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Submissions
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Transmission Pricing Methodology: Sunk Costs Working Paper

Mighty River Power welcomes the opportunity to provide feedback to the Electricity Authority's consultation on its sunk cost working paper for the development of the Transmission Pricing Methodology (TPM). No part of the submission is confidential.

Mighty River Power has jointly engaged consultants Castalia with Genesis Energy, Contact Energy and TrustPower to provide commentary on the Authority's sunk cost paper. Castalia have made a submission[1] directly to the Authority which we support.

1 OVERVIEW

The Authority has characterised several submitters, including Mighty River Power, as holding the view that:

- No dynamic efficiency benefits would result from adjusting prices to account for assets with sunk costs;
- Converting sunk costs to variable charges would give rise to pricing signals that would result in the inefficient allocation of resources.

The Authority argues sunk costs (which are the same as fixed costs in its view) can be ignored in marginal pricing decisions and can be recovered through variable pricing without any efficiency impacts. The conclusion is that as long as total economic efficiency is promoted then the existence of sunk costs in changing the TPM can be ignored.

Mighty River Power considers the characterisation above misrepresents its views. We have argued for instance that the sunk costs of the HVDC should be reallocated to resolve the current dynamic and static impacts. However, the same compelling case has not been

[1] Castalia (19 November 2013) "Response to Electricity Authority Transmission Pricing Methodology: Sunk Costs Working Paper" available from http://www.castalia-advisors.com/news_at_castalia.php&news_id=223

robustly established for the reallocation of other sunk assets proposed by the Authority. We discuss further these points in Section Three.

We have also not argued that that sunk costs cannot be recovered via variable charges. However, the current pricing mechanisms in the market are likely to achieve a high degree of static efficiency in recovering sunk or fixed costs. Shifting to variable pricing can only negatively impact on the efficiency of current arrangements.

In particular the variability and ex-post nature of the charges under the Authority's original proposal would have had material impacts for retail competition by significantly increasing working capital requirements for existing and new entrant retailers. We discuss further these points in Section Four.

Mighty River Power considers the key efficiency impacts from any revised TPM proposal need to be tested rather than assumed based on a partial analysis of economic theory. The Castalia report provides important guidance for the Authority in this regard.

2 RELEVANCE OF SUNK VERSUS FIXED COSTS

The Authority appears to be concerned that many submitters have failed to appreciate the difference between sunk and fixed costs. It has questioned the view that transmission assets are entirely sunk, considering that portions could be 'unbolted' and transferred to alternative uses[2].

Mighty River Power has previously indicated that any residual value of transmission assets is highly likely to be far less than the establishment, salvage and redeployment costs. This view has since been confirmed by Transpower[3].

We support the contention that for all practical purposes transmission assets are sunk even though it may be technically possible to reallocate a very small proportion[4]. The regulatory basis for transmission investment and cost recovery means that over their assumed operational life (the period for which regulatory approval was made) transmission assets are effectively sunk.

Despite expending substantial effort to argue that transmission assets are fixed rather than sunk, the Authority notes that:

> "The debate in the economics literature is about how best to recover fixed costs (and sunk costs are fixed costs), and not whether a distinction is required between sunk and other costs for efficient pricing."[5]

Mighty River Power agrees with this statement and discusses later how the current nodal pricing arrangements coupled with the existing TPM are highly consistent with the economic theory of efficient recovery of fixed costs.

In terms of the Authority's original TPM proposal we note the conclusion of Castalia that: "the concerns raised by industry participants about potential static efficiency losses remain valid, whether transmission assets are fixed or sunk."[6]

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[2] TPM Conference Transcript pp 78 and 149.

[3] As outlined in CEG (25 June 2013) "Transmission Pricing Conference – Response to Questions" Page 5.

[4] *Ibid.*

[5] TPM sunk cost working paper - Section 1.10

We also agree with the clear conclusions of consultants CEG and Castalia that the relevant consideration for the Authority is not whether transmission assets should be considered sunk or fixed costs, but whether any proposed changes to the TPM would lead to materially greater efficiency outcomes over the status quo.

3 DYNAMIC EFFICIENCY IMPACTS

Contrary to the characterisation put forward in the paper, Mighty River Power has not argued that there can never be dynamic efficiency benefits from the reallocation of sunk costs.

We have made clear our views that the current treatment of the HVDC sunk costs leads to dynamic inefficiency by reducing incentives to invest in future generation in the South Island[7]. These impacts[8] are well understood and have been robustly verified, including by the Authority in its original TPM proposal paper.

In comparison, the Authority's proposal to reallocate the sunk costs of all transmission assets post-2004 and over $2m has not been justified to the same level of rigour. We and other stakeholders have raised concerns with the Authority's problem definition and analysis in this regard[9].

Our comments regarding the lack of dynamic efficiency benefits related specifically to the Authority's TPM proposal. The reasons for this have been well articulated and include:

- The methodology would have changed the prices participants face but would not change at all the costs or timing of those transmission investments;
- For there to be dynamic efficiency benefits there must be demonstrable inefficiencies with the grid investment process administered by the Commerce Commission. No allegations have been made or analysis provided to date to support this;
- As Transpower has just completed a $2bn investment programme, there are few investments a revised TPM could meaningfully influence;
- Generators and loads will generally be influenced by other factors (such as proximity to fuel sources and access to markets) rather than transmission charges in locational decisions[10].

Dynamic efficiency could theoretically be promoted by *prospectively* signalling of the long run marginal costs (LRMC) of transmission to future investment, where there were opportunities for transmission investment costs to be reduced or commissioning deferred.

However, we agree with analysis that the Authority's original SPD methodology would act as a poor proxy for the LRMC of future transmission investment[11]. It is also questionable to what extent increased scrutiny would change investment decisions or lead to materially different information being put forward[12].

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[6] Castalia (19 November 2013) pg 7.

[7] Mighty River Power response to TPM unanswered conference questions (25 June 2013) pg 14

[8] As well as the static impacts associated with inefficient dispatch resulting from the HAMI charge.

[9] See recent submissions to the Authority's Cost Benefit Analysis consultation.

[10] The impacts on dynamic efficiency related to the HVDC highlight the problems of levying variable transmission charges over a narrow base of price sensitive participants.

[11] CEG (October 2013) "Economic Review of EA CBA Working Paper"– See sections 16 and 17

[12] Castalia (19 November 2013) pp 4-5

Castalia argue that while a conceptual link can be drawn between beneficiary pays charging for new assets, these conceptual links do not apply to existing assets[13]. The proposal in the paper for differential pricing for marginal and infra-marginal grid users risks inefficient reductions in demand as it presents no clear linkage to the actual willingness to pay. They argue that for this reason Ramsey pricing is generally regarded as the best method for differentiating on price.

4 STATIC EFFICIENCY IMPACTS

It is generally accepted that the existing nodal pricing framework along with recovery of the fixed costs via the current TPM is consistent with Ramsey pricing principles. This results in very high levels of static efficiency and is why "the New Zealand wholesale market design is widely regarded as being at the forefront of international best practice.[14]"

Mighty River Power has not argued that static efficiency will always be compromised where sunk costs are recovered via variable charges. Rather we and other stakeholders raised concerns that the move toward variable pricing under the Authority's original TPM proposal would reduce the high levels of static efficiency delivered under the current arrangements.

The clear feedback was that the Authority's claims that variable transmission charging would result in superior static efficiency outcomes relative to the status quo needed to be tested empirically rather than assumed. The sunk cost working paper does not advance this analysis, nor does the theory provide sufficient guidance to dismiss such concerns.

CEG cogently articulate how nodal prices are highly effective in signalling the SRMC of transmission. They reject the Authority's contention that a (as yet unspecified) TPM could result in material increases in productive efficiency by altering transmission prices to favour within-region over remote generation thus lowering aggregated delivered costs[15].

CEG consider static efficiency would be compromised by a move to variable pricing on the basis that remote generators will either increase their bids to reflect "costs that were once fixed but are now marginal, resulting in higher spot prices at the load centre[16]" or else will face stranding of their generation assets as well as potentially transmission.

Mighty River Power agrees with this assessment and considers the most likely outcome from imposing a variable transmission charge is that remote renewable generators will "spill" rather than generate, up to the level of any variable transmission charge.

As CEG note, such static inefficiencies could be reduced by levying charges to the generation sector across all generators in equal proportion. This would result in a shifting up of the merit curve. However, in this instance consumers may still be worse off as they would face interconnection charges being levied via higher variable energy prices rather than through fixed charges.

Mighty River Power's simple point to the Authority on the impact of variable transmission prices has been that volatility creates uncertainty which in turn creates risk. As noted by Castalia, this can have material impacts particularly for retail competition by introducing cash

[13] *Ibid* pg 9

[14] CEG (October 2013) page 13

[15] which is equal to physical energy losses plus any opportunity costs of congestion

[16] *Ibid* Pg 20 para 73

flow risks for electricity retailers. We strongly endorse this point. Our submission to the Authority's original TPM proposal raised the same concerns in terms of the impacts for retail competition from a shift to variable transmission pricing.

Castalia quantified the efficiency loss from the chilling effect transmission price volatility would have on retail competition as $54m in present value terms[17]. Independent economic analysis provided to Mighty River Power by Reunion estimated the working capital requirements to the entire industry from increased volatility at $90m[18].

The efficiency impacts therefore of moving toward more variable transmission pricing require careful and robust consideration.

5 CONCLUSIONS

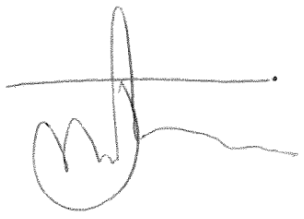
The implication in the Authority's paper is that the legitimate static inefficiency impacts identified by a number stakeholders in regards to the Authority's original TPM approach (particularly on retail competition) may be able to be ignored through a partial analysis of economic theory. This could lead to a pre-determined outcome in favour of its preferred approach without a robust assessment of the likely costs and benefits or alternatives.

The Authority has now been provided with considerable evidence via several economic consultant reports that the current TPM achieves a high degree of static efficiency consistent with economic theory (irrespective of whether costs are considered fixed or sunk). As the Authority itself notes, economic theory is unable to provide the same definitive guidance on the efficiency of shifting toward variable and differentiated pricing. In our view, such impacts have to be tested empirically.

The Castalia report summarises the key efficiency impacts the Authority should consider in developing its alternative TPM proposal which we consider provides more specific value and guidance in developing a revised TPM than the economic theory[19].

Please direct any queries on this submission to myself on nick.wilson@mightyriver.co.nz or 09 580 3623.

Yours sincerely,



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[17] Castalia (25 February 2013) "Review of the Electricity Authority's Cost Benefit Analysis of the Proposed Transmission Pricing Methodology." Pg 37

[18] Reunion (February 2013) "Proposed Transmission Pricing Methodology: Assessment of the CBA" Pg 24

[19] Castalia (19 November 2013) – Refer Table 4.1