Avoided costs of transmission (ACOT) payments for distributed generation

Summary of submissions

8 September 2014

Contents

1 Introduction

1.1 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).

1.2 The Authority considers that the current TPM can be improved so as 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. The Authority's consultation paper 'Transmission Pricing Methodology: issues and proposal' was released in October 2012 (October 2012 issues paper) to obtain feedback on the TPM proposal.

1.3 Extensive feedback on the TPM proposal was received through submissions, cross submissions and at a conference held in May 2013. Stakeholders raised concerns about, and made suggestions on, the Authority's TPM proposal. Following analysis of these concerns and suggestions, the Authority decided to issue a second issues paper.

1.4 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 second issues paper.

1.5 In this regard, on 19 November 2013, the Authority published its third working paper, 'Transmission pricing methodology: Avoided cost of transmission (ACOT) payments for distributed generation' (the Working Paper).[1] The Working Paper assesses the extent that ACOT payments influence transmission and distribution investment and if the payments provide other benefits.

1.6 Some submissions on the issues paper raised concern that changes to the TPM would reduce ACOT payments and therefore undermine investment in DG. The Working Paper investigated to what extent ACOT payments promote efficiency and therefore should be taken into account in the design of the TPM.

1.7 This paper provides a summary of the submissions received on the Working Paper.

2 Overview of submitters

2.1 Thirty two submissions were received from submitters, covering a range of topics in the Working Paper. Table 1 lists the submitters.

[1] The first working paper 'Transmission pricing methodology: CBA' was published on 3 September 2013. The second paper 'Transmission pricing methodology: Sunk costs' was published 8 October 2013.

List of submitters

Retailer/Generator	Distributors	Consumers	Others
Amethyst Hydro	MainPower New Zealand	Major Electricity Users' Group (MEUG)	Independent Electricity Generators Association[2]
Clearwater Hydro	PwC on behalf 22 Electricity Distribution Businesses[3]	Norske Skog Tasman	New Zealand Wind Energy Association
Energy3	Buller Electricity	Transpacific Industries Group NZ	Vestas New Zealand Wind Technology
Ngawha Generation	Eastland Network	Philip Wong Too	Transpower
Pioneer Generation	Orion New Zealand		
Tauhara North No.2 Trust	Powerco		
King Country Energy	Vector		
Nova Energy	Electricity Networks Association[4]		
Trustpower			
Contact Energy			
Genesis Energy			
Meridian Energy			
Mighty River Power			
Pulse Energy			
New Zealand Energy			
Wind Farm Group			

[2] The Independent Electricity Generators Association was supported by the following eighteen parties: Brooklyn Power Station, Energy3, Kawatiri Energy, King Country Energy, MainPower, Nigel Harwood, Nova Energy, NZ Energy, Onekaka Energy, Opuha Water Ltd, Opunake Hydro, Pioneer Generation, Simply Energy, Top Energy, Transpacific Industries, Trusthouse Ltd for Tararua Foundation, Vestas Australia and Windfarm Group.

[3] PwC's submission is on behalf following 22 EDBs: Alpine Energy Ltd, Aurora Energy Ltd, Buller Electricity Ltd, Counties Power Ltd, Eastland Network Ltd, Electra Ltd, EA Networks Ltd, Electricity Invercargill Ltd, Horizon Energy Distribution Ltd, MainPower New Zealand Ltd, Marlborough Lines Ltd, Nelson Electricity Ltd, Network Tasman Ltd, Network Waitaki Ltd, Northpower Ltd, OtagoNet Joint Venture, Scanpower Ltd, The Lines Company Ltd, The Power Company Ltd, Top Energy Ltd, Waipa Networks Ltd and Westpower Ltd.[4] ENA's submission was made with the explicit support of its 29 members: Alpine Energy Ltd, Aurora Energy Ltd, Buller Electricity Ltd, Centralines Ltd, Counties Power Ltd, Eastland Network Ltd, Electra Ltd, E A Networks Ltd, Electricity Invercargill Ltd, Horizon Energy Distribution Ltd, MainPower NZ Ltd, Marlborough Lines Ltd, Nelson Electricity Ltd, Network Tasman Ltd, Network Waitaki Ltd, Northpower Ltd, Orion New Zealand Ltd, OtagoNet Joint Venture, Powerco Ltd, Scanpower Ltd, The Lines Company Ltd, The Power Company Ltd, Top Energy Ltd, Unison Networks Ltd, Vector Ltd, Waipa Networks Ltd, WEL Networks Ltd, Wellington Electricity Lines Ltd, and Westpower Ltd.

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Source: Electricity Authority

3 Form of summary

3.1 The summary has been presented in two parts, under the following headings:

(a) Part 1: Comments on legal and process issues (table items 1-94); and

(b) Part 2: Analysis, analysis framework, chapter comments & other comments (table items 95-359).

3.2 In relation to Part 2, where appropriate, submissions relating to the analysis or conclusions reached in a particular chapter of the Working Paper have been arranged to match the structure of the Working Paper. Submissions on the conclusions described in Chapter 12 of the Working Paper are grouped under the relevant chapter. Finally, there were a substantial number of issues raised that did not relate to one particular chapter. The Authority has grouped submissions under broad themes.

3.3 Specifically, Part 2 is structured as follows:

(a) Analysis framework (table items 95-143)

- Relationship between ACOT and the wider review of the TPM
- The need to review Schedule 6.4 and/or Part 6
- How the Authority should conduct a review of Schedule 6.4 and/or Part 6 (and what should be considered)
- Onus and burden of proof
- Policy considerations that should frame the Authority's analysis
- Incorrect data
- Analysis framework – other comments
- Comments on the wider TPM proposals

(b) Policy and pricing principles (including Chapter 4 of the Working Paper and the history of ACOT) (table items 144-159)

- History of ACOT: the existence and level of ACOT payments over time

(c) Chapter 6: ACOT policies of distributors (table items 160-164)

- Distributors' current ACOT policies

(d) Chapter 7: Do ACOT payments reduce transmission costs? (table items 165-185)

- Do consumers benefit from ACOT through reduced transmission charges?
- Are reduced transmission costs resulting from DG, if any, reflected in Transpower's maximum allowable revenue?

- Locational incentives

(e) Chapter 8: Do ACOT payments reduce transmission investment? (table items 186-223)

- Demand forecasting
- Influence of ACOT on transmission investment
- Security of supply of DG
- Inconsistency with TPM issues paper

(f) Chapter 9: Do ACOT payments avoid distribution investment or costs? (table items 224-244)

- Costs to distributors
- Benefits to distributors
- General comments on the analysis in Chapter 9

(g) Chapter 10: Can ACOT payments result in inefficient subsidisation of DG? (table items 245-252)

- Risk of inefficient subsidies where distributors own DG
- Risk of inefficient subsidies from ACOT payments to older generation plant

(h) Chapter 11: Other potential benefits and costs from DG that might merit ACOT payments (table items 253-282)

- Savings from losses and constraints
- Competition benefits in the wholesale and retail markets
- Environmental benefits
- Costs resulting from ACOT promoting less economic generation
- Other costs and benefits identified by submitters

(i) Cost of ACOT to the consumer (table items 283-291)

- The Authority's calculation of how much ACOT costs to the consumer
- ACOT's influence on prices

(j) Consistency with other market arrangements (table items 292-303)

- Load management and DG
- Other consistency concerns

(k) Impact of change and feasibility of alternative arrangements (table items 304-347)

- Impact on investments and investor confidence
- Impact on competition in the DG market
- Incentives created or removed by changes to ACOT

- Market power of distributors compared to DG
- Costs to small DG
- Other comments on the feasibility of changing or removing ACOT

(l) Other (table items 348-359)

- Submitter proposals
- Other submissions, comments and requests

3.4 The Authority notes that the information in table C of the Working Paper raised a question from MEUG and was the topic of the submission from Norske Skog Tasman. The response published 10 January 2014 clarified:

> "The column "Whether the distributor pays ACOT" was not intended to identify whether each distributed generator received ACOT payments. This information was not available to the Authority. The term "Whether the distributor pays ACOT" was intended to indicate whether the *distributor* that the respective distributor [sic] generator is connected to pays ACOT. This was determined by examining whether the respective distributor discloses to the Commerce Commission that it pays ACOT, using Appendix A information."

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 http://www.ea.govt.nz/development/work-programme/transmission-distribution/transmission-pricing-review/consultations/#c7428.

PART 1: COMMENTS ON LEGAL AND PROCESS ISSUES

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Authority's statutory objective (changes to ACOT regime inconsistent with statutory objective and/or current ACOT regime consistent with statutory objective)	Clearwater Hydro	Proposed changes to Part 6 or the TPM that increase the complexity of ACOT payments or reduce the amount paid to distributed generators risk inhibiting investment in distributed generation. This would be to the long-term detriment of consumers.	Page 3	1
	NERA Economic Consulting (for Trustpower)	Without change management procedures, an unanticipated regulatory change that reduces or removes ACOT payments will increase regulatory risk and therefore the cost of capital in the New Zealand electricity industry. This would increase the costs of operating the electricity industry, increase electricity prices, result in under-investment, and dampen the effectiveness of current and future price signals, and is therefore not consistent with the Authority's statutory objective. A regulatory reform that reduces or removes ACOT payments will only be consistent with the Authority's statutory objective if it includes change management arrangements to compensate existing investors in distributed generation for departures from the returns they would reasonably have anticipated under the existing, long standing regulatory arrangements.	Pages iii, 25	2
	NZ Energy	The Authority is charged with promoting the efficient operation of the electricity industry for the **long-term** benefit of consumers, not with taking a short-term view. The Working Paper contains an inadequate analysis that focuses on allocative and productive efficiency in the short-term, and does not discuss the long-term. NZ Energy also suggests that severe disturbance to economic activity represented by investment in distributed generation would be detrimental to the long term benefit of electricity consumers.	Pages 2-3 (paras 12-18)	3
	Pioneer Generation	Dynamic efficiency should be the focus of the review of ACOT payments, since ACOT payments impact investment in long life generation, transmission and distribution	Pages 2-3, 14	4

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		assets. The Authority's approach in the Working Paper, which is focused on short-term productive efficiency, is a much narrower focus than 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".		
	Trustpower	As explained in the NERA report, amendments to the existing ACOT regime would only be consistent with the Authority's statutory objective if transitional arrangements/change management measures are included.	Page 13	5
	Trustpower	The pricing arrangements developed by the Electricity Commission have been included in the Code administered by the Authority. This suggests that the Government considered the pricing principles in Schedule 6.4 are consistent with the Authority's statutory objective. Trustpower agrees.	Pages 9-10,14 (section 5.1, para 8.1.2(g))	6
	Trustpower	At this stage the Authority's conclusions on the limited benefits of DG, and its view that the current arrangements are inconsistent with its statutory objective, appear premature.	Page 14 (para 8.1.3)	7
	Trustpower	The Authority has the power to consider the effects of distributed generation on regional markets. Considering these effects is in the long-term interests of consumers.	Page ii	8
	Vestas New Zealand Wind Technology	The changes proposed to ACOT payments in the Working Paper will not be in the long-term interests of consumers.	Page 1	9

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Authority's statutory objective (current ACOT regime inconsistent with statutory objective)	Contact	Contact says it agrees with the Authority that the current ACOT payment policies are not promoting efficient outcomes and this is inconsistent with the Authority's statutory objective.	Page 1	10
	ENA	The Authority should consider whether the Code requirement that the distributed generation owner enjoys the full benefit of the avoided costs in perpetuity is consistent with its statutory objective.	Page 8 (para 21)	11
	Vector	Consumers currently receive no benefits from distributed generation, and could actually incur dis-benefits. It is the distributed generator who receives the full benefit (or more) of any avoided transmission and distribution cost. This is contrary to the statutory objective of promoting the long-term benefit of consumers. The Authority should aim to ensure the distributed generators only invest in efficient distributed generation from which consumers receive actual benefits.	Pages 3, 7, 8-9	12
Authority's statutory objective (how to apply)	PwC (for 22 EDBs)	Applying the lens of the Authority's new statutory objective to Part 6 of the Code suggests that the focus for DG regulations should be on promoting (where in the long-term benefit of consumers): • *competition* in generation for DG and grid-based generators • *reliable supply* of electricity facilitated through connection of DG where this is efficient • *efficient operation* of the electricity sector, including efficient operation of transmission and distribution networks and wholesale markets, and including through efficient pricing.	Page 4 (para 17)	13

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Need to comply with administrative law principles	Trustpower	Changes to the ACOT pricing arrangements would need to fall within one of the limbs in section 32(1) of the Act and comply with administrative law principles. In relation to section 32(1), the Working Paper does not indicate whether the Authority thinks changes to ACOT payments are necessary or desirable to promote industry competition, reliable supply of electricity, or efficient operation of the electricity industry (or some combination of the above). Instead, the Authority appears to be of the view that it can remove the pricing principles in the Code if it considers they promote "*inefficient outcomes*". Trustpower does not think this is a correct interpretation of the Authority's powers. Trustpower considers there is a distinction between Code changes which are necessary or desirable to promote the efficient operation of the electricity industry (s 32(1)(c)), and Code changes which are necessary or desirable to promote efficient investment. Regardless, Trustpower cannot see how a Code change which reduces or removes ACOT payments for existing DG would enhance any efficiency objective.	Pages 10, 14 (section 5.2, para 8.1.2(h))	14
	Trustpower	The Authority's powers may be constrained by administrative law presumptions against delegated legislation having retrospective effect. New Zealand's longstanding arrangements to encourage distributed generation (which would provide benefits over time in relation to the network) were developed to give distributed generation owners increased certainty about the payback of their investment. In return, DG owners made the desired upfront capital investments. These arrangements arguably amount to a prospective scheme in which the Authority would be constrained from amending the price signals which apply to existing DG.	Pages 11-12 (section 6)	15

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Assessment outside statutory mandate	Trustpower	Parts of the Working Paper appeared to be directed towards assessing whether: a) the current distributed generation investments should have been made in the light of other industry developments; or b) the current distributed generation portfolio meets the Authority's definition of an efficient level of DG. Trustpower questions whether those enquiries fit within the Authority's statutory mandate.	Page 9 (section 4.2)	16
Problem definition	ENA	The faults that the Working Paper identifies with existing ACOT payments do not, in the most part, arise from ACOT payments themselves. Instead, they are the result of other potential regulatory failures.	Pages 1, 6-7	17
Ability to respond to the Working Paper	Pulse Energy	It is difficult to provide a complete opinion on the Working Paper, as alternative proposals based on economic benefit are not formulated.	Page 1	18
Quality of Working Paper, including errors and analytical faults	IEGA, ASEC (for IEGA)	There are substantive pieces of work which quantify the benefits of distributed generation (e.g., see Maunsell's analysis in *Costs and Benefits of Connecting Distributed Generation to Local Networks*, EECA, 24 Sept 2008). The Authority has not considered Maunsell's analysis in its discussion of the impact of DG on distribution networks, nor does the Authority's analysis provide a convincing rebuttal to that of Maunsell.	Page 1 of cover letter, page 18 of ASEC report	19
	Amethyst Hydro	The Working Paper's preliminary conclusion that ACOT payments and DG appear to have no observed effect on transmission investment, is factually incorrect when looked at from a historical perspective.	Paras 17-27	20
	Amethyst Hydro	In coming to the preliminary conclusion that ACOT payments have little observed effect on distribution investments or costs, the Authority appears to have relied upon a cursory review of asset management plans of only four distributors, none of which appear to have as long a history of involvement with DG as Westpower. It seems less	Paras 28-29	21

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		than prudent to draw such a significant conclusion from a relatively minor sample of officially disclosed documents.		
	Amethyst Hydro	The Working Paper's calculation of net cost to consumers of around $10 per household per annum ignores benefits around dynamic efficiency as well as the significant deferral of capital expenditure in the transmission network. Transmission investment is lumpy by nature and such benefits do not accrue immediately, but over time they are very significant. This point seems to have been completely ignored in the Working Paper. If the net benefits of DG displacing transmission are correctly included, Amethyst Hydro considers that the Authority will reach somewhat different conclusions.	Paras 37-40	22
	Amethyst Hydro	Any future policy should correctly value the true benefits that DG brings to the economy, something which is not evident from the analysis undertaken.	Para 52	23
	Amethyst Hydro	In the Working Paper, ACOT payments are considered to be a relatively recent phenomenon, driven in part by the 2007 DG regulations. However, this type of payment is not new. It has been in existence, in one form or another, for a number of decades.	Para 45	24
	ASEC (for IEGA)	The efficiency analysis in the Working Paper is inadequate, focussing solely on the productive efficiency losses that *might* arise *if* ACOT payments are used to subsidise DG that is less productively efficient than grid-connected generation. No evidence is presented that DG is less productively efficient than grid-connected generation. Furthermore, a much more important source of efficiency is dynamic efficiency.	Page iii of ASEC report	25
	ASEC (for IEGA)	Important functions of ACOT payments that have been omitted from the Working Paper are: • the price signal that it provides for reliability at peak • the role of ACOT-funded price-taking DG in the smoothing of prices during peak	Pages iv, 24	26

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		periods • its role in smoothing the relative volatility of cash flows from DG investments.		
	Clearwater Hydro	There are factual errors and misleading statements in the Working Paper. The Working Paper concludes that ACOT-funded DG appears to have quite limited impact on Transpower's peak demand forecasts, and hence ability to defer the assessed need for transmission investment. Transpower was surprised at this conclusion when raised with them, and there are numerous examples that show significant deferral of transmission investments. The Working Paper appears not to have evidence to justify its claims that DG has had little impact on transmission investment and no other economic benefits.	Pages 1, 3	27
	ENA	The conclusions in paragraphs 1.15(b) and (c) of the Working Paper (that ACOT payments have no observed effect on transmission investments, little observed effect on distributed investments or costs, and appear to provide no other material benefits to consumers) appear to be incorrect.	Page 7	28
	Energy3	The Working Paper's preliminary findings (that ACOT payments have had no observed effect on transmission investment, little effect on distribution investments or costs, and appear to provide no other material benefits to distributors, and that a prevalence of distributed generation on some distribution networks can cause net costs to the distributor) appear to have been formed from a superficial review of publicly available Asset Management Plans, rather than on the basis of any informed analysis. The Maunsell report ("Costs and Benefits of Connecting Distributed Generation to Local Networks", 2008) clearly rebuts the preliminary findings of the Working Paper.	Pages 2-3	29
	Genesis	The Authority's cursory treatment of "other benefits", particularly perceived environmental benefits of renewable generation, is inadequate. Any review of the ACOT regime should incorporate a much more quantitative analysis of these benefits.	Page 2	30

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	IEGA	There are factual errors and misleading statements in the Working Paper. For example: • the Working Paper concludes that ACOT-funded DG appears to have quite limited impact on Transpower's peak demand forecasts, and hence limited ability to defer the assessed need for transmission investment. However, Transpower was surprised at this conclusion when IEGA raised it with them, and IEGA has identified numerous examples that show significant deferral of transmission investments. • in para 11.11, the Authority states that wholesale and retail markets for electricity are **national** markets, and provides a reference to a Commerce Commission investigation report. However, the cited reference supports considering markets as **regional**, particularly for smaller consumers in remote areas where DG is most likely to be deployed. (See also pages iv and 19-20 of attached ASEC report.)	Page 2 of cover letter (see also pages iv, 19-20 of ASEC for IEGA)	31
	IEGA	The Authority has let itself and the industry down with the poor quality of thought and analysis presented in the Working Paper.	Page 2 of cover letter	32
	King Country Energy	King Country Energy disagrees with the Authority's conclusions that distributed generation "appears to have no observed effect on transmission investments", and believes that the Authority has extrapolated a few exceptional cases to the whole sector.	Page 1	33
	MainPower	The Working Paper appears to be written around a predetermined goal of eliminating the ACOT payments. The conclusions are supported by superficial and sometimes spurious analysis. (See the table on pages 2-3 of MainPower's submission for its comments on each of the Authority's findings from paragraphs 12.4(a)-(i), and explanations as to why it considers the Authority's analysis is flawed.)	Pages 2-3	34

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	MainPower	In regard to the conclusion in paragraph 12.4(g) of the Working Paper and the related footnote, the reference given (Transpower APR 2013 Appendix F.4) does not support the conclusion.	Page 3	35
	New Zealand Wind Energy Association	The Working Paper fails to meet a high standard of rigour and deliver high quality analysis.	Page 1	36
	NZ Energy	The breadth and depth of analysis in the Working Paper is significantly inadequate, and the conclusions drawn are incorrect. For example, inadequate short-term analysis (ie, the Authority's focus on allocative and productive efficiency in the short-term) has led the Authority to make incorrect conclusions. Analysis is required that considers dynamic efficiency over the longer time periods that are relevant to infrastructure investment in generation, transmission and distribution. Considerably more in-depth and robust analysis, along with full and transparent consultation, is required before the Authority decides whether to make any change that would affect the present TPM or ACOT payment regimes.	Pages 1-4 (paras 4-8, 14-18, 25, 28)	37
	Norske Skog Tasman	The table in Appendix C, and therefore any analysis and conclusions drawn from it, is not correct. For instance, the very last row shows that Horizon pays Norske Skog Tasman ACOT for TOPP1. This is wrong. TOPP1 injects into Norske Skog Tasman's network and has nothing whatsoever to do with Horizon's assets. There are several other errors in this table.	Page 1	38
	Nova	The arguments in the Working Paper fail on several grounds because: • it assumes that the structure of the electricity market will provide economically efficient outcomes in the absence of ACOT payment • it presumes that, given that Transpower fails to take DG into account in its transmission planning, the owners of DG should incur the cost of that failure • it implicitly assumes that none of the ACOT benefits paid to the generator/ retailers	Cover page	39

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		are passed through to end consumers in reduced tariffs • it assumes that because an investment was made in the past, regulatory changes that destroy some of the value of that investment will have no economic cost in the future.		
	Nova	The Working Paper does not address the significant savings in grid connection costs that can be realised by distributors as a result of DG. The Authority should quantify the benefits of lower connection costs before it makes any claim to the economic benefits or otherwise of ACOT payments.	Page 6 (section 6)	40
	Nova	It is wrong to suggest that 'ACOT payments do not appear to deliver any other material economic benefits' (para 1.15(f)), when the payments directly contribute to the economics of building localised generation and reduced energy losses.	Page 7 (section 7)	41
	Orion	Table 4 of the Working Paper may have misinterpreted data, at least in relation to the Orion network.	Pages 2-3 (paras 7-8)	42
	Pioneer Generation	The Working Paper has a flawed cost benefit calculation for the estimated cost of ACOT payments to consumers. Footnotes 1 and 59 of the Working Paper state: "*Based on an assumption that ACOT does not reduce or avoid transmission or distribution costs, $50 million ACOT per annum divided by total electricity consumption of 38,865,916 MWh = $0.00128/ kWh x 8000 kWh (average household consumption) = $10.29 per household."* This cost benefit analysis is flawed because: • distributed generation does reduce and avoid transmission and distribution costs • distributed generation provides additional benefits to consumers that have not been valued in the cost benefit analysis (these benefits are not paid to the owner of distributed generation)	Page 10	43

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		• the ACOT mechanism for compensating distributed generation for these benefits is relatively simple with low transaction costs for both the network company and the distributed generator. Additional costs associated with a change to this mechanism must be taken into account • the $50 million used in the calculation overstates the amount paid by network companies to owners of distributed generation (discussed in Appendix 2 of Pioneer's submission).		
	Pioneer Generation	The value that the Working Paper attributes to payments made to distributed generation is questionable. The raw disclosure data cannot be assumed to be the amount paid to distributed generation under the requirement in Part 6 of the Code. For any robust cost benefit analysis about the efficient contribution of distributed generation to the overall electricity system, this data must be scrutinised and validated.	Pages 12-13, Appendix 2 (pages 17-18)	44
	PwC (for 22 EDBs)	Section 10 of the Working Paper claims that distributors that own distributed generation have the potential to show preferential treatment to their own distributed generation when formulating ACOT payments. However, no evidence is provided in the Working Paper that this is happening. There are already adequate safeguards in place to mitigate the risk of any preferential treatment to distributor-owned DG.	Page 7	45
	Transpower	In relation to the Authority's conclusion in paragraph 1.15(b) of the Working Paper that "…ACOT payments, and the existence of DG, appear to have no observed effect on transmission investments", one interpretation of this statement could be that distributed generation does not avoid or defer transmission investment and, by extension, avoid or defer transmission costs. Transpower considers that a conclusion based on this interpretation would be incorrect.	Page 1	46

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Trustpower	Contrary to the Working Paper's conclusions, some of the Authority's analysis suggests that DG has been effective in deferring transmission investment. Other parts of the analysis have been conducted at too high a level to throw any light on the impact DG has had on transmission investment over the last 100 years. In addition to its role in deferring transmission investment, DG provides a number of other benefits to the industry that are largely overlooked in the Authority's analysis. In order to fully assess the scope, extent, and value of all the benefits DG provides to the industry, the Authority would need to undertake a different kind of analysis to that included in the Working Paper. (See also section 4.1 of the submission.)	Page 14; see also pages 7-9 (section 4.1)	47
	Trustpower	New Zealand's long history of offering ACOT-type incentives to encourage investments which reduce transmission peaks extends considerably further back in time than the distributed generation regulations referred to in the Working Paper. Transmission charging arrangements and payments to DG for reducing peak demand are interlinked, and practically always have been. The level of incentive has fluctuated over time, with current levels near the lower bounds of the long-term range. However, the signal itself has been in existence for more than 60 years.	Pages 2-3, 13-14 (also see Strata report for detailed history)	48
	Trustpower	The Working Paper makes certain assumptions about Trustpower's existing DG arrangements, drawing on material the Authority has found in the public domain. Some of the information in the paper is factually incorrect. However a number of Trustpower's DG arrangements are commercially sensitive and/or subject to confidentiality undertakings. Trustpower considers that correction of the information is not necessary for a "high level" policy discussion, but can provide the Authority further information about its specific DG investments on a confidential basis.	Page i	49
	Vestas New Zealand Wind Technology	ACOT payments didn't just begin last decade. ACOT payments have been part of the New Zealand electricity sector for more than half a century.	Page 2	50

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Inconsistencies	CEG (for Vector)	The Working Paper's analysis suggests that the long-term benefits from incentivising DG may not be material, particularly insofar as reducing or deferring long term transmission investment is concerned. However, these preliminary conclusions are difficult to reconcile with those contained in the Authority's first TPM issues paper. In that earlier work, the Authority concluded that the RCPD charge had been successful in deferring transmission investment in the upper north island (UNI) region through DG. It is imperative that the Authority clarifies whether the views expressed in its ACOT Working Paper displace its earlier views and, if so, the basis for that difference of opinion. This is because they have a potentially important impact upon the best option for dealing with the distortions created by the TPM and Schedule 6.4.	Pages 10-11	51
	Clearwater Hydro	The Working Paper is inconsistent with other positions taken by the Authority and current regulation. For example: • DG is equivalent to negative load, and negative load can avoid transmission charges. Currently, DG can also avoid transmission charges under Part 6.4. However, the Working Paper proposes to change the Code so that embedded generation behind a load will avoid transmission charges, but the DG will not • the proposal to discriminate against older DG plant is against market principles and inconsistent with the rest of the market. Older generators are not discriminated against in the wholesale market, and older DG also shouldn't be.	Page 2	52
	ENA	The Authority's conclusion in paragraphs 1.15(c)-(d) of the Working Paper (that ACOT payments have no observed effect on transmission investments or distributed investments or costs) is inconsistent with the TPM issues paper. Appendix D of the TPM issues paper describes distributed generation as having a favourable impact in terms of deferring investment needs.	Page 7	53

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	IEGA	The Working Paper is inconsistent with other positions taken by the Authority and current regulation. IEGA refers to the following examples: • DG is the equivalent of negative load. Load reduction or demand-side response can avoid transmission charges. DG can avoid transmission charges through Part 6.4. The Working Paper's proposal to change this will create an inconsistency in the treatment of load, demand response and DG, and uneconomic incentives to build infrastructure that embeds DG behind loads • the Authority is concerned that payments to older DG plant could result in inefficient subsidies. However, a similar concern (payments at high energy prices to depreciated generation assets) is the basis of the Labour–Greens 'NZ Power' plan which was criticised by Brent Layton.	Page 2 of cover letter	54
	MRP	One of the ACOT Working Paper's main conclusions is inconsistent with the problem definition in the Authority's paper "TPM issues and proposal paper", dated October 2012. The ACOT Working Paper concludes that current ACOT arrangements result in little effective locational signalling for either DG or transmission investment, since payment rates do not vary according to the number of peaks used in the RCPD calculation. In the TPM issues and proposal paper, the Authority argued that there is potential for current interconnection charges to produce excessively strong signals for peak-time reduction, leading to inefficiently high amounts of new embedded generation, back-up generation or demand-side management. The Authority also argues that the availability of the underlying renewable resource influences the location of distributed generation to a far greater extent than access to ACOT payments (MRP agrees), but also has analysis claiming ACOT payments are worth $650,000/MW in net present value terms. The Authority should clarify these inconsistencies in its analysis before coming to any conclusions on any changes to the ACOT provisions or any revised TPM proposal.	Pages 1-2	55

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Nova	The Authority's case against ACOT payments is inconsistent with its moves to introduce "user pays" for transmission. If transmission charges are charged directly to retailers or their customers instead of network companies, then those users would automatically avoid transmission charges when they are supplied by DG.	Cover page	56
	Vector	The analyses in the ACOT Working Paper and the October 2012 TPM issues paper appear to contradict each other. Appendix D of the TPM issues paper suggests that there are net benefits in UNI and USI from deferred transmission investment. The ACOT Working Paper suggests that there is no evidence of benefits from deferred transmission investment in any region, at least in relation to distributed generation.	Pages 4, 8, 10-11 (paras 17, 37, 39-48)	57
Relevant considerations	Genesis	The ACOT Working Paper fails to address a fundamental concern expressed by distributed generators, that the proposed TPM will undermine investor certainty in receiving such ACOT payments. This impact on investor certainty is a legitimate impact that the Authority needs to consider as part of any review of the regime.	Page 2	58
	NERA Economic Consulting (for Trustpower)	It is important to consider the extent to which an amendment to ACOT payments will increase the level of regulatory risk and the cost of capital in the New Zealand electricity industry. An increase in regulatory risk reduces efficiency, since the provision of future services becomes more expensive. An increase in the cost of capital is likely to reduce and/or delay efficient investment, which neither promotes the reliable supply by the electricity industry, nor is to the long-term benefit of consumers.	Page ii	59
	NZ Energy	Most distributed generation is renewable and there are significant pressures to move toward renewable energy. While the Authority may claim that such matters must be dealt with by other regulatory authorities, these matters are central to the long-term benefit of electricity consumers and must be considered by the Authority.	Page 4 (para 34)	60

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Irrelevant considerations	Nova	The Working Paper states that ACOT payments appear to provide no other material benefits to distributors. However, whether distributors benefit from distributed generation should be immaterial to ACOT payments. ACOT payments are a regulated payment that corrects for a market anomaly.	Page 6 (section 5)	61
	Nova	The Authority has undertaken analysis of the assumptions used in Transpower's grid planning, and concluded that ACOT payments and the existence of DG appears to have no observed effect on transmission investments. However, the absence, or otherwise, of DG in Transpower's planning has no relevance to whether DG should receive ACOT payments.	Page 4	62
Predetermination	ASEC (for IEGA)	Long-term investment decisions were made with the expectation of some form of continuing ACOT payment. Eliminating these payments will adversely affect investment incentives.	Page 3 (section 3.3)	63
	Clearwater Hydro	The Authority seems to be philosophically wedded to reducing ACOT payments.	Pages 1, 3	64
	MainPower	The Working Paper appears to be written with a predetermined goal of eliminating the ACOT payments. The conclusions are supported by superficial and sometimes spurious analysis.	Page 2	65
	Ngawha Generation	Ngawha Generation's decision to build generation capability within the Northland region was based upon the expectation of ACOT payments being made over the 20-40 year life of the asset. In particular, significant investment in additional capacity was made in 2008, which was supported by ACOT payments being made under the old 'Electricity Governance (Connection of Distributed Generation) Regulations 2007' (now incorporated into Part 6 of the Code). Any reduction or removal of ACOT payments at this stage in the asset lifecycle would materially reduce returns on this investment, potentially altering the basis upon which the original investment decisions were made.	Page 1	66

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Legitimate expectations	Ringa Matau (subsidiary of Tauhara North No.2 Trust)	Investors have a reasonable expectation that once they have made a lawful investment in long-life assets, their economic benefits should not be summarily appropriated at the whim of new regulatory oversight. Māori, as others, should be able to expect a high burden of proof on real and tangible benefits of any proposed changes before they are implemented, especially where there is the potential for material transfers of wealth.	Page 2	67
	Trustpower	Significant changes to the pricing methodology that applies to existing DG will affect the legitimate expectations and interests of DG owners who have made investments in reliance on various regulatory and quasi-regulatory schemes. Investments related to distributed generation have been made on the basis of peak demand charges that have been set and approved by successive governments, regulators and lines companies. The whole purpose of the peak demand price signals were to encourage the desired up-front capital investment by offering increased certainty about the returns which would be available over the life of the investment. The assumption likely to have been made at the time that these investments were made was that, for the pricing signals to be effective, the regulator would ensure the payments for reducing peak demand would continue over the assumed economic lifetime of the investment. Prior to the Working Paper, investors would not expect that a signal which had been in place for more than 60 years would be abruptly removed.	Pages ii, 3 (para 2.3.5), 10-11 (section 5.3)	68
Good regulatory practice / Need for regulatory certainty and stability	Trustpower, NERA Economic Consulting (for Trustpower)	Best practice regulation has evolved so as to establish a number of core principles for taking account of the interests of investors when making and amending rules that affect returns on invested capital. These include: a) the principle of **cost recovery**, which would enable investors a reasonable opportunity to recover the cost of their investment, including an appropriate return on their investment b) the principle that the regulator should generally seek to maximise the degree of certainty and predictability associated with future regulatory decisions, and	Pages 12-13 (section 6.2) of Trustpower submission, pages 9-12 (section 3) of NERA submission	69

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		minimise perceptions of regulatory risk. The Authority should have regard to these principles in discharging its statutory functions. The principle of cost recovery is also consistent with the Authority's statutory objective because it is a necessary precondition for efficient private sector investments in the electricity industry, and therefore underpins the delivery of reliable supply which is in the long-term interests of consumers.		
	ASEC (for IEGA)	Regardless of the fact the Authority has a single statutory objective, it is also a regulatory body and should comply with the principles of best practice regulation (refer to the Treasury's best practice regulation framework, and Mumford's related paper). Best practice regulation is "certain and predictable" (with the regulatory regime being predictable over time) and is "growth supporting". Both of these attributes include as indicators the regulatory regime taking into account the need for firms to make long-term investment decisions. The potential removal of ACOT payments is not consistent with these indicators.	Pages 3-4 (section 3.3)	70
	Clearwater Hydro	Certainty and predictability form part of any best practice regime. The ACOT regime has formed part of the NZ energy market for over 50 years, and a lot of DG investment has been made under this regime. Clearwater Hydro strongly opposes Authority attempts to dilute ACOT payments for DG. A radical change of this nature is anything but certain or predictable.	Pages 1-2	71
	IEGA	IEGA is concerned that the approach put forward in the Working Paper significantly departs from regulatory best practice by proposing fundamental changes to ACOT payments that have been a feature of the New Zealand electricity market (in a variety of forms) since at least the 1950s. Sudden changes in price signals that have consistently formed part of the justification to invest in DG over the asset's life undermine regulatory certainty and reduce dynamic efficiency which is not in the long-term interest of consumers.	Page 2 of cover letter	72

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	MRP	Regulation should be stable and the general quality and direction (rather than outcome) should be predictable. Options for reform should be subject to high thresholds for change and proceed according to robust and best practice regulatory impact assessment processes. Any changes should be subject to long lead times and involve appropriate grandfathering arrangements where significant wealth transfers are involved.	Page 2	73
	NERA Economic Consulting (for Trustpower)	The Authority is subject to different requirements when making changes to ACOT payments, relative to changes to the TPM. In light of the different requirements governing any change, the Authority should use its ability to amend ACOT payments with care and be guided by regulatory best-practice.	Pages i, 3-4 (section 2.3.1), 6-8 (section 2.5.2)	74
	Ngawha Generation	Creating an uncertain regulatory environment is detrimental to future investment planning, particularly for long-life assets.	Page 1	75
	Nova	ACOT payments were created to keep owners of DG whole when the market was restructured and energy generation and retailing was separated from the networks. A loss of ACOT revenues falls outside what would be considered to be a normal commercial and regulatory risk.	Page 7 (section 8)	76
	Philip Wong Too	The current regime is not fundamentally "broken", and the Authority should carefully consider the value of stability in pricing methodologies before making changes to the present methodology.	Page 1	77
	Trustpower	The expectations of current DG investors means that it would not be consistent with the efficient operation of the industry or good regulatory practice to make significant changes to the pricing principles that apply to their existing DG investments.	Pages ii, 12-13, 14	78

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Other comments re: regulatory design	CEG (for Vector)	Recognising and minimising inefficiencies in relation to long-term investments is a key element of the design of sound regulatory frameworks.	Page 9 (para 33)	79
Need for grandfathering provisions and/or transitional arrangements	Trustpower, NERA Economic Consulting (for Trustpower)	As explained in the NERA report, amendments to the existing ACOT regime would only be consistent with the Authority's statutory objective if transitional arrangements are included. They are necessary to mitigate the adverse effects such a change would have on perceptions of increased regulatory risk, and to assist in investor cost recovery.	Page 13 (para 7.1.2) of Trustpower submission, pages ii-iii, 13, 25 of NERA submission	80
	ENA	Significant business investment decisions have been made on the basis of ACOT payments continuing. Consideration should be given to an appropriate transition for existing DG receiving ACOT payments (to the extent that changes are to be made), such that the market for DG is not undermined.	Page 10 (para 27)	81
	Energy3	Investors made long-term investment decisions in reliance on ACOT payments, and removing ACOT payments significantly increases the regulatory and investment risk for generation projects. For this reason, if the Authority considers eliminating ACOT, this should only apply to future DG projects. All existing DG projects should be grandfathered under the existing ACOT arrangements.	Page 4	82
	King Country Energy	The Working Paper suggests a fundamental change, but there does not appear to be any form of transition mechanism in the proposal.	Page 1	83

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	MRP	Industry participants with distributed generation projects made their investment decisions based on an established regulatory regime, which has been in place for some time. Significant changes to the ACOT regime will have an impact on the economic viability of their investments. Any changes should be subject to long lead times and involve appropriate grandfathering arrangements. At a minimum, transitional arrangements should apply to the life of any relevant contractual arrangements between the distributor and the embedded generator.	Page 2	84
	NERA Economic Consulting (for Trustpower)	Incorporating change management arrangements that compensate existing investors in distributed generation for expectations of returns reasonably held by them would allow the Authority to achieve any efficiency objectives associated with amending ACOT payments and, at the same time, avoid the adverse effects of increasing regulatory risk.	Pages iii, 25	85
	New Zealand Wind Energy Association	Investors have made investments in good faith based on the policy at the time. The changes mooted have the potential to place existing investments at risk. If changes are made it is essential that there is some kind of grandfathering.	Page 2	86
	Ngawha Generation	If a change to the ACOT regime is implemented, any existing distributed generation agreements made under the existing regulations where ACOT payments are included should be grandfathered.	Page 3	87
	Pulse Energy	Small, often family-based, kiwi entrepreneurs have made investments in the market. Their investments were premised on ACOT payments, so the ACOT payments should remain at similar levels, even if the mechanism for calculating the payments is changed. If change has to be made, an effective date provision could be applied to maintain a level playing field for those that have invested.	Page 1	88
	PwC (for 22 EDBs)	Changing the basis for ACOT payments could fundamentally change the basis upon which investments were made (both DG investment decisions, and distributor decisions on whether to augment their own network). To provide regulatory certainty	Pages 6-8 (paras 40-43 and 48)	89

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		and protect recent investments, any changes to schedule 6.4 should be accompanied by consideration of transitioning or grandfathering existing arrangements for existing DG connections.		
	Trustpower	The NERA report provides a number of different examples of transitional arrangements which regulators have developed in Australia and the UK to mitigate the effect of changes on existing investors. These include arrangements which entirely exclude, compensate, or cap costs for existing investors, and arrangements which extend compliance timeframes. In some cases, it was decided that the regulator did not have the power to make changes which affect existing investors. NERA's report also considers the US environment and its approach to the regulatory risk which occurs when the regulatory compact between regulators and investors breaks down. The US has developed various arrangements in both its regulatory practice and case law which support the property rights of investors who have made investments in response to a public need. These principles and arrangements should be taken into account by the Authority if it proposes to amend the ACOT arrangements.	Page 13 (section 7)	90
	Trustpower	The optimal approach to transitional arrangements (and the one consistent with best practice principles and arrangements discussed in the NERA report) would be for the Authority to provide for separate treatment between existing DG and DG which is committed for construction after the completion of any review of Schedule 6.4. New DG would be remunerated under any new regime, but the Authority should ensure that ACOT payments continue to be made to existing DG at level consistent (in real terms) with those received in recent history.	Page 13 (section 7)	91
	Vestas New Zealand Wind Technology	At a minimum, any changes to the way in which ACOT payments are made or calculated should only apply to future investments. Any arrangements that are currently in place for existing distributed generation projects should be preserved so as	Page 2	92

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		to minimise sovereign risk and not harm New Zealand's reputation as a place to invest.		
	Wind Farm Group	Existing ACOT payments should be grandfathered.	Page 5	93
Other comments regarding grandfathering provisions	CEG (for Vector)	An argument might be made that the existing ACOT payments should be retained ("grandfathered") for existing DG that have invested under those arrangements; however: • it may be very difficult in practice to distinguish between "old" and "new" DG, particularly if plant is partly or wholly replaced/refurbished over time • to the extent a meaningful distinction could be made, this would create additional competitive neutrality problems as between "old and new" DG.	Page 15 (para 61)	94

PART 2: ANALYSIS, ANALYSIS FRAMEWORK, CHAPTER COMMENTS & OTHER COMMENTS

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Analysis framework				
Relationship between ACOT and the wider review of the TPM	Buller Electricity	The Authority should openly consider the links between distribution and transmission pricing methodologies when setting the TPM and ACOT arrangements.	Page 6	95
	ENA	The Working Paper does not explore whether potential changes to the TPM would improve the efficiency of existing ACOT payments.	Paras 18, 19	96
	Genesis	A review of the current incentives for distributed generation and the current ACOT regime is necessary. However, such a review should be completed before the Authority concludes its deliberations on a future TPM. This is because a review into the ACOT regime is likely to require consequential amendments to the TPM.	Page 1	97
	King Country Energy	The ACOT review should form part of the wider TPM review.	Page 1	98
	Meridian	If the Authority has concluded that ACOT payments have not reduced the need for network investment or provided other material benefits, the Authority should review the Part 6 pricing principles to devise a more efficient approach. Such a review of Part 6 should take place separately to a review of the TPM, though the two could take place in parallel with one another.	Page 1	99
	MRP	Any review of ACOT arrangements needs to be undertaken as the same time as the wider TPM review. Undertaking the two reviews on different timeframes would compound the current uncertainty facing DG investments, and creates potential for conflict between the outcomes of the two reviews.	Page 1	100

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	PwC (for 22 EDBs)	A review of Schedule 6.4 should be incorporated into the wider distribution pricing review and concurrent with further consultations on a revised TPM.	Page 7	101
	Ringa Matau (subsidiary of Tauhara North No.2 Trust)	A discussion on ACOT is only meaningful within the context of an actual TPM. Any TPM and associated ACOT regime should not create an uneven playing field for investors.	Para 1	102
	Vector	ACOT payments essentially require electricity distribution businesses to pass on the pricing signals from the TPM. Changes to the TPM might be necessary as well as changes to Schedule 6.4 to address the efficiency concerns identified in the Working Paper. If the problem is that the TPM is sending inefficient pricing signals, inefficient responses to those signals won't necessarily be limited to distributed generation.	Page 3	103
The need to review Schedule 6.4 and/or Part 6	MEUG	A review of Part 6 and Schedule 6.4 would be necessary, regardless of the TPM review process.	Para 6	104
	Ngawha Generation	The pricing principles in Schedule 6.4 were designed to encourage DG investment. The Authority now appears to be pursuing an objective of ensuring that prices are economically efficient. The objective of Part 6 needs to be clarified so all parties can understand how it impacts current and future investments and pricing decisions.	Pages 1- 3	105
	Orion	The pricing elements of Part 6 need review. However, the Authority should be wary of seeking economic perfection as there are advantages with a simpler approach particularly for small scale DG. A de minimis approach could be considered and the grid owner could be made responsible for any payments for benefits from large scale DG. Care is needed with any review to limit investment signal risks and because of potential price signals for DG from the TPM review.	Pages 1, 2	106

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	PwC (for 22 EDBs)	It is unclear whether the Authority still considers that positive price discrimination towards DG is an appropriate objective under Schedule 6.4. The Working Paper seems to suggest a preference for economically efficient DG pricing. The Authority may need to first address whether incremental cost pricing principles under Schedule 6.4 are necessary to fulfil the Government's policy objectives.	Page 3	107
	PwC (for 22 EDBs)	The current requirements of Schedule 6.4 appear to be inconsistent with the purpose of Part 6. The purpose of Part 6 suggests that regulations should facilitate the DG connections process where connections are consistent with applicable standards. Schedule 6.4 does not appear to align with this primary purpose.	Page 3	108
How the Authority should conduct a review of Schedule 6.4 and/or Part 6 (and what should be considered)	Amethyst Hydro	Any rewriting of Schedule 6.4 of the Code should only be undertaken after full and careful consultation with the industry on the form and substance of any future policy framework. This is necessary to avoid business uncertainty and regulatory shock.	Para 52	109
	ENA	A review of the pricing principles for DG connections, including ACOT payments, is warranted. Any such review should take place within the context of a review of the TPM and of distribution pricing methodologies. There are strong links between these three issues, but it appears these links are being overlooked.	Page 9	110
	ENA	A review of Schedule 6.4 should consider:	Pages 11-12	111

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		• the implication of a change in the objective of the regulation of distributed generation connection pricing, if the policy objective has shifted from facilitating DG to promoting economic efficiency • how best to signal the long-run incremental change in transmission and distribution costs that results from DG to DG operators • the extent to which efficient price signals to distributed generators are best delivered through regulatory means as opposed to market mechanisms; • the importance of long-term stability in price signals to distributed generators, to provide confidence to distributed generation investors to invest in efficiency enhancing distributed generation • ensuring consistency in the treatment of distributed generation and grid connected generation • ensuring consistency in the price signals for transmission peak reduction • the extent to which distributed generation should be treated any differently to other electricity connections, in terms of its contribution to the fixed and common costs of distribution and transmission networks • the potential for unintended consequences of any policy change • the transaction costs and practicality of implementing and maintaining any proposed changes.		
	Pioneer Generation	Any review of Part 6 and associated cost-benefit analysis should be a robust, open-minded first principles review that takes accurate information into account and demonstrates that alternatives are more efficient than the status quo.	Page 14	112
	PwC (for 22 EDBs)	A review of Schedule 6.4 should be incorporated into the wider distribution pricing review and concurrent with further consultations on a revised TPM. The	Page 7	113

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		review should: • address the purpose for DG pricing principles under Schedule 6.4 • analyse the effect of removing ACOT payments on long-run transmission demand and distribution, transmission and DG investments • address whether a separate DG pricing principle is necessary or whether DG pricing could be captured under the wider distribution pricing principles • assess the options to price avoided interconnection charges based on Transpower's economic costs • consider transitional provisions for existing arrangements.		
	Transpacific Industries	If Schedule 6.4 is reviewed, that review should consider dynamic efficiency and the additional competition that DG can provide in a region.	Page 3	114
	Vector	Distributed generation arrangements should be reviewed. However, a review of distributed generation pricing should not be limited to ACOT payments. It should include all aspects of DG pricing principles, in particular the treatment of fixed and common costs. Current application of the DG pricing principles can mean that consumers bear extra costs from DG. There is no sound reason why consumers should bear all fixed and common costs, while distributed generators are not required to contribute to any of those costs. The current pricing principles provide that distributed generators receive all the benefits from distributed generation, which can be over and above any efficiency benefits, and still not have to share those with consumers.	Paras 2, 4 (pages 4-5)	115

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Vector	Matters that the Authority should consider as part of its review of distributed generation arrangements include: • why do distributed generators receive all the benefits from distributed generation and consumers none? • why aren't distributed generators required to contribute to fixed and common costs? • why should consumers bear all of those costs when distributed generators also use and benefit from distribution and transmission networks? • does the Authority believe it is efficient for market participants to respond to RCPD charges in the upper North Island and upper South Island? • is there an efficiency difference between load responding to RCPD charges by reducing peak load and distributed generation responding to RCPD charges? • what would be the impact of alternative TPM options? • should the distributed generation arrangements be modelled more closely to Transpower's prudent discount policy? In particular, should the aim be to deter investments in alternative projects which would allow a customer to reduce its own transmission charges while increasing the total economic costs to the nation as a whole? • if distributed generation arrangements are changed in a way that impacts the financial viability of existing distributed generation, should transitional arrangements be put in place?	Para 36	116

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Onus and burden of proof	Clearwater Hydro	The burden of proof should be on those proposing the changes, not those supporting the status quo.	Page 1	117
	King Country Energy	The Authority should be defending the status quo and calling for evidence to show that the current situation does not add value, rather than the reverse. The pricing principles were based on accepted practice at the time of their introduction, and determine the viability and value of investments in DG.	Para D	118
	NZ Energy	The Authority should have to prove beyond doubt that ACOT payments are not economically efficient in the long run. DG operators should not have to prove that ACOT payments are efficient.	Para 25	119
	Ringa Matau (subsidiary of Tauhara North No.2 Trust)	Maori should be able to expect a high burden of proof that requires real and tangible benefits to be shown for any proposed changes to the regulatory environment before they are implemented. This is especially the case where there is potential for material transfers of wealth. In the case of Ringa Matau, the cost of allocating interconnection charges to generators without a mechanism to recover those additional costs will fall on Tauhara North No 2 Trust's beneficiaries.	Paras 3- 4	120
	Trustpower	Before it can justify reducing the rate of ACOT payments, the Authority needs to show that the benefit of doing so would outweigh the cost.	Section 4	121
Policy considerations that should frame the Authority's analysis	Amethyst Hydro	Any future policy should correctly value the benefits that distributed generation brings to the economy and ensure that those benefits are channelled through to the creator of the benefits in an economically efficient fashion.	Para 52	122
	Buller Electricity	If DG is limited, improvements in technology mean that consumers might soon be able to embed generation behind their own meters instead of relying on DG, bypassing transmission and distribution. The problem is not ACOT, but the regulatory regime's pricing model for the recovery of investment costs. The Authority should address the impact of technology on long-life network assets	Page 5	123

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		and how those costs are recovered.		
	ENA	The policy background behind the distributed generation regulations and Part 6 suggests that their focus was to facilitate DG, rather than provide efficient cost or price signals. The tenor of the ACOT paper suggests that the objective for DG pricing may have changed, but does not spell this out. An economic efficiency objective is appropriate for DG pricing policy, because there is no reason to favour DG over other competing suppliers of energy or transport or other users of the transmission and distribution networks.	Pages 5- 6	124
	ENA	The key question for any review of ACOT payments should be whether the efficiency of price signals to DG, relating to the externalities it imposes on the transmission and distribution system, can be improved cost effectively. The issues raised in an ACOT paper need to be framed in the wider context of the electricity market, given this broader context.	Para 17	125
	ENA	Instead of focussing on the extent to which ACOT payments provide benefits, a better focus would be to consider whether DG provides benefits and whether existing ACOT payments are a reasonable proxy for the extent of those benefits. DG is likely to provide an increasing share of total generation, given existing and emerging technologies. The objective of any review of ACOT payments should be to determine whether there are more efficient ways to provide signals to DG investors as to the appropriate location, capacity and timing of DG investments.	Para 10	126
	King Country Energy	In most cases, ACOT is part of a wider contractual agreement between DG and network companies. Each party to such a contract would have assessed the contractual arrangement as a whole. It is therefore unfair to single out ACOT as an issue, because ACOT forms just one aspect of a commercial contract and its perceived impact on third parties.	Para C	127

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	NZ Energy	The Authority has taken a short-term view when analysing the economic efficiency of ACOT payments. When a long-term view is taken and dynamic efficiency is analysed, Andrew Shelly's analysis (see ASEC (for IEGA)) shows that present ACOT payments are based on avoided economic costs, not just avoided transmission charges. The analysis also shows that the present rate of ACOT payments may be underfunding investment in DG.	Paras 6-7, 14-18	128
	NZ Energy	The breadth and depth of the analysis in the Working Paper is inadequate. As a result, the Authority has come to incorrect conclusions. The Authority has focused on short-term allocative and productive efficiency, but it needs to consider dynamic efficiency over periods of time that are relevant to infrastructure investment in generation, transmission, and distribution.	Pages 1, 3- 4	129
	Orion	The Authority needs to consider the possible financial impact on owners of DG investment when considering changes to the pricing aspects of Part 6. The Authority also needs to be careful in light of the wider TPM review.	Page 2	130
	Philip Wong Too	The Authority should carefully consider the value of stability in pricing methodologies.	Page 1	131
	Pioneer Generation	Dynamic efficiency should be the focus of the review of ACOT payments. Although productive efficiency (which was the focus of the Working Paper) is important, dynamic efficiency is much more important. Dynamic efficiency is achieved via appropriate investment in long-life transmission, distribution and generation assets. ACOT payments provide an economically efficient signal and incentive to invest in long-life DG assets.	Para a	132
	Vestas New Zealand Wind Technology	The proposals in the Working Paper are out of step with government policy. Government policy is to facilitate investment in DG. Any changes that are out of step with the Government's policy should only be made if they will result in clear and substantial long-term benefits for electricity consumers.	Page 2	133

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Incorrect data	Amethyst Hydro	Turnbull Power Station is included in the list in Table 3. Turnbull is part of an isolated distribution network at Haast and has no connection to the national grid.	Para 49	134
	Amethyst Hydro	Table 6 in Appendix C appears to be incorrectly labelled in the header row. Some labels are repeated in more than one column.	Para 48	135
	Ngawha Generation	Appendix C states that Ngawha does not receive ACOT. Ngawha does receive ACOT from the distributor.	Page 2	136
	Pioneer Generation	The information that the Authority provides about Pioneer's generation plant in Appendix C, Table 6 of the Working Paper is incorrect. It should be updated, using the information provided in Appendix 1 of Pioneer's submission.	Page 4, Appendix 1	137
Analysis framework – other comments	ASEC (for IEGA)	The Working Paper uses the term "inefficient" without clearly defining the type of efficiency in question and without clearly relating efficiency to the long-term benefit of consumers.	Section 3	138
	ENA	Inefficiencies identified by the Authority may not be solely attributable to ACOT. Other regulatory failures are also at play: • the reason why ACOT payments do not send locational signals is because ACOT payments mirror the interconnection charge, so can only provide the same price signal as the interconnection charge. This problem relates to the TPM • the reason why DG receives ACOT without necessarily resulting in transmission cost savings is that the TPM does not signal the long-run marginal costs to supply transmission capacity • grid-connected generation does not receive payments consistent with ACOT payments to DG. This is a problem with a system that does not have a mechanism to identify and reward grid connected generation that is an	Para 18	139

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		alternative to transmission. If DG is not reflected in Transpower's demand forecasts, this is because of Transpower's forecasting process. If consumers continue to pay the same for transmission plus ACOT payments, this is a problem with the TPM not providing appropriate signals to DG and other operators.		
	Norske Skog Tasman	The Authority is applying an after-the-fact kind of assessment of DG to determine whether ACOT payments are justified. If the Authority does assess whether DG deserves to receive ACOT payments, that assessment should take place at the time of the decision to proceed with a DG investment. A DG investment itself may alleviate transmission congestion.	Page 1	140
	Norske Skog Tasman	The Authority's concern should be with the observation that consumers do not receive any benefit from ACOT, not the payment of ACOT itself. However, end consumers do receive ACOT benefits in the case of industrial plant with generation.	Page 1	141
Comments on the wider TPM proposals	Pioneer Generation	Pioneer has been considering entering the retail market. However, if the TPM proposals proceed as they are currently understood, Pioneer Generation would need to reconsider entering the retail mass market. The cost of such a reduction in retail competition would far exceed the Authority's estimated cost of ACOT to the consumer.	Pages 11-12	142
	Vector	ACOT payments essentially require electricity distribution businesses to pass on the pricing signals from the TPM. Changes to the TPM might be necessary as well as changes to Schedule 6.4 to address the efficiency concerns identified in the Working Paper. If the problem is that the TPM is sending inefficient pricing signals, inefficient responses to those signals won't necessarily be limited to distributed generation. However, the efficiency impact of the concerns with distributed generation are minor compared to the impacts of the Authority's	Paras 7-10, 18-20	143

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		TPM proposal. The Authority should not use arguments about distributed generation to justify major reform to the TPM, or its TPM proposals.		
Policy and pricing principles (including Chapter 4 of the Working Paper and the history of ACOT)				
History of ACOT: the existence and level of ACOT payments over time	Amethyst Hydro	ACOT payments are not a recent phenomenon. They have been in place since at least the 1980s.	Para 45	144
	Contact	ACOT payments are an historic anomaly that create perverse incentives and require addressing. Contact agrees with the Authority's preliminary findings.	Page 1	145
	ENA	The ACOT payment is intended to be a proxy for savings to consumers in a region that result from generation within their own network area. The rationale behind ACOT is that those who are paying lower transmission costs because of DG should make a payment to the DG owner, to reflect the benefit they receive.	Para 21	146
	King Country Energy	It is misleading to suggest that the introduction of ACOT is linked to the introduction of DG regulations. ACOT can be traced back to the 1940s.	Para A	147
	MainPower	ACOT payments are a proxy for the long-term transmission benefits of DG. The current form of ACOT is readily calculable by distributors and generators and reasonably predictable compared to spot prices. This means that the transaction costs for ACOT are low.	Page 2	148

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	Nova	Before 1999, local electricity supply companies both sold electricity and owned the networks in their regions. Many also owned generation assets which served to reduce their reliance on the grid and the associated costs. When those companies were split in 1998, for the sake of simplicity, it was decided that transmission charges would be levied on the network companies and thereby passed through to retailers and consumers. This has implications for how ACOT payments should be considered. Schedule 6.4 was introduced to address problems that some owners of DG were having as a result of the reforms, and some network companies' use of their monopoly powers to capture the benefits of avoided transmission costs for their own benefit. The Authority should better demonstrate why the work that led to the current arrangement is incorrect, before finalising its view on ACOT payments.	Pages 1- 2	149
	Nova	In a freely competitive market structure, DG would be in competition with Transpower to serve increases in demand by consumers. DG would be built if it could profitably meet a price just below that delivered via the grid. Grid prices would be inclusive of transmission charges. Therefore, DG would benefit from the savings it creates from the avoided transmission costs. Similarly, network companies would be prepared to contract to secure additional DG in the future, as long as that DG could deliver at prices below Transpower's delivered cost of electricity. However, the market is designed in a way that means that DG does not directly benefit from the reduction in grid connection charges that it provides. The regulation of ACOT provides a remedy to that failing.	Pages 2-3	150
	NZ Energy	ACOT payments are not new. ACOT incentives have been in place since the national grid was first built.	Paras 9-10	151
	Pioneer Generation	Pioneer Generation was split out from a combined generation and network company. Pioneer Generation's submission is based on the experience of its employees who previously worked for that combined generator/network	Pages 6-7	152

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		company. Before they were split, such companies valued generation based on the avoided cost of energy and avoided cost of peak demand charges attributable to the generation. Those companies established embedded generation schemes to complement demand management and load control strategies, thereby optimising the distribution system and deferring capital expenditure. Capital expenditure that could be deferred because of such generation included lines upgrades and the replacement of transformers. Distributed generation provided increased network security, minimising the impact of transient network faults. However, regulation required the split of lines and generation companies. After the split, lines companies became less willing to contract and compensate distributed generation for the benefits that they enjoyed from distributed generation. ACOT payments are a regulatory mechanism that is needed to account for the regulated structural change.		
	Pioneer Generation	Low transaction costs and simplicity were key considerations in establishing the initial distributed generation regulations. Before the regulations were introduced, DG owners and operators faced lengthy delays and high costs when negotiating individual arrangements for payments with monopoly network companies, with an asymmetry of information. Pioneer Generation agrees with the Authority's comment in paragraph 7.4 that a more complex approach may result in higher administrative costs for distributors without providing them with any additional benefit.	Page 13	153
	PwC (for 22 EDBs)	The policy background of the Working Paper does not suggest that DG should receive favourable prices compared to other supply connections. Though an environment that encourages investment in small-scale generation may be desirable under the policy principles, this does not mean that pricing should encourage investment in DG.	Page 3	154

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Ringa Matau (subsidiary of Tauhara North No.2 Trust)	Before the DG rules were introduced, lines companies could directly benefit from reduced TPM charges that resulted from embedded generation that they installed and operated. However, they had no obligation to recognise the benefits from any other embedded generation. The main reason why ACOT was included in the DG rules, according to Ringa Matau's recollection, was to allow embedded generators to compete on the same basis.	Para 2	155
	Strata Energy Consulting (for Trustpower)	In the 1930s, bulk supply of electricity from the state to local authorities became the norm. Supply authorities paid prices that were based solely on winter peak demand. Urban authorities that had their own generation were able to manage their own costs. Rural power boards without their own generation could not manage their own costs, and were unable to spread the demand costs over the consumption of a large number of consumers. When the bulk supply tariff was introduced in 1954, bulk supply charges continued to be based on demand. From April 1967, the structure of the bulk supply tariff was amended to introduce an energy component. Prices became very volatile. Prices were frozen between 1970 and 1976, followed by significant increases between 1977 and 1980. In 1984, a more cost reflective seasonal structure was introduced. From 1984 to 1989, the structure of the bulk supply tariff was amended to introduce seasonal and time of day rates and a differential between the North Island and South Island rates. From 1988 to 1991, the bulk supply tariff was gradually unbundled into a series of pricing options for customers. This included the introduction of explicit charges for transmission when Transpower was separated from ECNZ. ECNZ initially set charges for energy, but these were later set by the wholesale electricity market.	Pages 9-21	156

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		From 1995, Transpower continued to develop its TPM by designing a pricing structure for transmission based on connection, capacity and network charges, until the development of the current TPM in 2008. Throughout this entire period from the 1930s, there has always been a charge on grid connected electricity consumers based explicitly on peak demand. At times the charge has been lower than current rates in real terms, and at times it has been significantly higher. But the pricing signal itself has always existed.		
	Trustpower	In Trustpower's experience payments have been made to DG on the basis of their ability to reduce peak demand for at least the past four decades. Incentives to do so have existed since at least the 1930s. DG and load management have been used to reduce peak demand, improve load factors, and provide overall benefits to the distribution, transmission and generation systems. Although the level of peak demand charges have varied, they have provided a constant signal. ACOT type incentives and payments are not a recent phenomenon. Traditionally, peak demand charges have been higher than current levels.	Section 2	157
	Trustpower	The current arrangements in Schedule 6.4 are the result of a decision to retain a number of rules and arrangements that were already in place when the Code was drafted. The Code was put in place under the Ministerial certifying process described in section 36, which required the Minister to be satisfied that the Code was consistent with the Act. This suggests that the Government considered that the pricing principles in Schedule 6.4 were consistent with the Authority's statutory objective. Trustpower agrees.	Section 5.1	158

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Wind Farm Group	The underlying policies behind ACOT include that: • competition in the generation and supply of electricity should be promoted • there should be an investment environment that encourages small-scale generation and the adoption of new electricity technologies and renewables • local solutions to local energy needs, innovation and responsiveness to consumer demands should be encouraged • there should be an investment environment that encourages the contribution of small scale generation to the delivery of electricity in an environmentally sustainable manner and to the overall security of the electricity system • the compliance costs of regulation should be minimised.	Page 1	159
Chapter 6: ACOT policies of distributors				
Distributors' current ACOT policies	Orion	Table 4 does not appropriately interpret information relating to Orion. The avoided cost of transmission that Orion has disclosed includes costs Orion incurred in providing alternatives to what Transpower would otherwise have built. The amount is mostly unrelated to DG. The installed capacity of DG is not necessarily related to payments Orion makes, since not all connected DG receives payments. The total amount that Orion paid in relation to transmission in the 2010 disclosure year was around $238,000, not $458,000. Though Orion paid export credits to generators with a capacity of around 8 MW in 2010, the total DG capacity in that year was around 34 MW. This raises the question of what amounts distributors are paying to DG, and on what basis.	Pages 2- 3	160

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Orion	Table 5 says that Orion pays $115 per kW per year based on LRAIC. That amount relates to distribution only. Orion uses a different value for the basis of the transmission component. The actual payment Orion payment makes is somewhat less than LRAIC, to reflect the fact that generation is not a perfect substitute for distribution or transmission.	Page 2	161
	PwC (for 22 EDBs)	Avoided transmission charges, particularly avoided interconnection charges, do dominate distributors' DG pricing methodologies. However, distributors also consider avoided distribution costs where these can be demonstrated.	Page 4	162
	PwC (for 22 EDBs)	ACOT payments should not ignore Transpower charges. Transpower charges are the costs that distributors face and the mechanism by which Transpower signals its economic costs. Incorporating avoided Transpower charges into ACOT payments should also signal avoided economic costs, so it is appropriate for Transpower charges to feature in ACOT payment policies.	Pages 4- 5	163
	PwC (for 22 EDBs)	Transpower's interconnection revenue requirement does not change with changes in RCPD. However, the allocation of interconnection charges across distributors can change within an RCPD region, and an individual distributor can reduce its interconnection charges by connecting distributed generation. Payment of avoided interconnection is consistent with the "with and without" test under the current definition of incremental cost.	Pages 4-5	164

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Chapter 7: Do ACOT payments reduce transmission costs?				
Do consumers benefit from ACOT through reduced transmission charges?	CEG (for Vector)	In the short-run, DG may reduce transmission charges for distributors. However, DG is likely to have no discernable short-term impact on Transpower's total transmission costs. The only likely effect of DG may be a reallocation of transmission charges amongst distributors and higher prices for consumers.	Section 3.1	165
	Contact	ACOT has resulted in an additional $50m of transmission charges being passed through to consumers, with no material reduction in transmission spend.	Page 1	166
	MainPower	MainPower does not understand how the Authority concluded that payment policies are designed to avoid transmission charges. Any design is more about recognising the generator's contribution to reducing transmission charges in a simple and transparent way. All parties assume that the level of charge is a reasonable proxy for long-term grid costs.	Page 2	167
	MEUG	MEUG agrees that distributors have little incentive to implement or evolve principled ACOT payments because ACOT payments are directly funded by consumers.	Para 7	168
	Pioneer Generation	The Authority assumes in paragraph 7.1 that Pioneer Generation receives 100% of avoided Transpower interconnection charges. This is not the case for Pioneer Generation's distributed generation assets.	Page 12	169

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Are reduced transmission costs resulting from DG, if any, reflected in Transpower's maximum allowable revenue?	ASEC (for IEGA)	The Authority seems to be concerned that ACOT reflects avoided transmission charges rather than avoided transmission costs. However, in any market where price exceeds the variable accounting cost, it will always be the case that a reduction in demand results in a reduction in revenue for the supplier that exceeds variable accounting costs. The Authority should not be surprised that the reduction in transmission charges which occurs with the reduction in demand is greater than any underlying reduction in variable transmission costs.	Section 4.1	170
	ENA	The reason why DG receives ACOT without necessarily resulting in transmission costs savings is that the TPM does not signal the long-run marginal costs to supply transmission capacity. This is not a problem with ACOT payments themselves.	Para 18	171
	Trustpower	The Authority's analysis of the impact of DG on transmission costs takes a short-term view. However, DG clearly reduces Transpower's revenue requirements over time. History shows a link between transmission charges and DG investment incentives. The reason why DG is currently unable to reduce transmission charges in any particular year is the current regulatory framework that regulates Transpower's revenue cap.	Section 3.4, paras 4.1.4, 4.1.6	172
Locational incentives	Amethyst Hydro	The absence of a direct locational signal is not necessarily inefficient. A direct locational signal could have the undesired effect of reducing investment in distributed generation in non-constrained areas. Further, any negative impact that results from the lack of a locational incentive is outweighed by other considerations. Such considerations include the prospect that marginally profitable schemes might not go ahead if there is uncertainty about ACOT, and the benefits of investment in truly renewable generation.	Paras 8-16, 41-44	173

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	ASEC (for IEGA)	It is not surprising that the location of DG reflects the location of fuel supplies rather than the location of congestion in the transmission network. This is because the only significant locational price signal for DG is Transpower's interconnection charge. There is a long history behind Transpower's interconnection charge, discussed in the Report.	Section 4.4	174
	ENA	The reason why ACOT payments do not send locational signals is because ACOT payments mirror the interconnection charge, so can only provide the same price signal as the interconnection charge. This problem relates to the TPM rather than ACOT payments themselves.	Para 18	175
	MainPower	It is pointless to test for a locational signal in ACOT payments. The structure of the payments is the same across the country.	Page 3	176
	Meridian	Meridian agrees that the location of DG has been primarily influenced by the availability of an appropriate site and resource, not the avoidance of transmission or distribution investment.	Page 1	177
	MRP	The Working Paper concludes that ACOT arrangements result in little effective locational signalling for DG or transmission investment. However, in the TPM issues and proposal paper, the Authority argued that there is potential for current interconnection charges to produce excessively strong signals for peak time load reduction, leading to inefficiently high amounts of new embedded generation. The Authority's justification for changing the TPM therefore appears to be undermined by the conclusions in the ACOT Working Paper.	Page 1	178
	MRP	MRP agrees that transmission charges are unlikely to have a material impact on generation location decisions, when compared to access to underlying fuel resources.	Page 2	179
	Philip Wong Too	The Authority's evaluation of benefits, in particular its analysis in paragraph 7.28 and Figure 2, only look at the short to medium term. However, both generation	Para 2	180

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		and transmission are long-term investments.		
	Pioneer Generation	Distributed generators do respond to locational incentives. Transpower's system security forecast 2000/2001 detailed aspects of the transmission network that were causing security constraints and had contributed to higher prices and/or load management in each region. Since that forecast was published, a number of the potential generation investments identified at that time have been built. The construction of those generation plants shows that investors in distributed generation do respond to constraints in the transmission network, and those investments were efficient compared to investment in the transmission grid.	Page 5	181
	Transpacific Industries	The conclusion that ACOT does not provide an efficient locational signal for DG depends on the electricity market being seen as a national market. However, the market is actually regional or GXP based. ACOT pricing that reflects the market structure will provide a far stronger locational signal. Nodal differential pricing goes some way to providing that signal, but is not strong enough.	Page 2	182
	Trustpower	Trustpower agrees that access to a suitable resource is a key factor in assessing the viability of a particular DG project. However, in Trustpower's experience as a DG investor, the locational signal provided by the existing TPM has also been important. Locational signals are particularly important when comparing schemes and considering the configuration of a particular scheme. The configuration of DG which is designed to reliably reduce peak demand and defer transmission investment may be quite different to generation capacity that is unable to do so. DG is often configured and operated specifically to accommodate network requirements and ensure that it can operate at peak times to reduce transmission charges.	Section 3	183

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	Vector	The Working Paper examines whether DG investments influence Transpower's investment decisions or provide an effective locational signal and whether recently commissioned DG has been located in import constrained regions. If the TPM does not provide an effective locational signal, it is unlikely that the DG pricing principles would either. This is not necessarily a deficiency of the DG pricing principles, but reflects that the TPM only provides a North-South Island locational signal.	Para 21	184
	Wind Farm Group	Wind Farm Group agrees that DG now appears to be more prevalent in non-import constrained areas following the introduction of ACOT. ACOT should be continued in all areas, but more so for renewables in import constrained or high growth areas.	Page 4	185
Chapter 8: Do ACOT payments reduce transmission investment?				
Demand forecasting	ASEC (for IEGA)	The Working Paper does not show that ACOT-funded DG has had no effect on transmission capital investment. The Working Paper seems to mischaracterise Transpower's view on whether DG can provide an adequate substitute to transmission. Transpower have advised the IEGA that they do consider DG in their demand forecasts. As the level of local generation grows, the reliability of DG in that area improves, with Transpower itself stating that local generation can achieve a reliability level of between 99% and 99.9%. The Report provides numerous examples of DG featuring in Transpower's demand forecasts.	Section 5.2	186
	Clearwater Hydro	The Working Paper does not have evidence to justify its claims that DG has had little impact on transmission investment. DG has contributed to the flattening of national demand for electricity. Some of Transpower's capital investment is premature. Transpower's premature capital expenditure is the result of regulatory failure, rather than the failure of DG.	Pages 1-2	187

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	ENA	If DG is not reflected in Transpower's demand forecasts, this is because of Transpower's forecasting process, rather than a problem with the principle of providing a price signal to DG based on its effects on the transmission system. In any case, Transpower's long-term demand forecast is based on gross demand minus the output of embedded generation.	Para 18	188
	King Country Energy	By using ICR/RCPD to pay benefits to embedded generation, the current pricing signal acknowledges DG for its contribution to reducing demand. Removing this pricing signal would reduce the incentive for generators to run during peaks. Removing the signal would therefore create a risk of increased demand, especially during peak periods. That would increase the need for transmission investment over time.	Para B	189
	Nova	Without ACOT payments, DG owners would have a weak price incentive to ensure that they generate during peak demand periods. Transpower would need to take the assumption that generation output from all existing DG would be minimal or zero during peak demand periods into account when planning its investment. This would most likely bring forward the need for additional grid investment, that would otherwise be unnecessary.	Pages 5-6	190
	Orion	It is incorrect that because much DG is individually small, the effect on transmission investment decisions is likely to be minimal. It is the aggregate size of DG that matters and reduces aggregate peak demand.	Page 4	191
	Orion	The question should be "does DG reduce transmission investment?". Orion believes that the answer is yes. In the Upper South Island, DG is a significant component of distributors' coordinated demand response. Coincident peak demand in the region is limited by 20-30 MW, which helps defer the next upgrade to the transmission assets of the region. The response is consistent year on year, making Transpower's load projections materially lower than they	Page 4	192

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		otherwise would have been.		
	Philip Wong Too	Cumulatively, small distributed generation investments can have measurable effects on the electricity demand served by the transmission grid.	Para 3	193
	Philip Wong Too	Peak demand is one of the most important factors that influence transmission investment decisions.	Para 1	194
	Philip Wong Too	Embedded generation is rewarded for decreasing peak demand at a connection point. There should continue to be incentives for embedded generation to reduce the growth of peak demand. This ultimately reduces the need for transmission investments.	Para 4	195
	Transpacific Industries	The reason why Transpower does not place much reliance on DG when making its demand or investment forecasts is that Transpower often does not have full details on the type, availability or de-rated generation capability of small DG. The reliability of multiple DG units can be very high.	Page 3	196
	Transpower	Transpower treats distributed generation in its demand forecasts in the following way: • Transpower analyses investment paths to meet net offtake demand (gross demand minus the contribution to serving that demand made by generation in the distribution network) • Transpower accounts for plant planned for within the next five years with output greater than 1 megawatt in its demand forecasting process. Plant with output less than 1 megawatt lowers observed demand at each GXP, indirectly affecting transmission planning and investment • analysis accounts for the relative contribution from firm and intermittent generation technologies in the relevant distribution network. At current demand, distributed generation is forecast to generate 173 megawatts at	Page 1	197

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		regional peak times at an aggregate level. Over the last 10 years DG has provided between 150 and 250 megawatts at regional peak times.		
Influence of ACOT on transmission investment	Amethyst Hydro	Historical analysis shows that distributed generation has had a significant impact on the timing and level of transmission investments. Examples include the Kumara Hydro Scheme, a number of distributed generation investments on the West Coast, the Cobb and Branch Schemes, and the Kaimai Scheme.	Paras 17-27	198
	ASEC (for IEGA)	Analysis shows that low levels of DG penetration may result in net benefits from avoided transmission investment of between $3.94 per ICP and $7.58 per ICP. High levels of DG penetration may result in net benefits from avoided transmission investment of between $15.50 per ICP and $29.82 per ICP.	Section 5.5	199
	Contact	Contact can think of few, if any, instances where embedded generation that receives ACOT payments avoid the need for grid investment. This is because generation is never able to provide the same reliability that transmission can. Grid connected generation provides a greater benefit to a greater extent than embedded generation, but receives no supplementary payment. Unless a generator actually avoids the need for transmission investment to occur, it should not receive an ACOT payment.	Pages 1-2	200
	Energy3	The finding that ACOT payments appear to have no observed effect on transmission investment appears to have been formed from a superficial review of publicly available asset management plans from Transpower. The Maunsell Limited Report, referred to in our submission on the TPM proposal, contains more reliable analysis.	Page 2	201
	King Country Energy	Because Transpower uses the net GXP demand for forecast calculations, Transpower inherently considers DG when making its investment decisions. DG does contribute to deferring transmission investment.	Page 1	202

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	MainPower	The conclusion that DG places additional costs on the transmission system is inconsistent with the finding in paragraph 8.15 that links new DG to the rate of local annual demand growth. The Authority's analysis suggests that such a relationship is a bad thing, saying that DG will have a minimal impact on transmission investment decisions. However, this sort of DG investment should be encouraged. Matching local demand growth means that transmission investment can be deferred.	Page 3	203
	MainPower	The Working Paper finds that where distributed generation does not improve security, transmission security constraints are likely to be encountered before capacity constraints. However, the current method of calculating ACOT payments rewards security by averaging the contribution to reduced RCPD.	Page 3	204
	Nova	The fact that Transpower does not take DG into account when planning grid upgrades may be explained by Transpower's guaranteed return on its upgraded investments, irrespective of their future utilisation. The absence of DG in Transpower's planning has no relevance to whether DG should receive ACOT payments. ACOT payments are not an incentive or subsidy, but an adjustment to ensure that owners of DG are not disadvantaged by network companies' charging methodologies. If Transpower's revenue were linked to demand and it was not a monopoly, its pricing could be expected to factor in potential competition from DG.	Pages 4-5	205
	NZ Energy	Transpower planning uses net flow at the GXP. This means that Transpower automatically takes the operation of DG into account in its planning. The West Coast is an example of where DG has replaced and deferred the need for transmission investment.	Paras 29, 33	206
	Pioneer Generation	Distributed generation reduces the need for investment in transmission assets over the long-term. When Transpower plans its transmission investment, it	Pages 4-5	207

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		takes into account net load. This means that it takes into account the load to be delivered by the transmission grid after embedded generation within the network has already met some of the demand. Transpower also considers transmission alternatives under its regulatory framework. Distributed generation is an alternative to investment in transmission assets. The West Coast is an example of Transpower deferring investment because of the contribution made by embedded generation in local networks.		
	Trustpower	Trustpower's submission provides a number of case studies that demonstrate that Trustpower's DG schemes bring benefits to consumers in the form of reduced transmission expenditure and deferred transmission investment. Case studies include: • the Kaimai Power Scheme • the Patea Power Scheme • the Wheao/Flaxy Power Scheme • the West Coast.	Section 3.2	208
	Trustpower	The Working Paper states that the bulk of new DGs that have been installed were often comparable to the rate of local annual demand growth. This shows that demand growth over time has been and can be met by small incremental investments in DG, reducing the need for large transmission investments. This prevents consumers from paying for redundant overcapacity for extended periods of time, and can reduce the prospect of excess transmission capacity being built years in advance of potential utilisation. It is more efficient to increase capacity in small quantities as required, than front load costs with large investments.	Section 3.4	209

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	Trustpower	The Authority claims that the relatively limited number of transmission investments over the last 20 years indicates that the placement and commissioning of DG is unlikely to have substantially altered the progression of transmission investment. However, relatively little grid expansion is exactly what would be expected if DG were deferring the need for transmission investment.	Section 3.4	210
	Trustpower	The Authority has not justified its conclusion that ACOT payments and DG have had no observed effect on transmission investments. To justify such a conclusion, the Authority needs to trace the evolution of the existing grid back to its genesis in the 1880s, and determine how the evolution would have differed in the absence of DG and whether consumers would have been worse or better off in that scenario. Originally, many distribution networks were not connected to the national grid at all and DG provided the only source of power to consumers on those networks. This means that DG capacity must have deferred the need for those networks to be connected to the transmission network and reduced the needed size of the connection capacity.	Section 4	211
	Trustpower	An assessment of the impact DG has had on transmission investment should consider the region in which the DG plant is situated. The size of the load in a particular region has a material impact on the extent to which DG affects the level of peak net demand that needs to be serviced by transmission.	Section 4	212
	Trustpower	To understand the potential future contribution of DG to reducing future transmission costs, the Authority needs to model the potential future evolution of the grid and assess how it may be different with and without DG. The Authority could then determine how much transmission investment could be deferred through DG, and therefore what the benefit of DG actually is.	Section 4.1	213
	Trustpower	The Working Paper seems to conclude that some investment in DG in certain regions was inefficient in terms of deferral of transmission investment.	Section 4.2	214

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		However, it should be remembered that these investments were made on the basis of the regulatory framework in place at the time. Decisions to invest in generation are left to market participants, who respond to signals given by the relevant regulatory frameworks. If the pricing signals at the time those investments were made had been more refined, the patterns of investment may have been different.		
Security of supply of DG	ASEC (for IEGA)	The combined reliability of multiple unreliable generation units is very high when compared to an appropriate level of transmission. This means that DG should be able to displace transmission investment. If this is not occurring, the cause of this problem should be reviewed, rather than merely addressing a symptom of DG that does not affect transmission investment. The cause of the problem is the capital investment process for Transpower, including both the criteria and the data that feeds into the process. Small scale DG projects that delay or permanently defer upgrades never feature in such analysis.	Sections 5.3- 5.4	215
	Buller Electricity	As more DG connects to a network, the n - 1 benefit rises. Security of supply is enhanced, particularly for regions supplied by single transmission corridors.	Page 5	216
	MainPower	The reference used to support the conclusion that Transpower does not consider DG to be sufficiently reliable does not support that conclusion. Transpower APR 2013 Appendix F.4 discusses grid support contracts via demand response or DG in the same context. It notes that they are both less reliable than transmission, but acknowledges that the level of reliability may be acceptable.	Page 3	217
	MainPower	Diversity of fuel source and location are widely accepted as increasing reliability. A range of DG developments can achieve such diversity.	Page 3	218
	Ngawha Generation	DG does promote security of supply. Transpower should take this into account in their asset planning. Examples of DG owned by Ngawha Generation	Page 2	219

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		promoting security of supply include the prevention of load shedding in the Far North in October 2009, Ngawha Generation's station availability rate of over 96% for the past three years and 98% in the last two years, and the significant contribution that Ngawha Generation's DG makes to meeting the demand of the Top Energy network in the Far North.		
	NZ Energy	The reliability of supply from DG would increase as the number of generators increases. A long-term view is necessary to alleviate Transpower's concerns about the reliability of DG.	Para 32	220
	Wind Farm Group	Although one DG asset on one distribution network would not provide total n – 1 security, any DG in its own right provides n – 1 security up to the operational capacity of the DG. Further, the more DG that is provided on distribution networks, the more resilience is provided to regions and the New Zealand electricity market as a whole. Auckland in particular has a need for renewable DG to improve the region's energy resilience.	Page 2	221
Inconsistency with TPM issues paper	CEG (for Vector)	The Working Paper's conclusion that DG does not defer or reduce long-term transmission investment is difficult to reconcile with the conclusions in the Authority's first TPM issues paper. In the TPM issues paper, the Authority concluded that the RCPD charge had successfully deferred transmission investment in the Upper North Island through DG. The Authority needs to clarify if the views it expressed in the ACOT Working Paper displace its earlier views from the TPM issues paper and, if so, the reason for that change. This is because the conclusion may affect what the best option is for dealing with the distortions created by the TPM and Schedule 6.4.	Section 3.2	222
	Vector	The ACOT Working Paper and the TPM issues paper come to potentially contradictory conclusions on whether the RCPD charges in the Upper North Island and Upper South Island provide efficient signals to reduce peak transmission demand and defer transmission investment. The analyses in the	Paras 16-17, Appendix	223

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		two documents appear to contradict each other.		
Chapter 9: Do ACOT payments avoid distribution investment or costs?				
Costs to distributors	Amethyst Hydro	Amethyst Hydro questions the relevance of the finding in the Working Paper that a prevalence of distributed generation can cause net cost to distributors to the argument that the existing ACOT payment regime needs modification. Avoided costs of distribution can already be dealt with in a bilateral manner through generator connection agreements. The link between avoided costs of distribution and ACOT is therefore unclear.	Paras 34-36	224
	ASEC (for IEGA)	It is irrelevant whether a prevalence of DG on some distribution networks can cause net costs to the distributor. Schedule 6.4 of the Code provides a mechanism for distributors to charge DG operators for these costs. Distributors are clearly implementing arrangements that set limits on injection where that would create a cost to the distributor.	Table 5, row (d)	225
	Eastland Network	Under the current TPM and Part 6, distributors do not benefit from the capacity reduction benefits of DG and are paying over and above Transpower charges.	Page 1	226
	Energy3	Where distributed generation creates costs for distributors, those costs tend to be passed on to the generator as a specific charge or developed into a connection charge for exporting load.	Page 3	227
	MainPower	Costs to distributors that are associated with DG are not relevant to a discussion about avoided cost of transmission. Distributors have the opportunity to recover such costs under Schedule 6.4 from the DG.	Page 3	228
	Transpacific Industries	The conclusion that DG can increase charges for network operators is the result of the current TPM, where Transpower's revenue is capped and essentially guaranteed. This means that any reduction in total load that can be attributed to DG increases charges for network operators. The current TPM does not include a mechanism to reflect the savings and benefits to the transmission	Page 3	229

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		system that result from DG.		
Benefits to distributors	ASEC (for IEGA)	Analysis by Maunsell estimates that 50% DG penetration can reduce the NPV of distribution costs by between 24.1% and 28.8%, depending on the voltage level at which the DG was connected.	Section 6	230
	Eastland Network	At a local transmission level, DG meets reliability, availability and operational criteria. For distributors, DG is an economically efficient alternative to paying Transpower connection charges and the requirement to contribute to Transpower's investment costs. DG also provides security of supply and an alternative to traditional investment and upgraded or additional distribution assets. Those benefits to distributors and local consumers justify payment to DG owners and operators.	Page 2	231
	Nova	There is no reason why ACOT payments need to provide distributors with any benefits. ACOT payments correct for a market anomaly where otherwise consumers within a network benefit from reduced grid charges as a result of DG, but the DG is only able to earn the market price for energy produced. However, lines companies do frequently benefit from the availability of DG. DG is frequently contracted to provide voltage support or reserve capacity within a region when undertaking lines maintenance.	Page 6	232
	Nova	The Working Paper notes that a prevalence of DG on some distribution networks can cause net costs to the distributor, but does not address the significant savings and lower connection costs that distributors can realise as a result of DG. Examples of savings to distributors include reduced transformer sizes and feeder capacity, because grid offtake is significantly less than it would have been without DG in the network. Lower connection costs are a true economic gain that are not reflected in ACOT payments. The Authority should quantify these benefits before it makes claims on the economic benefits or	Page 6	233

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		otherwise of ACOT payments.		
	Pioneer Generation	Pioneer Generation was split out from a combined generation and network company. Pioneer Generation's submission is based on the experience of its employees who previously worked for that combined generator/network company. Before they were split, such companies valued generation based on the avoided cost of energy and avoided cost of peak demand charges attributable to the generation. Those companies established embedded generation schemes to complement demand management and load control strategies, thereby optimising the distribution system and deferring capital expenditure. Capital expenditure that could be deferred because of such generation included lines upgrades and the replacement of transformers. Distributed generation provided increased network security, minimising the impact of transient network faults.	Pages 6-7	234
	Pioneer Generation	Network companies value investment in generation assets within their networks. Contracts between network companies and distributed generation demonstrate that network companies use distributed generation to operate their networks efficiently and help manage responding to load on their networks. Examples of such contracts include the Auckland DHB's contract with Vector for Auckland Hospital, and Pioneer Generation's general experience with Vector. Unison, WEL Networks, MainPower and Eastland Networks are all examples of network companies that have or are looking for renewable generation plants within their networks.	Pages 8-9	235
	Transpacific Industries	Transpacific Industries has experienced instances where a DG operator has had to fund substantial upgrades to the local network to get connection agreements into the local network. That expenditure directly benefits network companies and relieves them of the eventual need to upgrade their network at their own cost.	Page 2	236

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Transpacific Industries	DG reduces the loss factors within a network and can provide voltage support and reactive power connection. However, DG operators do not receive credit for this, because the flow of information on benefits is asymmetric.	Page 2	237
	Wind Farm Group	In respect of the conclusion at paragraph 12.4(h), the Authority needs to recognise the reliability benefits that renewables can provide to distributor networks. These benefits include voltage support, which in some cases is provided even when the DG is not generating.	Page 4	238
General comments on the analysis in Chapter 9	Amethyst Hydro	In making its finding that ACOT payments have little observed effect on distribution investment or costs, the Working Paper has relied on a cursory review of the asset management plans of four distributors. None of these distributors have a long history of involvement with distributed generation. However, WestPower has had a long history of involvement with distributed generation. WestPower's asset management plan shows that the commissioning of the Amethyst Hydro Station has deferred certain transmission investment from 2014 to 2019 or later, depending on actual load increases. WestPower has also been able to "island" schemes and supply local areas when supply from the main grid or sub-transmission network is unavailable, because WestPower has deeply embedded distributed generation. If distributed generation reduces demand on key assets, ACOT payments that encourage and support local DG investment reduce the need for distribution investment and reduce distribution costs.	Paras 28-33	239
	Energy3	The findings that ACOT payments have little observed effect on distribution investments or costs, provide no other material benefits to distributors, and can cause net costs to the distributor appear to be based on a superficial review of publicly available asset management plans from selected electricity distributors. The Maunsell Limited Report referenced in our submission on the TPM proposal contains more reliable analysis. That Report concluded that	Page 2	240

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		distributed generation for a variety of distribution voltages and distributed generation network penetrations resulted in a reduction in costs for the distributor.		
	Energy3	It is inappropriate to rely on distributors to form a view on the contribution of distributed generation, because some distributors perceive distributed generation to be a significant risk and threat.	Page 3	241
	MainPower	It is self-evident that better energy storage technology would increase the benefits of DG. However, this is not relevant to the Working Paper. The current system of payments rewards DG that has storage available, since such DG is more likely to generate during RCPD.	Page 3	242
	Orion	Orion sought to clarity how DG fits into its overall pricing approach. Orion has peak components of its pricing that reflect its estimates of the LRAIC of new distribution network. Those components also reflect a portion of Orion's transmissions costs. The prices provide a value against which consumers, retailers, or third parties can invest in load management approaches and technologies, including DG. However, much of that serves primarily to significantly reduce measured demand at the connections at peak times and thereby delivery costs. Generation only attracts export credits if it exceeds site demand and only for the amount of export. The amount of DG that responds to Orion's price signals is materially greater than the amount that receives explicit ACOT payments. The value to consumers in terms of reduced delivery costs is much greater than the ACOT payments that Orion makes. The effective saving per kW is somewhat higher for load reduction than it is for export.	Pages 3-4	243

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		The proposed TPM would bring forward transmission investment. It would reduce the transmission component of the price signal that DG sees on the Orion network. Orion would expect to see less DG response, with consequent increases in peak demands.		
	Vector	Vector agrees that DG can have positive or negative impacts on distribution network investment requirements. This depends on the scale of DG that occurs on the network.	Para 33	244
Chapter 10: Can ACOT payments result in inefficient subsidisation of DG?				
Risk of inefficient subsidies where distributors own DG	Amethyst Hydro	The Authority has no evidence to suggest that lines businesses have the potential to abuse their positions by providing better ACOT deals for their own DG than to other parties. The current information disclosure regime protects against such behaviour.	Para 46	245
	Eastland Network	Sufficient safeguards are in place to prevent distributors from providing preferential treatment to any DG that they own. These safeguards include clause 6.11 of the Code, section 76 of the Electricity Industry Act, and section 24 of the Electricity Services Information Disclosure Determination. The ineligibility of some DG for ACOT payments is because those distributed generators cannot deliver the service required, not because distributors are providing preferential treatment to their own DG.	Pages 2-3	246
	ENA	ENA strongly refutes any suggestion that there is a risk that networks will give preferential treatment to their own DG. The Authority itself acknowledged that there is no evidence that this occurs. ENA questions why that point was raised in the first place. All DG should be treated the same irrespective of ownership. That is the case now.	Para 20	247
	Pioneer Generation	Any change to the current regulated mechanism for paying DG could result in a competitive disadvantage for DG owned by independent companies compared	Page 9	248

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		with DG owned by network companies. Network companies have access to the information they need to calculate a reduction in capital or operating costs attributable to DG. Network companies could then elect to pay their own generation amounts that they estimate to represent the value of those benefits.		
	PwC (for 22 EDBs)	There are adequate safeguards in place to mitigate the risk of preferential treatment to distributor-owned DG. These include clause 6.11 of Part 6, section 76 of the Electricity Industry Act 2010, and the disclosure regime under section 2.4 of the Electricity Services Information Disclosure Determination 2012.	Pages 7-8	249
Risk of inefficient subsidies from ACOT payments to older generation plant	ASEC (for IEGA)	It is concerning that the Authority suggested that paying ACOT to older generation plant is inefficient. If the Authority's analysis on that point is accepted, the same principle could be applied to the economic rents that other grid connected generation earns in the wholesale electricity market. There is no evidence that DG earns windfall gains over historical generation costs.	Section 4.5	250
	Clearwater Hydro	Discriminating against older DG plant would be against market principles and inconsistent with the setup of the rest of the market. Older generators are not discriminated against in the wholesale market.	Page 2	251
	Strata Energy Consulting (for Trustpower)	Many early supply authorities had to install their own generating plant to initiate electricity supply to their regions. Some of those generating stations still exist. Those generating stations provide security of supply benefits and can be used to reduce costs arising from transmission charges or earn revenue from the wholesale electricity market.	Pages 26-27	252

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Chapter 11: Other potential benefits and costs from DG that might merit ACOT payments				
Savings from losses and constraints	ASEC (for IEGA)	It is disingenuous to claim that losses and constraints are reflected in wholesale market prices, resulting in no substantive case for additional compensation for DG. That statement is not true for significant changes in electricity consumption or net load. A significant reduction in net load will reduce losses and constraints. If the reduction in net load is due to generation, the generation will not receive the benefit of the higher wholesale price that prevailed before the additional generation. At the margin, this could lead to DG being under-provided.	Section 7.2	253
	Clearwater Hydro	DG reduces losses since DG is closer to the point of consumption than grid connected generation.	Page 2	254
	Nova	By being close to load, DG reduces lines losses. This means that local electricity prices are reduced, providing a direct benefit to consumers.	Page 7	255
	Wind Farm Group	The more DG that is constructed, the lower the lines losses. This means that DG improves the rate of efficiency when delivering generation to the end consumer. The lower the amount of losses from both a Transpower and distributor level, the better.	Page 4	256
Competition benefits in the wholesale and retail markets	Amethyst Hydro	Although competition benefits may arise if distributed generators dispatch their generation into the wholesale market or sell their output by contract to retailers, only relatively small-scale DG are likely to be rewarded by higher wholesale prices in the short-term. However, significant DG projects are likely to result in significantly lower wholesale prices by effectively removing the constraint in a region. It is inequitable if DG investors are unable to capture the economic benefits they create. On the one hand, there is an accepted principle that the exacerbator should pay. But this does not appear to be balanced against a benefiter being able to share in the ensuing benefits.	Para 47	257

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	ASEC (for IEGA)	Depending on the facts and the question at hand, retail markets are regional, as recognised by the Commerce Commission. Some of the Authority's own analysis of retail competition also supports the notion that retail markets are regional. Regional retail markets emerge because of transmission constraints. DG is a solution to those transmission constraints, and can defer transmission investment. DG also reduces the net load in a constrained region, making it less likely that constraints will occur in the first place.	Section 7.3	258
	ASEC (for IEGA)	Where DG is owned by a party other than an incumbent retailer, that DG will have the effect of facilitating competition in the regional electricity market. This is because retailers will have the option of contracting with the generator.	Section 7.3	259
	Buller Electricity	Markets operate regionally. Where hedges are expensive or difficult to obtain, retailers may be unwilling to enter a regional market because of the risk that transmission will fail. Local generation reduces that risk and improves competition, reducing electricity costs. It is in the interests of consumers to pay an amount that reflects a reduction in transmission costs to such local generators.	Pages 3-4	260
	Buller Electricity	Actions that result in lower costs for consumers should be supported. The strategy of avoiding transmission charges is used throughout the market. Consumers themselves take steps to reduce their transmission charges, such as using energy efficient appliances and cogeneration facilities. Consumers on a distribution network are not worse off if ACOT payments are made, since consumers benefit from increased retail competition and security of supply.	Pages 4-5	261
	Energy3	Retail markets are regional. Retailer access to local generation on the high priced side of the constraint reduces retailer risk and allows more competitive retail electricity prices.	Page 3	262

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Pulse Energy	Distributed generation technologies reduce prices for consumers by reducing location factors, and improve retail competition.	Page 1	263
	Pulse Energy	A policy that supports distributed generation is a policy that supports retail competition. The benefits of retail competition need to be factored into any assessment of the need for change in relation to distributed generation.	Page 1	264
	Transpacific Industries	DG presence in regional markets provides competition benefits for consumers.	Page 2	265
	Trustpower	The Commerce Commission's view is that markets need to be defined according to the question at hand. The Authority should clarify why it determined that its analysis of the benefits of DG should be considered in the context of a national market to comply with its statutory mandate, rather than regional markets. Trustpower believes there is real value in the competition provided by DG at both the regional transmission constrained market level and the national level.	Section 3.3	266
Environmental benefits	ASEC (for IEGA)	There is no compelling reason to favour DG because of environmental benefits. The ETS and other mechanisms produce a price reflective of externalities resulting from greenhouse emissions. However, on a project by project basis, there may be cases where DG provides enhanced environmental benefits over the same form of generation constructed on a large scale. For example, small scale hydro dams may have less adverse effects on aquatic life. Such effects are addressed through the consenting process, and for the purpose of this consultation, should be assumed to produce efficient outcomes.	Section 7.4	267

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Genesis	The Authority's consideration of other benefits, particularly environmental benefits of renewable generation, is inadequate. The review of the current ACOT regime should include a more quantitative analysis of these benefits.	Page 2	268
	NZ Energy	There are pressures to move towards renewable energy. Most DG is renewable. The prevalence of renewable energy is central to the long-term benefit of electricity consumers.	Paragraph 34	269
	Pulse Energy	Small-scale renewable DG projects contribute to renewable generation targets.	Page 1	270
	Wind Farm Group	Abandoning ACOT would go against the international trend of supporting renewable DG in particular. A number of favourable policies towards renewables are needed to achieve emission reductions. The carbon price alone is ineffective. Renewable generation, including renewable DG, requires continued support through targeted ACOT payments.	Page 3	271
Costs resulting from ACOT promoting less economic generation	Amethyst Hydro	It is unlikely that investors decide to go ahead with otherwise unprofitable investments merely because of ACOT revenue. This is because ACOT makes only a minor contribution to overall revenue and because of the uncertainty of maximum generation coinciding with the regional coincident peak demand. However, marginally profitable schemes might not go ahead in the future if there is uncertainty about ACOT.	Para 13	272
	ASEC (for IEGA)	The Authority does not produce any evidence to support the contention that some DG is less productively efficient than grid connected generation. The Authority should be focused on dynamic efficiency rather than productive efficiency because of its statutory focus on the long-term benefit of consumers.	Section 7.5	273

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	CEG (for Vector)	Generators already have an incentive under the existing charging framework to embed their generation. This incentive arises because DG must only pay for the marginal costs of connection. However, ACOT payments exacerbate this incentive by providing DG with an additional revenue stream that transmission connected generators do not receive. This may cause generators to embed even when transmission connected generation offers greater market benefits. As a result, customers will pay a higher price than is efficient, both in the short and long term. This does not necessarily mean that a particular DG investment cannot reduce distribution or transmission costs, or deliver other market benefits. However, DG may be chosen over other options that would have resulted in even lower costs or offered greater benefits, causing prices to be higher relative to what they would have been under those alternatives.	Section 3	274
	MainPower	The analysis that assesses whether ACOT payments could result in uneconomic projects being developed is only helpful if it is correct that DG does not reduce transmission investment. A price taking DG installation offers the additional benefit to consumers of stabilising or lowering nodal prices.	Page 3	275

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Other costs and benefits identified by submitters	ASEC (for IEGA)	Other benefits from ACOT payments that the Authority should consider when quantifying DG benefits include: • ACOT provides a price signal for providing reliable generation at peak periods • ACOT reduces peak wholesale prices by producing a stronger incentive than wholesale prices alone for DG to maximise generation during peak periods • ACOT reduces the volatility of cash flows earned by DG, increasing the possibility that DG investment will occur and that the potential benefits of DG will be achieved • there are few hedging opportunities available to investors in DG. The structure of the ASX market is such that it is not realistically available to smaller firms. It is costly for small market participants to trade on a futures and options exchange. ACOT partially mitigates the market failure caused by financial market frictions that give large connected generators access to financial markets that are closed to smaller entities • DG investment relies on compensation via ACOT for the externalities created by embedded generation, specifically the benefits to consumers. If the Authority removes ACOT, it will be enforcing a market failure.	Section 8	276
	Clearwater Hydro	The current regime encourages DGs to generate during periods of high demand. Without DG at this time, demand would increase. This would increase the spot price and place a greater cost on consumers.	Page 3	277
	NZ Energy	When other social and economic benefits are considered, Andrew Shelly's analysis (see ASEC (for IEGA)) suggests that the present rate of ACOT payments underfunds investment in DG.	Paras 7, 26	278

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	Pioneer Generation	Distributed generation can help grid security of supply. In late 2013, a major landslide occurred close to Aurora's feeder from the grid. Further bad weather could have resulted in the landslide wiping out the connection. Pioneer put an action plan in place that ensured that electricity would continue to be supplied to customers. Pioneer Generation is also considering investing in a connection to a remote node to avoid using and paying for the existing transmission grid. Without ACOT revenue, Pioneer would actively manage and reduce generation to avoid facing transmission charges. This would result in no net benefit to the end consumer, compared with the current situation.	Pages 7-8	279
	Pioneer Generation	Benefits that distributed generation provides to consumers include: • the engendering of local support for the generation plant • local jobs • increased diversity of supply for regions that can be distant from supply via the transmission grid • increased security of supply for local customers if their region is islanded from the transmission grid • an economically efficient alternative to investment in utility scale generation, with a comparable long-run marginal cost for new distributed generation • lower and less volatile local spot prices, since distributed generators are incentivised to generate to meet peak demand. This improves regional retail competition • increased competition in the rural generation market and in turn the marginal wholesale price of electricity • increased retail competition when DG sells output to smaller independent	Pages 9-10	280

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		retailers, and the owner of distributed generation is vertically integrated.		
	Pulse Energy	Distributed generators often find it difficult to obtain a fair market price for their generation from gentailers. Small-scale DG operators also have a lower level of market power and limited ability to affect the market in which they operate. Small-scale projects also generally cost more to establish. In light of those considerations, ACOT supports innovation and moves towards local generation. It is possible that the majority of market participants would support moves to reduce ACOT payments, as a means to support a reduction in generation only and retail only competition.	Pages 1-2	281
	Ringa Matau (subsidiary of Tauhara North No.2 Trust)	There are competition implications for any ACOT regime, or lack of. Any TPM will create an incentive to avoid costs. If parties that pay charges can reduce their costs by installing and operating embedded generation, but others cannot reduce costs in a similar way, that creates a competition concern.	Para 2	282
Cost of ACOT to the consumer				
The Authority's calculation of how much ACOT costs the consumer	Amethyst Hydro	The Authority's finding that ACOT causes a net increase in cost to households ignores the benefits around dynamic efficiency and the deferral of capital expenditure in the transmission network. Over time, reductions in transmission costs caused by the presence of distributed generation are very significant.	Paras 37-40	283
	ASEC (for IEGA)	ACOT prevents market failure by enabling DG to internalise the benefits of reduced future transmission investment and reducing the relative risk of DG cash flows. At high levels of DG penetration, the benefits induced by ACOT are between $15.50 per ICP and $29.82 per ICP. These benefits of ACOT exceed the $10.29 per household cost calculated by the Authority.	Section 5.5	284
	MainPower	The analysis used to reach the conclusion that ACOT creates an additional cost estimated to be $10 per household per year is simplistic and only considers current Transpower charges. The Authority does not adequately consider	Pages 2-3	285

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		whether those charges might have been higher in the absence of DG or whether they might rise faster in the future without DG. If the level of interconnection charge is set correctly, in the long-term consumers should see a more efficient electricity market.		
	Pulse Energy	It is wrong to suggest that ACOT payments cost consumers an extra $10 a year. This is because the benefits of distributed generation are not found in historic cost recovery or historic grid investment, but in future investment decisions. Distributed generation technologies aim to reduce reliance on or need for the grid. More distributed generation technology is likely to make recovery of transmission costs more difficult, but it does not make sense to stifle the growth of distributed generation technologies on that basis.	Page 2	286
	Transpacific Industries	The calculated cost to consumers ignores the dynamic efficiency of DG investments. Nor does it consider the savings arising from reduced spot prices that occur when DG supports the constrained portion of the network or grid.	Page 1	287
	Wind Farm Group	Wind Farm Group disagrees with the conclusion that consumers pay $10 more per annum due to ACOT. Although distribution charges may vary throughout regions, the total sum paid to Transpower nationally is the same.	Page 4	288
ACOT's influence on prices	CEG (for Vector)	The current framework results in DG being implicitly subsidised vis-à-vis transmission connected generators. This subsidy is funded within the industry and is likely to increase the prices paid by electricity consumers in the short-term. It may also lead to inefficient generation investment decisions that may increase prices over the longer term, above what they would otherwise have been.	Paragraph 6	289

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	CEG (for Vector)	Generators already have an incentive under the existing charging framework to embed their generation. This incentive arises because DG must only pay for the marginal costs of connection. However, ACOT payments exacerbate this incentive by providing DG with an additional revenue stream that transmission connected generators do not receive. This may cause generators to embed even when transmission connected generation offers greater market benefits. As a result, customers will pay a higher price than is efficient, both in the short and long term. This does not necessarily mean that a particular DG investment cannot reduce distribution or transmission costs, or deliver other market benefits. However, DG may be chosen over other options that would have resulted in even lower costs or offered greater benefits, causing prices to be higher relative to what they would have been under those alternatives.	Section 3	290
	ENA	If consumers continue to pay the same for transmission plus ACOT payments, this is a problem with the TPM not providing appropriate signals to DG and other operators. It is not a problem that necessarily arises from ACOT payments themselves.	Paragraph 18	291
Consistency with other market arrangements				
Load management and DG	ASEC (for IEGA)	DG should be treated the same as other ways of reducing load on the distribution and transmission network. Discrimination between sources of load reduction will result in allocatively and dynamically inefficient allocation of resources.	Section 4.3	292
	Clearwater Hydro	The proposals in the Working Paper will create an inconsistency in the treatment of load management and DG.	Page 2	293
	IEGA	DG is the equivalent of negative load. Load reduction or demand side response can avoid transmission charges. Changing the regulations to stop DG from avoiding transmission charges through Part 6.4 will create an inconsistency in	Page 2	294

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		the treatment of load, demand response and DG. It will create uneconomic incentives to build infrastructure and embeds DG behind loads.		
	King Country Energy	Embedded generators are effectively negative load. Customers who reduce their load receive benefits. Embedded generators should also receive benefits.	Para A	295
	Pioneer Generation	Distributed generation often generates at peak demand periods. It therefore reduces the quantity of generation that a network company takes from the transmission network at peak demand periods. This is effectively the same as load management or demand response, which are encouraged by network companies' pricing structures. An individual ICP benefits from reducing demand during peak periods by paying lower transmission charges. That is efficient. It is also efficient for DG to receive a benefit or payment for also reducing peak demand at a network level.	Page 5	296
	Strata Energy Consulting (for Trustpower)	There is a long history of substantial investment in load management equipment, for the purpose of avoiding peak load charges. That investment has deferred the generation plant and network infrastructure that would have been necessary to meet increases in load.	Pages 25-26	297
	Trustpower	The Working Paper does not refer to load control or a distributor's ability to shift transmission charges to other network companies by reducing peak demand. DG is essentially negative load. Therefore, DG and load control should be treated the same. Both defer investment in generation plant and network infrastructure.	Section 3.5	298

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Wind Farm Group	If ACOT is not retained, the benefits of demand side management (such as water heater ripple control and electric vehicles) may not be able to be valued in the market. DG and demand side management provide similar benefits to and have similar effects on distributors and Transpower. It is important to have mechanisms that promote innovation within both the demand side and DG markets.	Page 4	299
Other consistency concerns	Contact	ACOT payments have led to perverse incentives where owners of embedded generation benefit from rising transmission costs. This undermines the argument for increased scrutiny of transmission investment that the Authority has used to justify changes to the TPM, because these parties are always incentivised to argue for additional transmission investment.	Page 1	300
	ENA	Grid-connected generation does not receive payments consistent with ACOT payments to DG. This does not mean that ACOT payments made to DG are inappropriate. Instead, this is a problem with a system that does not have a mechanism to identify and reward grid connected generation that is an alternative to transmission.	Para 18	301
	Pioneer Generation	It is inefficient to differentiate between independent generation embedded within a network and generation that is within a network and attached to or behind a major load (cogeneration). A load with generation attached faces lower charges, since network and transmission assets consider only net load. Without ACOT payments, embedded generation that is not attached to a load is at a competitive disadvantage as compared to cogeneration.	Page 6	302
	Vector	Current DG arrangements contrast with Transpower's prudent discount policy. That policy aims to deter investment in alternative projects which would allow a customer to reduce its own transmission charges while increasing the total economic costs to the nation as a whole.	Para 32	303

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Impact of change and feasibility of alternative arrangements				
Impact on investments and investor confidence	Amethyst Hydro	Marginally profitable schemes might not go ahead in the future if there is uncertainty about ACOT payments. This could result in a lack of productive efficiency as less efficient generation sources that do not benefit from ACOT go ahead.	Para 14	304
	Amethyst Hydro	Distributed generation already faces a number of barriers to entry. If the value of ACOT payments is further eroded, this will likely decrease economic investment in distributed generation, particularly by new distributed generation investors.	Para 50	305
	ASEC (for IEGA)	ACOT is not a significant determinant of the decision to invest in small-scale DG and removal of ACOT is unlikely to have any effect on such investments. However, removal of ACOT is likely to negatively affect investments in larger scale, economically beneficial DG.	Section 5.6	306
	ASEC (for IEGA)	ACOT reduces cash flow volatility, and can provide the difference between investing and not investing in DG, even for viable DG investments. Removing ACOT will increase the risk that financially viable DG will not proceed and will ensure that sub-viable DG that would displace transmission investment does not proceed.	Sections 8.3-8.4	307
	Clearwater Hydro	Changes to how ACOT payments are calculated or that reduce the amount paid to distributed generators risk inhibiting investment in DG and destroying confidence in the market.	Pages 1, 3	308
	Energy3	Investors have relied on ACOT payments when making long-term investment decisions. Altering or removing ACOT payments significantly increases the regulatory and investment risk for generation projects in New Zealand.	Page 4	309

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	Genesis	The ACOT Working Paper fails to address the fundamental concern that the proposed TPM will undermine investor certainty in receiving ACOT payments. Any review of ACOT payments will need to quantify the risk of disincentivising new DG builds and maintenance (or re-powering) of existing DG.	Page 2	310
	IEGA	Changes to Part 6 or the TPM that increase the complexity of calculating ACOT payments or reduce the amount paid to DG risk inhibiting investment in DG. That will be to the long-term detriment of consumers.	Page 3	311
	King Country Energy	Amending Part 6 so soon after its introduction does not send an appropriate message to investors.	Page 1	312
	MainPower	MainPower has two options it can pursue in relation to a proposed DG projects. One of those two options would provide greater security of supply and reliability. If that option is pursued, investment in a transformer will be deferred. However, without reliable income from ACOT, it is unlikely that MainPower will pursue that option.	Page 4	313
	MRP	Any significant changes to the ACOT regime will significantly impact the economic viability of investments made by industry participants with distributed generation projects. Investment decisions were made based on an established regulatory regime which has been in place for some time.	Page 2	314
	New Zealand Wind Energy Association	Investors have invested in distributed generation on the basis of ongoing stable policy. The proposed changes have the potential to place existing investments at risk, because unpredictable changes in policy will increase the cost of capital for investments.	Pages 1-2	315
	Ngawha Generation	Ngawha Generation decided to make DG investments based on the expectation that it would receive ACOT payments. Any reduction or removal of ACOT payments would materially reduce the returns on that investment.	Page 1	316

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Ngawha Generation	Changing the rules on ACOT just seven years after DG regulations were introduced will significantly undermine investor confidence in the electricity sector. This is because an uncertain regulatory environment is detrimental to future investment planning, particularly for long-life assets such as DG.	Page 1	317
	Norske Skog Tasman	The Authority should not unbundle or remove ACOT payments to historical DG assets, because that will undermine investor confidence.	Page 1	318
	Nova	Violating the rights of investors by reducing ACOT payments increases the perception of market risk. This would flow through to the cost of funds and required return rate on any new DG investments. The cost of that reduced confidence is difficult to quantify, but could be greater than any perceived benefit from eliminating ACOT payments.	Page 7	319
	NZ Energy	ACOT payments have been built into the economic viability of many existing DG investments and are a significant consideration in any proposed investment. Investment in DG is likely to be around $500 million per annum. Severe disturbance to this level of economic activity would be detrimental to electricity consumers and the overall economy. Any material reduction in revenue available through ACOT payments will adversely affect the viability of existing DG investments and discourage future DG investments. Because larger DG plants have a direct effect on the operation of the grid, changes that affect their financial viability would also have significant cost implications for the grid. It is better to invest now, rather than try to fix problems resulting from market failure of essential infrastructure at a later point.	Paras 11-13, 19-24, 31	320

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Philip Wong Too	Removing ACOT will have significant revenue implications for some embedded generators. Changes that affect existing plant will raise the risk profile of investments in the electricity sector. This will increase costs and could have a chilling effect on investment.	Para 5	321
	Pulse Energy	Distributed generation investors are often small, family-based, kiwi entrepreneurs. They have made their investments on the basis of ACOT payments. ACOT payments should remain at similar levels to current payments, even if they are calculated differently.	Page 1	322
	PwC (for 22 EDBs)	Changing the basis for ACOT payments could fundamentally change the basis upon which investments were made. Investment incentives in DG and distribution need to be promoted. The DG regulations are being reconsidered only six years after their introduction and there is a need to promote regulatory certainty for investors. Changes to ACOT could result in investments being stranded.	Pages 6-7	323
	Transpacific Industries	Withdrawing ACOT would increase the volatility of cash flows for landfill gas fuelled power generation. This would severely impact the financial viability of that generation. ACOT payments should continue to be a feature of DG revenue streams.	Pages 1 to 2	324
	Trustpower	Decisions on DG investments were made on the basis of peak demand charges that have been set and approved by successive governments, regulators and lines companies. Investments were made on the basis of forecast returns over the lifetime of assets, derived from the expectations that existed when the investments were made. Investors are likely to have assumed that the regulator would have ensured that payments for reducing peak demand would continue, so that regulated pricing signals could be effective. The expectation was that the cost of over-engineering any plant would be recovered from avoided charges rather than energy charges. ACOT revenue is a significant portion of	Section 5.3	325

Issue	Submitter(s)	Submission summary	Submission reference	Item number
		the revenues received by some DG plant. Removing ACOT will create a significant wealth transfer between some industry participants and adversely affect smaller market participants. Participants will become weary of the potential for the regulator to change its pricing signals and future pricing signals will have to be strengthened above efficient levels to stimulate the actions required.		
	Wind Farm Group	Wind Farm Group has made substantial investments in DG. Changes to the rules on ACOT and other benefits potentially available to DG are of major concern, as they would impact the viability of Wind Farm Group's DG investments. Wind Farm Group is happy to share more information about these investments with the Authority on a confidential basis.	Page 3	326
	Vestas New Zealand Wind Technology	Changes to the rules on ACOT payments would impact the financial viability of distributed generation projects. Those projects were planned and financed on the basis of a particular set of rules. The changes being mooted are adverse to those investors.	Page 1	327
	Vestas New Zealand Wind Technology	ACOT payments have existed for over 50 years. They have influenced investment decisions. Any departure from the current framework should not be taken lightly and it is necessary to consider the wider messages that the departure would send to investors in the electricity market.	Pages 2-3	328
	Vestas New Zealand Wind Technology	Changes to ACOT payments will increase the cost of capital for distributed generation investments because the changes will result in capital markets applying higher risk premiums to distributed generation investments. The increased cost of capital could outweigh the $10/year potential saving for consumers identified by the Authority.	Page 2	329

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Impact on competition in the DG market	New Zealand Wind Energy Association	Small-scale players have limited resources. The complicated way of assessing the benefits of distributed generation implied in the Working Paper will increase the barriers to entry for small players, transaction costs, and the potential for disputes.	Page 2	330
	Ngawha Generation	Removing ACOT payments would remove support for small-scale DG businesses. Without ACOT, only major gentailers would be able to unlock future generation opportunities.	Page 2	331
	Pioneer Generation	Any change to the current regulated mechanism for paying DG could result in a competitive disadvantage for DG owned by independent companies compared with DG owned by network companies. Network companies have access to the information they need to calculate a reduction in capital or operating costs attributable to DG. Network companies could then elect to pay their own generation amounts that they estimate to represent the value of those benefits.	Page 9	332
	Wind Farm Group	Removing ACOT payments would mean that projects need to be larger to become viable and gain economies of scale. This would substantially increase the barriers to entry for new generators. This in turn would lead to less innovation, less competition, and less DG investment for renewables in particular.	Page 2	333
Incentives created or removed by changes to ACOT	Buller Electricity	If DG is limited, improvements in technology mean that consumers might soon be able to embed generation behind their own meters instead of relying on DG, bypassing transmission and distribution. The problem is not ACOT, but the regulatory regime's pricing model for the recovery of investment costs. The Authority should address the impact of technology on long-life network assets and how those costs are recovered.	Page 5	334
	Clearwater Hydro	Under the proposals, embedded generation behind a load would avoid transmission charges but DG would not.	Page 2	335

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	ENA	The ACOT paper does not consider the effects of moving away from the current approach to ACOT payments. A change could incentivise DG to connect behind loads so that the commercial advantages of ACOT can still be achieved.	Paras 18-19	336
	IEGA	Changing the regulations to stop DG from avoiding transmission charges through Schedule 6.4 will create an inconsistency in the treatment of load, demand response and DG. It will create uneconomic incentives to build infrastructure and embed DG behind loads.	Page 2	337
	King Country Energy	If incentives for DG are removed, new DG is likely to be embedded within large industrial consumers. The DG and consumer will probably arrive at an arrangement similar to current ACOT arrangements. However, such an outcome would be less efficient than current arrangements, because some opportunities for DG would be missed.	Para B	338
	Nova	Without ACOT payments, all standalone DG will be incentivised to directly supply large industrial or commercial loads. Eliminating ACOT payments would incentivise DG owners to invest in transmission capacity to directly reduce grid charges for their customers wherever possible.	Page 3	339
	Pioneer Generation	ACOT payments are a positive incentive for distributed generators to maximise generation during peak demand periods. Without ACOT payments, distributed generators, as price takers, will have no incentive to actively contribute to peak demand reduction. Peak demand reduction results in the most efficient use of generation, distribution and transmission assets.	Pages 10-11	340
	Pioneer Generation	Without ACOT payments, Pioneer would have to consider becoming a market participant. This means Pioneer Generation would have additional overhead costs, which will likely increase the overall cost to the consumer.	Pages 10-11	341

Issue	Submitter(s)	Submission summary	Submission reference	Item number
Market power of distributors compared to DG	Clearwater Hydro	If ACOT payments are removed, networks with existing DG would have lower transmission costs compared to networks with no DG. The reduction in the transmission costs for networks with existing DG would be at the expense of existing generators. This is a wealth transfer.	Page 2	342
	Energy3	Because distributors are natural monopolies that can potentially exert market power over others, if the true cost avoided by distributed generation were to be determined by negotiations between distributors and individual generators, the benefits of any avoided costs might not be passed on to the generator. The calculation of any benefit would require detailed analysis and depend on a number of assumptions within the control of the distributor. By contrast, current arrangements are administratively simple and fair.	Page 2	343
Costs to small DG	King Country Energy	Calculation of the benefits of DG needs to be simple. Many distributed generators are small, meaning that a calculation method that is not simple could result in small generators losing any value they would otherwise receive to the costs of calculating those benefits. The current methodology is transparent and simple, and links to commercial arrangements.	Para A	344
Other comments on the feasibility of changing or removing ACOT	CEG (for Vector)	Requiring ACOT payment schemes to have a greater focus on economic costs than avoided transmission charges would be difficult in a practical sense and would not address competitive neutrality concerns.	Section 4.2	345
	Genesis	Genesis agrees that a consistent methodology for distribution companies would be useful. That would allow standardisation in the treatment of payments, and remove unnecessary costs associated with managing the financial implications of different approaches across the country.	Pages 1-2	346

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Pioneer Generation	The mechanism in the proposed TPM would be virtually impossible for any individual participants billed by Transpower to recalculate, either for checking bills from Transpower or to determine the corresponding avoided transmission charge. Although the current convention or approach may undervalue the contribution DG makes for the benefit of the consumer, the approach is relatively straightforward for both the distributor and the owner of DG, parties are incentivised to scrutinise these payments, and the payment has lower transaction costs.	Page 13	347
Other				
Submitter proposals	CEG (for Vector)	Alternative approaches suggested include: • revise the TPM to better signal to all generators and other grid users the long-run costs that their actions impose on the transmission network. Ideally, generators deciding where to invest should face transmission price differentials that reflect the long-run marginal cost differential not already reflected in nodal prices. This transmission price signal should not differ between generators who decide to imbed and generators who decide to connect to the transmission network • remove the obligation to make ACOT payments from Schedule 6.4. This would require new DG investments to be viable on their own merits relative to alternatives • allow distributors to charge distributed generators for a share of the fixed and common costs in the distribution network they are deemed to be sharing • calculate transmission connected generators' share of existing connection assets based on their injections at the relevant grid exit point, rather than at the nodes between the connection assets and distribution networks.	Sections 4.1, 4.3-4.4	348

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	Clearwater Hydro	ACOT should be set at a fixed value in real terms and reset every five years.	Page 4	349
	Eastland Network	Since the current TPM is unlikely to change, consideration of avoided interconnection payments should be removed from Schedule 6.4 and Transpower should be required to pay avoided interconnection to distributors as a rebate, who would then pay qualifying DG owners or operators.	Pages 1-2	350
	Ngawha Generation	Transpower should be required to consult with DG when making its investment decisions to determine whether there are more cost effective alternatives to additional investment in the grid.	Page 2	351
	Orion	If an economic approach to ACOT payments is introduced, the Authority needs to take into account transaction costs, particularly for small DG owners and operators. A de minimis standard might be appropriate, as well as a requirement that the grid owner do the analysis for any generation above that standard.	Page 2	352
	Pulse Energy	If the Authority wishes to support a reduction in total ACOT payments, ACOT calculations should remain materially unchanged. The Authority should set criteria for the payment of ACOT, requiring a project to be renewable and setting a maximum size of, for example, 5 MW. A minimum threshold could be set at 0.1 MW.	Page 2	353
	PwC (for 22 EDBs)	It could potentially be economically efficient to move to ACOT payments based on economic costs. Consideration of Transpower charges should be limited to interconnection charges. However, interconnection charges do not align with avoided economic costs. Consideration of avoided interconnection payments should be removed from Schedule 6.4, and Transpower should be required to signal or pay avoided interconnection directly. However, PwC acknowledges that such an approach is likely to be difficult to apply in practice.	Pages 5-6, 39	354

Issue	Submitter(s)	Submission summary	Submission reference	Item number
	Vector	If the Authority wants to ensure that distributed generators receive dynamically efficient transmission pricing signals, the Authority should consider introducing some form of LRMC pricing for transmission. This would signal the full transmission investment implications of generation/consumption location decisions and peak usage.	Para 22	355
	Vector	The Authority should ensure that distributed generators are incentivised to only invest in efficient distributed generation that delivers benefits to consumers. Schedule 6.4 and the distributed generation regulations could be enhanced by including a specific link to a reduction in actual economic costs.	Paras 31- 32	356
	Wind Farm Group	ACOT payments should only be available for renewable generation, or at a lesser rate for thermal plant. ACOT payments should be higher in import constrained areas or areas of projected high demand growth to incentivise DG in areas of need. The ACOT structure should remain in place because it is more simple than subjective negotiations between distributors and DGs.	Pages 4-5	357
Other submissions, comments and requests	Ngawha Generation	If smaller generators no longer receive appropriate returns on their investment or lose confidence in the regulatory framework due to frequent changes, the liquidity of the ASX market will be adversely affected.	Page 2	358
	Pioneer Generation	OIA request: Pioneer Generation requests a copy of the Cabinet decision and/or policy advice given to Ministers on moving the distributed generation regulations to the Code.	Page 14	359