Summary of cross-submissions

Transmission pricing methodology review: issues and proposal consultation paper

4 June 2013

Executive summary

The Electricity Authority (Authority) is reviewing the transmission pricing methodology (TPM), which specifies the method for Transpower New Zealand Limited (Transpower) to recover costs of providing transmission services.

The Authority released the Transmission Pricing Methodology: issues and proposal consultation paper on 10 October 2012 (consultation paper) inviting interested parties to make submissions by 30 November 2012 and to make cross-submissions by 21 December 2012. The Authority announced an extension of the consultation period on 27 November 2012: asking parties to make submissions by 1 March 2013 and to make cross-submissions by 28 March 2013.

The Authority received 54 submissions and 16 cross-submissions which are available on the Authority's website at http://www.ea.govt.nz/our-work/consultations/priority-projects/tpm-issues-oct12/submissions/.

This paper provides a summary of cross-submissions. The cross-submissions covered a range of issues. This paper does not exhaustively list submitter comments, but instead identifies what it considered to be the major issues and themes in the cross-submissions. A separate paper provides a summary of submissions.

The Authority noted that some cross-submitters summarised the views of other submitters without necessarily advising the Authority as to what their position was in relation to these comments. While the Authority did not anticipate such comments, and considers them to be inconsistent with the purpose of a cross-submission, the Authority has included some of these comments at Appendix B of this paper.

The main points raised in the cross-submissions are described below:

Problem not identified

A range of views were provided by submitters about the Authority's definition of the problem: some parties considered that the Authority's definition of the problem was unsatisfactory; and some parties considered that it was well established that some change to the TPM was necessary. A number of parties, mainly parties with South Island generation, considered that it had already been sufficiently established by the Transmission Pricing Advisory Group (TPAG) and other work that there was a problem with HVDC charges. Consumers, such as Pacific Aluminium and NZ Steel, considered that changes were necessary, although not to HVDC charges, with Pacific Aluminium seeking a stronger price signal via changes to interconnection charges and DEUN requesting electricity is treated as an essential service.

The Authority should consult again

A range of views were provided by cross-submitters on the process for the TPM review. Common themes that were expressed by cross-submitters were: that the Authority needs more work in evaluating alternatives, and has not evaluated the next best alternative; that the Authority needs to consult again, although Meridian considered the Authority only needed to refine its existing proposal; and that an incremental change approach was warranted. There was a mixed response over whether the Authority should establish a working group, hold workshops, or hold a TPM conference, with some parties contending that these consultation processes are not useful and might be

counterproductive. Many submitters considered a transition period was warranted, particularly where large wealth transfers were concerned.

Inadequate consideration of the decision-making and economic framework

Vector noted that based on the decision-making and economic framework, full locational pricing was the best option. Vector noted that the Authority's proposal would reduce the locational signal currently provided by HVDC charges.

The Authority has not satisfied the "long-term benefit of consumers" test

A wide range of parties cross-submitted that the Authority had not adequately demonstrated that the proposal would be for the long-term benefit of consumers, and that the Authority needs to reconsider the meaning of "the long term benefit of consumers" in its statutory objective. MRP noted that proposal lacked analysis on impacts to consumers and that the HVDC part of the proposal would create a wealth transfer to SI generators at the expense of consumers.

TPAG majority recommendation as to HVDC

A number of parties expressed concerns as to what was considered to be a revival of the Authority's consideration of the TPAG recommendations. Consumers noted that the TPAG recommendations were: never accepted generally across all parts of the industry; based on questionable assumptions and analysis; and not highly compatible with positive externality considerations. Meridian considered that the TPAG approach represented a viable incremental change alternative while Vector considered that interest in South Island generation determined support for TPAG and that TPAG was not supported by consumers.

Feedback on the proposal

Status quo preferable for connection charges

The focus of Transpower's cross-submission was identifying issues with the connection charge proposal. Transpower submitted that there is no problem in practise with parties trying to shift costs to the interconnection pool in preference to Customer Investment Contract (CIC)-based charging, and that updating replacement cost values would not improve efficiency. Transpower suggested that there were significant advantages to the pooling approach and that CIC costs are currently effectively allocated.

Interconnection charges, beneficiaries-pay and the SPD model

Many submitters commented on interconnection charges, beneficiaries-pay and the Scheduling and Pricing Dispatch (SPD) model. Their various comments are divided into the following subcategories: changes to the HVDC charge; proposed SPD model will create volatile and uncertain charges; reallocation of sunk costs; beneficiaries-pay; allocation of SPD charges to generators; and inelasticity of demand not identified in SPD. Note also that Appendix A provides a breakdown of suggestions from cross-submitters. Many of these suggestions relate to alterations to the Authority's SPD and beneficiaries-pay proposal and should be read in conjunction with this section. Note

there is also a separate section within this document that discusses the various suggestions made by cross-submitters.

Changes to the HVDC charge

There was a mixed response over whether the current allocation of HVDC charges to South Island generators should be preserved as a locational signal, and because South Island generators benefit heavily from HVDC assets. Some cross-submitters considered that a change to status quo would cause greater generator pass through of costs to consumers, resulting in increased consumer electricity costs. On the other hand, many of the large generators considered that it is well-documented that current HVDC charges are inefficient and revisions are necessary. MRP argued that there are known inefficiencies in investment and dispatch due to current HVDC charges.

Proposed SPD model will create volatile and uncertain TPM charges

Many cross-submitters argued that the current SPD proposal will cause volatile and unpredictable TPM charges.

Reallocation of sunk costs

According to MRP, the reallocation of sunk costs creates uncertainty and is only warranted in extreme circumstances (such as its view of a need to change HVDC pricing to address inefficiencies in investment and dispatch).

Beneficiaries-pay

NZIER acting for MEUG considered that the SPD model shows that evaluation of beneficiaries is `entirely feasible', while MRP considered the SPD model is inadequate, does not accurately identify beneficiaries, and is disconnected with the grid approval process.

Allocation of SPD charges to generators

There was a view that the allocation of SPD and residual charges to generators would lead to increased distortions in wholesale and retail market prices and added risk premiums reflecting the additional volatility of charges.

Inelasticity of demand not identified in SPD: MEUG argued that a number of submitters incorrectly assumed demand elasticity in the SPD method.

Residual charges

Allocation of residual charges to generation will increase pass-through and create market distortions

Many cross-submitters appeared to be broadly comfortable with the concept of a Regional Coincident Peak Investment (RCPD) charge, which is similar to existing TPM charges, while some cross-submitters considered that the proposed 50:50 allocation between load and generators was arbitrary. Some cross-submitters expressed concerns that allocating charges to generators would increase the level of pass-through of TPM charges to consumers. Some cross-submitters considered that Megawatt hour (MWh) charges were more appropriate than Regional Coincident Peak Investment (RCPI) charges for generators. Pacific Aluminium argued that residual costs should be spread so to have the smallest influence on behaviour as possible. NZIER noted that

the dynamic efficiency benefits from the Authority's proposal will depend crucially on the extent to which residual charges can be made to 'stick'.

The Authority's assessment of the opt-out mechanism is incomplete

Many cross-submitters opposed the distributor opt-out proposal, with TrustPower contending that the Authority's assessment of the distributor opt-out mechanism was incomplete. MRP was concerned that the opt-out mechanism incorrectly suggested that distributors do not benefit at all from the transmission network.

The proposal will significantly disadvantage distributed generators

Many cross-submitters expressed concerns over the impact of the Authority's proposal on distributed generation. Parties commenting on the proposal's effect on distributed generation were mainly; distributed generators; industrial consumers with embedded generation supporting their consumption; parties that considered distributed generators received unfair favourable treatment; and parties requesting more clarity around the impacts of the Authority's proposal on distributed generation.

Some submitters, particularly industrials with embedded generation, submitted that net load rather than gross load should be used to calculate SPD and residual charges. NZ Steel submitted that the proposed TPM fails to adequately recognise the difference between: embedded generation with no net injection, generation behind a connection point with net injection, and generation totally dependent on the grid. NZ Steel advised that for generation associated with production processes, there is no link to market pricing and hence no rationale for applying SPD charges.

The cost benefit analysis is too high level

Many cross-submitters expressed concerns about the Authority's cost benefit analysis (CBA). TrustPower considered that the analyses and conclusions of Castalia and Reunion are more complete and therefore have greater validity than those of the Authority. Vector noted that the CBA does not attempt to demonstrate the proposal is to the long-term benefit of consumers. Vector noted that even NERA, Meridian's consultant, had issues with the Authority's CBA. Meridian submitted that a CBA is not a scientific exercise and will be high level in parts, quantify and estimate where it can and use qualitative analysis where it cannot. Meridian also noted that the suggestions it made for changes to the proposed TPM which impact positively on any revised CBA.

Suggested improvements to the TPM proposal

Meridian, Pioneer, Energy for Industry, Genesis (and Castalia), Contact, and TrustPower provided suggestions on how the Authority's TPM proposal might be improved. Typical suggestions were changes that were intended to reduce the volatility and uncertainty of TPM charges. Recommendations common to many submitters were: ex ante yearly billing cycle; less assets to be included in the SPD model, a longer capping period for SPD, elimination of distributors' ability to opt out of residual charges, and residual charges to be allocated 100% to load.

The key to impacting dynamic efficiency is impacting the investment decision

TrustPower advised that the key to impacting dynamic efficiency is influencing the investment decision. TrustPower contended that the Authority had not adequately established how improvements to the investment decision-making process would be achieved. TrustPower also advised that a charging mechanism needed to be determined at the time of the investment decision and should not be changed in retrospect. Meridian advised that the proposal would lead to increased scrutiny over investments. NZIER, for MEUG, considered that the dynamic efficiency benefits from the Authority's proposal will depend crucially on the extent to which residual charges are not passed through.

Comments on submitters' reliance on efficiency arguments

TrustPower noted the PwC submission which commented that the proposal could distort the economic efficiency of the wholesale market system by introducing consideration of sunk transmission costs into otherwise efficient Short-run Marginal Cost (SRMC) pricing decisions. Vector submitted that it did not understand the logic of some submitters that advocated for dynamic efficiency over static efficiency, but relied on a static efficiency analysis of HVDC pricing to support a change to the allocation of the cost of the HVDC link.

Glossary of abbreviations and terms

ACOT	Avoided Costs of Transmission
Act	Electricity Industry Act 2010
Authority	Electricity Authority
Code	Electricity Industry Participation Code 2010
CBA	Cost Benefit Analysis
CIC	Customer Investment Contract
DG	Distributed Generation
FTR	Financial Transmission Rights
GWh	Gigawatt hours
HAMI	Historical Anytime Maximum Demand
HVAC	High Voltage Alternative Current
HVDC	High Voltage Direct Current
Kvar	Kilo-volt ampere reactive
LCE	Loss and Constraints Excess
LNI	Lower North Island
LRMC	Long-run Marginal Cost
LSI	Lower South Island
MAR	Maximum Allowable Revenue
Minister	Minister of Energy and Resources
MW	Megawatt
MWh	Megawatt hour
NAaN	North Auckland and Northland project
NPV	Net Present Value
NRS	Network Reactive Support
PDP	Prudential Discount Policy
RCPD	Regional Coincident Peak Demand
RCPI	Regional Coincident Peak Investment
SPD	Scheduling Pricing and Dispatch
SRMC	Short-run Marginal Cost
TPAG	Transmission Pricing Advisory Group
TPM	Transmission Pricing Methodology
vSPD	vectorised Scheduling, Pricing and Dispatch

Glossary of cross-submitters

Submitter	Abbreviation used in this paper
Carter Holt Harvey Pulp Limited	CHH
Contact Energy Limited	Contact
Domestic Energy Users' Network	DEUN
Energy for Industry	Energy for Industry
Genesis Power Limited	Genesis
Major Electricity Users' Group	MEUG
Meridian Energy Limited	Meridian
Mighty River Power	MRP
New Zealand Steel	NZ Steel
Norske Skog Tasman	Norske Skog
Pacific Aluminium	Pacific Aluminium
Pan Pac Forest Products Limited	Pan Pac
Pioneer Generation	Pioneer
Transpower	Transpower
TrustPower Limited	TrustPower
Vector Limited	Vector

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1. Introduction and purpose of this paper

1.1 Introduction

1.1.1 The Authority is reviewing the TPM, which specifies the method for Transpower to recover costs of providing transmission services.

1.1.2 The Authority released the Transmission Pricing Methodology: issues and proposal consultation paper on 10 October 2012 (consultation paper) inviting interested parties to make submissions by 30 November 2012 and to make cross-submissions by 21 December 2012. The Authority announced an extension of the consultation period on 27 November 2012: asking parties to make submissions by 1 March 2013 and to make cross-submissions by 28 March 2013.

1.2 Purpose of this paper

1.2.1 This paper provides a summary of the cross-submissions to submissions on the consultation paper.

1.2.2 This summary of cross-submissions summarises the following types of comments:

(a) comments where parties expanded on points made in their submissions

(b) comments where parties revised points made in their submissions

(c) comments expressing submitters' view on points made by other parties in their submissions.

1.2.3 The Authority noted that some cross submitters summarised the views of other submitters without necessarily advising the Authority as to what their position was in relation to these comments. While the Authority did not anticipate such comments, and considers them to be inconsistent with the purpose of a cross-submission, the Authority has included some of these comments in Appendix B of this paper.

1.2.4 The cross-submissions received covered a range of issues. This paper does not incorporate all comments made by submitters. The quotes provided are generally a sample of what is considered to be the most important comments rather than an exhaustive list of comments.

1.2.5 Furthermore, this document discusses themes from the consultation paper only to the extent that they are commented on within cross-submissions. An exhaustive list of themes which correlates to the questions raised by the Authority in its consultation paper is provided within the summary of submissions document, and is a separate document.

1.2.6 Note that the opinions provided within this document represent submitters' views and are not (necessarily) the views of the Authority.

1.2.7 The submissions and cross-submissions, the summary of submissions paper and this paper will assist the Authority in determining next steps in its review of the TPM.

2. Overview of cross-submissions

2.1.1 Cross-submissions were received from 16 parties, as detailed in Table 1 below.

Table 1: List of parties making cross-submissions

Retailer/ Generators	Distributors	Consumers	Generators	Others
Meridian	Vector	MEUG*	Pioneer	Transpower
Genesis		CHH		Energy for Industry
MRP		DEUN*		
TrustPower		Pacific Aluminium		
Contact		Norske Skog		
		NZ Steel		
		Pan Pac		

***** Submitter represents a group of parties

2.1.2 Rather than providing an exhaustive list of submitter views, the cross-submissions normally either focused on areas that were of particular concern to cross-submitters, or analysed the submissions of, and provided concluding views surrounding, other submissions. For example; Transpower's cross-submission focused on the Authority's connection charge proposal, an area of the proposal which Transpower considered required further attention. However, TrustPower's cross-submission predominantly analysed comments made by other parties on key themes, and drew conclusions around areas of consensus and areas where submitters' views diverged.

2.2 Main points raised in cross-submissions

2.2.1 The main points raised in the cross-submissions are described below:

(a) problem not identified

(b) the Authority should consult again

(c) inadequate consideration of the decision-making and economic framework

(d) the Authority has not satisfied the `long-term benefit of consumers' test

(e) concerns about a possible revival of the TPAG recommendations

(f) feedback on the proposal, involving:

  (i) comments on LCE

  (ii) status quo preferable for connection charges

  (iii) changes to the HVDC charge

  (iv) proposed SPD model will create volatile and uncertain TPM charges

  (v) reallocation of sunk costs

  (vi) beneficiaries-pay

  (vii) allocation of SPD charges to generators

  (viii) allocation of residual charges to generation will increase pass-through and create market distortions

  (ix) the Authority's assessment of the opt-out mechanism is incomplete

  (x) the proposal will significantly disadvantage distributed generators

  (xi) the CBA is too high-level.

(g) suggested improvements to the TPM proposal

(h) the key to impacting dynamic efficiency is impacting the investment decision

(i) comments on submitters' reliance on efficiency arguments.

2.3 Brief synopsis of each cross-submitter's position

2.3.1 The following sets out a brief synopsis of the Authority's understanding of the main point(s) made by each cross-submitter:

(a) MRP did not support the proposal and requested an incremental approach to TPM changes with further consultation required

(b) Transpower did not support the proposal and suggested a further consultation on options to refine existing arrangements rather than revisions to the original proposal

(c) Pioneer did not support the distributed generation, generator charges, and SPD volatility aspects of the proposal and provided a straw man outlining Pioneer's suggested approach

(d) Energy for Industry submitted that the proposal in its current form is too complex, volatile, and uncertain, and provided a straw man outlining a simplified approach

(e) Genesis submitted that a measured, cautious approach was required and provided two alternative straw men options for consideration

(f) Meridian supported the proposal in principle but suggested some amendments to reduce charge volatility

(g) Vector did not support the proposal, nor did it support the TPAG recommendations, and advised the Authority that it should only commit to making changes where the proposal has widespread support

(h) Pan Pac had concerns on the residual and embedded generation aspects of the proposal and submitted that residual should be 100% RCPD

(i) Norske Skog expressed concerns about the HVDC and embedded generation aspects of the proposal and what it saw as a *revival* of the TPAG recommendations

(j) Contact did not support what it considered to be the Authority's "radical" changes and suggested incremental modifications to the TPM

(k) TrustPower submitted that the proposal is not consistent with the Authority's statutory objective and that the proposal is not to the long term benefit of consumers, and that it appears that the only part of the TPM that requires change is the apportionment of HVDC charges

(l) DEUN submitted that the proposal is not in the long term benefit of consumers

(m) CHH submitted that it did not support the distributed generation elements of the proposal and did not support the TPAG recommendation

(n) NZ Steel submitted that it did not agree with the distributed generation elements of the proposal and did not believe that generators associated with production processes should not be subject to SPD or residual charges

(o) Pacific Aluminium submitted that changes to the current TPM were necessary and SPD charges would go a long way to addressing problems associated with load meeting 100% of HVAC costs. However, Pacific Aluminium did not support the TPAG recommendations or the proposal to roll the HVDC charge into SPD, and suggested that the Authority address NZIER concerns before accepting the TPAG analysis

(p) MEUG submitted that there was sufficient uncertainty regarding the proposal to withhold issuing the guidelines and that the Authority should consult on next steps.

3. Summary of views in cross-submissions

3.1.1 The comments in the cross-submissions were divided into the following categories: the overall process; feedback on details of the proposal; suggested improvements to the proposal; and discussion of some of the proposal's impacts. Comments received on the overall process of developing the proposal included:

(a) problem not identified; the Authority should consult again; inadequate consideration of the decision-making and economic framework; insufficient consideration of the long term benefit of consumers; and concerns about a possible revival of the TPAG recommendations.

3.1.2 Feedback received on the proposal included:

(a) comments on LCE status quo preferable for connection charges; mixed support for changes to the HVDC charge; proposed SPD model will create volatile and uncertain TPM charges; reallocation of sunk costs; mixed support for beneficiaries-pay; mixed support for allocation of SPD charges to generators; allocation of residual charges to generation will increase pass-through and create market distortions; the Authority's assessment of the opt-out mechanism is incomplete; the proposal will significantly disadvantage distributed generators; and the CBA is too high level

(b) suggestions for improvements to the TPM proposal were provided by Pioneer, Energy for Industry, Genesis, Castalia (for Genesis), Contact, Meridian, and TrustPower.

3.1.3 Comments on some of the impacts of the proposal included comments on both dynamic and static efficiency.Each of the comments listed above are examined in detail below.

3.2 Problem not identified

3.2.1 PwC, on behalf of Genesis, submitted that out of 35 parties submitting on the Authority's identification of the problem, eight submitters either fully agreed or partially agreed that the Authorty's definition of the problem was satisfactory while 23 submitters considered it unsatisfactory. Note that this is Genesis' view and does not necessarily reflect the Authority's position.

3.2.2 Contact submitted that "*participants do not believe that the proposal correctly identifies the problem*"[1] and TrustPower noted that some submitters, such as Northpower, Ringa Matau, and Contact, "*queried whether the statutory criteria for a review of TPM Guidelines have been met*".[2]

[1] Contact cross-submission, p. 3

[2] TrustPower cross-submission, p. 2

3.2.3 TrustPower further noted that "*the charging regime for the HVDC link is the only real problem requiring resolution in the existing TPM*" and restated its position from its original submission that the HVDC link "*should be the focus of the Authority's efforts.*"[3] A number of cross-submitters, mainly gentailers[4], considered that a problem had been identified with HVDC charges, although some considered that problem was already sufficently identified by TPAG.

3.2.4 Meridian supported changes to status quo and submitted that changes to the TPM were widely supported. Meridian indicated that TPM changes were suported by Contact, MRP, TrustPower, Genesis, ENA, Pacific Aluminium, Energy Link, Pulse, NZCID, Auckland Chamber of Commerce.

3.2.5 Vector submitted that it agreed with EMA's statement that "*there is really nothing much wrong with the existing transmission pricing system, and no real need for urgency to change it*".[5]

3.3 The Authority should consult again

3.3.1 A number of cross-submitters commented on the Authority's process. Most of the comments related to recommendations for next steps. Overall there was a preference for the Authority to consult again and provide further options for the industry to consider.

Conferences, technical working groups and/or workshops

3.3.2 Meridian recommended that the Authority does not establish a "technical" working group, as "*given the TPAG experience this will not result in progress*".[6]

3.3.3 "*Pioneer supports the Authority holding a conference*" although it advised that the format and objective of the conference would have to be clearly defined.[7]

3.3.4 Genesis, submitted that it did not support a conference which it considered was an "*adversarial approach*", but instead preferred targeted workshops "*to facilitate moving forward the less-contentious elements of a revised TPM to deliver efficiency benefits*".[8]

3.3.5 MEUG supported the Authority holding a public conference, although advised "*requiring independent experts to sign a declaration that they abide by the Code of Conduct for Expert Witnesses as contained in Schedule 4 of the New Zealand High Court Rules*". MEUG also suggested the Authority "*consult on a proposed conference agenda, and invite written post*

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3 TrustPower cross-submission, p. 2

4 Genesis, MRP, Transpower, Contact, TrustPower, Meridian

5 Vector cross-submission, p. 9

6 Meridian cross-submission, p. 5

7 Pioneer cross-submission, p. 13

8 Genesis cross-submission, p. 11

conference submissions on particular matters identified by the Authority with reference to transcripts of the conference proceedings."[9]

Incremental change and transition periods

3.3.6 Vector and MRP submitted that the Authority should *"focus on incremental reforms"*.[10] Contact supported incremental modifications and a staged process[11] (as illustrated in Contact's straw man in Appendix A of this paper).

3.3.7 In DEUN's view, *"from the domestic consumer's perspective, incremental change will only perpetuate the faults of the present consultative processes*".[12]

3.3.8 Many submitters considered that a transition period might be warranted, particualrly where the revised TPM would create large wealth transfers.

3.3.9 TrustPower submited that "*any significant change to the TPM Guidelines needs to have a transition period appropriate to the underlying investment decisions which have been made under the current TPM*".[13]

3.3.10 Genesis submitted that "*the wealth transfers inherent in any change to transmission pricing may necessitate a transition period*". Genesis considered that even if the overall sector impact was small, "*it may still equate to potentially significant 'shock' for individual particiapnts or consumers*".[14]

New proposal, consultation on options or next steps

3.3.11 Transpower submitted that "*there is a clear and consistent message in the submissions that further work is required before suitable guidelines can be issued.*" Transpower further advised that "*further consultation should be on options to refine the existing arrangements, rather than on revisions to the original proposal*".[15]

3.3.12 Meridian recommended that the Authority release a modified proposal which "*retains the general direction set out in the original proposal but with improvements such as those recommended by Meridian and others*". [16]

3.3.13 Contact submitted that a new paper was required "*as a minimum*".[17]

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9 MEUG cross-submission, p. 5

10 Vector cross-submission, p. 9

11 Contact cross-submission, p. 3

12 DEUN cross-submission, p. 10

13 TrustPower cross-submission, p. 3

14 Genesis cross-submission, p. 11

15 Transpower cross-submission, p. 1

16 Meridian cross-submission, p. 21

17 Contact cross-submission, p. 3

3.3.14 MEUG suggested that the Authority "*consults on possible next steps for reviewing the TPM*".[18]

3.3.15 Vector suggested the Authority consult on how, if at all, it should further progress the TPM review. Vector suggested a "*workshop may be useful for this purpose*".[19]

Authority exceeding mandate

3.3.16 TrustPower considered that there was "*an open question as to whether the Authority has a mandate for the scale of the proposed change (as opposed to an incremental change to the TPM Guidelines to address the longstanding issues with the HVDC link)*".[20] Vector submitted that Transpower's submission stated that "*Transpower does not believe that the Authority's proposed methodology and Guidelines satisfy the purpose in section 15 of the Electricity Industry Act 2010*".[21] Vector thus stated that Transpower would not be mandated to develop a TPM based on guidelines that were not consistent with the Authority's section 15 objective.

3.3.17 TrustPower also considered that "*additional analysis and consultation will be required before the Authority can be satisfied that it has discharged its statutory obligations to evaluate alternative approaches for the charging of the interconnection and HVDC assets.*"[22]

Broader consultation

3.3.18 MRP recommended the Authority consult with the electricity industry and more broadly with Government agencies including the Commerce Commission, Ministry of Business, Innovation and Employment (MBIE), Treasury and other sectors on an appropriate way forward. MRP suggested that a "*robust and independently verified cost benefit analysis incorporating the additional static and dynamic impacts identified by submitters is an important starting position*".[23]

3.4 Inadequate consideration of the decision-making and economic framework

3.4.1 Vector's cross-submission included a section on the role and application of the Authority's decision-making and economic framework, and its implications for TPM development.

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18 MEUG cross-submission, p. 5

19 Vector cross-submission, p. 12

20 TrustPower cross-submission, p. 17

21 Vector cross-submission, p. 11

22 TrustPower cross-submission, p. 1

23 MRP cross-submission, p. 1

3.4.2 While Vector noted that the "Decision Making and Economic (DM&E) Framework may be a useful tool to help develop and evaluate potential TPM options" , it considered that "the Authority still needs to demonstrate its proposal is to the long-term benefit of consumers, including that it is better than other potential options."[24]

3.4.3 Vector contended that under the DM&E, "full locational pricing of the transmission grid would appear to be the best option as: (i) it is feasible (as reflected by the tilted postage stamp proposal), and (ii) it aligns well with market-like and exacerbator-pays (in contrast to the Authority's TPM proposal which predominantly attempts to satisfy beneficiary pays and administrative approaches, which are lower in the DM&E Framework's hierarchy)". [25]Vector argued that current HVDC charges provided a locational signal and should be maintained.

3.4.4 Vector also expressed concern over the Authority's definition of 'exacerbation' in the TPM proposal paper. Vector submitted that the Authority incorrectly regarded "*externalities as being the sole form of exacerbation*."Vector contended that this is "*inconsistent with the DM&E framework*" and documentation published on the Authority's website makes no mention of externalities in its definition of exacerbators.[26]

3.5 The Authority has not satisfied the "long-term benefit of consumers" test

3.5.1 A number of parties such as Vector, TrustPower, DEUN, Pacific Aluminium, MRP, and Transpower submitted that the Authority did not demonstrate adequately that the proposal is in the long term interest of consumers. PwC, on behalf of MRP, noted that no parties out of the 32 parties that commented on the consumer impacts of the proposal considered that the Authority adequately considered consumer impacts.

3.5.2 DEUN advised the Authority revisit the fundamentals and reconsider the meaning of 'long term benefit of consumers'. DEUN advised that "*the only change that could give us confidence that the pricing process would be in the long-term benefit of consumers would be to revoke the Authority's interpretation of its statutory objective, and direct the regulator to recognise electricity as an essential service, as is done in all other countries*".[27]

3.5.3 DEUN submitted that the Authority's view of promoting the building of infrastructure *"'in the hope of expanding the economic pie"*[28] was an incorrect interpretation of the Authority's statutory objective. DEUN further

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24 Vector cross-submission, p. 8

25 Vector cross-submission, p. 8

26 Vector cross-submission, p. 9

27 DEUN cross-submission, p. 10

28 DEUN cross-submission, p. 11

advised that "*regulation will never achieve stability until "long term benefit of consumers" means exactly what it says*".[29]

3.5.4 Pacific Aluminium submitted that the Authority "*cannot look out for consumers' long-term interests by ignoring the short-term*"[30] while MRP noted that there were "*limitations in the consumer impact analysis underpinning the Authority's proposal*".[31]

3.5.5 Vector supported a statement from MRP's submission that if the proposal were adopted, "*consumers will … bear the majority of the costs of the HVDC link, which are currently incurred by South Island generators*".[32]

3.5.6 Vector also submitted that it is clear that Transpower does not believe that the Authority's proposal complies with section 15 of Electricity Industry Act 2010. Therefore "*we wonder, from a practical perspective, what this would mean in terms of Transpower meeting the requirements of clause 12.89 of the Electricity Industry Participation Code 2010 to develop a methodology that is consistent with (b) the Authority's objective in section 15 of the Act; and (c) any guidelines published under clause 12.83(b).*"[33]

3.6 TPAG majority recommendation as to HVDC

3.6.1 A number of consumers[34] and Vector expressed concerns as to what was considered by some cross-submitters to be a revival of the Authority's consideration of the TPAG recommendations. Some cross-submitters considered that the TPAG recommendations were never accepted by the industry.

3.6.2 Pacific Aluminium submitted that "*it is with regret that the Authority's paper has breathed life into the TPAG majority proposal and that has been latched onto by some submitters.*[35] *The TPAG failed to reach consensus on how to allocate the costs of the HVDC assets. A slim majority favoured adding the costs of the HVDC assets to the HVAC assets and recovering these costs from consumers through the interconnection charge with or without a transition period to smooth price impacts*". However, according to Pacific Aluminium, "*even the supporters of this view had to acknowledge that postage stamping is likely to create an efficiency gain but it results in a*

29 DEUN cross-submission, p. 10

30 Pacific Aluminium cross-submission, p. 2

31 MRP cross-submission, p. 2

32 Vector cross-submission, p. 10

33 Vector cross-submission, p. 11

34 Including Pacific Aluminium, NZ Steel, Norske Skog, Carter Holt Harvey, MEUG

35 According to Pacific Aluminium parties `latching onto the TPAG majority proposal' are Clearwater Hydro, Energy for Industry, MainPower, MRP, NZWEA, Philip Wong Too, Powerco and TrustPower

significant immediate and certain transfer of value to SI generators offset by future and uncertain wholesale price effects".[36]

3.6.3 Norske Skog submitted that "we *opposethe TPAG majority view for the reasons we outlined in our submission to TPAG at the time*".[37]

3.6.4 NZ Steel advised that "*if the previously dismissed TPAG view is to be further considered we reserve the right to further submit*".[38]

3.6.5 CHH noted that the TPAG recommendations were "*never accepted or agreed by the wider industry and it is not now appropriate to attempt to revive it.*" CHH submitted that the "*efficiency gains suggested by the TPAG modelling work are based on questionable assumptions and analysis*".[39]

3.6.6 MEUG recommended the Authority "*disregard calls for reconsideration of aspects of the TPAG report*".[40] NZIER, on behalf of MEUG, questioned why the "*TPAG approach is considered highly compatible with positive externality considerations when a broad postage stamping is considered a sub-optimal approach to pricing and therefore has potential to generate negative outcomes*".[41]

3.6.7 Meridian suggested that the Authority should further explore an alternative 'incremental changes' option, consistent with the TPAG recommendations. According to Meridian, this would involve HVDC charges being folded into the interconnection charge to secure $30m of efficiency gains. Meridian submitted that this has been identified in several robust analyses to date.[42]

3.6.8 Vector submitted that, apart from Transpower, the only parties that supported TPAG[43] were parties with South Island generation, or had South Island generation sites under investigation. Vector noted that the TPAG recommendations were not supported by consumers, consumer groups, or others.[44] [45]

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36 Pacific Aluminium cross-submission, p. 4

37 Norske Skog cross-submission, p. 1

38 NZ Steel cross-submission, p. 2

39 CHH cross-submission, p. 1

40 MEUG cross-submission, p. 3

41 NZIER report, part of the MEUG cross-submission, p. 14

42 Meridian cross-submission, p. 5

43 According to Vector, parties supporting TPAG were: Contact, MainPower, Meridian (Powershop brand), MRP, NZWEA, TrustPower and Vestas.

44 According to Vector, parties not supporting TPAG were: CHH, ENA, DEUN, Fonterra, Genesis, Grey Power, MEUG, NZ Steel, Norske Skog, Orion, Pan Pac, Powerco, Rio Tinto, NZ Refining Company, Vector, and WEL Networks.

45 Vector cross-submission, p. 10

3.7 Feedback on the proposal

Comments on LCE

3.7.1 There were limited cross-submissions addressing the LCE proposal.

3.7.2 MEUG submitted that it was unsure whether there would be a detriment if there was a change from the status quo in relation to the LCE proposal, although it maintained that there is no pressing reason for such a change.[46]

3.7.3 TrustPower noted that that proposed treatment of LCE was one of the key points of difference in the submissions.[47]

3.7.4 Genesis suggested that the LCE offset is calculated annually and offset against the following year's MAR.[48]

Status-quo preferable for connection charges

3.7.5 Transpower and Genesis cross submitted that the Authority should not make any changes to connection charges.

3.7.6 Transpower's submission focused almost exclusively on the Authority's proposed connection charges. Transpower observed that the majority of submissions from its "*connection customers agreed there is no material problem with the connection charging framework, and connection charging was not a focus for most submitters with no strong endorsement for change.*" Transpower noted however that "*some of the submissions that agreed there were no material problems also agreed with the proposed change away from a pool-based approach to connection charging*."[49] According to Transpower, given this confusion Transpower provided the following information on connection charges:

> "*connection charges are based on the regulatory asset value of connection assets, so they recover the full capital-related costs of those assets. There is no 'excess' recovered through interconnection charges*
>
> *replacement costs are only used to allocate the capital-related costs of the connection pool. There is no relationship between the replacement cost values used and the overall level of connection charges.*"[50]

3.7.7 The implication of the above statements, according to Transpower, was:

> "*there is not a problem in practice with parties trying to shift costs to the interconnection pool by seeking TPM-based charging in preference to CIC-based charging*

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46 MEUG cross-submission, p. 1

47 TrustPower cross-submission, p. 13

48 Genesis cross-submission, p. 9

49 Transpower cross-submission, p. 1

50 Transpower cross-submission, p. 2

updating the replacement cost values would not achieve any improvement to the efficiency of connection charges but could alter the allocation of charges between customers reflecting the relative movements in the replacement costs of different asset types".[51]

3.7.8 Transpower suggested that there were significant advantages to the pooling approach. Under the pooling approach, "*the customer is effectively charged for the service received, and Transpower can make decisions as to how best to maintain that service. This assists us to optimise capital expenditure for renewal across the grid and avoids our customers experiencing price shocks due to routine asset replacements.*"[52]

3.7.9 According to Transpower "*in contrast to TPM connection charges, CIC charges allocate the costs of specific assets covered by a CIC to the contract counterparty. We use CICs predominately for new connections or material expansion of existing services, and customers thus see the cost of providing that additional service. CIC charges provide flexibility for customers to negotiate the charging profile, including the duration of the contract and the balance between annualised and lump-sum components. CICs have a charge profile that is flat in nominal terms (i.e. declining in real terms).*" [53]

Interconnection charges, beneficiaries-pay and the SPD model

3.7.10 Many submitters commented on interconnection charges, beneficiaries-pay and the SPD model. Their various comments are divided into the following subcategories: changes to the HVDC charge; proposed SPD model will create volatile and uncertain charges; reallocation of sunk costs; beneficiaries-pay; allocation of SPD charges to generators; and inelasticity of demand not identified in SPD. Note also that Appendix A provides a breakdown of suggestions from cross-submitters. Many of these suggestions relate to alterations to the Authority's SPD and beneficiaries-pay proposal and should be read in conjunction with this section. Note there is also a separate section within this document that discusses the various suggestions made by cross-submitters.

3.7.11 A number of cross submitters, mainly industrial consumers, considered that, while the SPD method had merits, the current allocation of HVDC charges to South Island generators should be preserved, as South Island generators benefit heavily from HVDC assets and a change to status quo would cause greater generator pass through of costs to consumers, resulting in increased consumer costs of electricity. On the other hand, many of the gentailers considered that current HVDC charges are inefficient and require revision.

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51 Transpower cross-submission, p. 2

52 Transpower cross-submission, p. 2

53 Transpower cross-submission, p. 2

3.7.12 TrustPower cross submitted that based on submissions "*the interconnection proposal does not meet the Authority's competition, reliability and efficiency criteria." "The Authority has failed to demonstrate that implementation of the proposal would be of long-term benefit to consumers*".[54]

3.7.13 Pacific Aluminium strongly disagrees with submitter assertions that the current interconnection charge is widely accepted and therefore needs no change. Accordingly to Pacific Aluminium "*it is abundantly clear that any market-based, exacerbator-pays or beneficiary-pays approach to allocating the costs of the HVAC interconnection assets would result in an allocation significantly different to the current inefficient smearing of these costs across consumers only. The SPD charge goes some way to redressing the current inefficiency*".[55]

Changes to the HVDC charge

3.7.14 Transpower considered that it was clear from many submitters that the "*status quo for interconnection charging (aside from perhaps the HVDC charge) is preferred over the proposed use of the SPD method*".[56]

3.7.15 Vector considered that a preference for dynamic efficiency over static efficiency for electricity transmission pricing "*suggests locational pricing should be considered and, at the very least, the current North-South Island locational HVDC pricing signal should be retained*". Vector noted Rio Tinto's statement that it is "*quite rational to consider the HVDC assets as connecting surplus South Island generation to higher-priced North Island load centres*".[57]

3.7.16 Vector argued that TPAG "*did not properly specify a problem with the HVDC locational signals, i.e. they did not establish that the HVDC charges exceeded LRMC and therefore did not establish that the (long-run) signal to invest in the North or South Island was too strongly biased against South Island locations*".[58]

3.7.17 Vector considered, "*the reason it was concluded there would be little benefit from locational pricing of the entire transmission grid, and efficiency detriments from locational pricing of the HVDC link, is that the benefits of locational pricing have been substantially understated*".[59]

3.7.18 Pacific Aluminium submitted that it is "*not clear why the Authority has largely replicated the TPAG analysis concerning the HVDC costs and alleged inefficiencies before addressing the concerns raised by the NZIER*." According to Pacific Aluminium, the NZIER analysis "*seriously questions the*

54 TrustPower cross-submission, p. 17

55 Pacific Aluminium cross-submission, p. 6

56 Transpower cross-submission, p. 1

57 Vector cross-submission, p. 6

58 Vector cross-submission, p. 7

59 Vector cross-submission, p. 7

TPAG work and raises serious questions as to the validity of its conclusions concerning the alleged inefficiencies of the HVDC charge". Pacific Aluminium requested that the Authority address these concerns.[60]

3.7.19 Norske Skog suggested that "*maintaining the charge on existing South Island generators, but not charging new South island generation, overcomes the efficiency problems with the status quo*". This, according to Norske Skog would be a simple change to make.[61]

3.7.20 Contact supported the Authority's proposal to change the way HVDC charges are recovered. Contact responded to comments made in submissions that the HVDC charges should not change because HVDC charges had already been factored into South Island generator values and that changing HVDC values would provide windfall gains to South Island generators. Contact disagreed with NZIER's comments that HVDC HAMI charges have already been factored into its South Island generator assets values.[62] One generator noted that "*many submitters agreed that with the exception of HVDC, where there are known inefficiencies in investment and dispatch, there is no compelling rationale to reallocate costs on sunk assets*." [63]

3.7.21 MEUG disagreed with Meridian's approach to handling the HVDC and HVAC economic value accounts and agreed with Pacific Aluminium's submission on how Transpower's economic value accounts should be treated. According to MEUG the over recovery and under recovery balances should be distributed to and recovered from the historic parties to which they relate, "*otherwise unnecessary windfall gains and losses will occur.*"[64]

3.7.22 Proposed SPD model will create volatile and uncertain charges.

3.7.23 Pioneer suggested the "*proposal creates significant costs for small players and the complexity and volatility is a barrier to new entrants.*"[65]

3.7.24 Energy for Industry submitted that the proposal is "*overly complex and will result in volatile charges for sunk assets that have a long life, creating disincentives for market participants and barriers to new entrants.*"[66]

Reallocation of sunk costs

3.7.25 MRP made submissions on the reallocation of sunk costs, an argument that was extensively covered by parties in initial submissions. Specifically, MRP submitted that the "*complexities and uncertainties of sunk cost allocation are not in the long term interests of consumers*", and that the re-allocation of

60 Pacific Aluminium cross-submission, p. 6

61 Norske Skog cross-submission, p. 2

62 Contact cross-submission, p. 3

63 MRP cross-submission, p. 3

64 MEUG cross-submission, p. 2

65 Pioneer cross-submission, p. 13

66 Energy for Industry cross-submission, p. 1

sunk costs will create regulatory uncertainty and adversely impact energy company's ability to access to capital markets.[67]

Beneficiaries-pay

3.7.26 NZIER, acting for MEUG, considered that the "*Authority's proposal is something of a game changer"* with respect to the TPAG views. It shows that: *"evaluating beneficiaries of the HVDC is entirely feasible*". NZIER noted that TPAG wasn't sure if this could be done as benefits change over time, sometimes significantly.[68]

3.7.27 MRP noted in its cross-submission that there was "*little support for the Authority's contention that the SPD approach would accurately identify beneficiaries, would lead to significant dynamic efficiency gains or would be durable." MRP also noted that "among other issues with the SPD approach, the disconnect with Commerce Commission's grid approval process was highlighted as a material issue"*.[69]

3.7.28 Vector was firmly of the view that the Authority's SPD beneficiaries-pay- and GEM analysis are "*both inadequate for concluding that changes to the pricing of the HVDC link are either necessary or desirable.*"[70]

Allocation of SPD charges to generators

3.7.29 MRP noted that the "*prevalent view expressed across a wide range of submitters was that the allocation of SPD and residual charges to generators and potentially retailers would lead to increased distortions to wholesale and retail market prices and added risk premiums reflecting the volatility of charges."*[71]

3.7.30 Vector noted Pacific Aluminium's concern that *"generators currently do not bear any of the costs of interconnection assets can be remedied by: (i) not changing the HVDC cost allocation, and (ii) splitting interconnection costs between generation and load". Vector noted that "the SPD method and other components of the Authority's TPM proposal do not need to be introduced to achieve this."*[72]

Inelasticity of demand not identified in SPD

3.7.31 MEUG submitted that a number of submitters, including Frontier (for MRP), Genesis, and EPOC, "*incorrectly assume demand elasticity in the SPD method."*[73] MEUG submitted that Covec (for MRP) correctly identifies the

67 MRP cross-submission, p. 3

68 NZIER acting for MEUG cross-submission, p. 4

69 MRP cross-submission, p. 3

70 Vector cross-submission, p. 10

71 MRP cross-submission, p. 4

72 Vector cross-submission, p. 5

73 MEUG cross-submission, p. 4

assumption of inelastic demand in the SPD method. Covec has submitted that "*in reality the demand curve at a node in a given half-hour in SPD is vertical because demand-side bidding does not occur".* MEUG suggested this "*major weakness"* in the SPD method, identified by NZIER, was not identified in MRP's main submission document. However, MEUG noted that Vector had recognised the flaw.[74]

Residual charges

Allocation of residual charges to generation will increase pass-through and create market distortions

3.7.32 A number of cross-submitters addressed the Authority's proposal for recovering residual costs. While many cross-submitters appeared to be broadly comfortable with the concept of a RCPD charge, which is similar to existing TPM charges, while some cross-submitters considered that a 50:50 allocation between load and generators was arbitrary.

3.7.33 Many submitters considered it was not appropriate to charge generators and the residual should be allocated 100% to load via RCPD. Some parties considered that any charges to generators would address the Authority's objective of allocating residual costs to as broad a base as possible. Some submitters suggested that generator charges should be allocated via a MWh charge.

3.7.34 Note that Appendix A provides straw men suggested by cross-submitters and this table provides a summary of cross-submitters preferences in relation to the preferred structure of residual charges.

3.7.35 Pacific Aluminium noted that some submitters argued that generators should bear a smaller allocation of residual costs because: they will just pass the cost through; there were few international precedents for an equal sharing; and because load derives much greater reliability benefits than generation and should therefore bear more of the cost. However, according to Pacific Aluminium "*none of these arguments have any sound basis upon which a regulator should act. Minimising cost pass-through could be achieved by appropriately structuring the charge. Limited international precedent is simply not an argument to support something different. The SPD method is not complete in capturing benefits and allocating costs on that basis, but that is not an argument to reallocate the residual in an essentially arbitrary fashion.*"[75]

3.7.36 Pacific Aluminium suggested allocating residual costs via "*as small a charge spread across as broad a base as possible. No other allocation is acceptable because if it were, the clear conclusion is that the leftover costs*

[74] MEUG cross-submission, p. 3

[75] Pacific Aluminium cross-submission, p. 3

contain an element that could be more efficiently allocated and thus they do not represent a true residual." Pacific Aluminium further argued that residual should be spread so to have "*as little influence on behaviour as possible".*[76]

3.7.37 NZIER (for MEUG) noted that the "*dynamic efficiency benefits from the Authority's proposal will depend crucially on the extent to which residual charges can be made to 'stick'."*[77]

3.7.38 Pan Pac supported Norske Skog's submission that there is no basis for a residual charge on generators. Pan Pac advised that it was able to respond to peaks and thus it considered an RCPD charge was appropriate.[78]

The Authority's assessment of the opt-out mechanism is incomplete

3.7.39 TrustPower submitted that the "*Authority's analysis of the effect of distributor's opting out is incomplete and that this is material to its overall evaluation".*[79]

3.7.40 MRP noted Mainpower's comment that "*a distributor is allowed to opt out of the residual charge, and is not subject to SPD charge as the EA in its analysis assumed, this means that the distributor would not even be paying for any benefit at all.*"[80]

The proposal will significantly disadvantage distributed generators

3.7.41 Many cross-submitters expressed concerns over the impact of the Authority's proposal on distributed generation. Parties unsupportive of the proposal due to negative impacts on distributed generation were: distributed generators; industrial consumers with embedded generation supporting their consumption; parties that considered distributed generators received unfair favourable treatment; and parties requesting more clarity around the impacts of the Authority's proposal on distributed generation.

3.7.42 Vector noted that distributed generator concerns were one of the main issues arising out of submissions.[81] TrustPower observed that a wide range of parties submitted that there was "*uncertainty over the effects of the proposed TPM on the economics of embedded generation*."[82]

3.7.43 TrustPower submitted that in the light of this negative submission feedback, the Authority should "*reconsider the weight it has placed on investor*

76 Pacific Aluminium cross-submission, p. 3

77 NZIER (representing MEUG) cross-submission, p. 13

78 Pan Pac cross-submission, p. 1

79 TrustPower cross-submission, p. 9

80 MRP cross-submission, p. 4

81 Vector cross-submission, p. 2

82 TrustPower cross-submission, p. 6

confidence and certainty, including especially the impact of its proposals on embedded generation".[83]

3.7.44 Pioneer submitted that "*the efficient contribution of embedded generation to the electricity market has not been considered by the Authority in the development of the TPM*".[84]

3.7.45 DEUN advised that the proposal would make "*small distributed generators less competitive"* and *"undermine the value of their investments*".[85]

3.7.46 Contact suggested an 'incremental modification' alternative to the Authority's proposal whereby the subsidy for distributed generation (Avoided Costs of Transmission or ACOT) was removed, and whereby South Island distributed generators above 10MW in size would contribute to HVDC costs.[86]

3.7.47 Meridian submitted that it "*continues to believe that, in principle, embedded generation above a capacity threshold*[87] *should be subject to the SPD and residual charges*". Meridian also suggested that, given the widespread concern and potentially large financial effects, the Authority should further investigate the impact of the proposal on embedded generation.[88]

3.7.48 MEUG's submitted that the proposal's impact on distributed generation was a concern of MEUG members and nine other non MEUG members.[89]

3.7.49 CHH noted that "*Contact's arguments attempting to develop a link between embedded generation and whether zones are net exporting or importing (from Contact's submission) assumes that embedded generation was established after the establishment of the investment in transmission and other generation. This is of course not necessarily the case at all. It does not follow at all that if an embedded generator is sited in a net exporting zone, that it rather than another generator would have been the cause of any increased load on the transmission system (if indeed there actually was any general overall increase rather than just within a zone)*".[90]

3.7.50 Norske Skog noted that "*Contact's arguments about whether embedded generation is in a net exporting or a net importing region ignore a few important points. Firstly the embedded generation may have been built at an earlier time and subsequent investments by Transpower (and possibly others) have altered flows on the grid*". Secondly, Norske Skog noted "there

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83 TrustPower cross-submission, p. 7

84 Pioneer cross-submission, p. 5

85 DEUN cross-submission, p. 4

86 Contact cross-submission, p. 3

87 In Meridian's Submission on the consultation paper (at p. 46), they recommended a threshold of 10MW given wholesale market obligations apply at 10MW.

88 Meridian cross-submission, p. 16

89 Alinta , ADHB, Clearwater Hydro, Energy3, NZWEA, Pioneer, Taharoa C Block, Tauropaki and Ventus Energy NZ Limited.

90 CHH cross-submission, p. 2

is *a world of difference between a wind farm embedded in a distribution system, and a generator embedded in an industrial plant. The industrial plant's generation is built to avoid the need to rely on power from the grid and therefore avoids the spot price. The industrial plant has installed generation to provide its own fixed price electricity. Therefore assessments of its benefits according to SPD are invalid, since the spot price is totally irrelevant for industrial embedded generation plant*".[91]

SPD charge should be calculated based on net load

3.7.51 Some submitters, particularly industrials with embedded generation, submitted that net load rather than gross load should be used to calculate SPD and residual charges.

3.7.52 CHH submitted that "*for industrial cogeneration embedded generation which is only in existence as a result of the industrial plant itself, there is no benefit* "by virtue of offering to or purchasing from the wholesale market". *This is because as described more fully in our submission of 28 February, the generation and load of the plant are inextricably linked together and so must be seen as a net load*".[92]

3.7.53 Pan Pac also expressed concerns over gross charging. Pan Pac further advised that its distributed generation assets are designed to "*partially isolate ourselves from on-going political and ideological tampering with an essential utility.*"[93]

3.7.54 TrustPower noted that the proposal to charge embedded generators on the basis of gross generation needed to be reviewed and reassessed on the basis that its impact on overall dynamic efficiency may be negative.

3.7.55 NZ Steel advised that "*net load is the appropriate measure at the connection point*."[94]

Treatment of generation associated with production processes

3.7.56 NZ Steel submitted that there are "*160 embedded or nominally embedded generation units throughout New Zealand. The October 2012 consultation paper was inadequate in recognising the extent of embedded generation*". NZ Steel also advised that "*there is mutual advantage in having generation and load connected to the grid, but the benefits vary considerably. For Residual Charges, the proposed TPM fails to adequately recognise the difference between: embedded generation with no net injection, generation behind a connection point with net injection, and generation totally dependent*

91 Norske Skog cross-submission, p. 2

92 CHH cross-submission, p. 2

93 Pan Pac cross-submission, p. 2

94 NZ Steel cross-submission, p. 1

on the grid. For generation associated with production processes, there is no link to market pricing and hence no rational(e) for applying SPD charges".[95]

The cost benefit analysis is too high level

3.7.57 Many cross-submitters expressed concerns about the Authority's CBA. DEUN noted that the "*CBA of the proposal was extensively criticised*."[96] PwC, analysing submissions on behalf of MRP, estimated that, out of 36 submitters that commented on the CBA, 33 were either fully against or partially against the CBA. According to MRP, only three submitters were either partially supportive of or neutral to the Authority's CBA and no party was fully supportive. Not that this is MRP's view and does not necessarily reflect the Authority's view.

3.7.58 TrustPower submitted that with "*regard to the overall cost benefit analysis, we believe the analyses and conclusions of Castalia and Reunion are more complete and therefore have greater validity than those of the Authority. Castalia finds that the Authority's proposal would lead to a net present cost of $48m (as opposed to the Authority's assessed net benefit of $173m); Reunion believes the cost could be greater – at least $167m.*"[97]

3.7.59 Vector submitted that the CBA "*does not attempt to demonstrate the proposal is to the long-term benefit of consumers and is narrowly based on a (flawed) assessment of (dynamic) efficiency."*[98]

3.7.60 Vector went on to submit that even Meridian, a supporter of the Authority's proposal, did not wholly support the CBA on the basis that its consultant, NERA, "*has reason to question the quantified benefits given they question whether the Authority's main dynamic efficiency benefit (improved transmission investment) would occur in practice. NERA also suggests the Authority's CBA was not appropriate as it did not 'incorporat[e] the effect on outcomes of volatility and uncertainty'.*"[99]

3.7.61 Meridian submitted that a "*CBA is not a scientific exercise" and that "a CBA will be high level in parts, quantify and estimate where it can and use qualitative analysis where it cannot*". Meridian also noted that the suggestions that it made in its submission, which are aimed at improving the proposal by reducing static inefficiency and transaction costs while increasing the durability and stability of the TPM, will positively impact any revised CBA that the Authority may produce.[100]

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95 NZ Steel cross-submission, p. 1

96 DEUN cross-submission, p. 6

97 TrustPower cross-submission, p. 5

98 Vector cross-submission, p. 3

99 Vector cross-submission, p. 3

100 Meridian cross-submission, p. 19

3.7.62 Meridian noted however that, the "*starting point of the CBA should be that $30m of efficiency gains are available from folding the recovery of the costs of the HVDC link into the interconnection charge*".[101] Meridian noted that these efficiency gains have been thoroughly assessed.

3.8 Suggested improvements to the TPM proposal

3.8.1 Genesis, Pioneer, Energy for Industry, Contact, and Meridian included possible suggestions in their cross-submissions for the Authority to consider. The following provides a brief description of each of the cross-submitter suggestions. Note that Table 2 in Appendix A provides a table that summarises the various suggestions by cross-submitters. The table allows the various suggestions to be compared by category.

Improvements to TPM proposal suggested by Meridian

3.8.2 Meridian submitted that there were a number of areas of general agreement that could take the Authority forward and that although the SPD charge in its originally proposed form was volatile and complex, changes could be made to address these issues. Meridian's suggested straw man is provided below:

(a) billing cycle: ex ante yearly

(b) assets in SPD: include in SPD the largest four existing assets with a $50-$100 million threshold for new assets102

(c) capping period: either weekly or monthly

(d) residual charges: 75% to load, 25% to generation with generation charges moving to a MWh charge and no opt-out for distributors.

3.8.3 Meridian considered that ex ante yearly pricing would reduce uncertainty around SPD charges while reducing the number of assets in SPD would simplify the SPD calculation. Meridian also suggested that increasing the capping period to a week or a month would ensure that benefits from transmission assets were sufficiently captured. Meridian considered that removing the distributor opt-out mechanism would further simplify the proposal and reduce the requirement for new contractual arrangements.

Improvement to TPM proposal suggested by Pioneer

3.8.4 Pioneer provided a straw man in its cross-submission which in its view would simplify the proposal and reduce volatility of its charges, while achieving the Authority's efficiency objectives. Details of its preferred approach to the TPM as follows:

(a) billing cycle: ex ante yearly

101 Meridian cross-submission, p. 19

102 HVDC pole 3, NIGUP, NAaN, and Wairakei Ring, HVDC pole 2

(b) assets in SPD: top five existing assets with a $100 million threshold for new assets and including only generating stations greater than 10MW

(c) capping period: either weekly or monthly

(d) residual charges: 100% to load, using net volumes, and no opt-out for distributors

(e) gross/net injection: net injection at the GXP.

3.8.5 Pioneer considered that load was the appropriate target for residual charges since:

(a) the 50:50 split was arbitrary and a 100:0 or 75:25 ratio (load: generation) was supported by some submitters

(b) network companies needed to face a meaningful transmission charge

(c) considerable work has already been undertaken to determine that network companies are the most efficient counterparty for interconnection costs.

Improvement to TPM proposal suggested by Energy for Industry

3.8.6 Energy for Industry submitted details of its preferred approach to the TPM as follows:

(a) billing cycle: ex ante yearly

(b) assets in SPD: top five existing assets with a $100 million threshold for new assets

(c) capping period: either weekly or monthly

(d) residual charges: 100% to load, and no opt-out for distributors.

3.8.7 Many of Energy for Industry's suggestions are considered similar to those provided by Meridian and Pioneer.

Improvements to TPM proposal suggested by Genesis

3.8.8 Genesis provided a straw man for the Authority's consideration and also engaged Castalia who suggested a further alternative. The two straw men are described below.

Genesis straw man: simplified SPD approach

(a) billing cycle: ex ante fixed for a 5 year period

(b) assets in SPD: HVDC assets poles 2 and 3 with a $20 million threshold for new assets

(c) SPD charges: HVDC costs recovered from load 100% by MWh regionalised by Island with new asset costs recovered 100% by load by MWh by RCPD area

(d) capping period: uncapped SPD allocation

(e) residual charges: 100% to load, and no opt-out for distributors

(f) LCE: bulk offset against following year's MAR

(g) connection charge: status quo

(h) Kvar charge: Authority's proposal

(i) residual charges: 100% to load using RCPD.

Castalia (for Genesis) straw man: ex ante GIT approach

(a) billing cycle: ex ante

(b) assets in SPD: future projects over $100 million that have not passed through the grid investment test

(c) charges: modelling the impact of allocating expected costs to identified groups on the basis of benefits they receive. If identification of beneficiaries leads to materially different charges, determining fixed, ex ante pricing differentials using RCPD for loads and MWh for generation.

3.8.9 Genesis and Castalia considered that their suggestions would reduce the uncertainty and volatility that they considered was characteristic of the Authority's proposal.

3.8.10 Castalia considered that its straw man, which uses an analysis of benefits undertaken as part of the GIT process to link investment approval decisions to transmission charges, being forward looking, provides a more efficient signal for new investment than either the Authority's proposal or the Genesis straw man.[103]

Contact: incremental modification approach

3.8.11 Contact suggested limiting changes to incremental modifications with initial changes including the following:

(a) Kvar charge: Authority's proposal

(b) HVDC charges: replacement of HAMI with a MWh based charge and inclusion of all generators over 10MW including distributed generators

(c) ACOT: removal of ACOT subsidy

(d) Prudential discount policy: consider whether the suggested changes have flow on impacts to PDP.

3.8.12 Contact's proposal sought to eliminate what it views as subsidies, or special treatment of distributed generators.

[103] Castalia report, Genesis cross-submission, p. 1

Improvements to TPM proposal suggested by TrustPower

3.8.13 TrustPower suggested possible amendments to the proposal based on submitter comments. Note that TrustPower stated that it was not putting forward its specific views, but that the suggestions were "*some*" suggestions from submissions.[104]

(a) billing cycle: a longer time period than the proposal and not in arrears

(b) assets in SPD: a different subset than that proposed by the Authority

(c) capping period: a longer period than that proposed by the Authority

(d) VOLL: a different value than that proposed by the Authority

(e) residual charges: less allocation to generators than proposed by the Authority and possibly 0%, with no opt-out.

3.9 The key to impacting dynamic efficiency is impacting the investment decision

3.9.1 Several cross-submitters commented on the likely dynamic efficiency impacts of the Authority's proposal.

3.9.2 TrustPower submitted that in order for the proposal to enhance dynamic efficiency, "*the key point in the process needing to be influenced is the investment decision. Submitters do not believe the Authority has adequately illustrated how improvement in the decision-making process would be achieved, particularly as it is overseen by another regulatory body."..*[105]

3.9.3 TrustPower also noted Business NZ's submission comment that "*several submitters believe that the charging methodology must be determined at the time of investment decision, and should not be changed in retrospect.".*[106]*.*

3.9.4 Meridian submitted that "*in relation to dynamic efficiency, the modifications recommended by Meridian would retain the incentives that the Authority (correctly) believes will lead to increased scrutiny of transmission investment. Generators will be able to anticipate the effect of an increase in their SPD charge, and will bring their expertise and resources to assist the Commerce Commission in scrutinising the investment proposal."* and *"the scale of investment is such that systematic improvements in the timing and scale of transmission investment will lead to dynamic efficiency gains.*"[107]

3.9.5 Vector noted that Meridian's claims about incentives to engage in transmission investment consultation were implausible given "*Meridian has not submitted on the Commerce Commission's price path development for*

104 TrustPower cross-submission, p. 13

105 TrustPower cross-submission, p. 4

106 TrustPower cross-submission, p. 5

107 Meridian cross-submission, p. 20

electricity and gas transmission networks, even though this is Meridian's single largest (external) cost ($380.7m for 2012)."[108]

3.9.6 Vector further considered that it is not clear to Vector "*why direct versus indirect charging for transmission services would have any impact on incentives to engage in consultation on transmission investment*" since distributors already pass through all of their transmission charges.[109]

3.9.7 NZIER, for MEUG, considered that the "*dynamic efficiency benefits from the Authority's proposal will depend crucially on the extent to which residual charges can be made to 'stick'.*"[110]

3.10 Comments on submitters' reliance on efficiency arguments

3.10.1 TrustPower noted the PwC submission which commented that "*the proposal could distort the economic efficiency of the wholesale market system by introducing consideration of sunk transmission costs into otherwise efficient SRMC pricing decisions*".[111]

3.10.2 TrustPower also noted the Energy Link submission comment that "*small generators that are price-takers would not have the same ability to structure their offers to minimise transactions charges via the SPD method as the bigger price-setting generators, so it is conceivable that large generators would pay lower transmission charges than smaller generators.*"[112]

3.10.3 TrustPower requested the Authority re-evaluate the effect of its interconnection proposal on the efficiency of the wholesale market in view of its express statutory obligation to consider the efficient operation of the electricity industry.[113]

3.10.4 Vector *"struggles to reconcile the logic of some submitters that advocate for dynamic efficiency over static efficiency, but rely on a static efficiency analysis of HVDC pricing to support a change to the allocation of the cost of the HVDC link*".[114]

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108 Vector cross-submission, p. 5

109 Vector cross-submission, p. 5

110 NZIER for MEUG cross-submission, p. 13

111 TrustPower cross-submission, p. 7

112 TrustPower cross-submission, p. 8

113 TrustPower cross-submission, p. 8

114 Vector cross-submission, p. 5

Appendix A Summary of suggested improvements to TPM proposal in cross-submissions

Table 2 Cross submitter's straw men by category

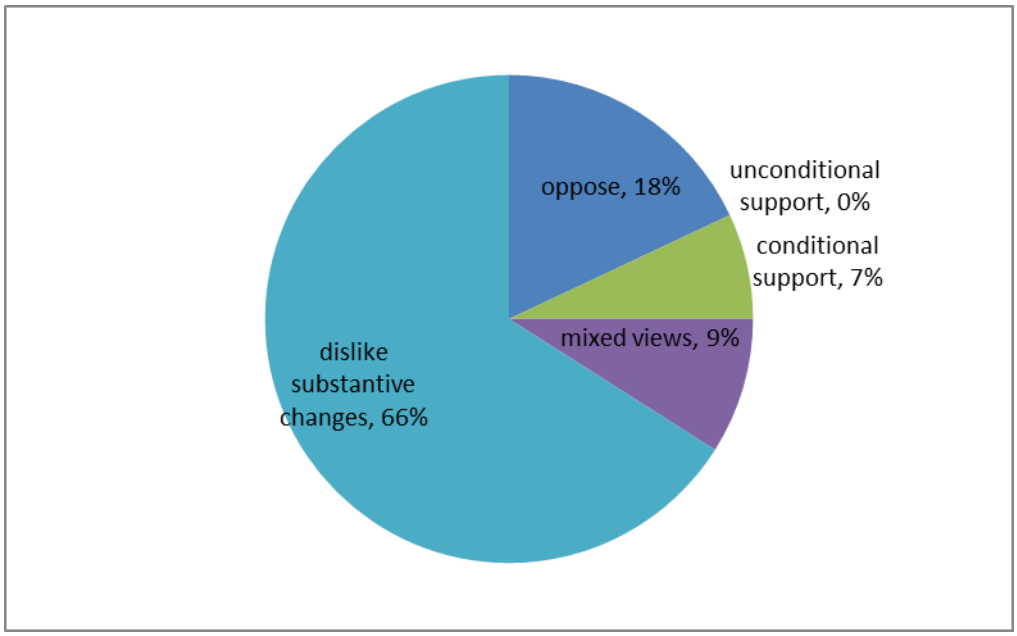
Cross-submitter	Pioneer	EFI	Genesis	Contact	Meridian	Trustpower	Castalia (for Genesis)
Name of Straw-man	Less volatile SPD approach	Less volatile SPD approach	"Simplified SPD approach"	"Incremental modification"	Less volatile SPD approach	Summary of submitter views	"Ex ante GIT approach"
billing cycle:	ex ante yearly	ex ante yearly	ex ante fixed for a 5 year period		ex ante yearly	billing cycle: a longer time period than the proposal and not in arrears	ex ante
HVDC charges:				replacement of HAMI with a MWh based charge and inclusion of all generators over 10MW including distributed generators			
assets in SPD:	top five existing assets with a $100millionthreshold for new assets and including only generating stations greater than 10MW	top five existing assets with a $100million threshold for new assets	HVDC assets poles 2 and 3 with a $20 million threshold for new assets		include in SPD the largest four existing assets with a $50-$100million threshold for new assets	a different subset than that proposed by the Authority	future projects over $100 million that have no passed through the GIT
SPD charges:			HVDC costs recovered from load 100% by MWh regionalised by Island with new asset costs recovered 100% by load by MWh by RCPD area				
charges:							modelling the impact of allocating expected costs to identified groups on the basis of benefits they receive. If identification of beneficiaries leads to materially different charges, determining fixed, ex ante pricing differentials using RCPD for loads and MWh for generation
capping period:	weekly or monthly	weekly or monthly	uncapped SPD allocation		weekly or monthly	a longer period than that proposed by the Authority	
LCE:			bulk offset against following year's MAR				
connection charge:			status quo				
Kvar charge:			Authority's proposal	Authority's proposal			
residual charges:	100% to load, using net volumes, and no opt out for distributors	100% to load, and no opt out for distributors.	100% to load using RCPD, and no opt out for distributors		75% to load, 25% to generation with generation charges moving to a MWh charge and no opt out for distributors	less allocation to generators than proposed by the Authority and possibly 0%, with no opt out	
gross/net injection:	net injection at the GXP						
ACOT:				removal of ACOT subsidy			
Prudential discount policy:				consider whether the suggested changes have flow on impacts to PDP			
Value of unserved energy:						a different value than that proposed by the Authority	

Appendix B Other matters included in cross-submissions

B.1 Many submitters including Genesis, DEUN, Vector, MRP, TrustPower, and Meridian analysed the views expressed by other submitters in their submissions with Genesis and MRP providing summaries of submitters' positions

B.2 Genesis provided an overall assessment of its views on submitters' overall positons in relation to the Authority's TPM proposal[115] as illustrated in Figure 1 below:

Figure 1 Genesis views on overall submitters' positions



Source: Genesis cross-submission

B.3 According to Genesis, none of the submitters unconditionally supported the Authority's proposal, 7% of submitters gave conditional support, the majority of submitters disliked substantive changes (66%) and 18% of submitters opposed the proposal. Genesis identified the key theme in submissions as being that the problem definition was inaccurate and that "the scale of the problem is not commensurate with the proposed solution in the proposed TPM". Genesis went further to suggest that submitters "acknowledge legacy issues with the allocation of HVDC costs", and that "there is a strong view that the current AC interconnection charge remains an effective mechanism for distributing sunk asset costs". [116]

B.4 DEUN submitted that only Meridian, Pacific Aluminium, and NZX supported the proposal[117], while Vector assessed that support from NZX and Pacific Aluminium was heavily qualified. Vector further considered that Pacific Aluminium and Meridian were unlikely to agree on the same version of the proposed TPM with Pacific Aluminium's support on the basis that South Island generators should

115 Genesis cross-submission, p. 5

116 Genesis cross-submission, p. 2

117 DEUN cross-submission, p. 8

continue to pay for the HVDC link. Vector also submitted "Meridian alone appears to be comfortable with half-hourly pricing of sunk transmission assets"[118]

Figure 2 MRP view of submitter by topic

	Fully Against	Partially Against	Neutral	Partially Support	Fully Support	Total
The Authority's definition of the problem	12	11	4	4	4	35
The Authority's approach to HVDC and IC	18	5	0	0	4	27
The viability of SPD in identification of beneficiaries	21	10	1	2	1	35
The Authority's proposed residual approach	14	8	6	4	0	32
Application of post 2004 assets over $2 million	26	9	1	2	0	38
Durability of proposal	0	17	0	2	0	19
Validity of CBA	28	5	1	2	0	36
Consideration of consumer impacts	25	5	2	0	0	32

Source: PwC analysis, MRP cross-submission

B.5 MRP engaged PwC to summarise submissions on the Authority's TPM proposal. PwC's views of submitters' responses were divided into eight separate categories. A summary of PwC's analysis is provided in below:

B.6 The PwC analysis identifies significant resistance to the Authority's TPM proposal, but also that, out of 54 submitters, many did not specify preferences in relation to all of the categories. The analysis also identifies that 12 out of 35 submitters that commented on problem definition were either neutral, partially supported, or fully supported the Authority's problem definition.

B.7 The PwC analysis suggests that no submitters supported or partially supported the proposal's consideration of consumer impacts.

B.8 TrustPower did not attempt to quantify submitters' support for the proposal although it did provide an analysis of submitter comments supported by quotes from selected submitters. TrustPower concluded that the following were key points of difference between submitters:

(a) suitability of the SPD method as a beneficiaries-pay charging method

(b) the assets that should be subject to a beneficiaries-pay charge

(c) whether the residual should be levied on generators

(d) whether any charges should be levied on retailers directly

(e) the treatment of the loss and constraint excess (LCE).[119]

B.9 TrustPower concluded, on the basis of these submissions, it "*did not think it was safe to draw any firm conclusions on the form of interconnection charges which would best meet the requirements of section 15 of the Act*."[120]

118 Vector cross-submission, p. 1-2

119 TrustPower cross-submission, p. 11

120 TrustPower cross-submission, p. 14

B.10 Meridian noted that there were a number of areas of general agreement that could take the Authority forward. Meridian suggested that there was general agreement in relation to the following:

(a) that the HVDC charge is inefficient[121]

(b) that a change to status quo arrangements is required[122]

(c) widespread support for a beneficiaries-pay approach.[123]

[121] Meridian indicated support for this statement from MRP, TrustPower, Transpower, Contact, Castalia (for Genesis), Powerco, Buller Electricity, Clearwater, Energy for Industry, Energy Link, NZCID, and NZ Geothermal Association

[122] Meridian indicated support for this statement from MRP, TrustPower, Contact, Genesis, ENA, Pacific Aluminium , Energy Link, Pulse, NZCID, and Auckland Chamber of Commerce

[123] Meridian indicated support for this statement from Genesis, NZIER (for MEUG), MRP, Transpower, Buller Electricity, Orion, Unison, NZIER (for AECT), CHH, Pacific Aluminium, Nova, NZX, and NZCID.