PACIFIC **ALUMINIUM**

Submissions
Electricity Authority
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By email to: submissions@ea.govt.nz

TRANSMISSION PRICING METHODOLOGY: SECOND ISSUES PAPER: SUPPLEMENTARY CONSULTATION: CROSS SUBMISSION ON VALUATION METHOD

Pacific Aluminium welcomes the opportunity to make a cross submission on the submissions received by the Authority on its Transmission Pricing Methodology: Second Issues Paper, Supplementary Consultation. As requested by the Authority, we have limited our cross-submission to those aspects of the submissions which commented on the valuation method for determining the total and annual amount to be recovered under the proposed area-of-benefit charge for an investment.

Our submission is attached to this letter. Should the Authority consider cross-submissions which address other topics, Pacific Aluminium asks that it also be given the opportunity to make cross-submissions on those topics.

Yours sincerely

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Pacific Aluminium's cross-submission on the valuation method

Pacific Aluminium gave extensive consideration to valuation method in its submission and concluded:

a) It is vital to consider the impact that policies, such as the proposal to adopt the Indexed Historical Cost (IHC) valuation method to calculate AoB charges, have on the overall TPM, not just on the charge at hand;

b) That constant real AoB charges are not necessarily more market-like, service based or cost reflective than AoB charges based on Transpower's regulated revenue allowance;

c) That using the IHC valuation method is likely to mean that the residual will not reduce over time and may increase, and that this will disadvantage customers in low growth areas, who will continue to subsidise investment to meet the needs of customers in high growth areas; and

d) That deviating from using the revenue allowance determined by the Commerce Commission as the basis for the AoB charge will undermine the efficiency and durability of the TPM.

1. Other than the detailed consideration given in our submission, few of the submissions on the Supplementary consultation to the second issues paper have provided detailed analysis of the impact of the Authority's proposal to adopt the indexed historical cost (IHC) valuation method for the purpose of calculating a constant real AoB charge for eligible investments.

2. In this cross-submission, Pacific Aluminium has provided comments on those submissions that have provided the more detailed comments and reasoning, in particular the submissions from Trustpower, Meridian and Transpower. Our working assumption is that this cross-submission will be read in conjunction with our own submission, so we have not sought to repeat the arguments made in that submission again in this cross-submission.

It is asserted that a workably competitive market for transmission services does not exist

3. The Authority has proposed that an AoB charge based on the IHC valuation method, which is constant in real terms, will better reflect outcomes in a workably competitive market for utility services than an AoB charge equal to the revenue allowance set by the Commerce Commission using the Depreciated historical Cost (DHC) valuation method.

4. The Authority considered in its Supplementary consultation paper how a utility-type service might be priced in a hypothetically workably competitive market. This intuitive reasoning led the Authority to propose its indexed historic cost valuation method for determining the AoB charge, which would be constant in real terms.[1]

[1] Supplementary consultation paper, paragraphs 3.45, 3.46.

5. Professors Bushnell and Wolak and, separately, Professor Yarrow, in reports attached to the Trustpower submission, pick up on the Authority's referencing to outcomes in workably competitive markets, with implications for the choice of valuation method.

6. Professors Bushnell and Wolak challenge whether outcomes of competitive markets are the right benchmark for designing transmission pricing as competition is not feasible in transmission services. They suggest that: "Rather than trying to force market outcomes on sectors where competitive markets do not, and likely cannot, exist, network regulators should work to ensure those networks serve the broader mission of enhancing competition in the sectors where market mechanisms are possible: wholesale and retail electricity sales.[2]

7. This conclusion by Professors Bushnell and Wolak conflates two propositions. The first proposition is that workably competitive markets do not exist for transmission services and hence speculation as to the pricing outcomes of such non-existent markets may be of limited value. Pacific Aluminium made a similar point in its submission on the Supplementary consultation paper.[3]

It does not follow that the lack of a workably competitive market justifies a tax-like approach to transmission pricing

8. The second proposition is that because competitive markets do not exist, "market-like solutions [to pricing] are not particularly desirable in the transmission network context."[4] Professors Bushnell and Wolak would have the Authority abandon the concept of an AoB charge and place "a disproportionate, if not complete, share of network costs upon load [as] consumers are typically less sensitive to prices than generators …"[5] That is, transmission charges, should be designed to be tax like to minimise behavioural responses to the charges.

9. This second proposition does not follow from the first. The fundamental characteristic of a 'market-like' price, and the characteristic which distinguishes a price from a tax, is that a price is expected to collate and convey information. A 'market-like' price aims to improve economic wellbeing over time *because* it impacts on a multitude of decisions over time. Grid users, Transpower, and regulators would make decisions differently in the future because of the information collated and conveyed by an AoB charge. These decisions will be based on their own preferences and on the relative prices of inputs available to them, and those decisions will in turn impact on future AoB charges. A tax, however, will typically be designed so as to minimise its impact on future decisions.[6]

10. The Authority has shown in its work to date the major problems which arise when charges for transmission services are divorced from the benefits and costs of the service and are designed as a tax. Examples given by the Authority in its Second issues paper include:

    a. encouraging generators to develop generation options around the Wairakei Ring ahead of other options with lower overall economic costs (para 6.14)

    b. potential decisions by major users on whether to remain in production (para 6.15)

[2] James Bushnell, Frank Wolak, *Beneficiaries-pay pricing and market like transmission outcomes*, February 2017,page 4.

[3] Pacific Aluminium, A submission from Pacific Aluminium to the Electricity Authority on the: Transmission Pricing Methodology: Second Issues Paper: Supplementary consultation

[4] James Bushnell, Frank Wolak, *op cit*, page 6.

[5] James Bushnell, Frank Wolak, *op cit*, page 7.

[6] Except for taxes specifically designed to alter behaviour, such as taxes on tobacco.

c. incentives for generators to develop new generation options in the lower South Island without accounting for the additional interconnection investment costs (para 6.16)

d. gas fired generators having an incentive to locate close to sources of gas even if the overall cost of locating elsewhere is less (para 6.16)

e. incentives for industrial customers to locate to minimise costs of inputs other than transmission (para 6.18)

f. incentives for distribution entities to encourage Transpower to build interconnection assets (para 6.10).

11. As these examples illustrate, it is the infra-marginal prices for transmission – that is, the overall level of transmission charges for the services received (not just the nodal price for the use of the existing grid) - which inform the total cost and benefit assessments by grid users, and hence resource allocation decisions over time.

Prices are not required to be constant in real terms in order to be "market-like"

12. To be 'market-like' a price need not attempt to reflect some view of an 'optimum' price – as Professor Yarrow observes, "deducing or calculating an 'optimum' becomes a utopian exercise, usually because the information available … is far short of sufficient for the exercise."[7] When advising the Commerce Commission on asset values which would best met its objective of promoting outcomes consistent with outcomes of workably competitive markets, Professor Yarrow found the most productive way to proceed was to give particular weight to the types of commercial arrangements observed in those markets which, whilst competitive, shared major, salient features with electricity networks.[8] These features include:[9]

a. large and lumpy investments

b. longish investment lags – that is, significant time lapses between taking an investment decision and first service provision

c. durable assets – that is, assets with long economic lifetimes

d. asset specificity – a significant difference between the value of an asset in serving its original, intended purposes and its value in its best, alternative use.

13. Professor Yarrow's Panel of Economic Experts concluded that competitive markets that exhibit these features are characterised by a higher prevalence of long-term contracting between suppliers and customers. The detail and duration of these contracts would "depend upon the specifics of the economic context and of expectations of the future *as they appear at the time the contract is struck"* (emphasis in the original).[10] Contracts settled at a later date will have terms, including

[7] George Yarrow, *Some awkward problems raised by the Electricity Authority's review of the Transmission Pricing Methodology,* February 2017, page 3.

[8] George Yarrow, ibid, page 8.

[9] The High Court queried whether markets with these characteristics are the relevant markets from which to draw inferences on the outcomes from workably competitive markets. However, this critique is relevant to the Commerce Commission's statutory objective of promoting outcomes consistent with outcomes in workably competitive markets, and not to the work of the Authority which must promote economic efficiency given the real world features of electricity markets. Wellington Airport & others v Commerce Commission [2013] NZHC 3289, pages 121 – 324.

[10] George Yarrow, ibid, page 9

prices, which differ from those determined in earlier periods. As a result, "there will, in fact, be a multiplicity of prices in the market at the later times, including for products/services that, at those later times, are economically similar".[11] As Professor Yarrow observes, there is nothing abnormal about this outcome – it does not signal economic inefficiency.

14. These factors led Professor Yarrow and his panel to strongly recommend depreciated historic cost valuation, rather than replacement cost valuation, as consistent with observations in workably competitive markets. Under depreciated historic cost valuation methods, current market conditions are taken into account at the margin when new investment is made. This means that "prices reflect costs, but iteratively, gradually and continuously; not periodically and sharply".[12] The profile and speed of this iteration would of course depend upon the mix and age profile of assets utilised in providing the service being priced.

15. Like Professor Yarrow, the Authority also drew on parallels with long-term contracts in the transport sector when it developed its decision-making and economic framework for transmission pricing methodology review.[13] The Authority observed that:

    a. Long-term contracts are sometimes a key feature of transport pricing, especially where producers have limited choice of transporters and have substantial investment in their own facilities.

    b. Long-term contracts typically require the producer to bear the costs of transport.

    c. Instances of consumers entering into long-term contracts for transport services are rare (because it exposes the consumer to opportunistic behaviour by producers).

16. The Authority observed that when the industry developed a proposal for market-based decision making for investment in the grid, it also considered that payments for assets would have been on a long-term contractual basis.[14]

17. As Professor Yarrow and the Authority describe – long term contracts are a feature of markets similar to electricity networks and the existence of these contracts would commonly mean:

    a. High charges are paid earlier in the life of an asset than in the later years, reflecting the higher risks to the asset owner on obtaining a return in the later years (because demand might change, or assets become obsolete or by-passed) and that financing tends to be available for a period less than the physical life of the asset.

    b. Prices paid reflect the conditions in place when the contract was entered into, and not current replacement values.[15]

    c. Producers, rather than consumers, would typically pay transport costs.

[11] George Yarrow, ibid, page 9

[12] George Yarrow, ibid, page 10.

[13] Electricity Authority, Decision-making and economic framework for transmission pricing methodology review: Consultation Paper, 26 January 2012, paragraphs 4.1.7 – 4.1.9.

[14] Electricity Authority, ibid, para 4.3.13 – 4.3.14.

[15] With exceptions for some forms of assets, notably land.

18. In short, this supports Pacific Aluminium's positions that the pricing outcomes which would result from AoB charges set on the basis of depreciated historic cost are broadly consistent with outcomes in real world competitive markets with high capital investment

Applying IHC to historical assets will result in over-recovery for those assets

19. Professor Littlechild, in a report attached to the Meridian submission, analysed the pricing outcomes which would result if AoB were established using its indexed historical cost method.[16] Professor Littlechild makes the following observations:

    a. The EA proposed this approach on the basis (inter alia) of an assumption that no single customer has made a significant contribution to any one asset. But this is factually incorrect in the case of Meridian and other South Island generators.

    b. it would mean that the total price to certain customers will not be related to the cost of providing that service, and that the NPV = 0 principle would be breached in relation to historical assets

    c. 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.

    d. The proposal to apply IHC-based levelled charges is not characteristic of real competitive markets, particularly when benefits, demand and technologies are changing over time.

20. Pacific Aluminium agrees with these comments by Professor Littlechild and made very similar observations in its submission on the Supplementary consultation paper.[17] Similar comments are also made by NERA in a paper attached to the Meridian submission.

IHC does not make the AoB more cost reflective or service based

21. Some respondents support the view that the IHC valuation method will lead to the AoB charge being cost-reflective.

22. HoustonKemp Economists, in a memo attached to Trustpower's submission, state that the AoB valuation method should be based on replacement cost as a matter of principle, as the quality of service provided by Transpower does not vary over time, so it is inappropriate to depreciate the value of assets in assessing the benefits that customers receive from them.[18] HoustonKemp notes that the Authority intends the IHC valuation method to a proxy for replacement cost. Similarly PwC considers that the refinement proposing the use of IHC rather than replacement cost is sensible and that the "IHC methodology will tie the value of the assets to their costs and remove the need for Transpower to carry out periodic asset revaluations".[19]

23. In its second issues paper, the Authority clearly distinguishes between the definition of "service-based" and "cost-reflective". The Authority states that "Service-based pricing occurs when the cost of a transmission service is charged to, and only to, transmission customers who receive the benefit of those services. This means that the other transmission customers are not charged for the costs of

[16] Stephen Littlechild, *Report on the Electricity Authority's Supplementary Consultation Paper*, 19 February 2017.

[17] Pacific Aluminium, A submission from Pacific Aluminium to the Electricity Authority on the: Transmission Pricing Methodology: Second Issues Paper: Supplementary consultation, pages 19 – 30.

[18] HoustonKemp Economists (Sydney) memo on EA proposals, 22 February 2017

[19] PwC submission on the second issues paper, paragraph 47.

providing those services."[20] The Authority states that, "Cost-reflective pricing occurs when the price of a transmission service reflects the full cost of delivering the service."[21]

24. The determination of costs is not the same as the determination of benefits, as HoustonKemp appears to imply. The annual cost of the services provided by Transpower's investments is set independently by the Commerce Commission and is, by definition, the regulated revenue that Transpower is entitled to collect in respect of each investment. As the Authority's definitions of service-based pricing and cost-reflective pricing state, the identification of beneficiaries of the services determines the group of customers that should meet the cost of the investment providing the service.

The IHC creates a "pseudo residual" charge through the AoB charge

25. Meridian has described as a "pseudo residual" charge the component of an AoB charge that arises because of the application of the IHC valuation method to an older asset producing an AoB charge that exceeds the Commerce Commission's revenue allowance in respect of that charge.[22]

26. Pacific Aluminium agrees with this assessment, which is consistent with the points raised in our submission. To illustrate by way of a simplified example, if the system consisted of one eligible investment that was towards the end of its life, the AoB charge for that investment in each year would equal the regulated revenue allowance. Using the IHC valuation method, the calculated AoB charge would over-recover the revenue allowance, and would need to be scaled down so that the revenue allowance was not exceeded. However, if a new investment were commissioned that served a different group of customers, its AoB charge would under-recover its revenue allowance. As a result, the charge for the original investment would increase. Hence, as a result of an investment, which the original customers do not use, their charges would increase. Meanwhile the new customers that are the only beneficiaries of the new investment would face an AoB charge lower than the revenue allowance for that investment and potentially lower than the benefits they expect to receive.

27. This is contrary to the Authority's own definition of service-based pricing, discussed above.

Other respondents have overlooked the distortionary impact of the IHC valuation method on the TPM

28. Pacific Aluminium finds other respondents have not focussed on the distortionary effect of the residual on the effectiveness of the revised TPM in achieving the statutory objective to any meaningful degree.

29. This lack of focus may reflect some respondents' particular circumstances and priorities with respect to the TPM proposal. For instance, the Authority does not propose that generators will pay the residual charge, so the distortionary effects that reducing the AoB charge has on the residual charge will not impact them.

30. This lack of focus means that other respondents have not analysed the impact that the IHC valuation method has on the residual to the same degree as in Pacific Aluminium's submission, where it has been identified that the IHC valuation method is likely to result in the residual charge growing rather than declining over time as the Authority assumes in the second issues

[20] Electricity Authority, second issues paper, paragraph 5.10.

[21] Electricity Authority, Second issues paper, paragraph 5.11.

[22] Meridian Energy, submission on the Supplementary consultation on the second issues paper, February 2017, paragraph 10.

paper. Worse, Pacific Aluminium has identified that the fact that higher growth regions will experience disproportionately higher investment in new transmission assets means that lower growth regions would continue to subsidise transmission investment in high growth due to the use of the IHC valuation method.[23]

31. In general, other respondents have not highlighted the importance of considering the impact of adopting the IHC valuation method for calculating the AoB charge on the overall TPM, rather than treating the AoB charge as a standalone charge. As Pacific Aluminium identified, any difference between the Commerce Commission's revenue allowance for eligible investments and the AoB charge will amplify the distortionary effects of the residual charge.

An AoB charge that differs from the revenue allowance for the investment providing the service threatens the durability of the TPM

32. Transpower has submitted that, "To be durable, the Area of Benefit (AoB) needs to be inclusive and time-neutral."[24] Transpower clarifies its reasoning why time-neutrality is necessary to achieve durability later in its submission when it states, "an inclusive and time neutral AoB charge treats customers in fundamentally the same way (it does not arbitrarily discriminate between customers on the basis of location or asset age) so is therefore likely to be considered objectively fairer, and therefore more durable."[25]

33. Transpower appears to be using the term durability as a proxy for "fairness" even though it is clear that Parliament set the Authority an economic efficiency objective, noting that the definition was deliberately narrower than the purpose set for the former Electricity Commission which had included fairness, amongst other objectives.

34. In contrast, Pacific Aluminium adopts a more conventional definition of durability, as meaning that the TPM should be capable of continuing to achieve its objectives through time. In this regard, Pacific Aluminium identified that an AoB charge that charges a different amount to the regulated revenue allowance will not automatically allow for changes in the methodology for revenue determination to flow through to the appropriate beneficiaries without the need for the Code to be changed. This need for the Code to be changed, by definition, threatens the durability of the TPM.[26]

Flexibility to adopt revalue eligible investments may be greater than intended

35. Transpower has advocated removing the optimisation provision from the guidelines on the grounds that the flexibility given in choice of valuation method effectively allows Transpower to optimise investments without having to meet the optimisation thresholds and also allows Transpower to alter the time profile of the charges through the life of the investment.[27]

36. Clearly the Authority did not intend to provide such broad flexibility in the selection and implementation of valuation methods or it would not have developed the optimisation provision. Therefore, Transpower's assessment warrants the Authority undertaking a careful review of how these provisions interact.

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[23] Pacific Aluminium's submission on the Supplementary consultation to the second issues paper, paragraphs 65-83.

[24] Transpower's submission on the Supplementary Consultation to the Second Issues Paper, Executive Summary.

[25] Transpower's submission on the Supplementary Consultation to the Second Issues Paper, paragraph 2.3.1

[26] Pacific Aluminium's submission on the Supplementary consultation to the second issues paper, paragraphs 84-86.

[27] Transpower's submission on the Supplementary Consultation to the Second Issues Paper, paragraph 2.3.5

Conclusion

After careful and detailed consideration, nothing in a review of the supplementary consultation submissions has changed Pacific Aluminium's view that:

a) It is vital to consider the impact of policies, such as the proposal to adopt the IHC valuation method to calculate AoB charges, have on the overall TPM, not just on the charge at hand;

b) That constant real AoB charges are not necessarily more market-like, service based or cost reflective than AoB charges based on Transpower's regulated revenue allowance;

c) That using the IHC valuation method is likely to mean that the residual will not reduce over time and may increase, and that this will disadvantage customers in low growth areas, who will continue to subsidise investment to meet the needs of customers in high growth areas; and

d) That deviating from using the revenue allowance determined by the Commerce Commission as the basis for the AoB charge will undermine the efficiency and durability of the TPM.