28 October 2014

Sent to: submissions@ea.govt.nz

Transmission Pricing Methodology: Problem Definition

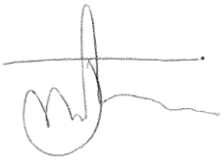
Mighty River Power welcomes the opportunity to provide feedback to the Electricity Authority's consultation on its revised problem definition for the Transmission Pricing Methodology (TPM). No part of the submission is confidential.

Our detailed submission and response to the questions are provided as attachments. In summary:

- We consider efficient grid investment is the role of Capex Input Methodology administered by the Commerce Commission rather than the TPM.
- In our view, revising the TPM will not deliver dynamic efficiency benefits. This is due to the lack of materiality of transmission charges to investment decisions, the fact that the existing grid investment process is largely sound and there is little prospect of future material investment a revised TPM could influence.
- Reliability is a mandatory statutory consideration for the Authority that needs much greater consideration and quantification in the problem definition than at present.
- The Authority has done a robust job in defining the static inefficiencies associated with the current interconnection and HVDC charges, which in some instances are lower than identified in the 2012 TPM proposal. We consider these should be resolved by the current Transpower Operational review of the TPM.
- The primary question therefore is whether there are material inefficiencies remaining with the existing TPM and whether they warrant complex reform, for example, like the Authority's previous Beneficiary-pays proposal. In our view, this is highly unlikely.
- The paper suggests that the durability of the TPM could be potentially improved by the re-allocation of sunk costs to address perceived cross-subsidies. The relevant consideration in our view is whether any existing wealth transfers lead to material static inefficiencies, given the potential for dynamic efficiency is highly limited.
- The paper does suggest there are fertile areas outside of the TPM the Authority could consider investigating. For example reviewing the grid reliability standards, providing input into future major capex proposals and further investigating the practicalities of a prudent discount policy for loads.

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

Yours sincerely,



Nick Wilson
Manager Regulatory and Government Affairs

MIGHTY RIVER POWER'S COMMENTS ON THE PROBLEM DEFINITION WORKING PAPER

1 Summary

1.1. While supportive of the characterisation and quantification of some of the inefficiencies associated with the current TPM (many of which have been identified in previous TPM reviews), Mighty River Power does not consider that changes to the TPM will give rise to long-term investment efficiency benefits.

1.2. In our view, the primary role of the TPM is to ensure that the recovery of the sunk costs of the transmission grid is efficient and minimises any distortions to the greatest extent possible[1].

1.3. It is important that the problem definition identifies unique and material problems with the efficiency properties of the current TPM that might be addressed under an alternative.

1.4. In contrast, it would appear of limited value to identify issues that will confront any methodology that can reasonably be conceived. These are not "problems" per se with the current TPM; they are generic challenges associated with any TPM – many of which arise from the fundamental economic characteristics of transmission.

1.5. The working paper appears to overlook this critical distinction in the discussion of the dynamic efficiency of future investments. In comparison, the analysis of static efficiency is robust and identifies a number of potential problems with the current TPM. However, we find it difficult to see how these issues warrant wide-ranging reform and we would expect them to be effectively addressed by Transpower's current operational review of the TPM.

2 Regulatory Jurisdiction

2.1 Efficient grid investment is not a relevant consideration

The passage of the Electricity Industry Act 2010 created a functional separation between the regulation of efficient transmission investment and the allocation of transmission charges.

2.1.1 This functional separation is evidenced by the transfer of grid investment approvals to the Commerce Commission and the express prohibition on the Authority from doing anything that falls under Part 4 of the Commerce Act 1986.[2] That functional separation sets the boundaries for the lawful use of the Authority's powers for Code amendments in respect of the TPM, and informs the set of relevant considerations that properly influence the Authority's decision-making.

2.1.2 These are legal considerations that must be adhered to by the Authority. An approach that fails to comply with these requirements, even if that approach is supported by economic theory, will be unlawful for several reasons. First, it creates a 'back door' for the consideration of transmission investment efficiency by the Authority that was

[1] We agree with the Authority that "no TPM is perfect" and therefore there will be limits to the extent any TPM could reasonably be considered completely distortion free.
[2] Electricity Industry Act 2010, s 32(2)(b).

never intended by Parliament. The statutory mandate of the Authority does not extend to addressing these considerations.

2.1.3 Second, that type of approach risks crowding out relevant considerations that are relevant to the Authority's statutory mandate. It would be highly irregular for the efficacy of the decision-making of one regulatory authority to be a key consideration in the decision-making of another body engaged in a separate regulatory process. As the Authority has its own (separate) statutory mandate to satisfy, improving the efficacy of an independent regulatory process cannot be treated as a relevant consideration.

2.1.4 Third, for the Authority to engage in matters of grid investment efficiency would avoid the procedural protections set out in the separate Commerce Act regime for consideration of the efficiency of transmission investment proposals. Transpower's capex is the subject of an input methodology (IM) that is designed to promote investment through certainty of treatment.[3] Circumventing the IM to condition investment in a manner that the Authority deems appropriate undermines that carefully calibrated investment regime.

2.1.5 It would amount to a reviewable error of law for the Authority to adopt an approach based on an interpretation of its statutory objective that fails to maintain the conceptual and statutory distinction between efficient investment in transmission and the allocation of transmission charges.

2.1.6 Further, the unsolicited interference by the Authority in a separate regulatory process is highly likely to be considered unreasonable by a reviewing court. The current proposed approach of the Authority which relies on a justification of improving the Commission's processes fails to maintain this distinction, and as a result risks rendering the proposed TPM amendments unlawful.

3 Dynamic Efficiency

3.1 The working paper has not identified a unique problem with long-term investment incentives under the current formulation of the TPM that could be addressed by introducing any reasonably conceivable alternative pricing model (including the "beneficiaries pay" options previously proposed).

3.2 Indeed, we find it difficult to envisage any reform making a material difference to forward-looking investment outcomes, much less giving rise to a noticeable improvement. The following reasons support this contention:

3.1 Transmission costs are not material to investment decisions

3.1.1 Successive reviews of the TPM have concluded – quite rightly in our view – that transmission pricing is highly unlikely to be a relevant factor when generators and load are deciding where to invest, irrespective of the TPM reform under consideration. Orion succinctly captured the key conclusions of both the CEO Forum and the TPAG review on this point:

> "… within the range of options under consideration, it doesn't much matter which one is used – generation will be built in pretty much the same locations (since it is driven largely by fuel availability), and load will go to pretty much the same locations (since it tends to go where

[3] Commerce Act 1986, s 52R.

load is already, and electricity cost is usually only a relatively small consideration in any case)."[4]

3.1.2 This view has been corroborated by Mighty River Power's own analysis. When the magnitude of transmission charges indicated in the Authority's previous modelling of its SPD Beneficiary-pays approach was added to the financial model for one of our recent geothermal investments the result was that there would have been no material change to the decision to invest or the consideration of alternative locations or designs.

3.1.3 It is also the case that the indicative SPD Beneficiary-pays charges would have had no material impact on our investment decision at Kawerau which the working paper, wrongfully in our view, appears to consider was inefficient. We outline our reasoning further in Attachment B.

3.2 Grid Investment is not demonstrably inefficient

3.2.1 The working paper does not present material evidence to suggest that the capital expenditure input methodology, currently administered by the Commerce Commission, has not resulted in efficient investment or that any changes to the TPM could improve this outcome in future.

3.2.2 The analysis provided using the SPD model is, in fact, misleading as the market benefits from any new transmission investment would be expected to be low due to excess capacity. Further, as we explain in more detail below, the analysis of the costs and benefits of several recent investments should be viewed with significant caution since they do not account for reliability benefits of transmission investments[5].

3.2.3 The Authority does cast doubt on the motives and incentives of the Commission in approving transmission investment, which in our view is unsubstantiated, and in any regard would not be addressed by any changes to the TPM.

3.2.4 Even if there was a problem arising from asymmetric information in the grid investment process, it is not obvious how TPM reform could address this problem.

3.2.5 Under any realistic formulation of the TPM, there would be a range of submissions in response to a new investment proposal – some in favour, some opposed. As CEG explain, those submissions would be motivated in almost every case by the effect of wealth transfers, not efficiency gains[6]. That being the case, TPM reform is unlikely to have any material effect on the efficiency of future transmission investment approvals.

3.2.6 Further, there would appear to be effective alternative ways for these matters to be addressed. As an interested party the Authority may make submissions to the Commission as part of the usual consultation process in respect of Transpower's capex. The Commerce Act also provides for the Authority to require the Commission to reconsider its price-quality control regulation to take into account the work of the Authority in respect of the Code.[7]

3.2.7 These two features of the Commerce Act investment regime allow the Authority to assist the Commission to take into account directly the possibility that it is not privy to full information. This remains a matter for the Commission to determine in the context

[4] Orion, Submission on Transmission Pricing Framework Paper, 24 February 2012, p.1.
[5] While the SPD method does include a VoLL parameter it is set at a low level of $3000MWh and the method does not take into account low probability high impact events which are material for consumers. Further 2017 appears to near term to test long run benefits.
[6] CEG, Economic Review of EA Beneficiaries-Pay Options Working Paper, A Report for Transpower, March 2014, section 3.1.
[7] Commerce Act 1986, s 54V(5).

of the evidence available in respect of a particular decision, not for the Authority to determine in the abstract. The weight to be afforded to these matters is for the Commission to determine in light of the evidence. It would be wholly inappropriate and unlawful for the Authority to pre-empt this aspect of the Commission's decision-making.

3.3 There is little prospect of material future investment

3.3.1 Many submitters including Mighty River Power have pointed out throughout the consultation process that even if investment outcomes could be beneficially altered through TPM reform (which we consider is doubtful), there is little prospect of material near-term investments that could be affected.

3.3.2 The Authority appears to have accepted a lower outlook for the potential for investment, particularly in South Island generation due to the likely retirement of the Tiwai smelter[8]. This could potentially over time trigger the need for further augmentation of the HVDC link but any investment would likely have to be approved based on an economic net benefit test for consumers by the Commerce Commission and therefore should not give rise to the concerns raised in the paper.

3.3.3 While the Authority considers that TPM reform is still warranted on the basis that "capital expenditure requirements can change very quickly", it provides only very limited and generic examples by way of a short footnote.

3.3.4 Several participants highlighted that a significant deficiency of the Authority's original problem definition was that it relied on a top-down assessment of the potential dynamic efficiency gains from deferring future investment[9]. It was recommended that the Authority should provide a cross check via a bottom-up assessment of what actual investment from Transpower's Annual Planning Review could reasonably be expected to be deferred or substituted.

3.3.5 The problem definition paper has not resolved these concerns in that no bottom-up assessment is provided. It has not been established therefore that there would be a material impact on forward-looking investment outcomes from any reasonably conceivable reform to the current TPM.

3.4 Reliability is a mandatory consideration

3.4.1 Reliability of supply is a mandatory consideration for the Authority in respect of any Code amendment by virtue of the express terms of the Authority's statutory objective.[10] The Authority is required to consider reliability directly. As a result it is unlawful for the Authority to seek to reinterpret its statutory objective, and then use that reinterpretation as a basis for justifying its decision-making.

3.4.2 However, in the working paper the Authority purports to consider reliability against its Decision Making and Economic Framework, rather than the statutory objective itself. This approach imports an intermediate step that distances the Authority's exercise of discretion from statutory requirements that govern that exercise of discretion. As a result, the very approach adopted by the Authority risks becoming the subject of legal challenge.

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[8] Problem definition working paper section 11.155 onward pg 93.

[9] See for example Castalia Review of the Electricity Authority's Cost Benefit Analysis of the Proposed Transmission Pricing Methodology Report to Genesis Energy (25 February 2013) and Reunion (Feb 2013).Proposed Transmission Pricing Methodology: Assessment of the CBA Report prepared for Mighty River Power.

[10] Electricity Industry Act 2010, s 15.

3.4.3 Further, as a matter of law, reliability is a separate consideration from the competition and efficiency considerations that also inform the Authority's exercise of discretion in respect of amendments to the Code. Each of these terms – competition, reliability and efficiency – is capable of sustaining a distinct meaning. To give effect to Parliament's intent, those distinct meanings should be reflected in the Authority's analysis.

3.4.4 The analysis set out in the Decision Making and Economic Framework interprets the "competition" limb of its statutory as requiring a total efficiency assessment, and the "reliability" limb as mandating an "efficient" level of reliability.[11] Reducing three concepts of a purpose statement to a single consideration in this manner is a highly unorthodox approach to statutory interpretation.

3.4.5 The Authority is essentially reading in a statutory term that makes efficiency the paramount objective. This approach risks focussing on efficiency to the exclusion of other benefits of reliability, and for that reason fails to properly discharge the Authority's statutory objective.

3.4.6 The Authority has previously stated that:

> "Supply interruptions (including non-price rationing) and degradation in the quality of supply can impose very large costs on consumers and suppliers, particularly when they are sudden and unpredicted. Uncertainty about future power supply can also be very costly if it undermines investment incentives and consumer confidence in the electricity industry (even when actual interruptions do not eventuate)." [12]

3.4.7 This analysis shows clearly the need to take reliability considerations into account directly and separately in terms of satisfying the long-term benefit of consumers. In contrast, the working paper does not quantify the considerable potential long-term dynamic efficiency costs that might be associated with reforming the TPM.

3.4.8 Perhaps most importantly, there is a lack of consideration given to the value that consumers place on reliability. Rather, the focus is solely on the notion that deferring transmission investments or forcing Transpower to build smaller assets will potentially lead to dynamic efficiency in the long-run. That is a potentially dangerous assumption that leaves the Authority open to the possibility of legal challenge.

3.5 Reliability benefits require greater consideration

3.5.1 The Authority is required to exercise a significant degree of judgement in discharging its functions (for example, to trade off efficiency and reliability considerations). This type of trade-off exercise must be undertaken in an appropriate and reasonable manner. In particular, the Authority must provide some weight to reliability considerations in its assessment.

3.5.2 It cannot (appear to) provide no weight whatsoever to reliability considerations where reliability may need to be considered against other factors such as efficiency. Further, the relative weight of reliability and other (efficiency) considerations must be reasonable, and open to scrutiny. The rationale for the trade-off the Authority makes between reliability and other factors must be put to interested parties in the course of the submission process.

3.5.3 In undertaking the necessary trade-offs, the question of appropriate weight is (at least in part) answered by the Authority's statutory objective. The primary consideration in

[11] Working Paper at 20.
[12] Electricity Authority, *Interpretation of the Authority's Statutory Objective* (14 February 2011) at [A36].

that objective is "the long-term benefit of consumers".[13] This statutory requirement means that the Authority must consider the value to consumers of the relevant considerations which it may be required to trade-off. The rationale for the Authority's decision must relate meaningfully to the long-term interests of consumers, and ideally would include qualitative or quantitative evidence to support that decision.

3.5.4 Assuming for the sake of argument that TPM reform could facilitate a deferral and/or downsizing of investments (which, as explained above, is not altogether clear) that would not necessarily deliver net benefits to consumers. If given the option of building "too big/too early" versus "too small/too late", there are very good reasons for choosing the former.

3.5.5 The recent experience of the sub-station failure in Auckland illustrates the costs of "the lights going out" can be extremely high. Using the Authority's own estimates of the Value of Lost Load for Auckland consumers, a very conservative estimate of the economic costs to the Auckland economy is ~$32m[14].

3.5.6 For this reason alone, the analysis of the costs and benefits of several recent transmission investments set out in Table 3 of the paper should be revised[15]. These estimates do not account for reliability benefits that do not have a market impact. This undermines the value of those estimates, since the greatest benefits of reliability investments tend not to arise during "business as usual".

3.5.7 Orion serves as a relevant example. In the years preceding the Christchurch earthquakes it invested in a significant amount of "earthquake proofing". This investment likely had little (if any) impact upon the day-to-day reliability experienced by Canterbury customers. However following the disaster, those investments enabled Orion to reconnect those customers more quickly and, in all likelihood, consequently gave rise to benefits that far exceeded the initial investment costs.

3.5.8 It follows that even if there was a sound basis to think that TPM reform could materially change investment outcomes, no analysis of those potential changes can ignore the effects upon reliability. At present, the working paper measures any deferred investment cost as a dynamic efficiency benefit, but ignores the potential costs from any resultant reduction in reliability, e.g., through an increased probability of outages. This is inappropriate and inconsistent with a key aspect of the Authority's objective:

> "…promote competition in, **reliable supply by**, and the efficient operation of, the electricity industry in New Zealand for the long-term benefit of consumers." [emphasis added]

3.5.9 For those reasons, although at first glance it would appear uncontroversial for the Authority to focus on the overall efficiency of the electricity industry for the long-term benefit of electricity consumers, that focus has not produced an accurate picture of the scope for dynamic efficiency improvements. The potential for transmission pricing to influence investment decisions in practice appears to be overstated and the analysis omits relevant considerations, such as the high value that consumers place on reliability.

[13] Electricity Industry Act 2010, s 15.
[14] Derived from 2,173 MWh difference between the full 24 hours of 12/10/14 and 5/10/14 respectively at Penrose 33 kV and 22 kV (which is fed by Penrose 33 kV). VoLL of 11,
[15] We note the SPD methodology included a VoLL parameter but at a low level of $3000/MWh but it does not consider the impact of low probability high impact events.

3.5.10 One potential opportunity that arises from the paper is that if the Authority has material concerns regarding the efficiency of reliability investments, rather than making changes to the TPM and risk undermining the high degree of static efficiency, it could review the Grid Reliability Standards and consider whether an alternative approach could be warranted. For example moving toward more of a probabilistic standard rather than a deterministic one.

4 Static Efficiency

4.1 The analysis set out above leads us to conclude that, in practice, the primary task of the TPM is unlikely to be improving the efficiency of future investments – that is a task for the Commerce Commission under its Capital Expenditure Input Methodology.

4.2 Instead, the core function of the TPM is arguably to ensure an efficient allocation of transmission costs that does not lead to any unwanted distortions to the use of the grid, i.e., to static inefficiency – including from generators altering their bidding conduct.

4.3 In this respect, we note – and agree with – consistent observations in successive transmission pricing reviews that the full nodal pricing arrangements in the wholesale market, coupled with the existing interconnection and HVDC charges in the current TPM, results in a relatively efficient two-part tariff[16].

4.4 The current TPM is therefore likely to achieve a relatively high degree of static efficiency, consequently limiting the scope for reforms to improve upon the status quo. However, that is not to say that improvement is not possible. The working paper identifies some potentially relevant problems with the use of the existing grid, including the incentives created by the HAMI parameter applied to the HVDC charge and the appropriateness of the signal provided by the RCPD charge in the UNI region among others.

4.5 However, neither these problems nor any of the others identified – if borne out – would need to be addressed through wide-ranging reform to the TPM. For example, they need not – and, in our view, should not – be addressed through the application of a variant of the Authority's SPD-based "beneficiaries-pay" approach. The solutions might be as simple as changing the HAMI parameter to a MWh charge (perhaps based on a historical moving average) and increasing "N" in the UNI region.

4.6 All of these matters are currently being explored by Transpower as part of its ongoing operational review and will, presumably, be addressed in that forum. There is therefore likely to be little need for the Authority to consider exploring those issues – they are being dealt with separately.

4.7 It is worth reemphasising that the high degree of static efficiency associated with the current TPM – which may well improve as a result of Transpower's parallel review – could be quickly eroded by the introduction of any methodology that dramatically altered the allocation of "sunk costs".

4.8 This point has been well-made throughout the consultation process and it remains valid; particularly for reforms that have the potential to affect wholesale market outcomes (the Authority's earlier proposals being examples).

[16] CEG, Economic Review of EA Beneficiaries-Pay Options Working Paper, A Report for Transpower, March 2014, section 2.2.

5 Durability

5.1 Disputes are unlikely to be resolved under any alternative TPM

5.1.1 The Authority appears to consider that the reallocation of sunk costs may be warranted in order to improve the durability of TPM, and specifically to address the cross-subsidy between transmission customers inherent in the smeared approach to allocating costs. The Authority considers that these cross-subsidies create incentives for parties to contest the TPM.

5.1.2 The Authority has not altered its assessment of the potential benefits of a durable TPM from its original 2012 considering savings of around $36.5m PV.

5.1.3 While we consider it is inherently the case that dispute of the TPM results in costs across the industry, we are less convinced that any reasonably conceivable TPM would be completely free from dispute and would therefore avoid such costs to any material extent.

5.1.4 It is in the very nature of the TPM that any material reform necessarily involves significant wealth transfers among industry participants. Any cost allocation methodology amounts to a 'zero sum game', and so the incentive to agitate for reform that benefits a subset of industry participants to the detriment of others is inevitable. It is a feature of the allocation of sunk costs required by any TPM, and is not specific to identified cross-subsidies.

5.1.5 This is reinforced by the numerous submissions to the Authority's original SPD beneficiary-pays proposal which highlighted how lobbying would be equally, if not more, prolific around key parameters of the proposed methodology. This is why expert advice for Mighty River Power assessed the potential durability benefits from reform as zero[17].

5.2 Impact of wealth transfer effects

5.2.1 The Authority has noted in its interpretation of its statutory objective that it should ignore wealth transfers effects except where there may be implications for dynamic efficiency.

5.2.2 On that analysis, the issue at the heart of the Authority's concerns is not whether cross-subsidies exist with the current TPM[18]. The key issue is whether, and to what extent, those cross-subsidies result in material inefficiencies.

5.2.3 As noted above we consider the static inefficiencies identified with the current interconnection and HVDC charges are resolvable without the need for significant and complex reform via the Transpower Operational Review and that there is limited scope for material dynamic efficiency gain.

5.2.4 TPAG took the view that the inefficiencies of the HVDC charging arrangements relatively insignificant and therefore the majority view supported a simple an understandable transition of charges which we still consider is valid.

5.3 TPM uncertainty is not material to investment

5.3.1 Recent history does not support a view that uncertainty surrounding the TPM has had a detrimental impact on investment and therefore dynamic efficiency. To some extent, this is to be expected. The TPM is a cost allocation methodology that is not directly

[17] Reunion (Feb 2013)Proposed Transmission Pricing Methodology: Assessment of the CBA Report prepared for Mighty River Power section 3.8

[18] As they will exist with any methodology because, as the Authority has noted, no TPM is perfect.

concerned with promoting economic growth. The effects of uncertainty associated with the TPM are unlikely to be as acute as for regulatory matters that impact on capital investment and dynamic efficiency considerations directly.

5.3.2 Despite the TPM nearly being under constant review and modification since its inception and over the past decade in particular, there has not been a lack of investment, in fact quite the contrary. Around $2.5bn has been invested in new generation as well at $3.5bn in transmission.

5.3.3 This reinforces the view that transmission pricing is unlikely to have a material impact on dynamic efficiency and as noted above the outlook for future dynamic efficiency gains appears muted.

5.4 Current TPM is flexible to change

5.4.1 Contrary to the working paper's view, we consider the fact that Transpower is reviewing only narrow aspects of the current TPM while retaining the same overall framework serves to illustrate the current TPM is flexible to the changing circumstances of the grid.

5.4.2 As the working paper notes, many of the inefficiencies being addressed by the Transpower review have been identified in successive reviews but have not been progressed in favour of pursing wider reform to the TPM.

6 Conclusions

6.1 The above analysis suggests that the appropriate role of the TPM is to ensure cost recovery of the sunk costs of the transmission grid are efficient and do not result in unnecessary distortions.

6.2 The Transpower TPM Operational Review will progress a number of reforms which should improve the already high levels of static efficiency inherent in the existing TPM.

6.3 The Authority should integrate the outcomes of the Transpower review in its own analysis to determine a new baseline for the TPM problem definition.

6.4 For the reasons outlined above, we do not consider the problem definition paper has demonstrated sufficient evidence and analysis to support a contention that there can be material dynamic efficiency gains from TPM reform.

6.5 In particular, reliability and the value to consumers is a mandatory consideration for the Authority which largely absent from the problem definition and would likely materially alter the current analysis.

6.6 On the basis of the evidence presented and the even lower outlook for future material transmission investment since the original TPM proposal was released two years ago we cannot see a compelling case for complex and significant reform to the TPM, particularly to significantly reallocating the sunk costs of the grid.

6.7 Doing so would risk the already high levels of static efficiency inherent in the existing TPM or potentially affecting the efficiency of the wider wholesale market.

6.8 The paper does suggest there are fertile areas outside of the TPM the Authority could consider investigating. For example reviewing the grid reliability standards, providing input into future major capex proposals and further investigating the practicalities of a prudent discount policy for loads.

ATTACHMENT A: Response to Questions

Question 1: Do you agree that, in relation to decisions around transmission pricing, the Authority should focus on overall efficiency of the electricity industry for the long-term benefit of electricity consumers? Why or why not?	No. For responses to this questions please see section 3.4 and 3.5 of our submission.
Question 2: Do you agree with the Authority's view on what constitutes an efficient charge? What role do you consider durability plays in determining efficient charges? Please explain your answers.	No. We do not consider the TPM has a role to play in efficient investment – this is a consideration of the Commerce Commission. See Section One for further commentary. We do consider efficient operation is consistent with the Authority's statutory objective. See section Four for further comment. We consider durability while desirable is likely to be an issue for any conceivable TPM and there is evidence the existing TPM is adaptable to change. See Section Five for further comment.
Question 3: Do you agree with the Authority's revised position on the problem definition, described above? Please explain your answer.	We are not clear on the question, but our submission outlines the areas where we agree with the Authority's problem definition and where we would challenge the assumptions.
Question 4: To supplement information already provided by Transpower, do you have any comments on the steps taken by Transpower or by other parties after approval of the NAaN, NIGU, and other investments such as the LSI Reliability Upgrade investments, to review whether it might have been efficient to postpone elements of them?	As these investments are approved on the basis of long run reliability benefits for consumers we would not expect there to be any post-investment assessment. We are aware of Transpower deferring its investment proposals around the LSI Renewables project in response to declines in committed generation.
Question 5: To what extent do current interconnection charges promote efficient timing of investments? Please explain your response.	See our comments in sections 3.1 and 3.2.
Question 6: To what extent do you consider participant support for transmission investments takes into account the cost implications for them and for other parties? To what extent do you consider the efforts made by participants to provide relevant information on transmission investments take into account the cost implications for them and for other parties?	See our comments in section 3.2.
Question 7: Do you agree that the Kawerau investment proposal described is an example of an inefficient investment resulting from the TPM? Please explain your answer.	No. See Attachment B to our submission.
Question 8: Do you consider that current TPM can incentivise parties to prefer interconnection assets over connection assets or building and owning their own assets (by which they will be required to pay a higher portion of transmission costs)? Please explain	No. See section 3.1 and Attachment B of our submission.

your answer and provide any examples you may have.	
Question 9: Do you agree that the TPM can materially impact investment efficiency? Please explain why or why not.	No. See sections 3.1 and 3.3 of our submission.
Question 10: Do you agree that cross-subsidisation of TPM costs between consumers is an important consideration when considering the durability of TPM charges?	No. The important consideration is whether the impacts of cross subsidy result in material inefficiencies. See section 5 of our submission, particularly 5.2.
Question 11: Do you consider that the current TPM is durable? Why or why not?	We consider there will always be incentives to challenge any conceivable TPM. The current TPM is no different in that regard but there is evidence it is capable of adapting to change. What is more relevant is assessing whether the inefficiencies arising from any TPM are material enough to warrant significant and complex changes, accepting that no TPM will be perfect. See section 5 of our submission, including section 5.4.
Question 12: Do you agree that the examples provided above are examples of a durability problem? Please explain your response.	No. See section 5 of our submission, particularly section 5.4. We note that that the uncertainty caused by NAaN arose from the application of the Authority's Economic and Decision making framework which Mighty River Power and others raised concerns with in their submission to the consultation at the time.
Question 13: If you consider there to be a durability problem, do you know of any further examples of durability problems with the TPM? If so, please describe. Please also estimate the costs that you have incurred in relation to submissions on the TPM for as far in the past as you are able to provide (ie in relation to current and previous TPMs).	We do not consider there is a material durability problem that warrants complex reform to the existing TPM. See section 5 of our submission. While the costs across the industry from regulatory reform will be high we do not consider that any conceivable TPM could reduce these cost to zero (see section 5.1.4 and 5.1.5) We caution against drawing the conclusion that the costs incurred in reviewing the TPM should be used to justify complex reform (such as the significant reallocation of the sunk costs of the grid). The appropriate focus should be instead on identifying and resolving any material inefficiencies with the current TPM. We note at the level of indicative SPD beneficiary pays charges to market participants from the reallocation of post-2004 sunk transmission assets would far exceed, by orders of magnitude, the costs associated with lobbying for TPM reform. This illustrates how durability would not likely be improved.
Question 14: Do you agree that durability is a particularly difficult problem to measure? Please explain why or why not. Are you aware of an appropriate methodology for measuring durability? If so, please provide details of that	We do not consider there is a material durability problem that warrants complex reform to the current TPM. See section 5 of our submission.

methodology.	
Question 15: Do you consider that the RCPD allocation provides an efficient signal of the need for load shedding at coincident peak times? Do you agree with the Authority's estimate of the possible efficiency effects?	We agree with the Authority's analysis around the inefficiencies of the RCPD signals. We consider these should be resolved by the Transpower Operation review.
Question 16: Do you agree that the interconnection charge may over-signal the need for overall reductions in consumption? Do you agree with the Authority's estimates of inefficiency? Which of the four scenarios, if any, do you consider the most plausible? Please explain your answer.	We agree with the Authority's analysis around the inefficiencies of the RCPD signals. We consider these should be resolved by the Transpower Operational review.
Question 17: Do you agree that the interconnection charge may over-signal the cost of increasing Tiwai smelter production in summer? Do you agree with the Authority's inefficiency assessments? Please explain why or why not.	We agree with the Authority's analysis around the inefficiencies of the RCPD signals. We consider these should be resolved by the Transpower Operational review.
Question 18: Do you agree that the interconnection charge and ACOT payments may over-signal the value of embedded generation? Please explain your answer.	See our comments in our submission to the ACoT working paper.
Question 19: Do you agree with the Authority's assessment that, although the interconnection charge may over-signal the value of generation to direct-connect consumers, any resulting efficiency loss is likely to be relatively small? Please explain your answer.	Yes.
Question 20: Do you agree that the HAMI allocation may incentivise SI generators to withhold existing capacity? Do you agree with the Authority's estimate of inefficiency? Please explain your answer.	We agree with the Authority's analysis around the inefficiencies of HAMI. We consider these should be resolved by the Transpower Operational review.
Question 21: Do you agree that the HAMI allocation may discourage upgrades to SI generation capacity? Do you think this is a material problem? Please explain your answer.	Yes.
Question 22: Do you agree that the HVDC charge may discourage investment in SI grid-connected generation? Do you agree with the Authority's inefficiency estimate? Please explain your answer.	Yes We agree with the Authority that outlook for SI generation investment has diminished significantly in the two years since the Authority's initial analysis and is likely to be at the lower end of the range of TPAG analysis. This suggests there are limited dynamic efficiency benefits from providing signals for generation investment in near to medium term..
Question 23: Do you agree that the HVDC charge may bring forward the need for upper SI transmission investment? Do you agree with the Authority's estimate of inefficiency? Please explain your answer.	Mighty River Power's high level understanding of the need for Upper SI transmission investment is that it is driven in the nearer term by voltage support requirements and then by transmission capacity needs to serve potential USI demand growth in the much longer term. Several wind and hydro generation projects are credible prospects in the USI region, but wind generation is less likely able to assist with voltage stability constraints.

	Thus it would not be unreasonable to conclude that the extent to which HVDC charges will bring forward USI transmission investment will depend on the extent to which HVDC charges inhibit investment cases for the hydro projects. Feedback from TrustPower for instance indicates that a range of factors are at play, such as construction costs,[19] making a clear cut answer to the question problematic. It should also be noted that Transpower and Orion have been actively investigating pragmatic non-transmission solutions in the USI such as demand response platforms. Such efforts have the potential to defer or reduce the level of capital investment and thus reduce the Authority's estimate of the inefficiency. Transpower has indeed stated that non-transmission solutions "will likely defer the eventual build date of the switching stations, and we expect to see contracts for NTS closer to the need date."[20]
Question 24: Do you agree with the Authority's view on prudent discount policy? Do you agree with Transpower's view that a PDP for notional generation is not practically achievable because of the difficulties in valuing notional disconnection? Please explain your answer.	We refer the Authority to the views in our ACoT submission which have not changed. Furthermore, Mighty River Power believes that there is a place for a PDP in the TPM to disincentivise inefficient bypass of grid assets, not just for load but also generation. We would be supportive of further investigation into whether a credible valuation could be constructed for a PDP for loads that addressed genuine inefficiencies caused by the TPM.
Question 25: Do you consider that there are any other material problems with the TPM (in particular, the HVDC charge, interconnection charge, and the prudent discount policy) that the Authority has not considered in this paper? If so, please provide details.	We consider there is a material issue with the Authority's analysis in that it has not consider the value to consumers of reliability. See sections 2.4 and 2.5 of our submission.

[19] https://www.transpower.co.nz/sites/default/files/plain-page/attachments/trustpower-usi-feedback.pdf
[20] https://www.transpower.co.nz/sites/default/files/uncontrolled_docs/USI_Stage2_Update.pdf

ATTACHMENT B: Kawerau investment proposal

The working paper questions whether a revised TPM could have been influential in mitigating the need for a grid upgrade proposal to the Commerce Commission for a replacement step-up transformer at Kawerau. The main contention is that, as the cost of the transformer would be socialised to interconnection customers, Mighty River Power faced inefficient incentives to prefer connection at 110 kV over 220 kV.

Mighty River Power does not consider the Kawerau investment proposal was inefficient or that a revised TPM would have resulted in a materially different outcome. The following reasons support this contention:

1. The investment proposal identified alternative drivers

Contrary to the implication in the working paper, Mighty River Power was not causer of the need for the grid investment. In consulting on its application of the Grid Investment Test, Transpower cited Norske Skog Tasman's newly committed 25 MW development as a key reason for the "need for investment," along with a number of potential new generators in the area over the coming 20 years[21].

Furthermore, subsequent to the Commerce Commission's approval of the investment proposal in April 2012, Norske Skog Tasman announced its decision to decommission a paper machine in August 2012. This firm commitment to a reduction in load in fact served to bolster the Commerce Commission's prudent decision to approve the investment.

2. There was no certainty of avoiding any costs

There was a four year lag between when Mighty River Power's generation was commissioned in 2008 and the Kawerau enhancement was approved in 2012. There was no certainty at the time of the generation investment that any grid augmentation would occur. Mighty River Power took the risks associated with nodal price separation over this period. As such, the potential to avoid the associated transformer costs was not a counterfactual considered in the generation connection investment decision.

3. A revised TPM would not have had a material impact on decision making

The decision to connect at 110 kV rather than 220 kV at Kawerau was also commercial in that the costs to between the two connection options significantly favoured connection at 110KV.

Mighty River Power has compared the indicative transmission charges for the region provided by the Authority for its SPD-based Beneficiary-pays charges against the costs of connection. This cross check confirms that had such signals existed at the time of investment they would have been unlikely to have had a significant impact on the decision to connect at 110 kV.

[21] Transpower (Nov 2011) Kawerau Generation Export Enhancement Consultation Consultation - On Our Application Of The Grid Investment Test