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Submissions
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To whom it may concern,

Cross-Submission to the Electricity Authority on the Decision-Making and Economic Framework for Transmission Pricing Methodology Review

Introduction

1. Vector welcomes the opportunity to make a cross-submission in relation to the Electricity Authority's (Authority) "Decision-making and economic framework for transmission pricing methodology review" Consultation Paper (TPM Framework Paper), dated 26 January 2012. No part of our submission is confidential.
2. While the Authority has appropriately taken a "first principles" approach to the Electricity Transmission Pricing Methodology (ETPM), we are disappointed that a number of submitters have used this consultation as yet another vehicle for relitigating HVDC pricing. The Meridian submission is the most egregious example of this. Vector submits that the Authority should not have regard to any such submissions.
3. Consistent with the Authority's statement on the purpose of the consultation, Vector has limited the cross-submission to matters relevant to the Authority's draft framework.¹

Dynamic v static efficiency

4. Vector agrees with Meridian that "the overarching statutory objective of the long-term benefit of consumers prioritises the promotion of *dynamic efficiency*."² Vector's submission emphasised that "dynamic efficiency is more important than static efficiency and, accordingly, where there is a tension between the two, dynamic efficiency should be given greater weight."³
5. However, Meridian also asserts that "New Zealand has committed transmission investment that will meet the majority of the country's demand growth for the next 10 to 15 years. Therefore, transmission pricing is likely to have no material influence on transmission investment decisions for the foreseeable future."⁴

¹ Q7, Electricity Authority, Questions and responses, 29 February 2012.

² Paragraph 46, Meridian Energy, Meridian Energy submission on decision-making and economic framework for transmission pricing methodology review: consultation paper", 24 February 2012.

³ Paragraph 46.

⁴ Paragraph 4, Meridian Energy, Meridian Energy submission on decision-making and economic framework for transmission pricing methodology review: consultation paper", 24 February 2012.

6. Meridian is effectively contradicting itself, claiming that dynamic efficiency should be granted primacy over static efficiency, but arguing that a static efficiency approach should be taken because a large amount of investment is committed.
7. Meridian is not alone in (implicitly at least) advocating a focus on static efficiency. Contact Energy also states that assessment of the benefits of any changes to the ETPM "must ... take into account the current state of investment commitment ... investment decisions required in the foreseeable future are relatively minor. The key efficiency issue is therefore the efficient utilisation of the existing and committed grid."⁵ In a similar vein, Trustpower advocates focus on static efficiency, arguing that "[d]is-incentivising the use of assets which have already been built is clearly inefficient, and the charging regime should reflect that."⁶
8. Mighty River Power also focuses on static efficiency over dynamic efficiency, claiming that sending investment cost signals "would result in ... [t]he deferral or cancellation of proposed generation and as such under-utilisation of the transmission infrastructure."⁷ Mighty River Power's comments are curious given transmission investment cost signals would impact on which generation investments go ahead and where, but not on the total amount of generation investment. Given the level of generation investment would not be impacted, it is difficult to see how transmission infrastructure would be under-utilised. It may be that parts of the grid are used less, but other parts would be utilised more.
9. Transpower is somewhat more explicit about the trade-offs between dynamic and static efficiency arguing that "dynamic and static efficiency objectives can conflict" and that "[a]t a high level, the transmission pricing methodology (TPM) is concerned with the static efficiency objective ..."⁸ Vector acknowledges these statements, with the exception that HVDC pricing is aligned with dynamic rather than static efficiency.
10. Vector does not agree with Meridian, Contact, Trustpower, Mighty River and Transpower that static efficiency is more important than dynamic efficiency in relation to transmission. We instead agree with Rio Tinto Alcan that "[i]t is generally accepted that consumers are better served through pricing structures that maximise dynamic efficiency, even if that may lead to a short-term loss of static efficiency" (emphasis added).⁹

Additional comments

11. Vector has the following additional comments:
 - a. **Threshold to justify changes to the ETPM:** Vector's submission emphasised the importance of demonstrating a clear and substantial (net) benefit before the Authority could consider making changes to the ETPM. This is a view shared by numerous other submitters, eg Contact,¹⁰ Genesis,¹¹ and Orion.¹²
 - b. **Wairakei:** Vector was somewhat surprised by Contact Energy's Wairakei example. Contact correctly points out that the Wairakei grid upgrades were to enable geothermal generation investments for Contact and Mighty River to be connected to the transmission grid.

⁵ Page 5.

⁶ Page 4.

⁷ Page 3 and 9.

⁸ Page 6.

⁹ Paragraph 10.

¹⁰ Page 3.

¹¹ Page 1.

¹² Paragraph 3.

It is not clear from Contact's submission why consumers should be expected to pay for grid upgrades intended to enable new generation. The principal difference between the Wairakei upgrade and connection assets is that more than one generator needed the upgrade to supply generation. Clearly, Contact and Mighty River are both exacerbators and beneficiaries.

- c. **Location of generation:** Contact Energy states that "new generation, especially renewable, locates where the fuel resource is located".¹³ This ignores: (i) that there are a multitude of fuel resources in New Zealand and therefore a multitude of locational options for generation investment; (ii) some fuel sources are movable, eg coal, gas and oil; and (iii) submissions made to TPAG that transmission pricing impacts on generation location decisions.
- d. **Complexity:** Vector has some sympathy for Mighty River's comment that "the TPM should avoid applying overly theoretical complexity to a market the size of New Zealand."¹⁴ The work previously done by Mighty River and Grant Read on Tilted Postage Stamp (TPS) illustrates how complexity can be avoided in implementing mechanisms such as full locational pricing.

Next steps

- 12. Vector agrees with Unison that "[a] key part of the present project should be to evaluate the evidence that has been developed during the pricing debates to date, its relevance to the decision-making framework and (where relevant) address any deficiencies to come to an informed decision."¹⁵
- 13. We depart from Meridian and Mighty River who suggest that "transmission pricing issues and options have been comprehensively analysed"¹⁶ or that TPAG has provided a "robust and exhaustive analysis".¹⁷ It is noteworthy that Rio Tinto, another member of TPAG, has stated that "TPAG did not provide a comprehensive and durable framework for making decisions about the TPM".¹⁸ Vector made similar comments in our submissions to TPAG and on the TPM Framework Paper.
- 14. Vector considers that a critical misdirection in the analysis undertaken reliance on GEM modelling to determine full locational pricing (eg TPS) would not provide sufficient benefits to justify implementation, and the consequent TPAG/GEM assessment that removing the locational signal in HVDC pricing would improve efficiency.
- 15. Dr Biggar and a number of submitters to TPAG raised concerns about the GEM model that were not addressed by TPAG.
- 16. While it has been claimed that the GEM analysis is "conservative", the opposite is true. The results are a function of the assumptions and methodology adopted in the GEM, eg 90% of transmission investment excluded from the analysis, adjustment of the assumptions around the timing of new South Island generation, no allowance for the impact of uncertainty about future transmission pricing methodology changes, and 100% pass-through of purported cost savings. It is unsurprising, for example, that if 90% of transmission investment is excluded from the GEM analysis, it will conclude that there is little or no benefit from locational pricing signalling future transmission investment costs. The modelling

¹³ Page 13.

¹⁴ Page 4.

¹⁵ Paragraph 4.

¹⁶ Paragraph 3.

¹⁷ Page 16, Mighty River Power, Consultation Paper – Decision-making and Economic Framework for Transmission Pricing Methodology Review, 24 February 2012.

¹⁸ Paragraph 3.

effectively collapses into a static efficiency analysis, which can be expected to conclude that minimising 'generation only costs' will result in lower costs than minimising 'transmission plus generation' costs.

17. From Vector's perspective there are outstanding issues as to whether there would be net benefits to the introduction of locational pricing and the direction of any efficiency impacts from removal of current HVDC pricing. Mighty River has tried to claim that "[t]he main dispute within TPAG was not around the veracity of these [HVDC] inefficiencies, but whether they were material enough to warrant changes to TPM."¹⁹ This claim conflicts with a wide range of submissions made to TPAG, and further reinforces our view that TPAG did not provide a "robust and exhaustive analysis".
18. Vector agrees with Unison that "[i]t may be that GEM was not the best, most appropriate tool" to make an assessment of whether locational pricing (eg TPS) should be introduced and "an evaluation of this work might suggest further analysis to be undertaken".²⁰ Vector agrees with these views. The Biggar Paper and submissions made to the TPAG illustrate that the GEM analysis provided a fundamentally flawed basis for rejecting full locational pricing.
19. Vector also reiterates that if market-based or locational pricing is rejected, the Authority should consider options for incentive-free charges on both consumers and generators.
20. Vector's submission and cross-submission both advocate that the Authority should consider full locational pricing and, particularly if market-based or locational pricing is rejected, whether "incentive free" pricing should be applied to consumers only or shared by consumers and generators. The range of ETPM options the Authority should consider are wider than the two TPAG HVDC pricing options some submitters have suggested the Authority should restrict its consideration to. Vector, accordingly, agrees with NZIER that "[t]he Authority's framework cannot and should not be precise about which pricing options will pass relevant Code amendment tests ... all options remain on the table at this stage."²¹

Concluding remarks

21. It is apparent from submissions that:
 - a. The Authority should set a high threshold to determine whether changes to the ETPM should be made.
 - b. The Authority will need to make a judgement about how to balance the trade-off between short-term (nodal pricing) and long-run (transmission investment) pricing signals. Vector believes, consistent with the objective of "long-term benefit of consumers", that the Authority should place greater weight on dynamic efficiency.
 - c. The analysis undertaken to date has not been sufficiently robust to determine whether or not full locational-based pricing should be rejected.
 - d. Consideration should be given to whether "incentive free" pricing for interconnection should be applied to consumers only, shared by consumers and generators, or all be charged to generators.²² This is an area of

¹⁹ Page 2.

²⁰ Paragraph 4.

²¹ Page 3.

²² As mooted by Orion. Paragraph 9, Orion, Submission on Transmission Pricing Framework Paper, 24 February 2012.

transmission pricing that has been neglected, not helped by the domination of the HVDC pricing issue.

22. If the Authority has any queries regarding Vector's submission or would like further information, please contact Robert Allen, Senior Regulatory Advisor, on 09 978 8288 or robert.allen@vector.co.nz.

Kind regards



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