Review of Submissions on the Electricity Authority's Transmission Pricing Methodology

Mighty River Power

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Executive Summary

PwC Australia has been asked by Mighty River Power (MRP) to review stakeholder submissions that have been received by the Electricity Authority in response to its Issues Paper for its review of the Transmission Pricing Methodology in New Zealand. MRP requested that we focus specifically on a number of key issues that are of particular interest and in doing so also identified key questions for this purpose; these have been the focus of our review.

Summary of stakeholder submissions

Overall, the majority of submissions, from across the stakeholder groups, tended not to support the Authority's TPM proposals. In broad terms, the most common views on the main issues identified by MRP were as follows:

- The Authority did not correctly characterise the definition of the problem. The key reasons underlying the lack of support for the Authority's problem definition were the views that:
  - There has not been the material change in circumstances required to trigger major reforms to the TPM
  - Whilst not perfect, the problems with current pricing regime are not material.
- The approach to the High Voltage Direct Current (HVDC) and Interconnection charges is not adequately justified, in that
  - It is unlikely to send the right signals for efficient transmission investment
  - Generators would likely change behaviour to avoid charges. However, this change in behaviour may not be efficient from the perspective of the market
  - It would likely introduce uncertainty and therefore is unlikely to be a durable solution.
- Whilst theoretically attractive, the Scheduling Pricing and Dispatch (SPD) charge is not particularly effective at identifying beneficiaries, in light of:
  - concern over the volatility of prices leading to an extra cost margin being passed onto consumers or, for energy intensive consumers, causing damaging impact on investment and locational decisions
  - concern that the proposed SPD method of allocating costs is too 'purist', which requires complex modelling and is therefore expensive to install and operate
  - the ex post assessment nature of the SPD method creating an incentive for market participants to avoid charges by avoiding use of unconstrained transmission assets, which is inherently inefficient.
- On the proposed recovery of residual costs, issues raised were:
  - It is appropriate for the residual costs to be recovered over the broadest base possible, however, these charges should not be extended to generators
  - Generators are likely to either change their bidding behaviour to avoid the charges or will simply pass any additional costs onto customers, and

  - Distributors should not have the opportunity to opt out of charging residual charges as the peak demand signals of the charge are most beneficial for distributors.

- Most did not agree with the application of beneficiaries-pay charge to post-2004 assets and assets over $2m. The main reasons for the general lack of support include:
  - The benefits of applying the Authority's approach to sunk assets are uncertain and there is a risk of unintended consequences
  - It would lead to market distortions, undermining static efficiency while not significantly enhancing dynamic efficiency
  - The inclusion of Pole 2, whereby it will be subject to the SPD approach, is unjustified as it does not lead to any efficiency gains.

- A majority of stakeholders were concerned that the proposed solution lacks justification:
  - Respondents did not agree that the approach was durable. The key reasons for the broad opposition to the Authority's claims regarding durability essentially revolve around the concern that the proposals lack a rigorous basis, are unnecessarily complex and lack industry support
  - Stakeholders identified a number of concerns with the Authority's cost-benefit analysis of the reforms. The principal concerns were that the analysis lacked evidence and justification
  - Reflecting an overall concern with the reforms proposed by the Authority, a number of stakeholders specifically identified that the proposed reforms would likely have a detrimental impact on consumers.

Contents

1 Introduction

1.1 Background and approach

Mighty River Power (MRP) asked PwC Australia to summarise the submissions received on the Electricity Authority's (Authority) Issues Paper for its review of the Transmission Pricing Methodology (TPM) for the New Zealand electricity market. In particular, MRP has asked us to identify the level of support for a number of the key proposals that the Authority has put forward in its Issues Paper. More specifically, MRP requested that we:

- Identify the types of stakeholders that provided submissions and the number of each stakeholder that provided submissions,
- Provide numerical and graphical descriptions of the level of support for key propositions, and
- Identify the key reasons for stakeholder submissions, including quotes where relevant.

The Authority's Issues Paper covers a broad range of topics and raises many questions for stakeholder feedback. In order to ensure that our review of submissions was targeted to the key issues, MRP requested that we focus only on a number of key issues, namely:

- The Authority's definition of the problem it is trying to address
- Proposed amendments to the TPM, which in turn considers:
  - The approach to the High Voltage Direct Current (HVDC) and Interconnection charges
  - Whether the Scheduling Pricing and Dispatch (SPD) method identifies beneficiaries accurately
  - The approach to the residual charge
  - The proposed application of the beneficiaries-pay charge only to assets post-2004 and over $2m.
- Justification of proposed solution, which looks at:
  - Whether the method will be durable, as claimed by the Authority.
  - Validity of the CBA
  - The impact on consumers as considered by the Authority.

For each of these topics MRP also identified a series of questions that were raised in the Issues Paper that relate most to each topic. These are listed in Appendix A.

In total submissions from 54 stakeholders were submitted in response to the Authority's Issues Paper. We grouped these stakeholders into the following stakeholder groups:

- Small Generator, with 9 submissions in this category
- Transpower as the only transmission network business in New Zealand
- Distribution, with 12 submissions in this category

- 'Gentailer', which comprises the 5 submissions received from retailers with substantial generation assets
- Retailer, which comprises the two submissions received from retailers without substantial generation assets
- Large Consumer, of which ten submissions were received
- Small Consumer, which comprises four submissions.

There are also an additional 11 submissions that were received from parties that do not fall neatly into the groups identified above. These are categorised as: Other. These are submissions from organisations such as think tanks, lobby groups and industry associations, as well as individuals.

The full list of stakeholders by stakeholder type is contained in Appendix B.

For each stakeholder submission, we then allocated a level of support for each of the Authority's positions on each of the key issues. We ascribed a support level on the following scale: Fully Support, Partly Support, Neutral, Partly Against, Fully Against. This allocation was based on our assessment of the extent to which a submission was in agreement or otherwise with the Authority's position on each of the key issues identified above.

Given the time available to us to provide this review, as agreed we have focused predominantly on direct responses by stakeholders to the key questions identified by MRP, as well as other content in submissions that address the above key issues of interest for MRP.

The key reasons for stakeholder views were then distilled and have been summarised in this report.

1.2 Structure of report

This document is a report of our analysis as described above. It is structured into sections addressing the issues we were directed to consider, i.e.:

- Section 2 looks at the Authority's approach to problem definition.
- Section 3 considers the proposed amendments to the TPM, which in turn covers:
  - The approach to the HVDC and Interconnection charges
  - Whether the SPD method identifies beneficiaries accurately
  - The approach to the residual charge
  - Application to assets post-2004 and over $2m
- Finally, section 4 discusses the justification of proposed solution, specifically:
  - Whether the method will be durable, as claimed by the Authority.
  - Validity of the CBA
  - The impact on consumers as considered by the Authority.

2 Definition of the problem

This section considers stakeholder views on whether the Authority has accurately identified the problems with the current TPM regime, and hence provided a basis for material change.

2.1 Whether the Authority's problem definition is accurate

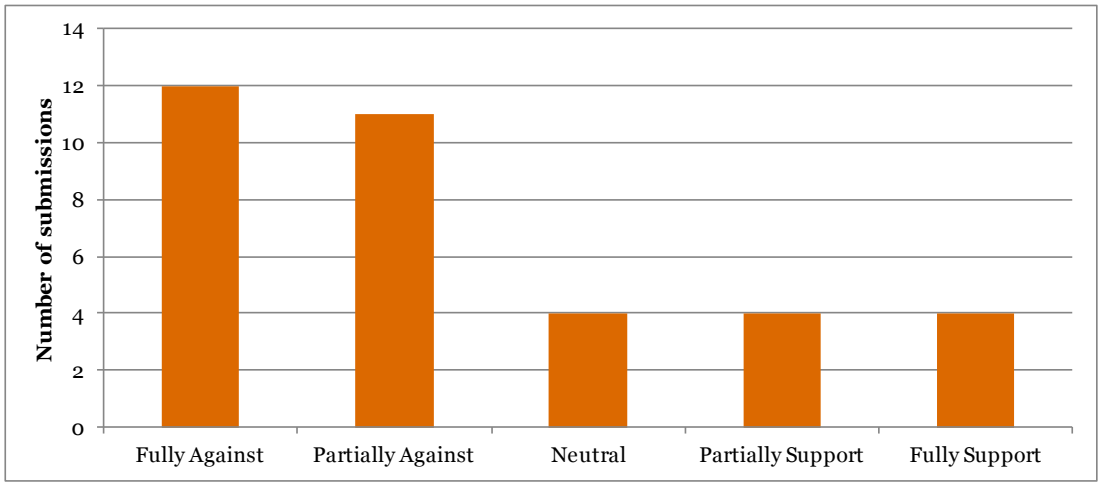
2.1.1 Issue

Section 4 of the Authority's report sets out its thinking on the definition of the problem it is trying to address through its proposals, focussing on the question of whether the current TPM promotes overall efficiency. According to the Authority, the current TPM does not establish efficient prices, to the detriment of the long-term benefit of consumers. The Authority believes the current HVDC and interconnection charges in particular are not efficient as the charges do not necessarily relate to the costs and benefits of HVDC and interconnection services. [1]

This section reviews stakeholder views on whether the Authority's problem definition is aptly characterised and whether the problem as defined warrants material change to the TPM regime. It also looks at the related question of whether the material change of circumstances threshold has been reached.

3.1.2 Overview of responses

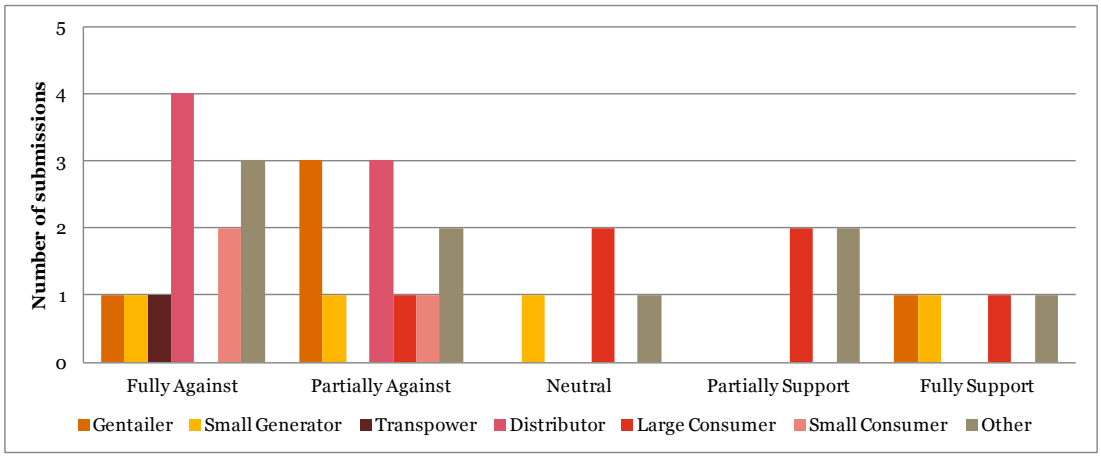
Figure 1: Count of views on the Authority's approach to problem definition



Source: Submissions to the Electricity Authority – Answers to questions 1, 4-6, 12, 13, 17 and other relevant sections; PwC analysis

[1] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. B

Figure 2: Count of views on the Authority's approach to problem definition, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to questions 1, 4-6, 12, 13, 17 and other relevant sections; PwC analysis

As shown in Figure 2, disagreement with the Authority on problem definition was strongest amongst Transpower, Distributors and Small Consumers, with a more varied set of views amongst Large Consumers, Small Generators, Gentailers and Other stakeholders.

2.1.2 What submissions say

Whilst there was some degree of variation in views, the majority of stakeholders tended to disagree with the Authority's approach to problem definition. Disagreement was strongest amongst Distributors and Transmission (Transpower), with Small Generators, Gentailers, Consumers and Other stakeholders also tending to express disagreement.

A key factor behind the level of disagreement was that many of these stakeholders did not accept the Authority's proposition that there had been a material change in circumstances. As such they did not agree that the driver for thorough review of the regime was triggered. One Distributor[2] encapsulates these views in submitting that the three changes listed by the Authority are not material, on the basis that:

> *"the first is a confirmation that many of the key transmission investments for the next 10 to 20 years have already been made, and the associated decisions, good or bad, cannot be undone; the second is largely a transfer of functions along with their decision making frameworks; the third [technology change] may be of interest had this been a reason for not implementing such approaches (SPD -based benefits modeling) in the past."*

On the third change, another Distributor[3] noted that whilst it is true that the computational power of computers has increased, it did not believe that this, of itself, represents a material change of circumstances. Similarly, Northpower strongly disagrees that a methodology should be made considerably more complex just because technology enables greater computing power. It notes that, on the contrary, there has been considerable focus on simplifying and standardising electricity pricing.

Another basic reason for disagreement was that stakeholders did not see the problems with the current regime as material, and hence the benefits of a profound change were unlikely to

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2 Orion, Submission to Issues Paper, p. 14.

3 Powerco

be significant. In particular, it was largely not accepted that the current arrangements created the potential for an inefficient outcome or gave rise to any adverse incentives, such as to "hold out" in order to get connection assets included in a capital expenditure proposal from Transpower to the Commerce Commission. In this regard, Powerco did not agree with the Authority that the interconnection charge is the subject of ongoing debate and lobbying because of a mismatch between the charge and the private benefits derived from interconnection. On the contrary, several respondents[4] noted that efficiency gains from moving away from the current regime are limited, since there is unlikely to be any significant need for transmission investment in the foreseeable future.

In addition, stakeholders noted there have been few complaints or disputes about the interconnection charge since the current TPM came into force and that the interconnection charge is generally well understood and accepted by industry participants. In addition, respondents noted that even if the current approach could in principle be improved through a move to beneficiaries-pay, there is value to a simple, forecastable, stable approach to recovering interconnection costs[5].

Rather than the sweeping changes represented by the Authority's proposals, several stakeholders considered that only incremental changes to the TPM should be pursued. Gentailer TrustPower submitted that the new arrangements for the regulation of Transpower's revenues and expenditure including: a) individual price quality regulation; b) information disclosure regime; c) the process for project by project approval of capex over $20m; and d) the process for approving base capex should be given time to settle before significant changes are made to the current TPM to pursue efficiency gains from enhanced scrutiny of transmission upgrades.

Limited support for the Authority's views was found[6]. These stakeholders generally considered that there had been a material change in circumstances largely along the lines proposed by the Authority, albeit some expressed support with caveats.[7]

While recognising that any solution is likely to have imperfections, these stakeholders also saw the current regime as having sufficiently material flaws as to warrant a thorough review and exploration of alternatives. For instance, Gentailer Meridian stated that[8]

> *"analysis has shown that the HVDC charge is inefficient and unsustainable, the Authority has a statutory duty to act, and a review of the TPM is therefore justified."*

On the issue of efficiency, there was some support for the Authority's basic contention that there are significant differences between what some parties pay for transmission services under the existing TPM and the benefits they receive, with one stakeholder noting that "generators, who derive significant private benefits from the interconnection assets, currently bear none of the costs."[9] NZCID noted[10] that it:

> *"supports in principle the allocation of costs to those who use and benefit from investments. On the issue of transmission pricing, we therefore also support the principle pursued by the Authority… NZCID accepts that the current pricing*

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4 E.g. Transpower

5 E.g. Transpower

6 NZX Limited, Major Electricity Users' Group, Meridian

7 Major Electricity Users' Group

8 Meridian, Submission to Issues Paper, p. 67.

9 Pacific Aluminium

10 New Zealand Council for Infrastructure Development, Submission to Issues Paper, p. 1.

> *methodology does not accurately charge benefiters in relation to the proportion of the grid that they use, but generalises costs of the wider interconnection network to the load."*

However, whilst agreeing that the current methodology is in need of review, NCID emphasised that the current methodology may be imperfect and yet remain the best available approach and that a theoretically efficient methodology does not equate to an efficient methodology in practice. It also added that an inferior methodology may still be preferable to alternatives if the costs of changing that methodology are very high.

One Gentailer agreed with the Authority on the potential for inefficient outcomes to arise from incentives to shift connection costs into the interconnection charge.[11] Pacific Aluminium, a Large Consumer agreed with the Authority's conclusion that a review of the TPM is warranted, highlighting that[12]:

> *"it is warranted as the current TPM is manifestly inadequate, especially in relation to the smearing of current interconnection asset costs across all loads, with the express exclusion of generators who clearly also significantly benefit from these assets. This has effectively not changed since Transpower's TPM that applied from 1 April 1999. That TPM was designed to allocate the sunk HVAC costs of the grid in a least-distortionary way in an environment of little further investment in the grid. That is, the focus was on maximising static efficiency. Since 2004 the sector has faced very significant grid investment, but the TPM has not been structured to improve the dynamic efficiency of those investments. For this reason alone, the current TPM simply cannot be to the long-term benefit of consumers."*

[11] Contact Energy Limited

[12] Pacific Aluminium, Submission to Issues Paper, p. 12.

3 Proposed amendments to the TPM

This section provides a summary of stakeholder views on the following four issues in relation to the proposed amendments to the TPM:

- Approach to the HVDC and interconnection charges
- Whether the SPD method identifies beneficiaries accurately
- The approach to the residual charge, and
- Application of the beneficiaries-pay charge to assets of post-2004 vintage and over $2m.

3.1 Approach to HVDC and Interconnection charges

3.1.1 Issue

The Authority has identified that the HVDC and interconnection charges are the most contentious components of the TPM[13]. This is based on the view that the benefits of HVDC and interconnection services are indirect, the costs attributable to each user are hard to determine, and historically the methods used to recover those costs have not been linked to the parties who receive the benefits from the assets.[14].

Given the concerns identified by the Authority, it proposes to charge for HVDC and interconnection services in proportion to the estimated private benefits that parties receive from those services. It considers that this proposal would allow those charges to automatically shift over time with changes in grid use and configuration without the need to fundamentally review the methodology applied.[15] In proposing this option the Authority has highlighted the application of such charges by US courts, international experts and emerging international practice.[16]

3.1.2 Overview of responses

The majority of stakeholders did not support the Authority's proposed approach to charging for the combined HVDC and interconnection costs. This view was largely consistent across stakeholder groups.

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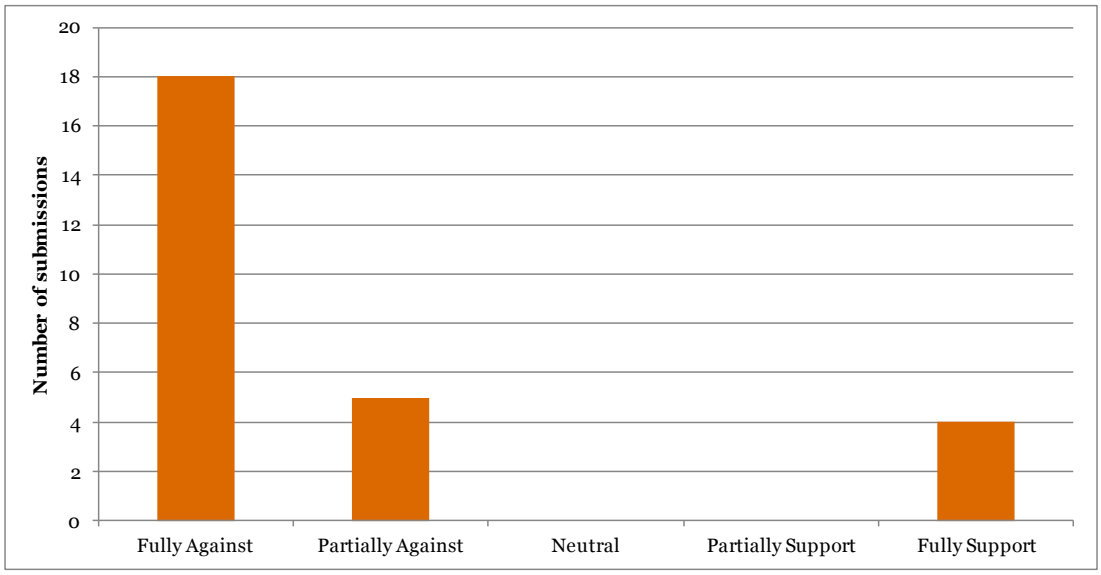
[13] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. C

[14] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. 89

[15] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. 89

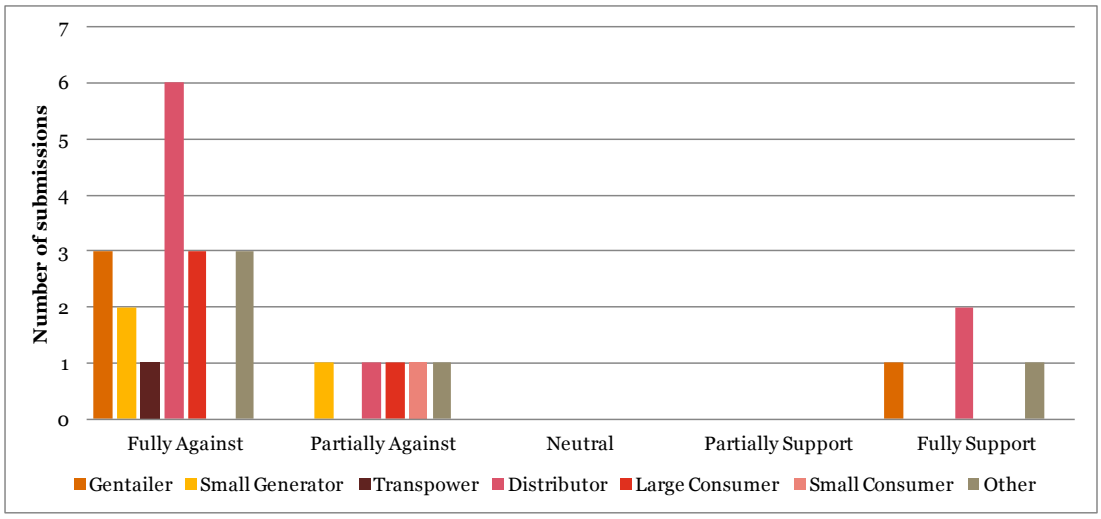
[16] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. 103

Figure 3: Count of views on the Authority's approach to HVDC and Interconnection charges



Source: Submissions to the Electricity Authority – Answers to questions 23-25 and other relevant sections; PwC analysis

Figure 4: Count of views on the Authority's approach to HVDC and Interconnection charges, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to questions 23-25 and other relevant sections; PwC analysis

3.1.3 What submissions say

Small and Large Consumers, network businesses and Gentailers largely did not support the Authority's proposed approach to HVDC and interconnection charges. Three stakeholders supported the Authority's proposal. They consisted of Meridian Energy (Gentailer), MainPower (Distributor) and the NZX (Large Consumer).

The primary concern for stakeholders that did not support the Authority's proposal was that it was unlikely to send the right signals to network users for the efficient use of network assets. In particular, it was noted that investment decisions for the HVDC and interconnection assets are already sunk.[17] As such, the behaviour and actions of generators into the future is not able to influence this investment that has already been made. For instance, Powerco noted the following:[18]

> *"Further, the Authority's analysis appears to be fatally flawed insofar as it fails to account for the negative effect of creating a variable IC charge that bears no relation to the cost of transmission. The SPD method will purposely create a highly variable and unpredictable IC charge for assets of more than $2million that have already been commissioned (since May 2004) and which are therefore sunk. The cost of using these assets is effectively zero and, in any event, does not vary from trading period to trading period, so, if there is a consumption response to this charge, the economic impact will be negative. The Authority's cost-benefit analysis has not considered the effect of this distortion, but it should, as the present value of the cost could easily be tens of millions of dollars."*

Some stakeholders that did not support the Authority's proposal were concerned about the impact it would have on the bidding behaviour of generators.[19] For instance, Norske Skog noted that the approach would give generators the ability to manipulate their offers in order to avoid the charge. This stakeholder noted, however, that the ability for generators to be able to avoid the charge through their behaviour likely indicated that they were indeed not beneficiaries of the services provided by the assets.[20]

A number of stakeholders were of the view that the approach to charging for HVDC and interconnection would not be sustainable over the longer term. This was primarily due to the variability of charges over a reasonably short time horizon. Conversely, there was a degree of support from stakeholders for the current approach to charging. The comments from Clearwater Hydro reflected a number of stakeholders in this regard[21]:

> *"The working party could not decide on HVDC recovery but could decide on interconnection recovery. Listen to the industry. If there is general acceptance that HVDC should be recovered across the entire market, recover interconnection and HVDC via RCPD charges. They send the right signals, are easy to understand, regions can be sized to produce the right result, the costs are manageable and a long term reduction ion peaks generally will be good for the industry in terms of future investment."*

Submissions identified a number of alternative charging approaches to the one proposed by the Authority. These included:

- A capacity rights approach for all of the HVDC[22]
- Rolling the HVDC charge into the interconnection charge and recover the total costs using the current allocation method[23]

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17 Genesis Energy, Powerco.

18 Powerco, Submission to Issues Paper, p. 14.

19 Orion, Pacific Aluminium, Vector.

20 Norske Skog

21 Clearwater Hydro, Submission to Issues Paper, p. 7.

22 Pacific Aluminium

23 Powerco

- Splitting the allocation of the current HVDC revenue approximately 2:1 between the interconnection revenue pool and the HVDC revenue pool based on the benefits estimates identified in paragraph 4.3.9 of the Issues Paper[24]

- Adopting a weighted lagged approach to calculating beneficiaries pays to reduce uncertainty and volatility[25]

- Only including assets approved after 2015 or selecting a broader range of assets regardless of age[26], and

- Setting SPD charges for load and generation in an asymmetric manner so as to extract the full producer surplus from SPD charges and only charging load where SPD charges to generators were insufficient to recover the full costs of SPD assets.[27]

The key reason for stakeholders supporting the Authority's proposal was that the approach gave recognition to the point that the HVDC is becoming an integral part of the electricity system more broadly.[28] MainPower, for instance, considered recognition of the integration of the HVDC and the wider network was sufficiently important that charges that reflect this should be retained regardless of the final design of the methodology.[29] Several other submitters[30] offered support for focussing on resolving the HVDC with some also advocating explicitly for the Transmission Pricing Advisory Group (TPAG) majority view (which was to integrate the HVDC into the interconnection charge over a 10 year transition period) or a similar approach.

3.2 Whether the SPD method identifies beneficiaries accurately

3.2.1 Issue

The Authority is proposing the interconnection and HVDC charges are to be moved to a beneficiaries-pay method. It proposes using the Scheduling, Pricing, Dispatch (SPD) method that is currently used in the wholesale electricity market in order to identify who benefits from the use of the transmission network.

This section looks at what submissions have to say on how effective the SPD method is at identifying beneficiaries, the limitations of the method, and any alternative methods that may be supported.

3.2.2 Overview of responses

As Figure 5 shows, most submissions do not support the SPD method for identifying beneficiaries. However, there are some stakeholders that are fully supportive.

Figure 6 shows that a Gentailer, Distributor and Large Consumer are in support.

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[24] Powerco

[25] Vector

[26] Vector

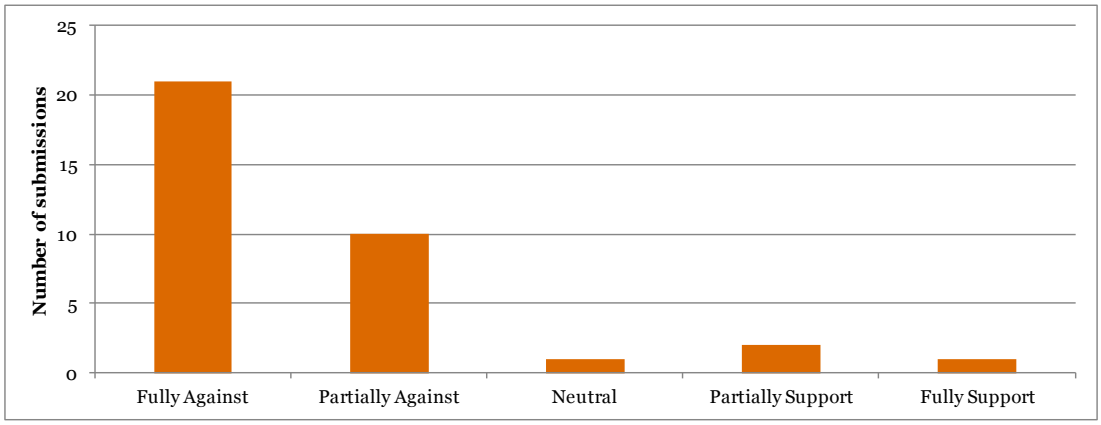
[27] Vector

[28] MainPower, New Zealand Wind Energy Association.

[29] MainPower

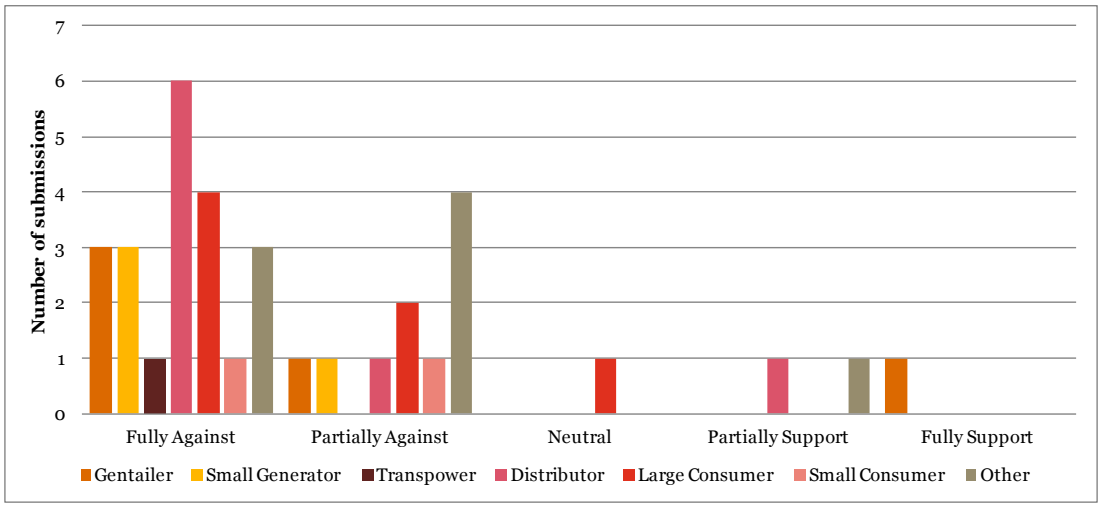
[30] Powerco, Buller Electricity, Auckland Chamber of Commerce, New Zealand Wind Energy Association, Pulse Energy, Clearwater Hydro, Energy for Industry and Phillip Wong Too.

Figure 5: Count of views on whether the SPD method identifies beneficiaries



Source: Submissions to the Electricity Authority – Answers to questions 23-25 and other relevant sections; PwC analysis

Figure 6: Count of views on whether the SPD method identifies beneficiaries, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to questions 23-25 and other relevant sections; PwC analysis

3.2.3 What submissions say

Many submissions had theoretical support for a method that allocates costs to the identified beneficiaries; essentially a user-pays approach.[31] Meridian in particular noted that 'the SPD charge can work in practice and is the most efficient beneficiaries pays method available'[32]

However, from a practical stand-point, most submitters, including many who expressed in-principle support, saw significant flaws in the proposed SPD approach. Reasons for these concerns included:

[31] Meridian, NZ Steel, NZX, Pacific Aluminium, Smart Power, Transpower, New Zealand Wind Energy Association.

[32] Meridian, Submission to Issues Paper, p. 42

- concern over the volatility of prices leading to an extra cost margin being passed onto consumers or, for energy intensive consumers, causing damaging impact on investment and locational decisions[33]

- concern that the proposed SPD method of allocating costs is too 'purist', which requires complex modelling and is therefore expensive to install and operate[34]

- the ex post assessment nature of the SPD method creating an incentive for market participants to avoid charges by avoiding use of unconstrained transmission assets, which is inherently inefficient[35]

- the unreasonable assumption that generators will have offers unchanged with and without transmission assets, which in Norkse Skog's view, will not accurately compute the level of benefit for generators

- according to Powerco, 'solving SPD with and without a particular asset will reveal the "spot benefit" of a particular asset during a given trading period. However, if the asset concerned were not actually present, the behaviour of generators and, to some degree, load would be different because of that fact and, consequently, the prices produced by SPD would also be different.'[36]

- it not recognising the comparative value placed on the assets employed to provide n-1 security[37]

- it is overlooking capping; asset threshold and cost per MWh VoLL[38]

- lack of analysis on how accurate the proposed method will be at identifying beneficiaries,[39] and

- the proposal has a short-term pricing focus, but this will not encourage efficient investment as that needs to based on the long run marginal cost.[40]

One stakeholder submitted that the SPD method should not identify generators as beneficiaries as it discourages new entrant embedded generators 'because it will be difficult to assess transmission charges from the methodology, and it will be equally difficult to formulate the commensurate offset through the wholesale prices'.[41]

Some of the submissions took issue with the proposal on a more fundamental level. For example, a dynamic pricing regime is unnecessary – as revenue from a 'fixed infrastructure assets' should be recovered via a 'stable annual revenue stream'.[42] One submission took the

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33 Smart Power, NZX, Genesis

34 Smart Power, Transpower, Genesis

35 Transpower

36 Powerco, Submission to Issues Paper, p. 3

37 Nova Energy, Powerco

38 Contact Energy Limited

39 Vector, AECT, Powerco, Winstone Pulp International

40 Vector, Pacific Aluminium

41 Main Power, Submission to Issues Paper, p. 3

42 Clearwater Hydro

view that monopoly transmission infrastructure is the wrong context for a beneficiary pays approach, other than at the connection point.[43]

Separately, Pioneer Generation is concerned it will be negatively affected by unintended consequences of the SPD method. Currently, Pioneer is exempt from the wholesale market rules due to the small size of its generation capacity. Under the SPD method, however, Pioneer believes it could be directed by the System Operator. This unintended consequence would create extra costs for the company.

Improvements on or to the SPD method

As well as indicating issues with the SPD method, many stakeholders suggested improvements to the method, or different methods altogether.

The following were some recommended improvements to the SPD method:

- Fixing charges over a longer period to avoid volatility – Transpower supported annually which allow charges to be forecast by parties. Distributors also noted issues with volatile charges under their default price-quality path where they do not opt out. Fixing charges annually would resolve this issue. As noted by Powerco[44]:
  - "*There is also the question of load control, given that the RCPD charge aims to flatten usage during regional peaks, at least in the Upper North and Upper South regions. At present, distributors carry out this function very well using conventional load control.*"
- Remove or cap SPD charges over a longer period than half hourly – opinions varied on length (daily – Pacific Steel, weekly – Meridian, monthly – Orion, Contact)
- Ensuring that parties that are not long-run beneficiaries of an asset do not receive any charges (TrustPower) i.e. by allocating charges on net rather than gross benefits.
- Retain the 10MW threshold for exemption from the wholesale market rules for the SPD component of the TPM.[45]
- One Large Consumer submitted that the calculation of transmission benefits 'should use net load or generation at location points … as is done now for RCPD calculations'[46]

Alternatively, some submissions proposed different methods. These follow below.

Rolling the HVDC charge into the interconnection charge and recovering the total costs using the current allocation method, as recommended by the TPAG, was suggested by Powerco. This would be superior to applying the half hourly SPD method because it would not produce any welfare reducing distortions to wholesale prices.[47]

Alternatively, Powerco also proposed splitting the allocation of the 'current HVDC revenue approximately 2:1 between the interconnection revenue pool and the HVDC revenue pool (based on the benefit estimates in paragraph 4.3.9 of the consultation paper) and continue to

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43 Mighty River Power

44 Powerco, Submission to Issues Paper, p. 4

45 Pioneer Generation

46 Carter Holt Harvey

47 Powerco

recover the reduced HVDC revenue from South Island generators as at present. This one-off beneficiary-pay allocation would be superior to the half hourly SPD method.'[48]

Acknowledging it as a less precise method than the SPD approach, one energy industry stakeholder suggested the 'approach proposed by Professor Hogan of a fixed charge over time would give much greater certainty'.[49] The stakeholder suggests this approach could be modified. For example, the methodology could have benefits based on SPD modelling which would have the effect of having 'fairly small changes over a year unless there were major events'.[50]

Although rejected in the Authority's Consultation Paper, TrustPower suggests the approach described by Frontier Economics in a 2004 paper is more efficient. This proposal supports the use of an economic model based on identifying and allocating costs to beneficiaries at the time grid investments are approved. TrustPower notes the inherent contestability in setting the key model parameters but considers this drawback applies to the Authority's approach.

Vector also had a number of suggested alternative options. These were[51]:

- Taking a long-term approach to calculation of surpluses rather than short-term i.e. what would the surpluses be if the asset never existed rather than if it was removed.
- Adopting a weighted lagged approach to calculating beneficiaries pay, which would reduce uncertainty/volatility in SPD charge.
- Adopting an alternative approach to determining what assets are included in the SPD charges e.g. only including assets approved after 2015 or selecting a broader range of assets regardless of age.
- Softening the ½ hour cap.
- Setting the SPD charges for load and generation in an asymmetric manner e.g. extracting full producer surplus from the SPD charges and only charging load where the SPD charges to generators were not sufficient to recover the full cost of the SPD assets.

3.3 The approach to the residual charge

3.3.1 Issue

The Authority recognises that the beneficiaries-pay approach that it has proposed may not recover the full costs of the network. This implies that an additional charge is necessary to recovery any residual amounts. The Authority indicates in the Issues Paper that an efficient residual charge is one that minimises distortions in the use of the network and ensures the costs are fully recovered.[52]

The Authority has proposed that the residual for any amount unrecovered from the beneficiaries-pay charge be applied as a peak charge to encourage efficient avoidance of peak use of the grid. The charge would consist of two charges, a Residual Coincident Peak Demand

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[48] Powerco

[49] Smart Power

[50] Smart Power

[51] Vector

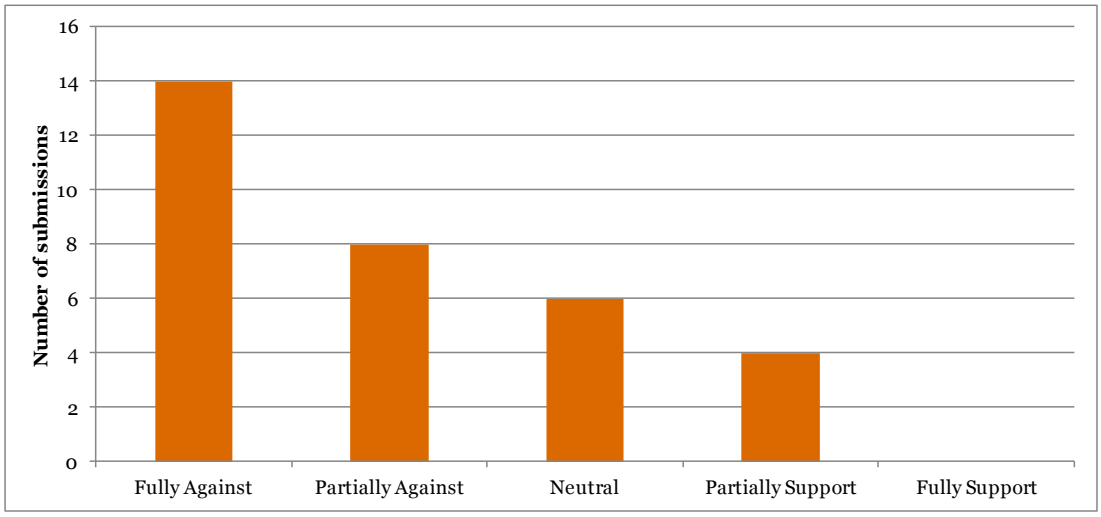
[52] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. 105.

(RPCD) that applies to loads and a Regional Coincident Peak Injection Charge (RCPI) that applies to generators.

3.3.2 *Overview of responses*

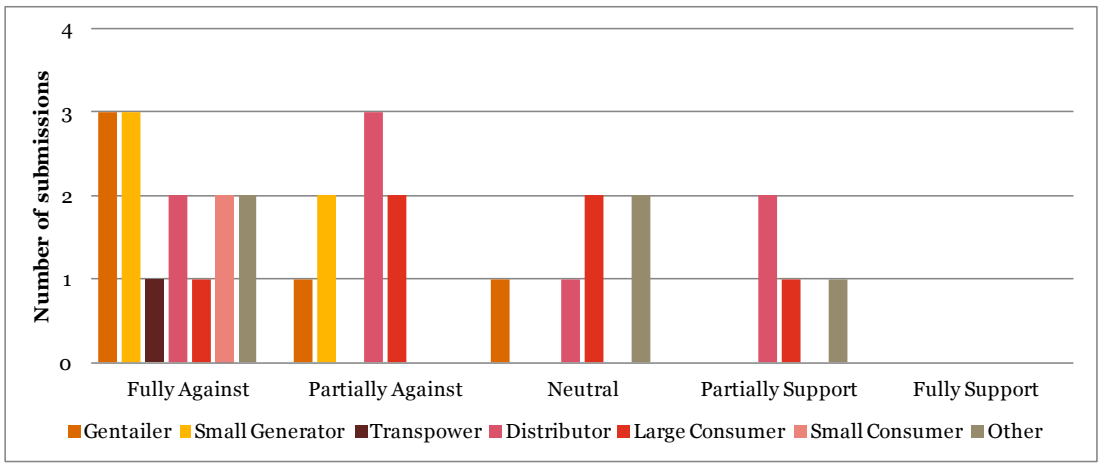
The majority of respondents to the Authority's Issues Paper do not support its proposed approach to the recovery of residual costs that remain following the allocation of beneficiaries-pay charges. While there were no stakeholders that fully supported the proposal, there was partial support provided by a limited number of Distributors and Large Consumers.

Figure 7: Count of views of the approach to the residual charge



Source: Submissions to the Electricity Authority – Answers to questions 26-31 and other relevant sections; PwC analysis

Figure 8: Count of views of the approach to the residual charge, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to questions 26-31 and other relevant sections; PwC analysis

3.3.3 What submissions say

A number of submissions agreed with the Authority's view that it is appropriate for residual costs be spread amongst a broad base.[53] The main justification for this view was that it assisted in avoiding unnecessary distortions from efficient network use. However, many stakeholders consider that there are likely to be undesirable outcomes should the recovery of these costs extend to generators.

The main concerns raised by stakeholders should the recovery of residual costs be extended to generators were that it:

- may inefficiently distort their bidding behaviour, or
- would see costs and risks passed onto customers.

A number of respondents, such as Contact Energy, Carter Holt Harvey Pulp & Paper and Norske Skog were concerned that generators might look to avoid generating during peak periods in order to avoid network costs. This was seen as particularly concerning in the context of generators whose primary purpose is to generate during peak periods.

Some stakeholders considered that, rather than change their bidding behaviour, generators would look to factor the likely transmission costs (and any risks associated with its uncertainty) into their wholesale price and that this in turn would be passed onto customers. For instance, Pacific Aluminium stated the following[54]:

> *"RCPD in the UNI and USI is designed to distort use of the transmission system by sending a signal to reduce demand when it is coincident with the regional peak demand, because this distortion is seen as desirable. Whether RCPI meets these principles depends on its structure, which has not been specified. However, if it is similar in concept to the RCPD charge (as seems likely) it would have the effect of deterring injections at times of regional peaks in the UNI and USI. To compensate, generators will likely have more highly priced tranches in their offer stack at these times and so spot electricity prices may be significantly higher at times of regional peak demand than they would otherwise be. It is not clear that this is either efficient or to the long-term benefit of consumers."*

Another key issue for respondents was whether distributors should have the option to opt out of charging residual charges. Most stakeholders were against this option. The key reasons cited by stakeholders that did not support allowing distributors to opt out were that:

- Distributors have the greatest incentive to manage peak demand, therefore, they should have responsibility for any charge that assists with minimising peaks,[55] and
- Requiring retailers to charge for residual costs might be expected to create additional risks and complexity for these market participants. This was seen to be a particular issue with respect to new retailers where the imposition might be perceived to be a barrier to entry.[56]

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53 Powerco, Vector, Pacific Aluminium

54 Pioneer Aluminium, Submission to Issues Paper, p. 20.

55 Domestic Energy Users' Network, Mighty River Power, NZX Limited, Pioneer Generation.

56 Carter Holt Harvey Pulp & Paper, Pioneer Generation, Smart Power, Transpower.

Orion New Zealand had a different perspective and noted that distributors should not be the counterparty to residual charges. Its main concern was the ability for distributors to manage the potential volatility of the charges.

Amongst those that did not support the Authority's proposals with respect to residual costs a number of alternative proposals were put forward. These included:

- A fully postage stamped charge[57]
- Allocating the share of the residual charge between generators and retailers/distributors according to their share of the previous year's SPD charge,[58]
- A per MWh charge (on both generators and load),[59] and
- Nodal pricing as a signal of network constraints.[60]

One of the main supporters of the proposal was NZX Limited. Its reasons for supporting the approach to the recovery of residual costs was that:

- It provides incentives for generators and retailers / distributors to scrutinise transmission investments,
- It encourages efficient avoidance of peak use of the grid, and
- It enables full recovery of transmission costs.

3.4 Application of beneficiaries-pay charge to assets post-2004 and over $2m

3.4.1 Issue

The Authority proposes to apply a cut-off date, 28 May 2004, before which the beneficiaries-pay charge would not apply to existing transmission assets. The Authority also proposes an investment cost threshold for application of the SPD method. This is $2 million, with the cost being assessed at the time the assets are added.[61]

The one exception to this is pole 2 of the HVDC link, which the Authority considers should also be subject to beneficiaries-pay so that the charging basis for pole 2 is broadly consistent with the basis for pole 3.[62]

3.4.2 Overview of responses

Figure 9 below graphically represents the extent that submissions agreed with the Authority's proposals in relation to the application of the beneficiaries-pay charge to assets post-2004 and over $2m.

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57 Meridian Energy

58 NZX Limited

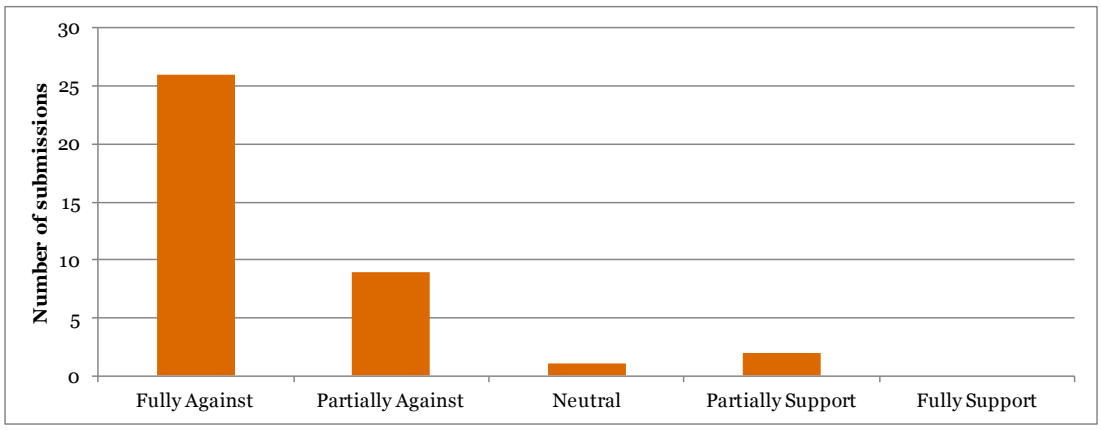
59 Powerco

60 TrustPower

61 Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. G

62 Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. G

Figure 9: Count of views on the Authority's application to assets post 2004 and over $2 million

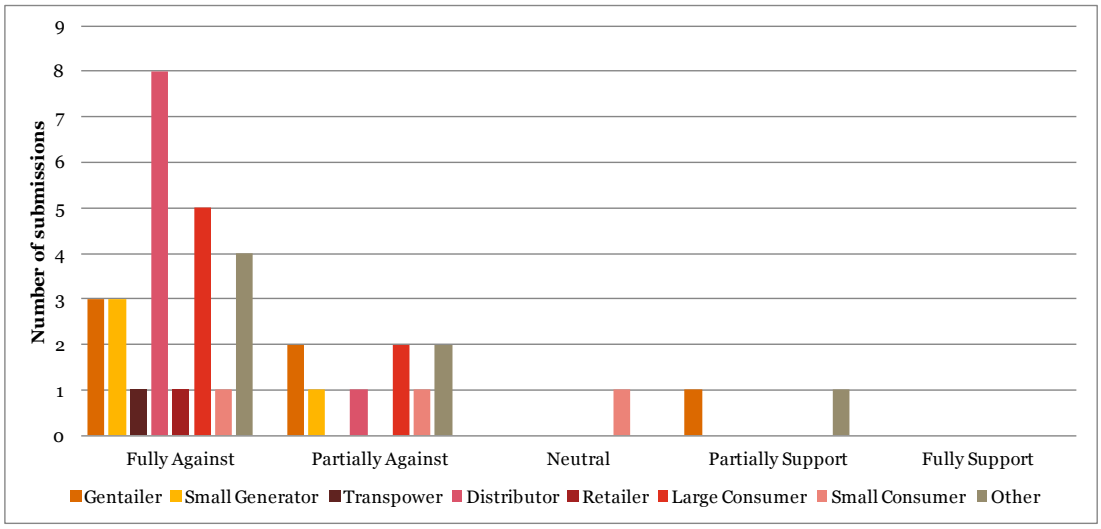


Source: Submissions to the Electricity Authority – Answers to question 23 and other relevant sections; PwC analysis

This chart shows that the majority of submissions disagreed with the Authority's position and reasoning on this issue.

This basic picture is reflected in Figure 10 below, which shows agreement/disagreement broken down by stakeholder group.

Figure 10: Count of views on the Authority's application to assets post 2004 and over $2 million, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to question 23 and other relevant sections; PwC analysis

3.4.3 What submissions say

Unintended consequences

A number of stakeholders contended that applying the SPD method to sunk assets would see little if any benefit and carry significant risk of unintended consequences. This is based on the concern that as there is no scope for demand-side response and the residual will be large for many years.

In a similar vein, one stakeholder[63] believes that applying the SPD allocation approach to sunk transmission costs is particularly problematic due to factors such as the likelihood that generators will seek to pass residual charges through to customers, the effect on embedded generation and a number of "structural flaws" or design elements where possible unintended outcomes have not be adequately considered. This basic concern was shared by several Distributors, who were concerned that by creating a distinction between assets commissioned before and after 28 May 2004, the Authority will incentivise some customers to oppose the replacement and refurbishment of particular assets and others to support such action.

In addition, it was put forward that numerous disputes about the definitions of assets and their treatment by the SPD method could be expected. Powerco raised the example of where a $2million+ asset that forms part of a group of assets that work together, and were commissioned before 28 may 2004, is replaced or upgraded. This submission argued as a result it is not clear whether such an investment would change the status of the whole group of assets to SPD method assets or only the replaced or upgraded asset would become an SPD method.

In this context, Auckland Airport[64] echoed other stakeholders[65] in expressing concerns about the impact on regulatory uncertainty and its flow-on effects:

> "*...the complexity of the proposal, and that it will result in costs for industry participants that are uncertain and challenging to estimate. There is also concern that the proposal is not sufficiently clear to allow industry participants to fully assess the impact on their businesses... Clearly, confidence to invest in New Zealand's critical infrastructure will be severely undermined if volatility becomes a feature of the regulatory landscape. Specifically, New Zealand's investment appeal will be impaired to the extent regulatory decisions are seen to be reversible at short notice, result in significant asset value impacts, and which increase complexity and uncertainty around cost allocation.*"

Market distortions

A number of stakeholders raised the concern that the Authority's approach would lead to market distortions. In particular, it was argued that introducing locational signals for sunk assets will have a limited positive influence on dynamic efficiency, whilst the constant reallocation of transmission charges for sunk assets could incentivise market participants to act in ways that compromise static efficiency.[66] In this regard, it was submitted that the proposal is unlikely to result in more efficient transmission investment decisions, since the SPD charge reveals only the benefit of existing assets not future investments.

One stakeholder also identified equity concerns with the proposal in question, and the link to efficiency. [67]

> *"Consider two largely identical users connected to similar transmission assets—one largely served by pre 2004 assets and the other by post 2004 assets. It is possible that the SPD allocation to the post 2004 user will be much larger than to the pre*

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63 Major Electricity Users' Group

64 Auckland Airport Submission to Issues Paper, p. 1-2

65 E.g. Tauropaki Power Company, who stated that the "element of retrospectivity (in that they apply to transmission investments approved since 2004, and not just to those approved once the new TPM has been settled), further emphasises how the Proposals could be interpreted as signalling the Authority's preparedness to act in a time-inconsistent fashion, thus increasing investment uncertainty.", Submission, paragraph 60.

66 Auckland Council

67 Genesis, Submission to Issues Paper, p. 25

2004 user. Both will of course have similar RCPD charges. It will be difficult to justify the difference in the total transmission charges. We note that the majority of post 2004 projects are in the North Island. These equity issues could translate into efficiency losses if they undermine the confidence of transmission users to invest because of the risk that the regulator can fundamentally change their input costs once their capital is sunk."

Pole 2

Several respondents put forward the argument that there is no efficiency gain to be had by including the Pole 2 HVDC assets in the SPD method.[68] It was argued that the Authority's rationale behind including this exception is not strong enough to justify changing the basis upon which Pole 2 costs are allocated and the flow-on effects from including it within the SPD model. One stakeholder explains:[69]

"In the past when the South Island generation companies were sold, these were purchased at a price that included the fact that these companies would be paying for the HVDC charges in perpetuity. If this charge is removed, it essentially results in a wealth transfer and impacts dynamic efficiency. There does not appear to be any benefit in moving away from the status quo treatment of Pole 2 charges, which are generally accepted as part of the cost of being a South Island generator and were factored into the price paid for the companies in the past."

Other approaches:

Some alternative approaches emerged from the response. Pioneer submitted that:[70]

If the SPD charge is to be retained it is unlikely to analyse any proposed transmission investment unless it is very directly relevant to its operations (and consistent with our philosophy that we are prepared to pay for assets that we use); and unintended consequences should be avoided and the 10MW threshold for exemption from the wholesale market rules retained and applied to the SPD component of the TPM.

Transpower argued that the charge should:[71]

- only be applied prospectively to interconnection assets
- only apply to a limited number of the largest transmission investments.

Meridian and Contact also argue for a reduced set of assets to apply and for the threshold to be set at $50-100m rather than $2m.

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68 Pacific Aluminium

69 Fonterra, Submission to Issues Paper, p. 4

70 Pioneer, Submission to Issues Paper, p. 15

71 Transpower

4 Justification of proposed solution

This section addresses those issues that relate to the overall justification for the proposed approach, including:

- Whether the method will be durable over the longer term
- The validity of the cost-benefit analysis undertaken by the Authority, and
- The impact on consumers as considered by the Authority.

4.1 Whether the method will be durable

4.1.1 Issue

The Authority states the SPD method provides a highly flexible and durable beneficiaries-pay charge.[72] This is because the beneficiaries-pay charge is designed such that it would vary in accordance with variations in the benefits each party receives.

> *"For example, if there is significant electricity demand growth in the North Island requiring increased South Island generation, South Island generators would receive larger benefits from pole 3 on the HVDC link. Under the SPD method, as proposed in this paper by the Authority, South Island generators would automatically pay a larger share of the costs of pole 3. Similarly, any additional transmission investment required in the South Island to get the surplus power to the North Island would automatically be paid by South Island generators benefiting from those investments."* [73]

According to the Authority, this flexibility should greatly reduce the need to fundamentally review the TPM in the future, bringing lower regulatory costs in the form of reduced lobbying activity and legal challenges, lower administrative costs associated with on-going reviews of the TPM and reduced regulatory uncertainty for investors, including transmission customers.

4.1.2 Overview of responses

A summary of the views obtained from submissions on the durability of the proposed TPM is shown in Figure 11. The majority of submissions disagree with the Authority's claim that its proposed pricing method is durable.

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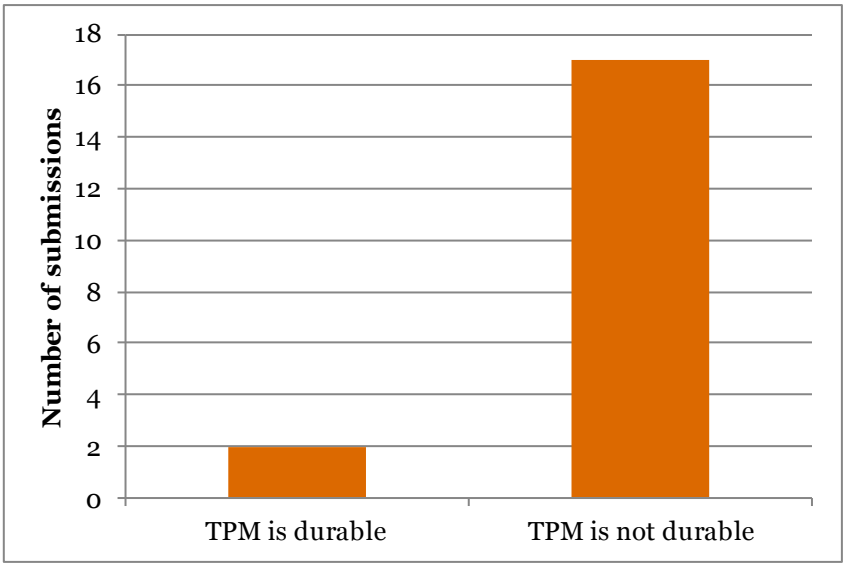
[72] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. H.

[73] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. H.

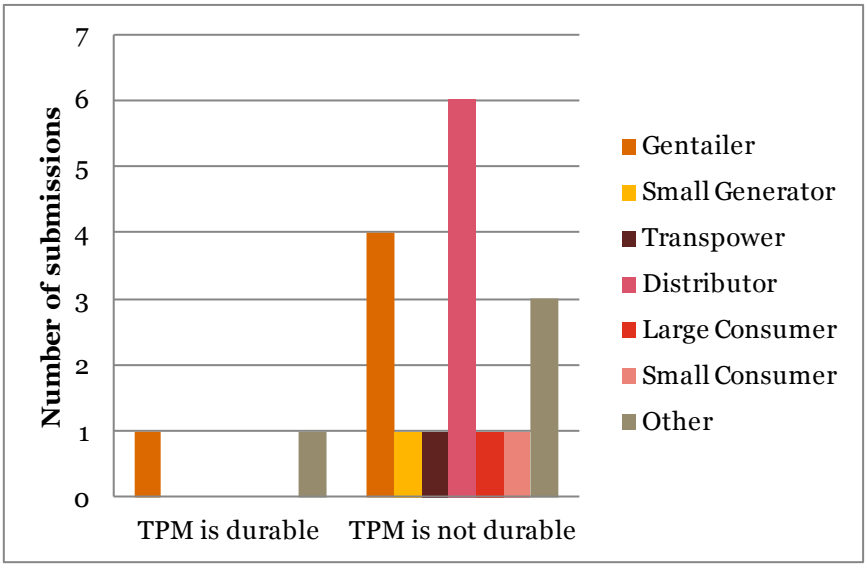
Figure 11: Count of views on the durability of the proposed TPM



Source: Submissions to the Electricity Authority – Answers to questions 23-25 and other relevant sections; PwC analysis.

Figure 12 shows the same information but by stakeholder group. Distributors and Gentailers are the largest stakeholder groups in the set of submissions that commented on this issue and who disagree with the Authority that the proposal is durable.

Figure 12: Count of views on the durability of the proposed TPM, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to questions 23-25 and other relevant sections; PwC analysis.

4.1.3 What submissions say

Almost all stakeholders who opined on the issue of durability rejected the Authority's contention that its proposed method is durable, and argued, rather, that the method will

invite more lobbying and disputes. The primary reason given was that it was seen as lacking a rigorous basis[74][75][76], and hence was susceptible to dispute and lobbying, in contrast to the advantages claimed by the Authority. They also pointed to what they saw as the inherent volatility of the method. [77]

Another factor submitted by several stakeholders was the complexity[78] of the method, combined with the prospect of consequent large wealth transfers. For example, Genesis Energy is concerned about the proposal's 'volatility and complexity', with many design factors being unknown. Genesis submit that this could lead to 'the need to review the Proposed TPM design much later on in the implementation timeframe (incurring additional costs and creating additional layers of regulatory uncertainty), through to widespread market failure (as in the insolvency or exit of a market participants).'[79] ENA also note that Transpower will have to exercise discretion, which will be contentious.

The lack of industry support was also cited as a factor that could undermine durability.[80] Indeed, some stakeholders believed the history and procedure of seeking feedback meant the durability of this proposal was being undermined.[81] As noted by Contact[82], 'the Proposal will not cause a reduction in disputes, just a change in the protagonists.'

In contrast to other submissions, Meridian stated there will be 'substantial gains from increased durability through sheeting home costs more directly to beneficiaries.'[83] NZX Limited also indicated that it agrees that the SPD charge is inherently flexible, and hence durable, in that it will be able to deal with changes to transmission, generation and demand.[84]

4.2 Validity of the CBA

4.2.1 Issue

The Authority has undertaken a quantitative analysis of the costs and benefits (CBA) of the proposal against a counterfactual of the status quo. This is compared to a CBA of the option favoured by the majority of the TPAG against the counterfactual of the status quo to assess whether the Authority's proposal delivers larger net economic benefits.[85]

The CBA includes a sensitivity analysis of the costs and benefits for both the Authority's proposal and the TPAG majority view. Sensitivity analysis is provided for two cases: optimistic (low costs and high benefits) and pessimistic (high costs and low benefits).[86]

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74 Mighty River Power, Submission to Issues Paper, Appendix G: Frontier report on TPM Review, 1 March 2013, p. iv.

75 Orion New Zealand Limited, Submission to Issues Paper, p. 23.

76 Contact Energy Limited, Submission to Issues Paper, p. 14.

77 TrustPower, Submission to Issues Paper, p. 27.

78 Transpower, Submission to Issues Paper, p. 10.

79 Genesis Energy, Submission to Issues Paper, p. 5.

80 Vector Limited, Submission to Issues Paper, p. 34

81 Business NZ, Submission to Issues Paper, p. 7; Powerco Limited, Submission to Issues Paper, p. 3.

82 Contact Energy Limited, Submission to Issues Paper, p. 11

83 Meridian Energy, Submission to Issues Paper, p. 60.

84 NZX Limited

85 Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. 117

86 Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. 118

A useful summary of the Authority's CBA for its proposed TPM is given by Powerco Limited: The CBA of the SPD method is driven by two purported benefits[87]:

1 *an improvement in dynamic efficiency (mid-point PV $171.8m)*

2 *a reduction in the cost of disputes related to the TPM (mid-point PV $36.5m).*

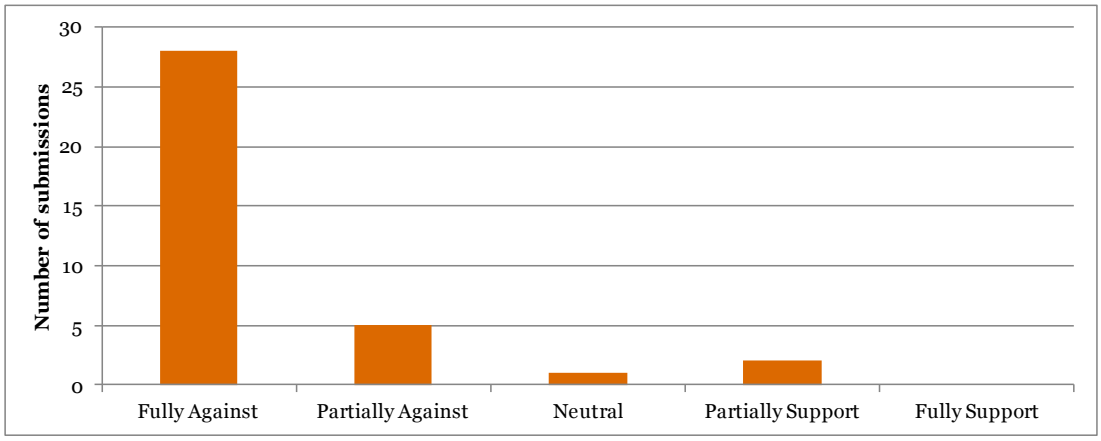
The following is the assumed mechanism that would achieve improvements in dynamic efficiency:

- *the SPD method will identify the beneficiaries of grid investments more accurately and this will encourage greater lobbying of the Commerce Commission by the deemed beneficiaries*
- *as a result of this increased lobbying, the Commission's capital expenditure approval decisions will be [0.3] per cent more efficient.*

4.2.2 Overview of responses

A summary of the views obtained from submissions on the validity of the CBA is shown in Figure 13. The majority are in the 'fully against' position with a small collection that are in the 'partially against', 'neutral' and 'partially support' position.

Figure 13: Count of views on the validity of the CBA

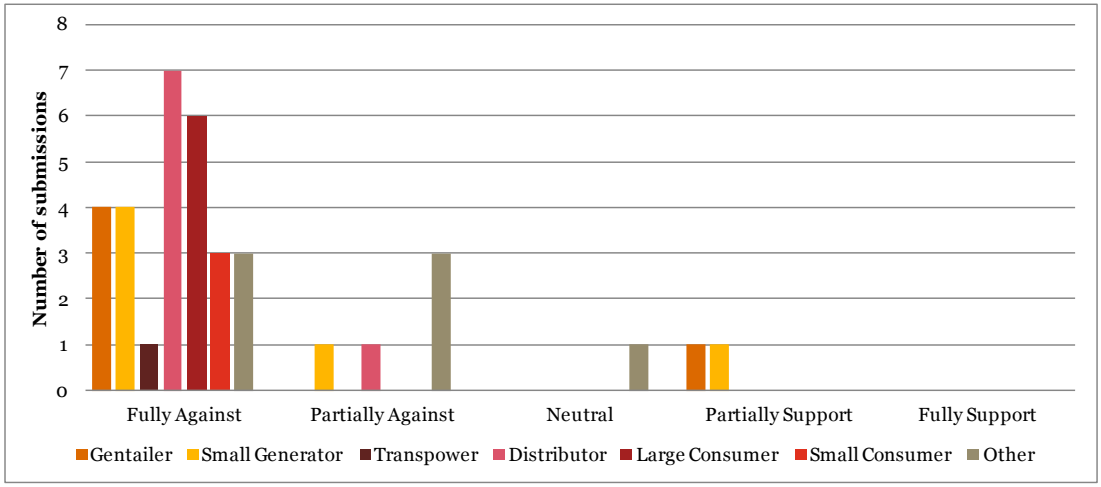


Source: Submissions to the Electricity Authority – Answers to questions 32, 33 and other relevant sections; PwC analysis

Figure 14 shows the same categories as Figure 13 but by stakeholder group. It shows that Distributors, Large Consumers, Gentailers and Small Consumers make up most of the group who are 'fully against' the validity of the CBA.

87 Powerco Limited, Submission to Issues Paper, p. 2.

Figure 14: Count of views on the validity of the CBA, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to questions 32, 33 and other relevant sections; PwC analysis.

4.2.3 What submissions say

Those stakeholders that at least partially support the Authority's CBA analysis were Meridian Energy and Clearwater Hydro. In brief, their comments were:

- Meridian, through its opinion requested from Professor Lewis Evans, agreed that the Authority's proposal is 'more efficient than the status quo'. Meridian acknowledges there are issues quantifying the efficiency effects of changes to the TPM but 'on the available evidence' believes the dynamic efficiency gains would outweigh any static inefficiencies – if the Authority's proposal were adjusted according to Meridian's recommendations.[88]

- Clearwater Hydro agreed with the approach of the CBA but believed the risks are 'huge and unqualified'. Furthermore, Clearwater Hydro noted the 'modest' economic benefits of the proposal – expected annual benefits being $12 million per annum, only 1.5 per cent of Transpower's annual revenue.[89]

Conversely, a broad range of stakeholders did not support the CBA analysis that had been undertaken by the Authority. Smart Power, for instance, believed the assumptions made about retailer and consumer behaviour were 'unrealistic'. Smart Power also reflected Clearwater Hydro's comment that the economic benefits are 'very small given the risks'.

Comments made by stakeholders that did not support the Authority's CBA analysis include:

- Transpower, who states that the 'cost benefit analysis is not sufficiently robust to support the case for the proposed changes'.[90]

- New Zealand Steel who were 'unable to substantiate anywhere near the CBA expectations claimed'.[91]

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88 Meridian Energy, Submission to Issues Paper, p. 56.

89 Clearwater Hydro, Submission to Issues Paper, p. 7,

90 TransPower, Submission to Issues Paper, p. 10.

- Contact Energy[92] and Pioneer[93] who believe the cost-benefit analysis understates the costs. Contact Energy also believes the CBA overstates the benefits.

- Citing the New Zealand Institute for Economic Research, the Major Electricity Users' Group stated 'the Authority's empirical analysis of costs and benefits is at best illustrative'.[94]

- Smart Power believed the assumptions made about retailer and consumer behaviour were 'unrealistic' and the economic benefits are very small given the risks.[95]

- Castalia Strategic Advisors, who undertook an alternative CBA on behalf of Genesis Energy, found the overall result was a net $48.1 million cost rather than a $173.2 million benefit.[96]

More detailed comments were also provided with respect to the CBA analysis. The broad themes, comments on which are summarised below, were:

- The efficiency parameter used by the Authority

- The estimation of dispute costs

- The impact of costs not considered

- Other concerns about the CBA.

A summary of comments on these issues follows.

The efficiency parameter used by the Authority

There were numerous comments on this element of the CBA. These included:

A number of submissions were concerned with the 0.3 efficiency parameter assumption made by the Authority. The main concerns were that it was made without justification and was highly subjective.[97] A view raised in a number of submissions was that more evidence was required to support it and that this should be from sources that are relevant to the assessment that is being undertaken by the Authority.[98]

Powerco is critical of both the idea that there would be dynamic efficiencies achieved through beneficiaries (such as offtake customers) lobbying on transmission capital expenditures and of the efficiency parameter value. Powerco considers the value would be zero. Powerco reasons this is because the value of the transmission cost to individual offtake customers is such that changes to transmission charges 'would not provide a sufficiently material

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91 New Zealand Steel, Submission to Issues Paper, p. 16.

92 Contact Energy Limited, Submission to Issues Paper, p. 34.

93 Pioneer Generation, Submission to Issues Paper, p. 15.

94 Major Electricity Users' Group, Submission to Issues Paper, p. 3.

95 Smart Power, Submission to Issues Paper, p. 15.

96 Genesis Energy, Submission to Issues Paper, Appendix C, p. v.

97 Norkse Skog, Transpower, Vector, Winstone Pulp International, Ringa Matau Limited

98 TrustPower, Vector.

incentive for them to engage more directly with the grid investment decision-making processes'[99]

Estimation of dispute costs

One of the Authority's justifications for the proposed TPM is the 'avoided costs from durability benefit'. A number of submissions disputed the existence of these benefits:

- Transpower states 'the proposal will increase dispute and lobbying' because a 'complex model-driven pricing method with large wealth transfers will invite dispute'.[100]
- Powerco submits that 'the TPM proposal expands the scope for possible disputes'.[101]
- TrustPower says the current design of the TPM proposal 'raises questions about assumptions the Authority has made regarding avoided dispute costs'.[102]
- Business NZ is sceptical of any financial benefit ascribed to avoided dispute costs 'based on the experience over the preceding decade, and the numerous attempts to bring the issue of the TPM to a resolution'.[103]
- The Auckland Chamber of Commerce thought 'the distortionary impact and disputes' created by the requirement of 'consumers to contribute to the historical cost of generators exporting electricity from one Island to the other through the HVDC line' would 'far outweigh any practical benefits'.[104]

The impact of costs not considered

Transpower, being the main entity involved in implementing the proposed TPM, have pointed out that the CBA understates the transaction costs and opportunity costs. It estimates there would be $20 million in implementation costs and $1 million ongoing costs per annum.[105]

A common view in submissions was that the Authority's proposal creates volatility in transmission pricing. This, in turn, drew comments on how the CBA had dealt with the issue.

The main concern by stakeholders regarding the volatility of transmission charges in the context of the CBA was that the costs of this volatility had not been adequately recognised in the Authority's analysis.[106] For instance, Pioneer Generation noted the following:[107]

> *"there are costs associated with unintended consequences, the contribution of embedded generation to the efficient operation of the electricity market appears to have been overlooked and the added complexity and volatility will manifest in risks*

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99 Powerco Limited, Submission to Issues Paper, p. 2.

100 Transpower, Submission to Issues Paper, p. 10.

101 Powerco Limited, Submission to Issues Paper, p. 3.

102 TrustPower, Submission to Issues Paper, p. 27.

103 Business NZ, Submission to Issues Paper, p. 7.

104 Auckland Chamber of Commerce, Submission to Issues Paper, p. 5

105 Transpower, Submission to Issues Paper, p. 1

106 Nova Energy, NZX Limited, Pioneer Generation.

107 Pioneer Generation, Submission to Issues Paper, pp 15-16.

at all points along the value chain resulting in a higher risk premium being built into retail prices."

Some submissions linked the expected increases in volatility to impacts on working capital and considered this also needed to be recognised in the CBA.[108]

Transpower and the New Zealand Council for Infrastructure Development each considered that there was a lack of consideration in the CBA on the inefficiencies that could be created by the proposals more generally. Transpower stated that:[109]

"The analysis ignores the dynamic inefficiencies resulting from the proposed SPD and RCPI charges, and the reduction of the RCPD charge."

Other concerns about the CBA

Other concerns about the CBA include:

- PwC New Zealand (on behalf of 22 distributors) noted the change from incorporating HVDC charges into the interconnection charge may result in higher overall prices for consumers and that this 'effect needs to be incorporated into the CBA to ensure the proposal is in the long-term interests of consumers.'[110] Also that
  - the benefits of maintaining the current interconnection charge are not included in the CBA, and
  - implementation costs and issues are not given adequate attention and are under-costed.
- Smart Power noted the proposed TPM makes assumptions about retailer and consumer behaviour which are unrealistic. It considered the pricing signals are too uncertain to obtain much in the way of response from consumers.[111]
- New Zealand Wind Energy Association noted 'the cost to the industry of consultation etc' and the 'administrative costs of any new system' had not been factored into the CBA
- A number of submissions identified that the proposals are likely to have distortionary incentives on generators that need to be taken into account.[112]

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108 New Zealand Wind Energy Association, Fonterra Co-Operative Group, Pioneer Generation.

109 Transpower, Submission to Issues Paper, p. 10.

110 PwC NZ, Submission to Issues Paper, p. 8.

111 Smart Power, Submission to Issues Paper, p. 15

112 Carter Holt Harvey, TrustPower, Vector.

4.3 Impact on consumers as considered by the Authority

4.3.1 Issue

A key issue with respect to reform of the transmission pricing methodology is the likely impact on consumers. The Authority considers that the current TPM can be improved so as to advance its statutory objective to better promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.[113]

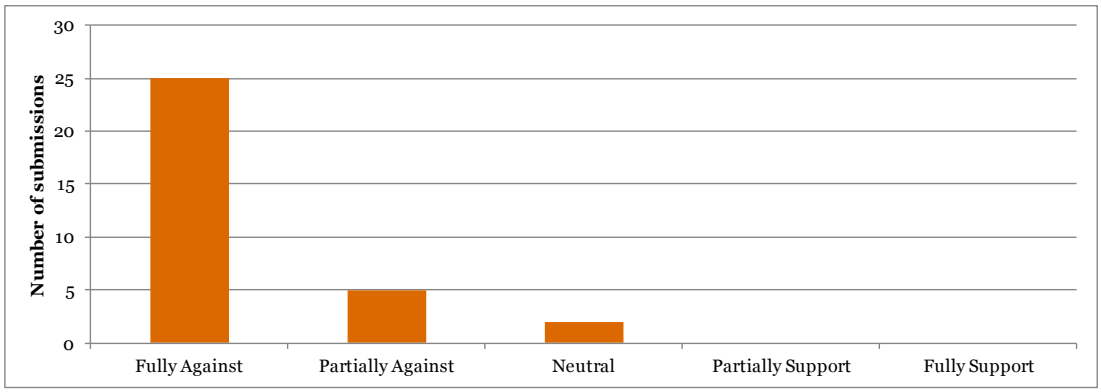
In undertaking its analysis the Authority identified several aspects of the current TPM that it considers are not consistent with promoting the long-term benefit of consumers. Its view is that the current approach precluded efficient investment on the supply side and also efficient use of the network by customers, including the efficient use of demand-side management.[114] The Authority noted however that imperfections will always remain, stating:[115]

> *"The Authority's view is that it is not possible to design a perfect beneficiaries-pay charge with current technology, and it is not attempting to do so. The key issue for the Authority is whether the proposed beneficiaries-pay charge delivers greater economic benefits for consumers than any other practical alternative available to it."*

4.3.2 Overview of responses

All stakeholders that commented specifically on the consideration of the consideration of consumer impacts were either fully against, partially against, or neutral to the Authority's views in its Issues Paper. This is shown in Figure 15. Figure 16 shows the same information but categorised by stakeholder group. It shows Distributors make up the largest stakeholder group that were concerned with the Authority's comments with respect to consumer impacts.

Figure 15: Count of views on whether consumer impacts have been considered by the Authority



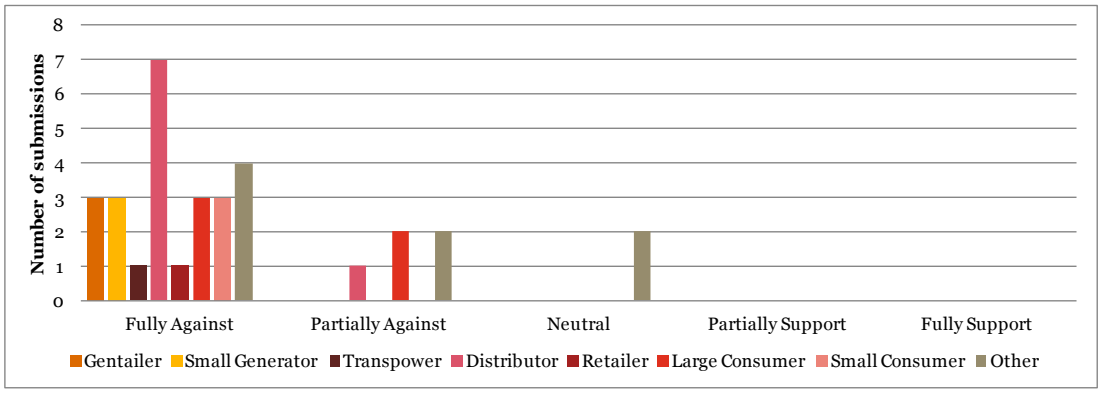
Source: Submissions to the Electricity Authority – Answers to questions 32, 34 and other relevant sections; PwC analysis

[113] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. A

[114] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, pp 45-46

[115] Electricity Authority, Transmission pricing and methodology: issues and proposal – Consultation Paper, 10 October 2012, p. G

Figure 16: Count of views on whether consumer impacts have been considered by the Authority, by stakeholder group



Source: Submissions to the Electricity Authority – Answers to questions 32, 34 and other relevant sections; PwC analysis

4.3.3 What submissions say

A number of overarching comments were made by submitters that indicated they were concerned that the Authority's proposals would not be for the long-term benefit of consumers. The key concerns for stakeholders in this respect were:

- Increased complexity, with implementation and ongoing administrative costs being passed through to consumers[116]
- Rather than generators bearing costs, any additional costs, including managing volatility, would simply be passed through to consumers,[117] and
- The proposals were unlikely to provide signals for efficient investment, the costs of inefficient investment ultimately being borne by consumers.[118]

Genesis Energy noted that the proposed implementation timeframe for the reformed TPM will have costs and pricing implications for existing contracts. It considered that this would extend to retail contracts, bilateral hedge agreements and active ASX futures contracts.

The PwC New Zealand summary of the views of distributors noted that these stakeholders had concerns about the impact for consumers of incorporating the HVDC charge into the interconnection charge:[119]

> *"In particular, the Consultation Paper appears to ignore potential costs to consumers arising from incorporating HVDC changes into interconnection. Under the current TPM, the pass through of the HVDC charge to consumers is likely to be partly constrained by competitive tension between generators. It is therefore possible that generators may under-recover HVDC related costs.... This benefit to consumers is likely to be more modest under the proposed TPM as distributors that incur HVDC costs (through the residual charge) are not subject to the same competitive tension and will likely pass these costs on to consumers in full."*

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116 Energy for Industry Limited, Ringa Matau Limited

117 Mainpower, Orion New Zealand, Auckland Council

118 Auckland District Health Board

119 PwC NZ

A concern amongst stakeholders about the impact of price volatility and its impact on consumer prices was also expressed by Transpower:[120]

> *"The charge would vary each month, and would not be known in advance. In conjunction with the charge being too complex for parties to accurately forecast, this approach would introduce new risks for generators, retailers and other purchasers. Parties would not have any ability to hedge this risk, and the risk would flow through to higher end consumer prices. The charge may reduce competition given it is likely to be particularly challenging for smaller retailers, generators, and purchasers."*

A further stakeholder concern was in relation to the treatment of wealth transfers. For example, Contact stated[121]:

> *"The Authority's overarching objective of promoting the efficient operation of the electricity industry for the long-term benefit of electricity consumers will be undermined by the large wealth transfers likely to occur between Auckland consumers and large industrials."*

The creation of additional retail barriers to entry were also noted by Simply Energy, whilst Buller stated that small retailers may be forced to exit due to the need for prudential security cover.

Tauharoa submitted implicitly that there were no benefits to consumers due to consequent reduction in the viability of embedded generators.

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[120] Transpower

[121] Contact Energy Limited, Submission to Issues Paper, p. 13

Appendix A List of relevant questions in the Authority's Issues Paper

MRP identified the following questions raised in the Authority's Issues Paper that relate most to topics of most interest to it. Accordingly, we have focused our analysis on the responses to these questions given by stakeholders in their submissions.

Table 1: Electricity Authority Consultation Paper questions

#	Question
1	What are your views about the materiality of changes in circumstances since the current TPM came into force in 2008?
4	What comments do you have about the potential for inefficient outcomes to arise from incentives to shift connection costs into the interconnection charge?
5	Do you agree that there is the potential for inefficient outcomes to arise from incentives for connected parties to hold out for connection asset replacement to occur as a grid upgrade rather than under an investment contract? Explain your answer.
6	Do you consider that there are any other problems with the connection charging arrangements under the current TPM? Provide a detailed explanation of the nature and materiality of the problem.
12	What comments do you have about a the differences (including their materiality) between private benefits from interconnection assets and interconnection charges; and b the consequences of those material differences?
13	What comments do you have about the Authority's analysis of the problems with interconnection charges?
17	Do you agree that the proposal will address the problem identified in chapter 4 in relation to the connection charge? Please give reasons for your views.
23	What is your view of the Authority's assessment and conclusions about using the SPD or vSPD model to establish a beneficiaries-pay charge for recovering some or all HVDC and interconnection costs?
24	Do you agree with the Authority's conclusion that the most efficient beneficiaries-pay charging option for applying to HVDC and interconnection costs is likely to be the SPD method? Please provide an explanation for your answer.
25	Do you consider that there are beneficiaries-pay options that the Authority has not identified that are practicable, would deliver greater net benefits and would recover HVDC and interconnection costs? Explain your proposal.
26	Do you agree with the proposal to apply the residual charge to: a generators and direct-connect major users; b distributors, except where they opt out from the charge; and c retailers, were distributors elect to opt out from the charge?
27	Do you agree with the proposal that distributors may opt out from the residual charge:

#	Question
	a to the extent that they do not benefit from offering interruptible load on the wholesale electricity market; and b provided they consult with retailers that may be affected before they opt out?
28	Do you consider that the proposed RCPD/RCPI charge, designed to encourage efficient avoidance of peak regional use of the grid, with half of the residual revenue recovered from load and half from generators, would best complement a beneficiaries-pay charge that calculates charges every trading period using the SPD model? Explain your response.
29	Do you agree that the RCPD/RCPI charge would best meet the principles for an alternative charging option of: a minimising the distortion in use of the transmission grid resulting from the imposition of charges; and b ensuring the costs of providing the transmission grid, as approved by the Commerce Commission, are fully recovered so future investment is not stifled by concerns by investors that they will not receive a return on their approved investment? Explain your response.
30	Do you agree that the Authority's preferred option for the residual charge should be an RCPD/RCPI charge designed to encourage efficient avoidance of peak regional use of the grid? Explain your response.
31	What are your views about amending the existing prudent discount policy to provide that it: a applies to disconnection of load as a result of investment in generation where this would not be privately beneficial in the absence of transmission charges; and b may apply for the expected life of the asset to which the prudent discount applies? Explain your response.
32	Do you agree with the assessment of the economic costs and benefits of the Authority's TPM proposal versus the counterfactual? Explain your answer.
33	Do you agree with the assessment of the costs and benefits of the TPAG majority proposal against the counterfactual? Explain your answer.
34	Do you agree that the Authority's TPM proposal meets the Authority's objective? Explain your answer.

Source: http://www.ea.govt.nz/our-work/consultations/priority-projects/tpm-issues-oct12/

Appendix B List of respondent stakeholders by stakeholder group

Table 2: List of submissions made to the Electricity Authority

Stakeholder	Stakeholder Type
Auckland International Airport Limited	Distributor
Buller Electricity	Distributor
Electricity Networks Association	Distributor
MainPower	Distributor
Northpower	Distributor
Orion New Zealand Limited	Distributor
Powerco Limited	Distributor
PricewaterhouseCoopers (PwC) New Zealand	Distributor
Unison	Distributor
Vector Limited	Distributor
Waipa Networks	Distributor
Wellington Electricity Lines Limited	Distributor
Contact Energy Limited	Gentailer
Genesis Energy	Gentailer
Meridian Energy Limited	Gentailer
Mighty River Power	Gentailer
TrustPower	Gentailer
Carter Holt Harvey Pulp & Paper Ltd	Large Consumer
Energy for Industry Limited	Large Consumer
Fonterra Co-operative Group	Large Consumer
KiwiRail Holdings Limited	Large Consumer
Major Electricity Users' Group	Large Consumer
New Zealand Steel	Large Consumer
Norske Skog	Large Consumer
Pacific Aluminium	Large Consumer
Winstone Pulp International Limited	Large Consumer

Stakeholder	Stakeholder Type
Auckland Chamber of Commerce	Other
Business NZ	Other
Electric Power Optimization Centre	Other
Employers and Manufacturers Association (Northern)	Other
Energy Link	Other
Energy Market Services	Other
New Zealand Council for Infrastructure Development	Other
New Zealand Geothermal Association	Other
New Zealand Wind Energy Association	Other
NZX Limited	Other
Phillip Wong Too	Other
Smart Power	Other
Pulse Utilities New Zealand Limited	Retailer
Simply Energy	Retailer
Auckland Energy Consumer Trust	Small Consumer
Auckland Council	Small Consumer
Auckland District Health Board	Small Consumer
Domestic Energy Users' Network	Small Consumer
Alinta Energy	Small Generator
Clearwater Hydro	Small Generator
Energy3	Small Generator
Nova Energy	Small Generator
Pioneer Generation	Small Generator
Ringa Matau Limited	Small Generator
Taharoa C Block	Small Generator
Tauropaki Power Company	Small Generator
Ventus Energy NZ Limited	Small Generator
Transpower	Transpower

Source: http://www.ea.govt.nz/our-work/consultations/priority-projects/tpm-issues-oct12/

pwc.com.au