Transmission pricing methodology: Problem definition relating to interconnection and HVDC assets

Summary of submissions

Contents

1 Introduction

1.1 This paper provides a summary of the submissions received on the paper 'Transmission pricing methodology: Problem definition relating to interconnection and HVDC assets', published on 16 September 2014 (the working paper).[1]

1.2 The Electricity Authority (Authority) is reviewing the Transmission Pricing Methodology (TPM), which specifies the method for Transpower New Zealand Limited (Transpower) to recover the costs of providing transmission services. The TPM is contained in Schedule 12.4 of the Electricity Industry Participation Code 2010 (Code).

1.3 The Authority considers that the current TPM can be improved to better meet the Authority's statutory objective to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers. In October 2012 the Authority released a consultation paper 'Transmission Pricing Methodology: issues and proposal' (October 2012 issues paper) to obtain feedback on the TPM proposal.

1.4 The Authority received extensive feedback on the TPM proposal through various sources including submissions, cross submissions and a conference held in May 2013. Concerns were raised and suggestions made by stakeholders on the Authority's TPM proposal. As a result of these, the Authority decided to issue a second issues paper.

1.5 Prior to developing a second issues paper, the Authority has decided to prepare a series of working papers to seek a further understanding of the issues raised by submitters. Feedback on the working papers will form a key input into the Authority's development of the second issues paper.

2 Overview of submitters

2.1 The Authority received 20 submissions from submitters covering a range of topics in the working paper. Table 1 lists the submitters and the sector of the industry with which they are associated.

1 The Authority has published the following working papers: 'Transmission pricing methodology: CBA' (3 September 2013); 'Transmission pricing methodology: Sunk Costs' (8 October 2013). 'Transmission pricing methodology: Avoided cost of transmission payments (ACOT) for distributed generation' (19 November 2013); 'Transmission pricing methodology: Use of LCE to offset transmission charges (21 January 2014); 'Transmission pricing methodology: Beneficiaries-pay options' (21 January 2014); 'Transmission Pricing Methodology: Connection charges (6 May 2014); 'Transmission pricing methodology: LRMC charges' (29 July 2014), 'Transmission pricing methodology: problem definition relating to interconnection and HVDC assets' (16 September 2014).

Retailer/generator	Distributors	Consumers	Other
Contact Energy	Electricity Networks Association (ENA)	Carter Holt Harvey Pulp & Paper (Carter Holt Harvey)	Transpower
Genesis Energy	Orion NZ Limited	Fonterra	
ASEC on behalf of the Independent Electricity Generators Association	Powerco Limited	Majority Electricity Users' Group (MEUG)	
Meridian Energy	PricewaterhouseCoopers (PwC) on behalf of 22 EDBs	New Zealand Steel	
Mighty River Power	Vector	Norske Skog Tasman	
Pioneer Generation		Pacific Aluminium on behalf of Rio Tinto Alcan (New Zealand) Ltd and NZAS	
Ringa Matau Limited			
Trustpower			

2.2 Fonterra supported MEUG's submission and the accompanying report from NZIER. Carter Holt Harvey also supported the NZIER report. New Zealand Steel drew attention to MEUG's submission and NZIER's report.

2.3 Orion, Powerco and Vector supported the ENA's submission.

3 Form of summary

3.1 The summary is set out as follows:

(a) Part 1: legal and process issues

(b) Part 2: efficiency of transmission investment (including questions 4 to 9 of the working paper)

(i) Can/should the TPM materially impact investment efficiency?

(ii) Participation in the grid investment approval process

(iii) Does the current TPM promote efficient grid investment?

(iv) Relevance of durability to efficiency

(v) Efficiency of postponing investments

(vi) Examples of inefficient investment

(vii) Do parties prefer interconnection assets to connection assets?

(viii) Other comments

(c) Part 3: TPM charge durability (including questions 10 to 14 of the working paper)

(i) Is cross-subsidisation important to durability?

(ii) Does the current TPM have a durability problem?

(iii) Is durability difficult to measure?

(iv) General comments on durability

(d) Part 4: efficiency of generator behaviour and demand side response to TPM charges (including questions 15 to 23 of the working paper)

(i) Does the RCPD allocation efficiently signal load shedding at peak times?

(ii) Do you agree with the Authority's estimate of the possible efficiency effects?

(iii) Does the interconnection charge over-signal the need to reduce load?

(iv) Do you agree with the Authority's estimates of the possible efficiency effects?

(v) Does the interconnection charge over-signal at Tiwai smelter?

(vi) Is the value of embedded generation over-signalled?

(vii) Does the interconnection charge over-signal the value of generation to direct-connect consumers?

(viii) Does the HAMI allocation incentivise SI generators to withhold existing capacity?

(ix) Do you agree with the Authority's estimate of inefficiency?

(x) Does that HAMI allocation discourage upgrades to SI generation capacity?

(xi) Does the HVDC allocation discourage investment in SI grid-connected generation?

(xii) Do you agree with the Authority's estimate of inefficiency?

(xiii) How does the HVDC charge affect upper SI transmission investment?

(xiv) General/other

(e) Part 5: prudent discount policy (including question 24 of the working paper)

(f) Part 6: general/other (including question 25 of the working paper)

(i) Is there a cross-subsidy problem?

(ii) What constitutes an efficient charge?

(iii) What are the problems with the TPM?

(iv) Quantification

(v) Other comments on the working paper

(vi) Other

3.2 The summary broadly follows that structure of the working paper, with additional separate sections for legal and process issues and general comments.

3.3 The working paper invited submitters to provide their comments on twenty five questions.

3.4 Questions 1, 2 and 3 were of a general nature, and submitters' responses to those questions covered a range of matters. Responses have been included in the legal issues, general comments, and promotion of efficient transmission investment sections of the summary as appropriate.

3.5 If a submitter made a point on a question that was more closely related to another section of the working paper (such as legal and process issues), that submission may not appear in the same section of the summary as the section of the working paper to which that submission responded.

3.6 If a submitter did not directly respond to the questions in the working paper, or made additional submissions, those submissions appear in the most relevant section of the summary.

3.7 This paper is a summary only and does not contain an exhaustive list of submissions made on each subject. For more information please refer to the submissions themselves, which can be found on https://www.ea.govt.nz/development/work-programme/transmission-distribution/transmission-pricing-review/consultations/#c13929.

PART 1: LEGAL AND PROCESS ISSUES

Issue	Submitter	Submission	Page	Item no
Interpretation of the Authority's statutory objective	ASEC for IEGA, Carter Holt Harvey, Contact, Meridian, New Zealand Steel, Norske Skog, Pacific Aluminium	Submitters agreed with the Authority that it should focus on overall efficiency of the electricity industry for the long-term benefit of electricity consumers.	2; 3; 2; 12; 2; 1; 6	1
	Meridian, Mighty River Power, Orion, PwC	Options should be reviewed directly against the Authority's statutory objective in the second issues paper.	4; 6; 6-7; 3	2
	Mighty River Power, PwC	The Authority should have considered reliability of supply.	1, 5-6, 10; 2	3
	Contact	To the extent that the Authority has adopted an interpretation of its statutory objective, the Authority should apply that interpretation consistently.	2	4
	ENA	The Authority's focus on "overall efficiency of the electricity industry for the long-term benefit of consumers" is not the same as its statutory objective, is not a summary of the Authority's interpretation of its statutory objective, and does not take into account the requirement that the full economic cost of Transpower's services be allocated.	12	5
	Meridian	The term "overall efficiency" summarises the three limbs of the Authority's statutory objective, which are all ultimately about the promotion of efficiency for the long-term benefit of consumers. The Authority's approach is consistent with the Authority's previous interpretations of its statutory objective.	4	6

Issue	Submitter	Submission	Page	Item no
	Mighty River Power	Promoting reliability of supply is a mandatory, separate consideration for any Code amendment. The Authority fails to consider reliability in three respects: • the Authority is reading in a statutory term that makes efficiency the paramount objective, to the exclusion of reliability benefits; • the Authority purports to consider reliability against its DME framework, rather than the statutory objective itself. The Authority is distancing its exercise of discretion from the statutory mandatory considerations that govern the exercise of that discretion; • the DME framework interprets the reliability limb of the Authority's statutory objective as mandating an efficient level of reliability. That is a highly unorthodox approach to statutory interpretation. To be responsible and transparent, the Authority must explain the trade-offs between reliability and other factors. The primary consideration in the Authority's statutory objective is the long term benefit of consumers. The Authority has not considered the value that consumers place on reliability. Ideally, the Authority would use qualitative or quantitative evidence to demonstrate how its decision relates meaningfully to the long term interests of consumers.	1, 5-7, 10	7
	Orion	While the Authority should focus/comply with the Authority's objective and Code provisions, it must also be cognisant of section 32(2) of the Act. Orion do not believe that it follows that the Authority must review the TPM without having a reasonable expectation of material improvement in efficiency.	9	8
It is not the Authority's role under the Code to consider efficient investment	ENA, Genesis, Mighty River Power, Orion, TrustPower, Vector	It is the Authority's role under the Code to ensure that the full economic costs for approved investments are allocated in a way that promotes the Authority's statutory objective, not to use the TPM to encourage efficient transmission investment. The Commerce Commission is responsible for efficient investment.	12; 8; 1, 2-5, 8, 11; 7; 4; 4	9
	Mighty River Power	Interference by the Authority in a separate regulatory process (that of the Commerce Commission) is unreasonable, inappropriate, unlawful, a reviewable error of law and an	3	10

Issue	Submitter	Submission	Page	Item no
		irrelevant consideration. Considering such matters risks crowding out considerations that are relevant to the Authority's own statutory mandate.		
	Vector	It would unnaturally stretch the Authority's statutory objective for the Authority to be responsible for efficient investment.	4	11
Process	Contact, ENA, Genesis, Castalia for Genesis, Mighty River Power, Pioneer, Trustpower	Transpower's operational review may address some/many/all of the problems identified by the Authority. This may lead to the need to: • delay the options working paper; or • integrate Transpower's analysis; or • abandon the TPM review once the Authority analyses the results of Transpower's review. Pioneer noted that the efficiency gains from Transpower's review might exceed the efficiency gains from the Authority's TPM review.	6; 15-16; 2-4, 11; 8-9, 11-13; 21; 10, 13; 2; 12	12
	MEUG, NZIER for MEUG	The Authority should explore the opportunity to synchronise changes to the TPM with the review of Transpower's capex IM and other IM that are relevant to Transpower and to be completed by the end of 2017.	2, 4; 5, 9	13
	Mighty River Power, Orion, PwC	The TPM should be reviewed against each component of the statutory objective.	6; 6-7; 3	14
	Meridian	It is critical that the review of the TPM proceeds in a timely manner, particularly in relation to the HVDC charge.	12	15
	Norske Skog	The TPM review is not an efficient use of time and resources, but participants have no choice but to engage in it.	1	16
	NZIER for MEUG	The Authority should continue developing and improving its views on the nature and details of problems with the TPM as the review progresses. The Authority has carried out a thorough and largely transparent process.	4-6	17

Issue	Submitter	Submission	Page	Item no
	Pioneer	Pioneer supports publishing an options paper in advance of the second issues paper, to give industry an understanding of the Authority's likely direction. The Authority should ensure that it has sufficient time to fully consider submissions on the options paper before finalising the second issues paper. The current timeline has only one month allocated.	1	18
		If the Authority initiated a change to the investment approval process, this could eliminate the need for a TPM review.	1	19
	Transpower	The sequence of working papers was not ideal but is not fatal to the Authority's process, and will not inhibit the Authority developing a robust second issues paper. The key question is whether the working papers support development of a robust problem definition, quantify the scale of any problems, and identify appropriate and proportionate TPM options for the second issues paper.	2	20
		The TPM process is costly and time consuming. This creates significant regulatory uncertainty and risks undermining the durability of the TPM.	14	21
		The Authority cannot claim that the status quo is inconsistent with the Authority's statutory objective until the status quo is compared with other TPM options.	2-3	22
		The Authority should: • carefully assess views expressed regarding the problems with the TPM; • take account of how the electricity market is evolving; • assess the extent to which the current TPM already reflects cost reflective pricing; • make sure that if dynamically efficient pricing options are considered that status quo is fully assessed on a static and dynamic basis; • give greater prominence to principle 4 in the consultation charter; and • make sure the options working paper is open to and canvasses a broad range of options.	15	23
Bias/ predetermination	Norske Skog, Pioneer	The Authority seems to be pulling numbers out of nowhere to suit its arguments.	3; 3	24

Issue	Submitter	Submission	Page	Item no
	Pioneer	The Authority's analysis indicates that the Authority is fixated on a complex solution.	3	25
	Powerco	The consultation questions on the working paper were poorly drafted and leading in nature.	1	26
	Ringa Matau	The Authority has defined the problem narrowly, which limits the scope of the problem and supports the Authority's biased position. In other words, the Authority is fitting its problem definition argument to its preconceived solution.	1, 6-7	27
		The fact the Electricity Authority has not considered current international practice, and the separation of regulation into two regulators effectively limits and biases the Authority in its approach and in the outcome it can achieve.	5	28
	Transpower	The Authority has judged the status quo without comparing it to other TPM options. This could be interpreted as predetermining that change is necessary and predetermining that a particular alternative TPM should be adopted, and could be seen as the Authority applying low thresholds for intervention, undermining regulatory certainty and durability.	2, 3	29
The DME is not useful	Contact	The decision-making and economic framework is not useful. The DME is based on the Authority's preferred solution.	1-2	30
	Orion, PwC	The decision-making and economic framework is not useful. The DME framework unhelpfully constrains the Authority's thinking.	6, 7; 3	31
The treatment of submitter views is inadequate	New Zealand Steel	Given the volume of material, technical complexity, and resources of consumers, many consumers cannot participate in the submissions process. This should not be treated as indicating apathy, acquiescence, criticism, or tacit agreement with any proposal.	3	32
	New Zealand Steel, Norske Skog,	The Authority has ignored or not responded to submissions, including (for example) in relation to: • whether Transpower can inquire beyond a connection point;	6; 1, 3, 4; 1; 3-	33

Issue	Submitter	Submission	Page	Item no
	Orion, Pioneer, Ringa Matau, Transpower	• ACOT submissions; • durability. In some cases, the Authority continues to ask questions about matters that have already been addressed by submitters.	4; 9; 9	
	Norske Skog	The Authority should provide feedback on submissions to date and provide reasons for accepting or rejecting participant views.	1	34
	Ringa Matau	The Authority has been focusing on how the submissions answer the questions posed by the Authority, rather than genuinely considering the substance of parties' submissions.	8	35
	Transpower	If the Authority continues down a path of radical change, ignoring submissions that view the changes as disproportionate to actual problems, the feedback on the 2015 issues paper could mirror the responses to the 2012 issues paper.	14	36
		The working paper lists Meridian and Trust Power as opposing Pole 3, whereas both parties provided strong support for the investment.	14	37
There has been a material change in circumstances	Pacific Aluminium	The fact that recent capital investments are so significant and different must trigger a review of the methodology for the allocation costs.	5	38
	Carter Holt Harvey, MEUG, Norske Skog, Orion, Vector	The Authority has not established that there has been a material change in circumstances, so it does not have grounds to conduct a review of the TPM.	1, 3; 1; 1; 8; 2	39
	Orion	Although the Authority cannot review the TPM unless there has been a material change in circumstances, the Authority could propose changes to the TPM in another way (for example, sending a letter to Transpower).	7-8	40
		Given that the current TPM was in place at the start of the Code, it can be assumed that it is the	7-8	41

Issue	Submitter	Submission	Page	Item no
		approved TPM, and that the regulatory intent was to place a bar to material changes to it.		
	Vector	The Authority cannot use its statutory objective as a justification to ignore another unambiguous statutory obligation to identify a material change in circumstances, which is a pre-condition to changing the TPM.	1-2	42

PART 2: EFFICIENCY OF TRANSMISSION INVESTMENT (including questions 4 – 9 of the working paper)

Issue	Submitter	Submission	Page	Item no
Can/should the TPM materially impact investment efficiency?	Carter Holt Harvey, Orion, Pioneer	The TPM will not materially impact investment efficiency, because the TPM is second order when compared to the potential efficiency impacts of the major capex IM and associated process.	4; 11; 2	43
	ENA, Mighty River Power, Vector	Deferring investment may not benefit consumers because, in terms of risks to consumers, it is better to build too big and too early than too small and too late.	8, 9; 7; 4	44
	New Zealand Steel, Norske Skog	Yes, the TPM can materially impact investment efficiency.	4; 3	45
	ASEC for IEGA	Yes, the TPM can materially impact investment efficiency by providing incentives to reduce demand and passing on costs of investments to cost causers (potentially). In relation to cost causers, only large consumers are capable of this optimal decision-making. Smaller consumers require a forward-looking price that reflects the cost of future transmission investment. Price signals should be known in advance and should not vary between half hours.	9	46
	Contact	The types of incentives described in the working paper exist, but are not for the TPM to address.	2	47
		A poorly chosen TPM can impact investment efficiency. A methodology that penalises peaking generation or generation in importing regions will result in inefficient transmission investment. A methodology that rewards load at peak times will also result in inefficient transmission investment.	3	48
	Mighty River Power	Even if the TPM could affect investment outcomes, there is little prospect of material investments in the near future, and the Authority has not satisfactorily demonstrated that capex requirements can change very quickly.	5	49
	New Zealand Steel	Yes. For example, upper North Island and upper South Island consumers, with visibility of TPM	4	50

Issue	Submitter	Submission	Page	Item no
		charges, have strong incentives to manage peak load and assist with investment efficiency. This is important to achieve long-term efficiency.		
	NZIER for MEUG	The Authority has not shown that material issues with investments can be attributed to the TPM. It is unlikely that transmission charges affect Transpower's decisions as to whether to propose an investment to the Commerce Commission.	10, 11	51
		There are no big transmission capital investments on the horizon, so the efficiency of transmission investments is unlikely to be a priority for the next five years.	12	52
	Orion	If interconnection charges are less smeared, this might work out at an extra 1.3 cents per kW hour. This may not incentivise small consumers to scrutinise investment proposals.	4	53
	PwC	The TPM does not have a material bearing on the investments that are proposed or approved. Reforming the TPM for the purpose of price discovery for investment decisions is likely to be limited because: • costs reflective pricing has no impact on sunk investments; • price discovery is only important when a new investment is being considered, so is of little value between major investments; • price discovery is facilitated through the interaction between sellers and buyers, and no such market exists for transmission; • neither Transpower nor the Commerce Commission are required to take account of pricing implications in proposing or approving projects.	3-4	54
	Transpower	The cost of building too late is greater than the cost of building early. Even if a revised TPM encouraged more interaction in investment decision making, it would have little influence over the analysis of optimal timing.	11	55
	Trustpower	There is already evidence of a progressive tightening of controls, for example, in relation to quality standards in requirements on Transpower to develop further capability in relation to its	7	56

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		business processes, and the Commission is committed to fine-tuning its regulatory controls. If there is evidence of a less than rigorous assessment of transmission investments, there is scope under the Commerce Act frameworks for improvements to be made. It follows TPM reforms should not aim to improve efficient investment.		
Participation in the grid investment approval process	ASEC for IEGA, ENA, Genesis, NZIER for MEUG, Orion	Increased participation would not affect grid investment, because the Commerce Commission makes decisions without regard to transmission pricing matters. The Commerce Commission makes decisions based on a national net benefit test. Some submitters noted that this disincentivises participation in the grid investment process.	7; 12-13; 3, 7; 10-11; 3	57
	Carter Holt Harvey, Fonterra, Genesis, NZIER for MEUG, Orion, Powerco Transpower, Trustpower	A change to transmission pricing is unlikely to incentivise participants to participate in investment decision-making (for example, because parties have limited resources, complexity of investment proposals, or because of the small proportion that transmission costs represent of overall costs).	4; 3; 3, 4-6; 7, 10-12; 4; 10-11; 12-13; 4	58
	Contact, Transpower, Vector	Parties currently submit in support of investments that are benefit-neutral or that have negative benefits for the submitter and / or do not submit even if they expect to receive benefits. This suggest that a beneficiaries-pay approach would not lead to increased participation in the investment approval process.	3; 13; 4	59
	ENA, Genesis, Meridian, Powerco, PwC, TrustPower, Transpower	The Authority has not established that the approval process under Part 4 of the Commerce Act is not sound. Submitters noted features of the grid approval system that ensured that it was robust, including: • the Commerce Commission is independent and impartial; • the Commerce Commission seeks expert advice and consults widely; • the Commerce Commission applies an objective and transparent framework; • there is no evidence that the Commerce Commission has made incorrect decisions.	8; 2, 9, 13-14; 6; 4; 3; 4; 11	60

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	Genesis, TrustPower	Participants may not have superior/additional information to provide to the Commerce Commission. Trustpower submitted that, if participants had superior information to the Commerce Commission, they would participate in the current process.	9; 4	61
	Mighty River Power, Trustpower	Even if participants could be motivated to participate, there would always be a range of views put forward, and submissions would not be motivated by what is best for the market (for example, by wealth transfers).	4; 6	62
	Orion, Pioneer	If the Authority thinks there are problems with inefficient grid investments, the Authority should try to improve the investment approval process (either by a review of the input methodologies, or by mounting a case for change to the regime with the Minister).	10-11; 2	63
	Castalia for Genesis	Market participants are not withholding information from Transpower and the Commerce Commission when transmission investments are either proposed or approved.	2	64
	ENA	If the Authority thinks there is a problem with the grid approval process, it should explain the problems with that process.	8	65
	Genesis	The split between the planning (Transpower) and approval (Commerce Commission) of transmission investments ensures that Transpower maintains its objectivity.	2, 9	66
		A broader review of the Commerce Commission's grid investment test criteria, to occur as part of the formal review of all input methodologies in 2017, could improve the transmission investment decision process.	12	67
		The working paper's description of the record of submissions in the investment approval process may be misleading, because it does not assess the quality of submissions provided, or whether submitters engaged in Transpower's earlier grid planning process. The grid planning process enables participants to provide information to Transpower, and to the Commerce Commission, for the purpose of making informed decisions on transmission investment needs.	8-9	68

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	Meridian	When considering whether to make a submission, participants take into account their private costs and benefits, the transaction costs of making a submission, the extent to which the participant expects to be able to influence the decision, implications for the participant's customers, and the risk that sub-optimal outcomes will challenge the durability of the TPM.	5	69
	Mighty River Power	The capex IM is designed to promote investment through certainty of treatment. Circumventing the capex IM undermines the carefully calibrated investment regime. The Commerce Act allows the Authority to assist the Commerce Commission to take into account the possibility that the Commerce Commission is not privy to full information, but whether that is the case and the weight to be associated with that possibility are for the Commerce Commission to determine in light of the evidence available.	2-5	70
	NZIER for MEUG	The working paper overstates the capability of consumers to understand and influence transmission investment decisions.	1	71
		It is likely that industry participants do not receive relevant or material signals at the time that major transmissions are proposed, and only react once investments affect transmission charges.	7, 10, 11, 12	72
		It is unlikely that the difficulties of connecting large, lumpy investment decisions to users of a monopoly transmission network can be overcome by network users examining transmission investment proposals.	10	73
		The submissions described in paragraph 9.33 (which the working paper describes as the result of incentives from TPM charges and having provided additional information to the regulator) would not have been material. None of those parties would have had enough market power to influence transmission investments.	11	74
	Orion	The concern about the lack of incentives for distributors to input into grid investment decision-making is not consistent with concerns that distributors over respond to RCPD signals, and it is not clear why this is not sufficient reason to dispense with attempting to provide efficient price	3	75

Issue	Submitter	Submission	Page	Item no
		signals through transmission charges. Orion agrees with the conclusion, but not the logic.		
		In relation to participating in the investment decision-making process, Orion did not oppose recent major grid investments. Orion's involvement is what you would expect under a beneficiaries-pays approach. Orion did not involve itself in a decision about an investment that provided no benefit and therefore no charges.	3	76
		Orion would not oppose an investment that it did not benefit from as it would be inappropriate and would appropriately be ignored by the Commission. Additionally, Orion does not have knowledge of other parts of the country, so would not normally have useful information to share. While parties with commercial incentives may present information on the TPM, it does not follow that this will lead to poor decisions. The quality of those decisions depends much more on the capex IM and the way it is implemented than the TPM.	10-11	77
	Pacific Aluminium	NZAS agrees that participants support for investments is dependent on the benefit the participants get from the investment. However, many consumers find it difficult to assess the benefit they get from investments. More work needs to be done by network companies and regulators to assist consumers to understand the likely impact of investment decisions on network charges.	7	78
	Transpower	The Authority should not read too much into the actions of stakeholders leading up to investment decisions, because ex-post analysis is susceptible to hindsight bias.	13	79
		It is difficult to see what (if any) future investment efficiency benefits could flow from increasing TPM motivated engagement in the investment approval process given: • more incentives on Transpower to optimise expenditure; • increase in competition and political attention on retail prices; • emerging challenges faced by Transpower including future demand, disruptive technology, affordability and fuel poverty, death spiral, changing consumer expectations, new business	14	80

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		models, climate change.		
		The Authority needs to be cautious in its assessment of participants' incentives to participate in the transmission approval process.	4	81
Does the current TPM promote efficient grid investment?	Fonterra, MEUG	The problems with transmission investments are wider than the TPM. Two key issues that need to be resolved are: • how to ensure that parties who benefit from future transmission investments know that they will have to bear the costs of those investments. The previous regulatory regime administered by the Electricity Commission failed in this regard, and the Commerce Commission process did not fix that problem. The Authority must explore the opportunity to synchronise improvements to the TPM, and the reviews of the capex IM and other IMs relevant to Transpower. Transpower's shareholders should bear some risk for stranded assets; • how existing uneconomic transmission assets should be treated. Resolving this problem is more important than reallocating charges for existing economic assets. Transpower should be required to write down existing uneconomic assets.	3; 2-4	82
	Meridian, Pacific Aluminium	Current interconnection charges do not promote efficient timing of investments, because parties who derive benefit from investment that exceeds the cost to them are incentivised to lobby for early and excessive investment. Pacific Aluminium gave the example of Otahahu indoor substation.	5; 6-7	83
	Mighty River Power, Vector	There is no evidence or examples in the problem definition document to suggest that the current TPM is leading to significant investment inefficiency.	1, 4,-4	84
	Norske Skog, Orion	RCPD signals encourage peak demand management, which promotes delays in investment in transmission capacity.	2;10	85

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	ASEC for IEGA	The current interconnection charges do not promote efficient timing of investments. However, • current charges were only ever intended to recover the cost of existing assets; • the timing of major investments is best justified by regulatory hearings; • the opportunities have always existed to link future interconnection charges to grid upgrades. The regulator that approves investments does not take into account how the costs of the investment will be paid.	7	86
	Pacific Aluminium	It is inefficient that South Island investment has been deferred through demand-side management but South Island consumers are paying for unconstrained demand in the North Island.	6	87
	Trustpower	Even if the ex-post benefits of an investment is zero, the decision to invest may still have been correct given the information available at the time. It is better to have a planning process with a broad and long-term horizon when no individual firms have undue influence over specific project approvals. The current regime does this.	6-7	88
Relevance of durability to efficiency	Contact	The role of durability is to lower the discount rate that individuals and firms use when making investment decisions.	2	89
	Genesis	Durability is better considered as a symptom of investment inefficiency or inefficient use of the grid. Such an approach avoids the risk of double-counting benefits that would result from improving investment efficiency or improving the efficiency of grid use.	3	90
	Norske Skog	Durability does not have much relevance to efficiency, because durability simply means lack of complaints. For example, if a wealthy immigrant volunteered to pay everyone's transmission charges no one would complain but it would not be efficient.	1	91
Efficiency of postponing investments	Meridian	Parts of the LSI upgrade have been deferred because of uncertainty surrounding the assumptions driving the LSI upgrade. Because investments should only proceed when there is a case for them, those deferrals were appropriate.	5	92

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	Mighty River Power	Transpower deferred its investment proposals in relation to the LSI renewables project in response to declines in committed generation. Those investments were approved on the basis of the long run reliability benefits for consumers, so any post-investment assessment of their appropriateness would not have been expected.	11	93
	Norske Skog	If the Authority had adopted a stochastic optimisation programme for the GIT projects such as NAaN, NIGU and LSI reliability may have been delayed or abandoned.	2	94
	Transpower	Some projects can be built in stages, but for other projects it is uneconomical to stop the project. It was not possible to defer NIGU.	11-12	95
Examples of inefficient investment	Carter Holt Harvey, Contact, ENA, Mighty River Power, Norske Skog, NZIER for MEUG	The Authority has not established that the Kawerau investment proposal is an example of inefficient investment and that the alternative would have been more efficient.	4; 3; 13; 4, 11, 15; 2-3; 11	96
	Meridian, Pacific Aluminium	The Kawerau investment proposal is an example of an inefficient investment resulting from the TPM, and an example of commercial actions that can be driven by the avoidance of costs.	5; 7	97
	Norske Skog (supported by Carter Holt Harvey)	In relation to the Kawerau example, the conspiracy the Authority suggests did not take place. The design capacity of the MRP plant was around 68MW but the installed capacity was around 105MW due to an oversight. During a shutdown one of the interconnecting transformers was overloaded. Since 2008, the KAG plant has been ramped back often to avoid the constraint binding. The Authority should check with MRP, but it would not surprise Norske Skog if the overall cost of the lost production exceeded the incremental cost to connect to the 220 KV bus at Kawerau. The grid upgrade at Kawerau was triggered by Norske Skog's investment in a 21MW geothermal power station. The new transformer avoids low-cost renewable energy being spilled at Kawerau and replaced with thermal generation. This has an associated reduction for the spot	2-3 (4)	98

Issue	Submitter	Submission	Page	Item no
		price nationwide.		
	ENA	The Authority has not identified any investments that proceeded but should have been deferred.	8	99
	Mighty River Power	Mighty River Power would have made the same investment decision at Kawerau under the SPD beneficiaries-pay approach. Mighty River Power disputes that the investment was inefficient. Mighty River Power did not cause the need for the grid investment, and at the time of the investment there was no certainty that any grid augmentation would occur.	4, 11, 15	100
	NZIER for MEUG	The reasons for those connection decisions were the commissioning of a geothermal power station at Norske Skog and the subsequent closure of various plant at the pulp mill, and not TPM charges.	11	101
	Orion	The Kawerau example is perhaps better seen with an example of a possible problem with the interconnection/connection boundary.	4	102
Do parties prefer interconnection assets to connection assets?	ASEC for IEGA, Meridian, New Zealand Steel, Pacific Aluminium	Yes, the current TPM incentivises parties to prefer interconnection assets over connection assets, or building or owning their own assets, because the cost of interconnection assets are shared.	8; 6; 3; 7	103
	New Zealand Steel, NZIER for MEUG	A consumer's decisions regarding asset classification reflects many factors. NZIER for MEUG submitted that factors include the significance of transmission charges to a consumer and the view that a consumer has on the predictability of those charges, and that, further, the monopolistic nature of networks can distort outcomes and make underlying facts and motivations less transparent.	3; 11-12	104
	ASEC for IEGA	Yes, and this suggests that the Authority should revisit the definition of connection to ensure it is sufficient and deep, and focus attention on the link between approval of investment projects and development of a locational interconnection charge over time.	8	105

Issue	Submitter	Submission	Page	Item no
	ENA	Under any pricing methodology some parties will prefer that a particular asset is classified under one category or another.	13	106
	Meridian	Yes, but HVDC and interconnection charges can promote embedded generation investments that would not otherwise be pursued or that are not the most efficient option, such as Meridian's White Hill and Hurunui wind farms.	6	107
	Mighty River Power	The current TPM does not incentivise parties to prefer interconnection assets over connection assets or building and owning their own assets.	11	108
	Orion	There is a theoretical risk that current TPM can incentivise parties to prefer interconnection assets, but Orion is not sure this is a material or systematic problem. The recent acquisition of numerous connection assets by EDBs is likely to reduce this issue.	11	109
Other comments	ASEC for IEGA	Responsiveness of charges to permanent changes in demand is a feature desired by consumers, even if it is not the most efficient outcome.	4	110
	Fonterra	Transpower has very few large capital expenditures planned for the upcoming years, so the opportunity for further review of investment proposals is limited. However, the upcoming review of Transpower's capex IM provides some opportunity for improvements.	3	111
	Transpower	Submissions to the Electricity Commission on transmission investment should be considered in the context of a period of under-investment in electricity transmission. Submitters were concerned about under investment, not over investment.	13	112

PART 3: TPM CHARGE DURABILITY (including questions 10 to 14 of the working paper)

Issue	Submitter	Submission	Page	Item no
Is cross-subsidisation important to durability?	Carter Holt Harvey	Cross-subsidisation, in particular interconnection charges, is a consideration when considering the durability of TPM charges. However, it is very unlikely that cross-subsidisation could be eliminated from the TPM.	4	113
	Contact	An element of cross-subsidisation is not likely to significantly affect durability, because no workable system for avoiding cross-subsidisation has emerged so far, and the lower the per unit rate firms and individuals face, the less incentive they have to lobby for change.	4	114
	Meridian	Cross-subsidisation of load contributes to the perception that the TPM is unreasonable and unfair, raising durability issues. In particular, the HVDC charge and large industrial loads raise cross-subsidisation concerns.	6	115
	Mighty River Power	Applying the Authority's interpretation of its statutory objective, the key issue in relation to cross-subsidies should be whether, and to what extent, those cross-subsidies result in material static inefficiencies. If that is the issue, cross-subsidisation is not a concern with the current TPM, because the inefficiencies of the HVDC charging arrangements are relatively insignificant. The potential for dynamic efficiencies from the TPM reform is highly limited and supported by insufficient evidence and analysis in the working paper.	1, 9, 10, 12	116
	Pacific Aluminium	Durability should be considered in light of the benefits that all participants receive from the transmission system.	8	117
		There would be nothing wrong with sharing incremental costs of construction on the grid. However, where massive investments benefit one region, they need to be considered on their merits, otherwise there will be a loss of durability.	8	118
	PwC	No. The current TPM does not result in cross-subsidisation, and the Authority has taken an unnecessarily short term approach to thinking about grid investment.	4	119

Issue	Submitter	Submission	Page	Item no
Does the current TPM have a durability problem?	ASEC for IEGA, Contact	The current TPM as a whole is durable, with submitters' reasons including that it is simple, transparent, adaptable, and stable. However, features of the methodology are not durable or could be improved. Submitters pointed to: • the HVDC charge, including legacy issues • the lack of linkage between new transmission investments and charges to parties causing the need for the investment.	11; 4-5	120
	ASEC for IEGA, Contact, Castalia for Genesis, Mighty River Power, PwC, Transpower, Trustpower	Transpower's operational review is not an example of a problem with the TPM / demonstrates that the current TPM is flexible and can respond to the changing circumstances of the grid.	5, 10; 4-5; ii; 10; 4; 10; 12	121
	ASEC for IEGA, Orion, Powerco	The proposed alternatives would be less durable than the current TPM. Powerco pointed to the definitional ambiguity of SPD.	11; 4; 2	122
	Contact, Orion, Powerco, PwC	Reviews of the TPM by the Authority / TPAG have hurt the TPM's durability/are responsible for the lack of incremental changes following significant upgrades/are responsible for TPM-related costs incurred by participants / have created investment and regulatory uncertainty.	4-5; 12; 3; 5	123
	ENA, Castalia for Genesis	The TPM has been in place for a significant period of time, demonstrating that it is durable.	9, 14; ii	124
	ENA, Castalia for Genesis, New Zealand Steel, Orion, PwC	Lobbying and disputes are not symptoms of a durability problem, but an expected and inevitable outcome of a centralised decision-making process that allocates costs among parties / any regulatory process / any TPM.	9; ii, 2; 4; 10; 4	125

Issue	Submitter	Submission	Page	Item no
	Mighty River Power, Powerco, Vector	Any durability issues in relation to NAaN were created by the Authority's actions, not by the TPM.	12; 3; 6	126
	NZIER for MEUG, Orion	The perceived durability issues are likely to continue under any design of the TPM. Parties will always have incentives to avoid charges / try to shift costs / pursue their own interests.	6, 12-14; 4-5, 11-12	127
	ASEC for IEGA	The existence of the PDP does not indicate a problem with the TPM. It will always be necessary to have a PDP to accommodate cases where charges provide incentives to bypass the network.	5	128
	Carter Holt Harvey	The current TPM is durable because it is relatively easily understood. However, improvements should be made in response to changing circumstances if they are evident to all.	4-5	129
	Castalia for Genesis	The Authority has not presented a credible durability problem, because the Authority has not presented any evidence that industry engagement with the TPM has been detrimental, or that changing the TPM would result in fewer disputes.	ii, 2	130
	ENA	The Authority's examples of durability problems and cross-subsidisation illustrate that transmission "service" is not well defined, and do not illustrate a problem with the TPM.	14	131
	Meridian	To be durable, a TPM must be fair and reasonable, with the standard being whether participants would consider the TPM's allocation of cost to be fair if participants did not know in advance the subset of participants on which charges would be levied. The arbitrary distinction between HVDC and HVAC assets, and the full allocation of HVDC costs to South Island generators, mean that costs to some participants are out of line with any reasonable estimate of current or potential associated benefits to those participants. As a result, the TPM fails the fairness test and is not durable. That reasoning has underpinned Meridian's constant challenge of the TPM.	1-3, 7, 9	132
		The TPM is not durable. It cannot be applied objectively, as the methodology to allocate HVDC	1, 6-9,	133

Issue	Submitter	Submission	Page	Item no
		costs is not grounded in robust factual analysis of who benefits from the link. The HVDC charge has not adapted to changing patterns of grid use, and the interconnection charge has resulted in cross-subsidisation. Meridian's submission outlines the chronology of disputes relating to the HVDC charge.	13	
		Given that transmission costs have substantially increased when demand has flattened, the calculation methodology does not withstand scrutiny. That means that the durability of the TPM has come under challenge, and merely tweaking the TPM will not address the valid concerns about the TPM's durability.	2	134
		Excluding costs to the regulator or the costs of legal challenge, Meridian estimates industry costs of $5M per year associated with the unsustainability of the TPM.	9	135
	Mighty River Power	The constant review and modification of the TPM has not resulted in a lack of investment.	9-10	136
		Any TPM requires sunk costs to be allocated among industry participants. That necessarily involves significant wealth transfers, which leads to disputes. The durability benefits from reforming the TPM are zero.	9, 11, 12	137
		The level of indicative SPD beneficiaries-pay charges from the reallocation of post-2004 sunk transmission assets would far exceed the costs associated with lobbying for TPM reform.	12	138
	New Zealand Steel	The current TPM's durability needs to be assessed against proposed alternatives. The push for change comes from the Authority, not from those who must pay under the methodology.	4	139
		Users of the grid are more concerned with the magnitude of charges rather than the durability of allocation methods. The allocation methodology is only part of the equation regarding disconnection from the grid.	4	140

Issue	Submitter	Submission	Page	Item no
		Over the past two years, New Zealand Steel has spent (directly) $15,000 involved in the TPM review process.	4	141
	NZIER for MEUG	The Authority has not adequately defined the core durability issue that it is trying to fix. It is difficult to see how a durable TPM can both offer certainty and be able to adjust. The heart of the durability problem is the need to allocate the "guaranteed" nature of Transpower's recovery of costs from other participants. The working paper does not place enough emphasis on this problem.	5-6	142
		The Authority's estimate of inefficiencies that result from the TPM's durability problems may double-count inefficiencies identified and counted under the "inefficient operations" section of the working paper.	6	143
		The working paper does not clearly establish whether there are material problems with the TPM's durability. If there is a cross-subsidisation problem that results in avoidance of the grid, that problem can be resolved by weakening the RCPD signal, as explored in Transpower's operational review. If the RCPD allocation results in consumers disconnecting from the grid, that is a problem with the economics of the overall supply of electricity to that consumers. Perceived problems with the durability of the HVDC charge are influenced by the outlook for demand, so may "go away". NZIER is not clear how the Authority's forecast of HVAC interconnection costs for Aurora and Vector relate to Figure 5 (Transmission costs incurred by mass-market customers are increasing).	12, 13	144
		Aspects of the TPM could be refined to help improve durability, but this does not require a complete overhaul of the TPM.	6, 12-14	145
	Orion	The current TPM is quite durable, possibly because most parties think it is reasonably good.	11	146
		Costs incurred are not a measure of durability, because Orion would not have incurred any material costs over the last five years had regulatory agencies not initiated TPM-related work	12	147

Issue	Submitter	Submission	Page	Item no
		programmes.		
	Pacific Aluminium	The current TPM is not durable. That is because it is not cost reflective.	9	148
		A lack of change in the current TPM since 2004 does not indicate durability, because parties who benefit from cross-subsidisation will try to block changes that deliver a more cost reflective TPM.	9	149
		The increase in requests for ad hoc interventions and Transpower's current operational review indicate there is a durability problem.	9	150
	Powerco	There are no significant durability problems with the current TPM. There have been very few disputes about interconnection because the current TPM is very clear. A need to modify "n" values does not indicate a durability problem, it indicates a need to refine the current (basically sound) methodology.	2-3	151
	Transpower	In relation to efficiency consequences: • the regulator's own actions, such as responding to lobbying or special pleadings, materially impact durability; • the Authority does not need to achieve consensus, but there needs to be broad acceptance for the TPM to be durable; • there should be a high burden of proof that an alternative TPM would be a long term benefit of consumers before substantial changes are made.	10	152
		Transpower's NAaN extension reflects that an administrative pricing methodology cannot account for all future scenarios. This could be rectified with very minor changes to the TPM.	10	153
		The regulatory process with regard to the TPM has been challenging for stakeholders, both under the Authority and its predecessors. However, TPM reform may result in a series of ongoing and periodic disputes about design choices, especially if the TPM reforms result in	9	154

Issue	Submitter	Submission	Page	Item no
		significant wealth transfers.		
	Vector	NAaN is not a strong example of the TPM's lack of durability. It was a one-off sequence of events and does not demonstrate any fundamental problem with the TPM. The process that was followed demonstrates that the TPM was working and is able to deal with unusual situations as they arise.	5	155
Is durability difficult to measure?	New Zealand Steel, Orion, Pacific Aluminium	Durability is difficult to measure.	4; 12; 10	156
	Contact	No research relating to the difficulty of measuring durability has been presented.	5	157
	Meridian	Durability is not a difficult problem to measure or estimate. Common features of durable charging regimes include: • relatively simple and transparent structures • common prices for access, but with some differentiation according to costs and benefits • no arbitrary treatment of particular customers or assets within the infrastructure.	9	158
	NZIER for MEUG	The Authority may be having difficulties measuring durability because it has not adequately defined the core durability problem.	14	159
	Pacific Aluminium	Durability is particularly difficult to measure because it requires an assessment of highly uncertain future costs in relation to changes to the TPM.	10	160

General comments on durability	Norske Skog, Vector	If durability means no threat of legal action, a durable TPM does not exist. No matter what TPM is in place, someone won't like it.	3; 5	161
	ASEC for IEGA, Contact	Parties must buy-in to the TPM / a charge for it to be durable.	5; 4	162
	ASEC for IEGA	Complex, opaque allocation mechanisms are not durable, and volatile and unpredictable charges are not durable either.	4	163
	Carter Holt Harvey	Durability and certainty are helpful for all in the electricity industry, but it may be unrealistic to expect that the TPM will not need to be significantly changed again over the next 5 to 15 years. Improvements in the efficiency of appliances and equipment and uptake of potentially disruptive technology could lead to significant changes in consumer behaviour.	3	164
	Contact	A durable TPM must make sense, be simple, and be adaptive to capacity constraints.	4	165
	ENA	The Authority's examples of cross-subsidisation and durability problems with the TPM lend support to Transpower's operational review, in particular Transpower's review of the appropriate number of peaks for RCPD based charging.	14	166
	Genesis	Adaptability is a better description of the qualities that make a regulatory framework more durable.	3	167
	New Zealand Steel	The paper does not define the problem regarding durability. The RCPD charge is objective and measurable, and changing patterns of grid use cannot be adequately dealt with until the matter of stranded investment is addressed, and perverse outcomes can also result from cost recovery of overinvestment.	4	168
	Orion	The regulatory framework could support durability by limiting TPM reviews to once every X years. Orion notes that the Part 4 IM are reviewed on a 7 year cycle.	12	169
	Pacific Aluminium	If participants are charged below cost, they will choose inefficient solutions and overinvest in the network. This is not durable.	9-10	170

		Durability can only be achieved when parties are being charged on an economically efficient basis.	6	171
	PwC	The working paper suggests that the customers would disconnect from the grid due to cross-subsidies. This is not justified by real life examples, so it does not appear to be a material problem.	5	172
	Trustpower	A staged introduction of reforms would enhance durability and would aid investor certainty.	9	173
	Vector	Durability is supported by an economically sound methodology consistently applied over time. The extent to which the regulator panders to the lobbying creates uncertainty and undermines durability.	5	174

PART 4: EFFICIENCY OF GENERATOR BEHAVIOUR AND DEMAND-SIDE RESPONSE TO TPM CHARGES (including questions

Issue	Submitter	Submission	Page	Item no
Does the RCPD allocation efficiently signal load shedding at peak times?	Contact, Genesis, Meridian	It is appropriate/efficient for RCPD signals to be relaxed after significant transmission investment.	5; 10-11; 9	175
	Carter Holt Harvey	RCPD allocation provides an efficient signal to shed load at peak times and avoids cross subsidisation by consumers with a "flat" load profile.	5	176
	Contact	The current interconnection charge promotes peak avoidance through the RCPD charge. Any load reduction should flow into demand forecasts, lowering future transmission requirements.	2	177
	Genesis	Although the RCPD allocation can impose sharp pricing signals, only a small number of intensive energy consuming industries manage that risk.	10	178
	Norske Skog	RCPD signals are beneficial at all times, as evidenced by the fact that Transpower pays consumers to manage demand.	3	179
	Orion	For load management to be effective, distributors and end-use customers require stable long-term price signals but allow them to respond through investments in fuel switching ability, demand reduction, and any energy efficiency programmes.	12	180
	Transpower	RCPD charges can over signal the benefit of load shedding, but solutions must be commensurate with inefficiency.	17	181
	Trustpower	Trustpower supports charging based on peak demand. Keeping a signal in place is important to maintain investment incentives and ensure that efficiency of future signals is not reduced. The number of RCPD periods could be adjusted. Trustpower's suggested approach is that Transpower determines the minimum and maximum number of RCPD periods that should be used in a year, and regions could transition from the minimum to the maximum and back again over a number of years, depending on capacity constraints.	12	182

Issue	Submitter	Submission	Page	Item no
Do you agree with the Authority's estimate of the possible efficiency effects?	Castalia for Genesis; Contact; New Zealand Steel; Norske Skog; PwC	The Authority has overestimated inefficiencies associated with the signal that RCPD provides for load shedding.	10, 11-14; 5; 5; 3; 5	183
	Norske Skog, Orion, Trustpower	The Authority cannot count benefits in relation to load management where load management is used for local network purposes as well as for controlling TPM pricing.	3; 5, 12; 10	184
	Castalia for Genesis	The efficiency effect is between +$4m and -$18m. The Authority's estimate overlooks that: • distributors have no direct financial interest in transmission charges; • distributors have incentives to reduce peak load. The most direct financial reason to control load is to manage capital expenditure on distribution networks and defer growth capex. Consumer-owned distributors have more incentive to control load. • for direct-connect customers, the cost of load control outweighs the benefits from avoiding wholesale prices. To determine how much load control can be attributed to transmission charges, and how much load control is to defer distribution capex, a better approach is to investigate how much load distributors would rationally control to defer growth capex, and attribute any residual load control to transmission charges.	10, 11-14	185
	Contact	The Authority's estimate assumes ongoing costs of avoiding peaks for 20 years, even though a grid investment has occurred, likely increasing capacity far above current requirements. If, on the other hand, the RCPD signal is muted, the $1,000 per MWh value is over-stated. The value represents the value to the network owner, and may not represent the value to customers. Even applying that value, there would be significant net benefit immediately following the transmission investment.	5	186
	New Zealand Steel	The Authority's estimate fails to recognise that the cost of responding to RCPD signals depends on the extent of load reduction, how frequent and duration. For example, for New Zealand Steel, short duration reduction can be achieved with little or no cost, and infrequent but longer duration	5	187

Issue	Submitter	Submission	Page	Item no
		load reduction has minimal impact on cost. A blanket per MW hour value of lost load is misleading.		
	Norske Skog	We do not accept the Authority's estimate. We explained in a previous submission that load shed at coincident peak times incurs no costs, but the Authority has assigned a cost of $5 million.	3	188
	PwC	The estimate is overstated by as much as $42 million to $56 million. For example: • the assumption that load control costs customers $1,000 per MW hour assumes that distributors forego revenue by granting a discount on controlled tariffs, which is not correct, and ignores the corresponding proportion of customers that would save $1,000 per MW hour in choosing to move to a controlled tariff; • the cost to customers of hot water load shedding is low, if not negligible.	5	189
	Trustpower	Trustpower would expect the estimated costs for load management to be much lower, given most consumers are not aware of load control. Given low rates of load growth, the investment deferral benefits attributable to load control could be greater than the Authority has calculated.	10	190
Does the interconnection charge over-signal the overall need to reduce load?	Carter Holt Harvey, New Zealand Steel	While a small number of large customers receive and act on signals to reduce consumption, most consumers do not see price signals.	5; 5	191
	Castalia for Genesis, Contact, Fonterra, Genesis, Mighty River Power, New Zealand Steel, NZIER for MEUG, Powerco, Ringa Matua	The Authority has overstated the importance of interconnection charges/RCPD signals to decisions about consumption and/or generation investments. Submitters cited other factors as being more important, including the price of energy, reliable supply of energy, pre-existing load, resource consents, locational price signals, declining demand.	10, 14-16; 7; 2; 9-10; 3-4; 5; 1, 6-7; 4; 6	192

Issue	Submitter	Submission	Page	Item no
	Contact	Over-signalling due to the overall rate is outside of the Authority's control. Regarding over-signalling due to issues of elasticity, the approach suggested is at odds with the desired durability attribute of the TPM being able to be applied objectively, and should not be pursued.	6	193
	ENA	The TPM does not result in cross-subsidies, so there is no reason to think that the TPM results in inefficient price signals.	15	194
	NZIER for MEUG	It is not clear what the Authority means by "over-signalling".	14	195
	Pacific Aluminium	Yes, the TPM over-signals the need for consumption reduction. Inefficient network charges reduce demand for grid generation (e.g. due to PV, energy efficiency, or lower economic efficiency (e.g. NZAS)). As demand reduces, network prices raise to maintain network revenue, which creates an unsustainable vicious cycle.	8, 10-11	196
	PwC	The working paper suggests that customers are incentivised to inefficiently reduce consumption when RCPD based charges are converted to variable tariffs and distribution and retail tariffs. This is not an issue with the TPM, but reflects legacy metering and regulatory requirements including the low user fixed charge, and retail charge structures. Variable tariffs are likely to occur under any TPM in the electricity market. In any case, many distributors allocate transmission charges to tariffs based on a consumer group's share of RCPD, so the impact of variable tariffs for passing on RCPD charges is not likely to be as pronounced as suggested.	5-6	197
	Trustpower	The Authority is concerned that parties may simply reduce their overall consumption. However, many consumers pay lower RCPD charges throughout the year as a result of their load being controllable.	10	198
Do you agree with the Authority's estimates of the possible efficiency	Castalia for Genesis	Castalia estimates that the inefficiency is likely to be less than between $0 and $30m in present value terms. The inefficiency at peak times is different from the overall inefficiency. The Authority's analysis has overlooked that distribution pricing allocates transmission costs differently to different consumer groups. Inefficiencies for consumers on uncontrolled tariffs stem	10, 14-16	199

Issue	Submitter	Submission	Page	Item no
effects?		from distributors' pricing structures, rather than the TPM. Any residual TPM issues from a greater inefficiency in responding to the peak signal that would otherwise occur are not expected to be large and may be offset by distributors' savings from deferred capital expenditure.		
	Norske Skog	The Authority's estimates for inefficiency are not particularly meaningful because the elasticities, costs and values for X and Y are guesses.	4	200
Does the interconnection charge over-signal at Tiwai smelter?	Castalia for Genesis, Norske Skog	Tiwai Point is uniquely large and warrants a bespoke solution. It should be considered separately from other load.	10, 16-18; 4	201
	Contact, Pacific Aluminium	The current interconnection charge over-signals the cost of NZAS increasing production in summer.	6; 11	202
	Castalia for Genesis	Ideally, the Authority would investigate how any variation between the RCPD charges that Tiwai faces and the cost to provide Tiwai transmission services might impact Tiwai's production decisions and its resulting demand. If the TPM is adapted to account for Tiwai's situation, signals to other consumers may be distorted.	10, 16, 17-18	203
	NZIER for MEUG	The working paper's analysis in relation to the Tiwai smelter is not clear. Line 4 of the Tiwai smelter only represents a small amount of NZAS' output, and the additional electricity charges are likely to be less material than the working paper suggests.	15	204
	Pacific Aluminium	It is economically irrational that Pacific Aluminium is incentivised to not use plentiful hydro resources, when demand would not place extra pressure on the transmission system.	2	205
		The Authority's inefficiency assessments are reasonable, and have been confirmed by NZAS's recent decision not to restart potline 4. Restarting would have resulted in disproportionate transmission cost increases for all of NZAS's production.	11	206

Issue	Submitter	Submission	Page	Item no
Is the value of embedded generation over-signalled?	ENA, Meridian, Orion	If interconnection charges and ACOT payments over signal the value of embedded generation, Part 6 of the Code needs review.	15; 10; 13	207
	Mighty River Power, Pioneer, PwC	Submitters referred the Authority to their submission on the ACOT working paper.	13; 3-4; 6	208
	Norske Skog, Pioneer	ACOT payments do not over signal the value of embedded generation.	4; 3-4	209
	ASEC for IEGA	Interconnection charges and ACOT payments may both over signal and under signal the value of mesh load reduction, including embedded generation. This is because the interconnection charge does not (unlike previous arrangements) reflect benefits from using local transmission assets and does not reflect capacity utilisation. The Authority's logic confuses embedding generation within a distribution network or a direct connect consumer, and embedding generation in the upper North Island or lower North Island.	12-13	210
	Contact	The present form of ACOT payments does not promote efficient outcomes and may over-signal the value of embedded generation. ACOT payments have: • had little, if any, effect on reducing transmission investment requirements; • resulted in an additional $50 million of transmission charges being passed to consumers with no material reduction in transmission spend. That cost allocation is excessive and could undermine confidence in the TPM; • led to perverse incentives where owners of embedded generation benefit from rising transmission costs, undermining the Authority's use of the argument for increased scrutiny of transmission investment to justify changes to the TPM. It is a telling conclusion the Authority makes; the reason why the efficiency loss is small is because more money can be made out of ACOT, i.e. you can make higher returns by a quirk in the current TPM than by investing in your business	6	211

Issue	Submitter	Submission	Page	Item no
	ENA	Issues with the pricing principles may justify some modification to the TPM, but not of the scale or nature of the changes proposed in the October 2012 issues paper.	15	212
	Meridian	ACOT payments may not correctly signal the value of embedded generation because the payments do not directly relate to the avoided future transmission or distribution costs, and because the location of distributed generation is primarily influenced by the availability of an appropriate site and resource.	10	213
	Norske Skog	Embedded generation is not 100% reliable. Therefore, 12 peaks might mean that the embedded generation pays the full interconnection charge, but with 100 peaks they would only pay 10%. This implies that efficiency loss for embedded generation is not likely to be relatively small.	4	214
	NZIER for MEUG	Issues around embedded generation and co-generation require specific attention as a whole, because the relevant economics and technology change over time. The working paper lacks a coherent discussion of where and how alternative generation options impact core generation and the use of the transmission network. The Authority appears to be approaching this issue in a piecemeal way.	15-16	215
		It may be economic to embed generation in a distribution network, except for the recovery of transmission costs. Regardless of the TPM, this problem will likely exist until the costs allocated reflect the real economics of how the grid is used. The value of the grid may need to be re-appraised.	15	216
		The Authority's concerns regarding alternative generation sources within distribution networks or within direct-connect customers' premises have the potential to discourage innovation and dynamic growth. Competition should be a priority when thinking about the most efficient outcome in this area.	4	217
		There is a disconnect between the discussion in the working paper that past co-generation investments are sunk, and question 19 (which proposes that there are incentives to direct-	15	218

Issue	Submitter	Submission	Page	Item no
		connect consumers to invest further in co-generation).		
	Trustpower	While the ex-post assessment of some investment in DG in certain regions may indicate inefficiency, those investments were made on the basis of the regulatory framework and place at the time.	10-11	219
Does the interconnection charge over-signal the value of generation to direct-connect consumers?	Carter Holt Harvey	The current interconnection charge methodology provides an appropriate transmission charge signal to direct-connect customers. Highly efficient co-generation plants mean that Carter Holt Harvey's pulp mills present themselves as fully integrated net load.	6	220
	Meridian	Some inefficiency should be expected because Transpower is entitled to recover its sunk costs.	10	221
	Mighty River Power	Any resulting efficiency loss from interconnection charges over-signalling the value of generation to direct connect consumers is likely to be relatively small.	13	222
		Under the SPD beneficiaries-pay approach, Mighty River Power would have made the same decisions in relation to a recent geothermal investment and the Kawerau investment.	3-4	223
	PwC	While interconnection charges may, in theory, over signal the value of generation to direct connect customers, these inefficiencies are likely to be small.	6	224
Does the HAMI allocation incentivise SI generators to withhold existing capacity?	ASEC for IEGA, Castalia for Genesis, Contact, Genesis, Meridian, Orion, Pacific Aluminium	The HAMI allocation incentivises South Island generators to withhold existing capacity.	14; 21; 7; 1, 11; 10; 7; 11-12	225
	Castalia for	The HAMI charge creates a high marginal cost for running additional capacity, but that is unlikely	21	226

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	Genesis	to be material to generators. The marginal cost of providing additional capacity may be so high that the effect of withholding the capacity is the same.		
	Contact	Whether the HAMI allocation discourages upgrades to South Island generation capacity is secondary to the issue of South Island generators withholding existing capacity.	7	227
	NZIER for MEUG	The Authority's evidence that South Island generators withhold capacity is anecdotal, and does not appear to be material once probabilities of occurrence are taken into account.	16	228
	Orion	Orion does not understand why Meridian and Contact do not enter into an arrangement that manages the risk associated with greater injection.	13	229
Do you agree with the Authority's estimate of inefficiency?	Meridian, Mighty River Power	Submitters agree with the Authority's estimate of inefficiency in relation to the incentives created by HAMI for South Island generators to withhold existing capacity.	10; 13	230
	NZIER for MEUG, Pacific Aluminium	The inefficiency from the HAMI incentivising South Island generators to withholding capacity is unlikely to be material.	16; 11	231
	Castalia for Genesis	The inefficiencies that result from South Island generators withholding capacity that cannot be dealt with through Transpower's operational review may be towards the lower end of between $0 to $12m net present value.	21	232
	Contact	Contact disagrees with the Authority's estimate of the inefficiencies that result from South Island generators withholding existing capacity because of the HAMI allocation. Contact refers the Authority to Transpower's more thorough analysis.	7	233
	Meridian	It is unclear whether the Authority has included any material change in stored energy at the end of simulations when conducting its efficiency calculations.	10	234
	Norske Skog	Incentives to withhold existing capacity or not carry out upgrades may not be as material a	4	235

Issue	Submitter	Submission	Page	Item no
		problem as the Authority thinks. The Authority should find out the water values at times when South Island generators have withheld capacity. In any case, if the HAMI allocation is such a big problem why not change the allocation to annual injection.		
	Trustpower	The inefficiency is material and inconsistent with the efficient operation of the industry. In relation to the Authority's estimates, Trustpower notes that this is an issue on which TPAG struggled to find a consensus. Whether a change to HVDC charging should proceed ultimately depends on the results of a cost benefit analysis, including an assessment of all costs and risks.	12-13	236
Does the HAMI allocation discourage upgrades to SI generation capacity?	Meridian	Meridian may increase the output of the Waitaki station, if the HAMI allocation is removed.	10	237
		The HAMI allocation may discourage upgrades to South Island generation capacity. Decisions to upgrade generators are made infrequently, so the resulting efficiencies are long-lasting. However, the inefficiencies are minimal in comparison to the dynamic inefficiencies that arise from the disincentives created by the HVDC charge to invest in new South Island generation.	10	238
	Orion	Orion does not agree that the HAMI allocation may discourage upgrades to South Island generation capacity. Greater capacity does not necessarily mean greater HAMI.	13-14	239
Does the HVDC allocation discourage investment in SI grid-connected generation?	ASEC for IEGA, Contact, Meridian, Norske Skog, Orion, Pacific Aluminium	The HVDC charge may discourage investment in South Island generation. Some submitters noted that: • this may be beneficial; • this is not a material inefficiency; • there may be other reasons why investments have not proceeded.	14; 7; 1, 11; 4-5; 4; 12	240
	Meridian	The HVDC will facilitate the new national markets in frequency keeping and instantaneous reserves by operating in a different mode, enabled by the recent investment in Pole 3 and the associated control systems. Even though that investment will allow competition between participants in both islands with multi-million dollar efficiency gains to benefit consumers, the	3	241

Issue	Submitter	Submission	Page	Item no
		HVDC costs are fully allocated to South Island generators. This is an example of costs to some participants being out of line with benefits to those participants.		
	Mighty River Power	Future generation investment in the South Island is likely to be limited, suggesting that the dynamic efficiency benefits from providing signals for generation investment in the near to medium term are also likely to be limited.	5, 13	242
	Norske Skog	Any problem with this could be solved by limiting charges to existing generation assets and exempting new South Island generation from HVDC charges.	4-5	243
Do you agree with the Authority's estimate of inefficiency?	ASEC for IEGA	In relation to the Authority's estimates, TPAG's central estimate of inefficiency of $24 million remains reasonable (except for the use of a discount rate that is too high).	14	244
	Castalia for Genesis	Applying TPAG's and Transpower's latest demand growth projections, Castalia estimates that the inefficiency that results from HVDC charges discouraging upgrades or new investment in South Island generation capacity is between $4m and $9m in present value.	22-23	245
	Meridian	Meridian estimates that the inefficiencies at approximately $30m in present value. Although no new generation will be required for the next few years, the Authority is required by its statutory objective to look to the long term. In the long term, new generation will be required and decisions to build that new generation will be made over the next few years. Demand can change quickly. The HVDC charge will result in generation being built in the North Island, even though it may be more efficient to build generation in the South Island.	1-3, 11	246
How does the HVDC charge affect Upper South Island transmission	ASEC for IEGA, Meridian	ASEC agrees that HVDC charges may bring forward the need for upper South Island transmission investment.	15; 11	247
	ASEC for IEGA	Except for the use of a discount rate that is too high, the Authority's estimates are reasonable.	15	248

Issue	Submitter	Submission	Page	Item no
investment?	Castalia for Genesis	Applying the TPAG's model and Transpower's most recent demand growth projections, without the HVDC charge, no upper South Island generation projects would be expected to be commissioned before 2022 and on the one project would be expected to be commissioned before 2030. However, even if HVDC charges have caused upper South Island options that are cheaper than transmission investments to be deferred, that is not necessarily a problem. Transmission investments should not be approved if alternatives are more efficient. Any decision to pursue transmission investments ahead of more efficient generation options would be the result of a failure by both Transpower and the Commerce Commission, and are not a problem with the TPM. The estimated inefficiency should not be considered in any assessment of the problem definition.	24	249
	Meridian	Meridian agrees with the Authority's estimate of the inefficiency that results from the HVDC charge bringing forward the need for upper South Island transmission investment.	11	250
		The HVDC charge is an unwarranted barrier to new generation in the upper South Island. An example is Meridian's Hurunui wind farm.	1, 11	251
	Mighty River Power	The need for upper South Island transmission investment is driven by voltage support requirements and then transmission capacity needs to serve potential upper South Island demand growth in the longer term. Several wind and hydro generation projects are credible prospects in the upper South Island region, but wind generation is less likely to be able to assist with voltage stability constraints.	13	252
	Norske Skog	Norske Skog is sceptical that the HVDC charge may bring forward the need for upper South Island transmission investment, because Norske Skog is not aware of the need for any new generation in New Zealand for the foreseeable future. However, it may be more efficient for existing consumers to be incentivised to shed peak demand than for generators to build otherwise uneconomic power stations.	5	253

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General/other	ENA, Mighty River Power	The appropriate mechanism by which to improve the RCPD periods is Transpower's operational review. ENA stated that an operational review is consistent with the rationale for the way that the RCPD periods were set in the first place, and is to be expected after 10 years.	9-10; 13	254
	Castalia for Genesis	Inefficiencies relating to RCPD charges amount to between a benefit of $4m and a cost of $80m in present value terms, of which $0 to $62m of cost relates to Tiwai smelter.	9-10	255
	Contact	The HVDC and interconnection charges fail to promote efficient operation of the electricity industry.	2	256
	Genesis	The current TPM creates inefficiencies. Ideally, the allocation of the cost of interconnection assets should be neutral to participants' operational decisions following investments. Other pricing signals already incentivise participants to change their behaviour in reaction to grid constraints, but may be distorted by an allocation mechanism.	10	257
		The TPM incentivises some South Island generators to advocate for change, because of equity concerns.	11	258
		Where new generation obtains a benefit from the grid, the benefit is likely to only be for the short term. The grid investment test will identify and recommend investment in areas where generators benefit the most from any transmission constraints over time.	9	259
	Mighty River Power	The full nodal pricing arrangements in the wholesale market, coupled with the existing interconnection and HVDC charges, result in a relatively efficient two-part tariff.	8	260
	NZIER for MEUG	If any inefficiencies stem from the HVDC charge, they are likely to be very small.	16	261
		The Authority presents assumptions and scenarios as facts. The quantification of inefficiencies	14	262

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		in section 11 of the working paper is based on the working paper's assertions that there are problems with the HVDC and interconnection charges, and the working paper points to that same quantification as evidence of those assertions. The Authority made this same error in the October 2012 issues paper.		
		The problem with the HAMI allocation may be the 5 year duration of the charge, rather than the charge itself. South Island generators may oppose the charge, but that is to be expected, and South Island generators are also likely to oppose a beneficiaries-pay/residual charge.	16	263
		The working paper oversimplifies the decision-making processes of MEUG members regarding production and co-generation.	1, 6, 7	264
	Vector	Even if the issues the Authority has identified regarding inefficient operation of the electricity industry are real, they are not justification for the TPM changes being proposed by the Authority because: • some issues, such as production incentives on direct connected load including Tiwai, are best addressed through the Transpower operational review; • some issues are able to be addressed through more targeted reforms; • the issue regarding South Island generation investment incentives is largely theoretical, and depends on the need for substantial new generation investment in the next few years (which is not required); • the materiality of the remaining issues is very low in the context of the value of the total transmission revenues allocated by the TPM.	6	265

PART 5: PRUDENT DISCOUNT POLICY

Submitter	Submission	Page	Item no
ASEC for IEGA, PwC	A PDP will continue to be required.	16; 6	266
ENA, Mighty River Power, Norske Skog, NZIER for MEUG	The PDP is necessary to ensure that the TPM does not result in inefficient by-pass of the grid.	10; 14; 5; 17	267
New Zealand Steel, Norske Skog, NZIER for MEUG, Orion	The PDP is not a problem / the working paper does not adequately establish a problem with the PDP. NZIER commented that problems with network pricing are structural and not peculiar to transmission.	5; 6; 17; 6	268
Orion, Trustpower	The requirement for a PDP is consequential to the nature of the TPM decided on.	14; 13	269
Contact	Because of the nature of industrial load and its security of supply requirements, industrial load will not disconnect from the grid.	7	270
	The PDP fails to promote efficient operation of the electricity industry.	2	271
ENA	A PDP should be retained, the PDP should apply to the expected life of the assets, and the scope of the PDP should be widened to include generation investments (subject to review). It may also be appropriate to extend the PDP to investments that enhance consumer or demand side flexibility.	10, 16	272
	There is no evidence that uneconomic bypass has occurred and only three applications have been approved since 2008, suggesting that the bar for the PDP is neither too high nor too low.	10	273
Meridian	A PDP is desirable. The PDP process for assessing whether alternative transmission is viable is robust.	11	274
	The PDP should apply for the life of an asset, and apply to disconnection of load resulting from generation	11	275

Submitter	Submission	Page	Item no
	investment.		
Mighty River Power	Further investigation into whether a credible valuation could be constructed for a PDP for loads that addressed genuine inefficiencies caused by the TPM would be appropriate.	14	276
	Mighty River Power refers the Authority to its submission on the ACOT working paper.	14	277
Pacific Aluminium	The PDP could be extended to apply more pragmatically to existing participants who would prefer to agree a longer term fixed price for the new work services, based on the assets used by the participant.	12	278
PwC	PwC agrees with the submissions summarised in the working paper that PDP should only be applied when there is a real risk of bypass.	6	279
Trustpower	Appropriate transition arrangements need to be made for those who make investment decisions on the basis of the current PDP.	13	280

PART 6: GENERAL/OTHER

Issue	Submitter	Submission	Page	Item no
Is there a cross-subsidy problem?	ASEC for IEGA, ENA, Orion, Powerco, PwC, Transpower, Vector	A cross-subsidy exists if a charge for a good or service is below the incremental cost or above standalone cost. On that test, the Authority has not demonstrated that there is a cross-subsidy problem (for example, because the total transmission charges to Auckland and Northland are less than incremental cost; that there have only been three prudent discount agreements)	6; 5-6, 12; 11; 1-2; 9; 2, 4	281
	Castalia for Genesis, NZIER for MEUG, PwC, Trustpower	Any cross-subsidy problems are unlikely to be material. Reasons include: • prices are likely to be above the short run marginal cost for the majority of transmission customers, so very few customers are being cross-subsidised; • the broad base charge ensures that all customers pay a reasonable proportion of costs; • over the life of the assets within the core grid, the effect is unlikely to be as pronounced as any examples selected by the Authority.	i; 10; 4; 9	282
	ENA, New Zealand Steel	It is not clear what concept of cost the Authority has used to determine whether a customer's charges for using the transmission grid are above or below the cost of services that a customer receives.	6; 1	283
	ENA, Orion, Powerco	To the (minimal) extent to which cross-subsidies occur, this can be dealt with through the PDP.	6; 11; 1-2	284
	ENA, Transpower	Instances where parties pay less than incremental cost may indicate that the definition of connection assets is not deep enough, not that there are problems with the interconnection charging regime.	6; 8-9	285
	ASEC for IEGA	Price discrimination, and uniform prices of differential costs, are not cross-subsidies, if prices are not less than incremental cost. Given that the incremental cost of providing interconnection is zero (because connection is the incremental cost of connecting a generator to the core transmission network), there is a no cross-subsidy in the current interconnection rate to generators.	6	286

Issue	Submitter	Submission	Page	Item no
	ENA	Applying the Authority's analysis from the sunk costs working paper, the necessary condition for Pareto efficiency is that the marginal willingness to pay must equal marginal cost. This requirement is met under the nodal pricing regime. Although the Authority does not know the cost of supplying infra-marginal units to each transmission customer, as long as the TPM allocates costs free of cross-subsidies, there is no reason to think that the TPM produces inefficient price signals.	6-7	287
		The economic incidence, and not the legal incidence, of a charge determines the charge's economic effects. The Authority's discussion on cross-subsidies is limited to the legal incidence of charges under the TPM, and not their economic concerns.	5, 10	288
	NZIER for MEUG	The analysis associated with Figure 2 (Price does not reflect cost of supply of transmission services) ignores charges that are made of multiple components.	10	289
	Pacific Aluminium	Yes, there is a cross-subsidisation issue. The step change in the interconnection rate means that South Island consumers are paying a lot for new transmission build that primarily benefits North Island consumers, without getting additional benefit. This issue was known and should have been addressed before the current TPM was approved, so a review is overdue.	1-5	290
	PwC	While in principle charges that are more cost reflective are likely to be more efficient, in practice some smoothing is required in order to have administratively simple and fair prices.	3	291
		The examples of cross-subsidisation in the working paper fail to recognise that there are short term winners and losers, and these positions change over time reflecting local transmission assets. For example, in the past there was considerable investment in the lower South Island grid, although those investments did not benefit users in the upper North Island.	4	292
	Transpower	The working paper overstates and oversimplifies the extent to which interconnection and HVDC pricing is not cost-reflective. The Authority needs more clarity about what cost is meant to be reflected (e.g. stand alone cost, incremental cost, marginal cost). The Authority needs to	7-9	293

Issue	Submitter	Submission	Page	Item no
		evaluate charges against incremental cost/short-run marginal cost for each customer. The Authority should consider: • to what extent interconnection pricing results in cross subsidies between customers; • to what extent the variation in implicit margin above incremental cost as a result of interconnection pricing results in allocative inefficiency; • whether it would be efficient to recover joint and common interconnection costs from direct connection customers and EDBs.		
		Just because South Island generators pay HVDC charges does not mean there is a subsidy. It just means that those generators pay closer to stand-alone cost (the upper limit of subsidy-free/cost-reflective pricing).	9	294
What constitutes an efficient charge?	ASEC for IEGA, Carter Holt Harvey, Contact, Meridian, NZIER for MEUG, Orion, Pacific Aluminium	Submitters broadly agree with the Authority's view on what constitutes an efficient charge.	3; 3; 2; 4; 8; 10; 6	295
	Meridian, Pacific Aluminium	A focus on dynamic efficiency is appropriate.	4; 6	296
	Meridian, PwC	Efficiency outcomes should be assessed in the long-term. The timeframes used in the working paper are too short. Meridian submitted that the statutory objective requires the Authority to focus on a long-term view.	4; 3	297
	ASEC for IEGA	An efficient pricing framework would ensure that cost-causers pay for costs. The fact that transmission investment projects are supported by parties who benefit from the projects and opposed by parties who bear the cost indicates that the problem is not the recovery of the cost of existing assets, but the recovery of the costs of new transmission assets.	7-8	298

Issue	Submitter	Submission	Page	Item no
		The Authority needs to take into account that: • the wholesale electricity market involves a trade-off between short run and long run efficiency; • while arbitrarily terminating historical arrangements might have a theoretical outcome of a more efficient future if agents involved are assumed to instantly forget the past, overturning historical agreements can have a chilling effect on future investment because participants are participating in a "repeated game". Past agreements were negotiated to achieve a Pareto improvement, in particular in relation to: • responsible pricing, simplicity and transparency; • the separation of lines and energy in contracts.	2	299
		At a theoretical level, the Authority is correct in its statements about Ramsey pricing, but Ramsey pricing is of little benefit at a practical level, because: • the practical measurement of price elasticity is exceptionally difficult; • the transmission system does not serve consumers directly, but the system provides services to an aggregation of consumers of different types with different price elasticities. The Authority needs to consider the question of how to allocate charges in a way that each party pays at least the incremental cost of connection, and that the costs of the rest of the grid are recovered in a non-distortionary way.	3	300
		The Authority's conclusion that a smeared charge would be inefficient is a dubious conclusion because: • the statement assumes that the correct service provided by the transmission grid has been identified; • it assumes the cost of the service can be identified with accuracy; • the statement assumes that users of a transmission system would not negotiate a charging regime which, optimally reflecting trade-offs made by consumers, would differ from the Authority's assumed optimal regime.	3	301

Issue	Submitter	Submission	Page	Item no
	Castalia for Genesis	The long-term interests of consumers will be best served when electricity demand can be reliably met from the lowest cost combination of generation, transmission, distribution and demand response capability. Generation and demand response investment decisions are made in response to market signals. Transmission investment and pricing decisions are regulated and could create inefficiencies if they distort market-based investment decisions (for example, by creating a perception of regulatory risk in transmission investment), or ignore cheaper market-based investment options.	8	302
		No transmission pricing system can be perfect, because substantial fixed costs need to be recovered. Having prices that are broadly in line with the costs of delivering transmission services is an appropriate objective. However, the need to recover substantial fixed costs is likely to require that some customers pay prices higher than their marginal cost to be efficient.	i, 6-7	303
		At a high level, efficient transmission prices would involve low prices in areas with spare transmission capacity, and high prices in areas approaching the need for new investment.	7	304
	Meridian	Durability is a necessary requirement for an efficient charge, being important for dynamic efficiency in an industry where investments are to a material degree sunk and recovered over a long time frame. However, the Authority should also consider: • Transpower's entitlement to recover the costs of existing assets; • the nature of the transmission grid as a platform connecting users and generators of electricity; • loads' different preferences for reliable supply and competition between suppliers, compared to generation; • the existence of nodal pricing as a signalling mechanism.	4	305
		The TPM should consist of a durable methodology that facilitates dynamic efficiency, and the arbitrary distinction between the HVDC and other interconnection assets should be removed.	4	306

Issue	Submitter	Submission	Page	Item no
	Mighty River Power	The analysis in the working paper that uses the SPD model is misleading. Market benefits from any new transmission investment would be expected to be low, because of excess capacity. Further, the analysis does not account for the reliability benefits of transmission investments.	1, 4	307
	Norske Skog	An efficient charge should reflect the purpose of investment in the grid, which is to meet peak transmission flows.	1	308
	Pacific Aluminium	The critical element is identifying the extent to which existing charges promote or detract from the objectives of the TPM, as this identifies problems.	6	309
	PwC	A balance needs to be struck between dynamic efficiency and allocative efficiency. Dynamic efficiency is more important when considering future investments, but allocative efficiency is currently very important given Transpower's limited pipeline with future investments.	3	310
	Trustpower	The problem definition for TPM reform falls out of the question of whether the TPM allocates the efficient sunk and fixed costs of transmission as efficiently determined by the Part 4 IMs without distorting locational marginal price signals.	8	311
What are the problems with the TPM?	Carter Holt Harvey, Transpower	The inefficiencies that the Authority has identified are of relatively minor importance compared with annual interconnection and HVDC charges.	1, 3; 3	312
	Castalia for Genesis, Genesis, Transpower, Trustpower	The Authority has overstated the size of any problems with the current TPM.	ii-iii; 7;2, 7; 13	313
	ENA, MEUG, Mighty River Power	The working paper has not advanced the argument for TPM reform. Mighty River Power submitted that in particular a compelling case has not been made for reallocating the sunk cost of the grid.	1, 12; 2; 10	314

Issue	Submitter	Submission	Page	Item no
	Mighty River Power, New Zealand Steel, Norske Skog, NZIER for MEUG, Orion, PWC	The working paper has not established that there are material problems with the TPM.	2-3; 1-2; 1; 5, 9; 1; 2	315
	NZIER for MEUG, MEUG	The efficiency gains from reallocating sunk costs are not obvious or material enough to justify significant change.	9; 1	316
	Meridian, Pacific Aluminium	The allocation of interconnection charges is problematic. Transmission charges have increased substantially even though demand has flattened.	2; 1-5	317
	ASEC for IEGA	The most material problem is that the Authority's alternative is viewed as costly and unpredictable and has little support.	16	318
		The Authority needs to consider the possible inefficiencies from volatile transmission charges, and the effect this may have on durability.	16	319
		The Authority needs to consider the effect of levying interconnection charges on generators. Such a move may be inefficient.	17	320
	Castalia for Genesis	Given that the transmission pricing system cannot be perfectly efficient, the size of the inefficiencies that the Authority has identified is relatively small when compared to the value of the assets for which costs are being recovered, and does not justify a radical change.	i, 1-2	321
	Contact	The working paper represents a significant improvement on the problem definition, but Contact still has some concerns with the new problem definition. The HVDC and interconnection charges fail to promote efficient investment in transmission, generation and distribution, and by load. The lack of a robust CBA is inconsistent with the Authority's statutory objective.	1-2	322

Issue	Submitter	Submission	Page	Item no
	Fonterra	The current TPM is working well, but could be improved.	2	323
	Meridian	The working paper responds to specific concerns raised by submitters, and helps clarify the problems with the TPM. Meridian agrees that the three principal problems are that: • the HVDC and interconnection charges fail to promote efficient investment in transmission, generation and distribution, and load; • the current TPM is not durable, resulting in inefficient investment; • the HVDC and interconnection charges fail to promote efficient operation of the electricity industry. The efficiency and durability issues in relation to the HVDC charge are the chief contributors to these problems.	1, 5	324
	New Zealand Steel	There are not material deficiencies with the TPM for existing transmission assets. That is because: • the Authority has not reconciled the "old" beneficiaries-pays approach with the "new" cost allocation approach; • more clarification is required regarding the nature of cross-subsidies; • the working paper does not identify the extent to which the grid is utilised by participants and the degree of benefit or cost; • there is no recognition of the problem of differentiating between different types of generation; • there is a failure to recognise the guaranteed cost recovery aspect and how this influences the methodology, in particular equity issues arising from the cost allocation exercise; • there is no consideration of how network distribution companies price; • there is inadequate consideration of cogeneration and distributed generation.	1-2	325
	Pacific Aluminium	Inefficiently smearing costs across a wide consumer base mutes scrutiny of many investments, and leads to lobbying from participants who receive benefits from investments. Participants also do not assess alternative options like demand management or embedded generation.	7-8	326

Issue	Submitter	Submission	Page	Item no
	Pacific Aluminium	The current TPM does not allow participants to agree a long-term fixed price for transmission services, this increases investment risk.	12	327
	PwC	The working paper does not make a robust or objective case for significant reform to the TPM in respect of interconnection charges. Many of the issues which are raised are immaterial, overstated, or able to be resolved through targeted refinements (for example, as proposed by Transpower).	2	328
	Ringa Matau	To define a problem, the Authority should identify an ideal transmission system, and then identify the ways that the current TPM differs from the ideal, and finally quantify whether the differences are material. An ideal transmission system would be a regulated market that replicates an efficient market for transmission, with the "least bad" intervention. An ideal transmission market would evolve to consider workable international models. Problems that arise in relation to this transmission ideal are: • failure to consider international practice; • separation between the Authority and the Commerce Commission limiting the solutions that can be reached; • the Authority oversimplifying its analysis; • the Authority not being objective; • poor quantification.	1-10	329
		The separation of regulation into two regulators (the Electricity Authority and the Commerce Commission) that do not work together prevents efficient decision-making.	4-5	330
	Transpower	An alternative TPM may better promote the Authority's statutory objective, but an assessment of this should be done at the second issues paper stage, not now.	2, 7, 17	331
Quantification	Contact, MEUG, New Zealand Steel, Norske Skog,	The Authority has not adequately quantified the problems with the TPM. Conclusions in the working paper are based on errors/oversimplification/unsubstantiated examples/a preference based decision-making and economic framework/unsupported assumptions.	1, 2; 5; 3;2; 5, 9; 4; 3;	332

Issue	Submitter	Submission	Page	Item no
	NZIER for MEUG, Orion, Pioneer, Ringa Matau		5	
	Contact, Ringa Matau	Robust quantitative analysis is required to demonstrate the scale of the problem or the true value to New Zealand of the proposed solutions. It is not enough to do a qualitative analysis.	1-2; 9-10	333
	ASEC for IEGA	A discount rate of 8% is not appropriate for a question of social benefit. A better discount rate would be 3.5%, within a range of 2% to 6%.	9	334
	Castalia for Genesis	Castalia estimates that the inefficiencies that result from the interconnection and HVDC charges are to the value of between $4,000,000 and $101,000,000 in present value terms. The Authority has overlooked the role of other parties and processes, has attributed inefficiencies to the TPM that are not actually caused by the TPM (but instead have some relationship or dependency with the TPM), and has made an uncredible claim that the current TPM lacks durability.	ii-iii	335
	Genesis	The Authority should consider the following criteria for assessing the costs and benefits of any TPM, in line with the problem definition: 1. Efficient investment • The TPM encourages efficient transmission investment decisions; • The TPM encourages efficient generation investment decisions; • The TPM encourages efficient demand side investment decisions. 2. Efficient use of the grid • The TPM incentivises efficient consumer behaviour; • The TPM incentivises efficient generator behaviour; • The TPM leads to efficient utilisation of existing transmission assets.	1-2	336
		Genesis agrees with the Authority's intention to align the problem definition and cost benefit analyses of any proposed options.	2	337

Issue	Submitter	Submission	Page	Item no
	NZIER for MEUG	The Authority has used simpler models than what it used in the October 2012 issues paper, but has not demonstrated that these simplified models provide reliable pricing predictions.	3	338
		As in the October 2012 issues paper, the Authority has not attached probabilities to the potential for the problems that the Authority has identified to be real.	4, 14-15	339
	Orion	Adding up the worst case inefficiency costs give the total present value of benefits of around $2.33 million, or $12 per consumer per year. If just 1/6th of the current cost of the HVDC finds its way through to consumers by way of higher retail prices, this will offset the maximum possible efficiency gain in terms of what consumers pay (we know this is mixing wealth transfers with efficiency, but we still think consumers would not consider $12 a year material).	6	340
	Pacific Aluminium	When assessing the benefit of HVDC assets, the Authority should take into account the fact that they were built for northward flow and significant southward transfer puts NZAS at physical and financial risk, due to the requirement to provide load shedding services.	2-3	341
	Ringa Matau	There is no evidence that the Authority has considered current international practice in its problem definition.	4	342
	Transpower	Because inefficiency estimates are measured against a "perfect" counterfactual, potential efficiency gains are less than estimated inefficiency. The inefficiency in the status quo is 1%-2.5% of transmission revenues. Transpower supports action to address inefficiency but urges the Authority to proceed with caution and proportionality.	3	343
	Transpower	Transpower assesses the TPM inefficiency at 2% of transmission revenue and HVDC inefficiency at 3% of the PV of HVDC revenues. These inefficiencies are relatively small, but they are worth investigating.	17	344
Other comments on the working paper	Castalia for Genesis	The best way to scope out the nature and size of problems with the current TPM is the bottom-up analytical approach, adopted in the problem definition working paper.	iii	345

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		The Authority has ignored the role of other parties and processes, including the roles of Transpower and the Commerce Commission. As a result, the Authority's analysis overstates the problems with the TPM. A problem should only be considered a problem with the TPM if the problem can be resolved by a change to the TPM. Adopting this narrower concept of problems with the TPM would help progress the Authority's statutory objective, help manage expectations from the TPM review, and help create targeted and lasting solutions.	Ii, 2-5	346
	ENA	At some future point, the Authority must address the limitations of the working paper with respect to analysis of the economics of transmission pricing and investment decision-making within the context of New Zealand's electricity market and regulatory processes, and the factual basis for whether any problems exist.	1-2, 11	347
		ENA disagrees that it is not necessary for the Authority to show that a problem exists in practice before intervening to alter the amounts paid by firms in relation to multi-million dollar investments, after those investments have been committed. The problem definition should establish a prima facie case for regulatory intervention and discussing options for change. The problem definition working paper fails to set out a robust definition of the problem that is in line with the New Zealand Treasury's guidance on problem definitions: • the working paper fails to establish that the current TPM results in systemic adverse outcomes, fundamental inefficiencies, or poor decisions with reference to accepted literature, or based on evidence or convincing economic analysis; • the working paper mistakes important economic concepts, meaning that key inferences drawn in the working paper are not supported by accepted economic theory.	1, 3, 4, 5	348
	Mighty River Power	Both the old and new problem definitions fail to provide a bottom-up assessment of what actual investment from Transpower's annual planning review could be reasonably expected to be deferred or substituted.	5	349
	NZIER for MEUG	The working paper considers efficiency at too high a level, oversimplifies transmission economics, and ignores the influence that transmission economics had on the design of several	6, 9	350

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		pricing components in the current TPM. The analysis in the working paper relies heavily on argument by example and anecdote, and is not persuasive.		
Other	Carter Holt Harvey, Castalia for Genesis, Contact, Genesis, NZIER for MEUG, Powerco, PwC, Transpower	Changes to the TPM should be incremental rather than revolutionary. Reasons included: • it is unlikely that that transmission capacity will need to be significantly increased over the medium term and future levels of consumer demand are uncertain; • the TPM is a cost allocative method and should be treated as such.	1, 3; i, 1-2; 1; 7; 12-14; 4; 2; 2,7,17	351
	ASEC for IEGA, Orion	The Authority's transport analogy is not useful. The transmission system provides the service that is more related to capacity than to transport.	4; 7	352
	Carter Holt Harvey	Investment decisions and their timing can have a material impact on overall transmission charges.	4	353
	Castalia for Genesis	Castalia agrees that the CBA should focus on assessing how each option would resolve inefficiencies identified with the TPM, while minimising the impact of any new inefficiencies or costs. To achieve coherence between the problem definition and the CBA, the Authority should: • identify elements of the problem that are separable from the TPM; • evaluate options applying the same analytical approaches as in the adjusted problem definition (though Castalia does have criticisms of the analysis in the problem definition paper); • use the problem definition as the upper bound for the net benefit of any change, as the net benefit of any options can be expected to be lower than the extent of the problems identified (though Castalia is of the view that the Authority has overstated the problem).	iii-iv, 25	354
	Genesis	A number of options are available to Transpower that, in conjunction with Transpower's	11-12	355

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		operational review, could overcome efficiency problems. These include working with the Commerce Commission, and working with the Authority to formalise the operational review process as part of the TPM guidelines.		
	MEUG	The Distribution Pricing Review, the Retail Data Project and the Transparency of Consumer's Electricity Charges project should consider if, and how, transmission charges should be passed through to all users (including generators).	4	356
		Alternatives to the current TPM, such as SPD, might create other problems in respect of prices for existing transmission assets.	4	357
	Mighty River Power	Instead of reviewing the TPM, the Authority should consider reviewing the grid reliability standards, providing additional input into the Commerce Commission's consideration of future major capex proposals, and further investigating a PDP for load.	1, 4-5, 8, 10	358
		The high degree of static efficiency associated with the current TPM could be quickly eroded by the introduction of any TPM that dramatically altered the allocation of sunk costs.	8	359
	New Zealand Steel	The September 2014 paper moved to a cost allocation approach from the beneficiaries-pay approach in previous papers, without attempting to reconcile the two models or how the change affected describing the problem definition.	1	360
	NZIER for MEUG	The three different attempts to identify and quantify problems with the TPM (TPAG, the October 2012 issues paper and the problem definition working paper) lack coherency. They have failed to produce a strong base of quantitative evidence or reach similar estimates of the costs and benefits of the current TPM, or arrive at a common scope of the problem definition. The Authority's emphasis seems to have changed from promoting beneficiaries-pay to promoting efficient network and generation investments and operations through cost-reflective pricing.	1-5, 8-9	361
		The October 2012 issues paper's most useful contribution was not the problem definition, but the	2-3	362

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		innovative beneficiaries-pay solution proposed by the Authority. Even so, NZIER had a number of concerns with beneficiaries-pay.		
	Orion	No TPM is perfect. Whatever the imperfections are with the current TPM, the Authority's proposals will not improve matters.	2	363
		RCPD provides the signal to which distributors respond, and this keeps upper South Island demand lower than it would be otherwise.	12	364
	Pioneer	Pioneer supports the ASEC report. In particular: • the Authority's proposal has little support and will not be durable; • the analysis regarding the impact of the interconnection charge on net load reduction; • the use of HAMI to allocation HVDC charges impacts generators that are not connected to the grid; • a volatile and unpredictable charge will be economically inefficient; • it is not economically efficient to levy interconnection charges on generators.	3	365
	Pioneer Generation	The proposals are not simple enough. Complex proposals create confusion and distrust from consumers and represent a barrier to new entrants and innovation.	4	366
	Powerco	Any problems with the TPM can be addressed by incremental refinements, except (perhaps) the HVDC charge.	4	367
	PwC	In principle, PwC is not opposed to levying interconnection and HVDC charges on a wider group of grid users, if it would be more representative of the usage of the grid, and whether this would result in a net benefit to consumers.	3	368
	Transpower	Transpower is happy to assist the Authority in its review, for example, in relation to the N=12 and 100 settings, the impact of a per MWh basis for allocating HVDC charges, and in relation to the tilted postage stamp method.	15	369