other more important considerations such as cost-reflectivity.

14 Second Issues Paper at [5.11].
15 Meridian submission at [49]-[56].
16 See also NERA Report at section 3.2.1.4.

A levelled charge that collected only the remaining revenue is certainly no less service-based than a levelled charge set as if IHC had applied from an asset's date of commissioning.

Moreover, a switch to IHC would mean total charges would not be based on the cost of providing the service (i.e. "service-based"), but instead:[17]

> … will depend on a rather random combination of the amount that happens to have been paid to date based on the previous methodology and the amount going forward that is implied by a new methodology, a combination that has no economic significance or merit. The total paid for an asset over its lifetime would vary arbitrarily depending on how much of its life had passed at the time the new TPM took effect.

To this point it can also be added that assessing the historical costs of old assets to recreate the levelled charge that would have applied from the start of the asset's life is very difficult and generally avoided in regulatory economics. The Authority suggests that where such historic cost information is not available Transpower should use a "suitable proxy".[18] This would likely prove to be extremely controversial compared with using the depreciated RAB values which have been endorsed through the Commerce Commission's processes. The problem is avoided by using the present RAB values consistently with Part 4.

Further issue: a pooled approach

Two parties appear to suggest the Authority may be able to achieve its desired outcome by applying the approach currently used by Transpower for connection assets.[19]

Meridian opposes the suggestion that such an approach could be applied for valuation of assets for the purpose of the AoB charge. While it is difficult to meaningfully respond in the abstract, the range of problems with this approach would include:

- A pooled approach would not achieve NPV=0 on an asset-by-asset basis. Rather, the particular return on a particular asset would depend on how long it is in service, the balance between old and new assets in the pool over time and movements in relative asset costs.
- Since the total amount to be recovered on a new investment would no longer be known, the benefit of participation in transmission investment decision-making would be reduced.
- Implementation would require difficult decisions in terms of the number of asset pools and how to accommodate depreciation which had already been recovered on historic assets (although this might be possible through scaling back the value of such assets when used to apportion the total amount being recovered between assets).
- The question of what asset values would be used to apportion the revenue requirement would be controversial.

17 Littlechild Report at [6]-[7].

18 Refinements Paper at [3.76]-[3.77].

19 See Axiom Economics *Economic Review of Transmission Pricing Supplementary Consultation Paper: A Report for Transpower* (February 2017) at p 35 (section 4.1); and PwC on behalf of 14 EDBs *Submission to the Electricity Authority on Transmission Pricing Methodology Review: Second issues paper Supplementary consultation* (23 February 2017) at [57].

Conclusion

Meridian opposes switching to IHC valuations without accounting for depreciation funded to date in respect of all existing assets, but the problems are acute in relation to the HVDC assets.

One of the main parts of the problem definition that the new TPM is intended to solve is the arbitrary treatment of charging for the HVDC assets. Under the present regime, Meridian has paid (in 2017 dollars) approximately $1.5 billion in HVDC charges, of which approximately $1 billion has been towards capital costs. In total, South Island generators have paid approximately $1.4 billion towards capital costs on the HVDC assets. A "solution" that ignores depreciation funded by past HVDC charges will give rise to a new set of durability issues. It is hard to imagine how the use of IHC could be considered to be "objectively fairer, and therefore more durable."[20]

As NERA states, "it would not make sense to replace [the current TPM] with another one that would be perceived as inefficient and unfair."[21] Meridian has strongly objected to the separate treatment of HVDC assets and to the deeming of South Island generators as the sole beneficiaries of those assets. However, "ignoring this payment history and the NPV=0 principle would undermine confidence in the new regime, and therefore its durability."[22] In correcting the arbitrary and inefficient setting of HVDC charges historically, no reasonable decision-maker could ignore the reality that many of the HVDC assets have been largely depreciated.

Moreover, a simple solution exists in using the asset values which have been approved by the Commerce Commission and turning the unrecovered present value of the asset into an annuity.

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20 Transpower *TPM 2nd issues paper, supplementary consultation: Transpower submission* (February 2017) at p 13 (section 2.3.1).

21 NERA Report at [62].

22 NERA Report at [64].