Submission to the Electricity Authority on TPM Review: Sunk Costs

19 November 2013

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INTRODUCTION

1. Vector is responding to the Electricity Authority's (Authority) working paper "Transmission pricing methodology: Sunk costs" (Sunk Costs Working Paper), dated 8 October 2013.

2. No part of this submission is confidential and Vector is happy for it to be made publicly available.

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OPENING COMMENTS

4. Vector agrees with the Authority, subject to recognition that wealth transfers can impact on long-term benefit of consumers, that "if changing the methodology by which transmission prices are determined promotes overall efficiency in the electricity industry, the Authority may change the methodology, irrespective of the existence of sunk costs."[1]

5. When considering "overall efficiency" the Authority needs to make sure it takes into account both the static and dynamic efficiency impacts of any transmission pricing methodology option.

6. There can be trade-offs between static and dynamic efficiency that need to be taken into account in the assessment of the overall efficiency impacts. Equally, some options may result in both static and dynamic inefficiency; particularly if the options were developed absent a sound problem definition.[2]

7. In order for the recovery of fixed and sunk costs to promote dynamic efficiency the TPM needs to influence the use of existing assets in a way that lowers/delays future investment requirements i.e. minimises the future cost of delivered (transmission plus generation) energy. This suggests a TPM based on the LRMC of transmission.

8. The 2012 TPM Proposal, in contrast, capped SPD charges at average cost (which could be well below LRMC during periods of peak usage)[3] and was pre-occupied with the question of whether a sunk investment (or largely sunk, or fixed and sunk investment, depending on your perspective) is economic and should have been built/approved.

RELEVANCE OF THE DISCUSSION ON SUNK COSTS?

9. The Sunk Costs Working Paper goes into considerable detail about the distinction between fixed and sunk costs, including a large amount of academic quotes and references. It is less than clear what implications the Authority believes should be drawn from this.

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[1] Paragraph 9.8, Electricity Authority, Working Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

[2] Refer, for example, to the section "Opening comments and the Authority's problem definition" in Vector's Submission to the Electricity Authority on TPM Review: CBA, 15 October 2013.

[3] See, for example, Vector's stylized example in the subsection "Capturing capacity versus through-put services" of "Submission to the Electricity Authority on Transmission Pricing Methodology: Issues and proposals", 1 March 2013.

10. The lack of clarity is highlighted by the statement 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." (emphasis added)[4] That being the case, why labour the distinction between fixed and sunk costs?

11. If the Authority considers there is a useful distinction to be made between fixed and sunk costs then the Authority should empirically measure and define the extent to which Transpower's assets can be categorised fixed or sunk and the implications of this for achievement of dynamic and static efficiency.

12. The Sunk Costs Working Paper also makes some idiosyncratic comments about sunk costs that serve to confuse rather than clarify the distinction between fixed and sunk costs. This is notable in the statement that "There is undoubtedly an opportunity cost to the Crown in retaining its investment in Transpower. If it were to sell the firm to another party to use the assets in their current use, the Government would free up financial capital which could be applied to its other priorities. From the perspective of the owners of Transpower, and potential investors, the capital employed in the transmission grid cannot therefore be considered sunk."[5] For the avoidance of doubt, whether an asset is sunk or not does not hinge on whether it could be sold or has a market value.

STATIC VERSUS DYNAMIC EFFICIENCY

13. It appears that what the Sunk Costs Working Paper is attempting to convey is that transmission pricing can have both static and dynamic efficiency impacts. A TPM Proposal could be overall efficient even if it harms static efficiency, if there are countervailing dynamic efficiency benefits.

14. Vector has been very clear in its submissions that there can be a trade-off between static and dynamic efficiency (and that some pricing methodology options, such as the Authority's TPM proposal could harm both static and dynamic efficiency).

15. Vector has acknowledged, for example, in advocating the introduction of full locational pricing for electricity transmission, that locational pricing could minimise delivered energy (aggregate transmission and generation investment) costs over-time (enhancing dynamic efficiency), but result in under-utilisation (from a static efficiency perspective) of fixed and/or sunk transmission investment in the short-term.

16. Vector's cross-submission on the Decision Making and Economic (DM&E) framework for transmission pricing is also germane to the matter of static versus dynamic efficiency. Vector pointed out that parties such as Meridian Energy were relying on static efficiency arguments as their basis for challenging the current HVDC charges, even though some of the same parties also claimed that they considered dynamic efficiency to be more important than static efficiency.

17. Vector has also made the same criticism in relation to the Authority's assessment of the efficiency of the current HVDC link charge in the TPM Issues Paper. The Authority's assessment is premised on a static efficiency analysis that treats the transmission grid

[4] Paragraph 1.10, Electricity Authority, Working Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

[5] Paragraph 5.10, Electricity Authority, Working Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

as sunk, and therefore focuses on minimisation of generation only costs, rather than aggregate generation plus transmission. We repeat our comments below:[6]

> Vector has previously observed that "the current HVDC link pricing, at least, provides a pragmatic form of partial locational pricing, with locational pricing limited to a North-South Island pricing signal" …
>
> In order for the Authority to determine the locational signals provided by the current HVDC charges are inefficient it would need to determine: (i) the long-run marginal cost (LRMC) of electricity transmission from the South Island to the North Island; and (ii) that the current HVDC charges exceed LRMC.
>
> It is not sufficient to determine that current HVDC pricing would result in higher cost (North Island) generation investment, compared to (South Island) generation than would occur absent the HVDC charges. This reflects a static efficiency perspective where transmission is treated as sunk so they can be ignored.
>
> The Authority rightly points out that "new investment in generation in the South Island could require further investment in the HVDC link". In Vector's view, if the Authority adopted a dynamically efficient approach to transmission pricing it would signal these future cost implications of decisions to invest in South Island generation.
>
> Removal of current HVDC charges could (conceivably) result in lower (short-term) cost (South Island) generation plant being built, but at the (longer-term) cost of higher transmission costs. A dynamically-efficient approach would seek to minimise generation plus transmission costs in the long-run. [emphasis added and footnotes redacted]

MISINTERPRETATION OF SUBMITTERS' VIEWS

18. The Sunk Costs Working Paper misrepresents the views of some submitters, including Vector, and appears to use this misrepresentation as a basis for dismissing their arguments against the Authority's 2012 TPM Proposal.

19. The Authority, for example, argues that "Economic theory does not support the view of some submitters that prices should not reflect sunk costs …."[7] Vector is not aware of any submitter that has made any such submission. The overall amount of revenue Transpower is allowed to recover is set by the Commerce Commission, includes sunk and fixed costs and is outside the scope of the review of the TPM.

20. The statement goes on to say that "Economic theory does not support the view … that fixed costs should not be recoverable by variable charges, when setting infra-marginal prices."[8] The distinction between marginal and infra-marginal pricing is simply not relevant as the Authority's proposed TPM, and the SPD method in particular, is based on a set of charges for transmission that are not designed to be infra-marginal.[9]

21. The Authority also asserts "Some submitters claimed that no dynamic efficiency benefits would result from adjusting prices to account for assets with sunk costs … They claimed the changes may in fact result in efficiency losses instead."[10]

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[6] Paragraphs 98 – 102, Vector, Submission to the Electricity Authority on Transmission Pricing Methodology: Issues and proposals, 1 March 2013.

[7] Paragraph 1.13, Electricity Authority, Working Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

[8] Paragraph 1.13, Electricity Authority, Working Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

[9] The costs allocated by the TPM (as charges) are designed to recover the costs of owning, operating and expanding the transmission system and the revenue required to do this is regulated by the Commerce Commission in the long term interests of consumers.

[10] Paragraph 2.2, Electricity Authority, Overview Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

22. The majority of submissions focused on how the Authority's specific proposal would distort both static and dynamic efficiency. This does not mean, as the Authority effectively asserts, that submitters do not believe there are options for changing the way sunk costs are charged that would promote dynamic efficiency.

23. The misinterpretation is clear from the Authority's claim that "CEG make a strong claim that "there can be no dynamic efficiency benefits" from adjusting prices to incorporate the cost of sunk assets."[11] What CEG actually said is that "There can be no dynamic efficiency benefits associated with applying a 'beneficiaries pay' approach to … sunk costs". The CEG statement was specific to the Authority's proposals and is much narrower than the Authority claims.

24. The CEG report for Transpower, "Economic Review of EA CBA Working Paper", dated October 2013, makes it clear CEG understands transmission pricing can have both static and dynamic efficiency impacts.

25. CEG makes it clear that, in order to promote dynamic efficiency, "the overall price difference between … two locations should ideally reflect the LRMC differential that is not already reflected in the nodal price differential, i.e. the "gap" between LRMC and SRMC."[12] It is clear CEG believes LRMC pricing, and not the Authority's beneficiary-pays proposal, may promote dynamic efficiency. This is not a surprising conclusion to draw from CEG's reports given that the beneficiary-pays/SPD method could actually send the opposite pricing signals to LRMC pricing.[13]

26. The Authority has specifically categorised Vector as holding the view that "the proposed methodology would convert a fixed or sunk cost to a variable charge ... the proposed changes would give rise to pricing signals that would cause inefficient allocation of resources. That is, in their view, the resulting pricing signals would prevent resources being applied to their highest value use." [14]

27. Vector did not and has not said it is necessarily inefficient to convert fixed and/or sunk costs into variable charges per se. What Vector said in its submissions on the TPM Issues Paper and at the TPM conference was that the way the Authority was proposing to convert fixed or sunk costs into variable charges would distort both dynamic and static efficiency.

28. The reference the Authority has made to Vector's comments at the TPM conference about variabilising fixed and/or sunk costs creating static inefficiency was just one example of the distortions the Authority's 2012 TPM Proposal would cause. It does not imply anything about Vector's views on dynamic efficiency. The statement was made in relation to a specific question about per megawatt charging for RCPI charges. Vector simply stated that such an approach would result in static inefficiency. We had already detailed the detriment the proposal could have on dynamic efficiency earlier in the conference.

29. Vector's submissions, and answers provided at the TPM conference, have also emphasised that the TPM proposal would: (i) have the same impact as 'pay-as-bid' on

[11] Paragraphs 4.4 and 4.5, Electricity Authority, Working Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

[12] Paragraph 57, CEG report for Transpower "Economic Review of EA CBA Working Paper", dated October 2013.

[13] A point that was discussed in Vector's submission on the Issues Paper. Refer, for example, to the section "Substantial problems with the SPD Method, Submission to the Electricity Authority on Transmission Pricing Methodology: Issues and proposals, 1 March 2013.

[14] Paragraph 4.6, Electricity Authority, Working Paper, Transmission pricing methodology: Sunk costs, 8 October 2013.

dispatch;[15] (ii) result in subsidisation of users of the network during peak periods by users with smoother usage profiles; and (iii) distort use of pre and post-2004 assets. We have been very clear that these are the opposite of the signals that would be expected from either a statically or dynamically-efficient TPM, and that we consider the 2012 TPM Proposal would be harmful to both static and dynamic efficiency.

30. For the avoidance of doubt, Vector recognises static efficiency does not necessarily require that fixed or sunk costs are recovered through fixed charges. Rather static efficiency requires any shortfall from (short-run) marginal cost pricing to be recovered in a way that minimises the distortion to marginal cost pricing. Options include Ramsey pricing (use of variable charges), different intra-marginal prices (as the Authority has suggested), fixed charges, taxes etc.

CONCLUDING REMARKS

31. Transmission pricing can impact on both static and dynamic efficiency.

32. There can also be trade-offs between static and dynamic efficiency.

33. While, as a general rule, Vector believes greater weight should be given to dynamic efficiency than static efficiency, it is important that the static and dynamic efficiency impacts of any proposal are robustly and rigorously analysed. This includes in both qualitative and quantitative terms. The difficulty in quantifying dynamic efficiency impacts in a meaningful way heightens the importance of a robust qualitative assessment (and underlying problem definition).

34. While there can be a trade-off between static and dynamic efficiency, Vector does not believe this is the case in relation to the Authority's 2012 TPM Proposal. Vector believes the 2012 TPM Proposal would harm both static and dynamic efficiency. The submissions made in response to the TPM Issues Paper raised valid and significant concerns about the impact of the Authority's TPM Proposal both on static and dynamic efficiency.

35. The Authority needs to be mindful that just because a particular submission may criticise the TPM Proposal on the basis that it undermines static efficiency, or that it undermines both static and dynamic efficiency, it does not follow that the submitter does not recognise that transmission pricing, and recovery of fixed and/or sunk costs, can be used to promote dynamic efficiency.

36. The Sunk Costs Working Paper fails to establish that the absence of explicit distinction between fixed and sunk costs actually invalidates submitters' arguments in any material way, or that there is a significant enough difference between fixed and sunk costs to make the distinction relevant.

37. The Sunk Costs Working Paper asserts that submitters treated fixed and sunk costs as synonymous terms; which is at least partially based on a misunderstanding of some parties' submissions. (Notably, the Authority's TPM Issues Paper made no distinction between sunk and fixed costs, and only made two references to sunk costs.[16])

38. Notably, most of the criticism of the current TPM, and the HVDC link charges, is based on a static efficiency perspective rather than a dynamic efficiency.

[15] These static efficiency impacts of the TPM Proposal are well articulated by the Authority in its 5 June 2013 briefing "the economics of electricity paper".