

Transmission pricing decision-making and economic framework

Submissions on the Electricity Authority's consultation paper

NZIER report to MEUG

March 2012

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1. High-level framework is the right approach

This report provides our views on submissions responding to the Electricity Authority's consultation paper "Decision-making and economic framework for transmission pricing methodology review".¹

Our advice is focussed on matters of significance to the framework identified by the Authority and especially on various responses to the questions raised by the Authority.

We remain of the view that the framework set out in the Authority's consultation paper is useful to the extent that it provides principles around which transmission pricing options can be further assessed – a first hurdle or short list. We assume that the application of this framework will be subject to cost benefit analysis and is not a substitute for evidence and consultation.

It is appropriate that the Authority has set out an in-principle decision-making framework because this clarifies how its statutory objective relates to Transmission pricing.

This is useful from the point of view of many consumers. While a number of seasoned electricity industry experts may find the return to principles tiresome and abstract, it is essential information for those who do not live and breathe electricity market regulation on a daily basis, i.e. consumers, and those who are seeking to understand the implications that a relatively new regulatory regime has on transmission pricing.²

1.1 Details should come later

In our submission we noted (p.3) that details for determining transmission pricing should come later. A number of submissions include points of contention or disagreement with the Authority's framework. Many of these fall into the category of details which need to be dealt with in the context of the full Code Amendment process, including CBA. Issues of detail need to be dealt with either through empirical analysis or methodology design details and, at this stage, should be ignored in terms of implications for a decision-making and economic framework.

Issues of detail include the following claims from submissions:

- market approaches are costly, complex, and of uncertain benefit
- market approaches have not worked elsewhere in the world
- multi-lateral contracting has not worked in the past
- identifying exacerbators or beneficiaries is too costly

In discussing these issues many submissions argue against one pricing method or another based on experience of past charging methods, lessons learned in past reviews, and local and international experience. It is understandable that submitters have drawn on such experience but it is the wrong approach for this consultation.

Precision about which pricing options will pass relevant Code amendment tests cannot and should not be part of the Authority's framework. The best that the framework can do is to

¹ 26 January 2012.

² As noted in the submission by Carter Holt Harvey, there is an imbalance between consumers and producers in terms of capacity to engage in discussions over transmission pricing.

provide clues about likely outcomes and to clarify the decision-making process. That being so, all options remain on the table at this stage.

On the basis that we think it is premature to discuss detail and that we broadly agree with the Authority's decision-making and economic framework, we limit the bulk of our analysis of submissions to a summary table in Section 3, including matters for consideration after a decision-making framework has been agreed upon.

2. Focus on dynamic efficiency

The Authority's focus on long term benefits to consumers requires that they pay attention to dynamic efficiency. Our views are coloured by the Authority's statutory objective and in particular our views regarding the role that dynamically efficient transmission pricing plays in meeting that objective. Below we address two issues related to this; issues which have been missed by many submitters.

2.1 Need for regulatory innovation

One component of dynamic efficiency is innovation i.e. new ways of doing things. In our view, this should not be limited to producers and consumers but also to regulators and the regulatory environment. We believe that it is entirely reasonable to return to an in-principle framework for transmission pricing methodologies and ask some hard questions about whether e.g. market-based approaches could be implemented.

A number of submissions have argued that market-based approaches have not worked in the past or elsewhere in the world. This should not preclude new attempts or targeted attempts at designing market-based approaches. It is entirely appropriate that the Authority is considering tackling difficult regulatory and market design problems. Indeed, it seems to us that the Authority has a mandate to do exactly that.

The workability and costs and benefits of market-based approaches must be tested to determine whether their complexity or associated transaction costs may mean that they are not beneficial.

We caution that transaction costs, of themselves, may have diminished weight under the Authority's dynamic efficiency statutory objective. For example, while a capacity rights regime for pricing access to the HVDC would create reasonably large up-front costs to set up, these static costs are of less importance than the long term benefits to consumers that might accrue as a result of dynamically more efficient price signals.

2.2 Consumers always pay in the long term

Over the long term it is consumers who, on average, will bear the cost of transmission services, regardless of the pricing methodology chosen.

In a workably competitive market there will be dynamically efficient deviations from this. Producers will find that their investments are less profitable than expected and competitive pressure will mean that, periodically, transport costs are not fully loaded into delivered prices. When this happens one of two corrections will eventually occur: investors book a lower value on the asset or it is replaced by another, more appropriate, asset. Either way, this means a lower cost of capital with transport costs fully loaded into delivered prices and, over the long term, the cost of transmission will be paid for by consumers.

This pattern and its end result is one of the essential components of dynamic efficiency.

This is somewhat idealised because regulatory decisions and rent-seeking can impede the dynamically efficient correction mechanism we have described however, even in a market which is not workably competitive, consumers will still end up bearing the costs of

transmission.³ What matters for long term consumer benefit is dynamically efficient pricing which ensures that investors are not compensated for, or able to avoid, the costs of bad decisions. In the absence of dynamically efficient pricing, consumers end up paying more for delivered energy than they otherwise would.

Most of the opposition to elements of the Authority's framework seems to overlook this point with submitters more concerned about how to share sunk costs amongst those who are unlikely to bear the costs in the long term anyway.⁴

A number of submitters questioned whether the framework should concern itself with efficient price signals for longer term grid investment and use of transmission assets, given that current upgrade plans will ensure sufficient capacity for the foreseeable future and that recovery of related sunk costs is the issue of moment. We appreciate that efficient recovery of sunk costs is a pressing issue but a focus on this, at the expense of long term price signals, is at odds with dynamic efficiency and long term benefits to consumers and thus contrary to the Authority's statutory objective.

Similarly, we take a cautious approach to claims that what matters most for transmission pricing is the efficient utilisation of existing and recently committed assets. Past investment and investment committed in recent years may well turn out to have been a bad idea over the longer term (by "bad" we mean market conditions which, it turns out, can be improved upon). Approaches to transmission pricing need to accommodate that possibility and should not be tailored on the presumption that lower than expected utilisation is dynamically inefficient utilisation (which seems to be an idea underpinning some views). This is a separate, albeit related, matter to the need to ensure a stable and predictable environment within which the transmission owner can achieve a reasonable return on investment

³ We tend to agree with the view that cost-benefit analysis should account for the perverse implications of wealth transfers which are a function of a changeable regulatory environment. However, this can be captured by an analytical representation of the dynamic inefficiencies of the regulatory environment rather than a consideration of the wealth transfers per se.

⁴ As an aside it is worth noting that this is the case with respect to the HVDC. From the perspective of dynamic efficiency and long term benefits to consumers, the proximate incidence is irrelevant. The resource cost will ultimately fall on consumers. The issue at stake is whether that resource cost of delivered energy (including transport and reliability, i.e. the generalised cost) is minimised for a given level of service.

3. Views on issues raised in response to questions

Question	Points of contention raised in submissions which should be dealt with in CBA and other analysis relevant to code amendment	Points of contention raised in submissions which are of relevance to a decision-making and economic framework (NZIER view in italics)
<p>Q1 Do you agree with the Authority's interpretation of its statutory objective with respect to transmission pricing?</p>	<p>The Electricity Commission and TPAG identified practical issues which need to be addressed. (Contact)</p> <p>In-principle efficiency gains will be offset by the sheer complexity of such changes e.g. introducing capacity rights (Contact)</p> <p>Wealth transfers should not be excluded because this favours some consumers over others (DEUN).</p>	<p>The Authority should focus on achievable efficiency gains not abstract principles (Contact, Powersmart).</p> <p><i>We disagree. Drawing back from debate over measured efficiency gains or cost-benefit analyses is useful if it lays the platform for a more structured debate and clarifies the connection between the Authority's statutory objective and transmission pricing approaches.</i></p> <p>The Authority's interpretation is relevant to centralised transport and not distributed generation (Powersmart).</p> <p><i>We agree with this point to the extent that it supports a push for transmission pricing approaches which focuses on dynamic efficiency and potential innovation in the electricity industry. The framework itself does not inhibit uptake of alternatives to transmission even if individual approaches considered within the framework could have that effect.</i></p>
<p>Q2 Do you agree with the above application of the three limbs of the statutory objective to transmission pricing?</p>	<p>The framework and attention to its implications (see 1. and 2. above) imply HVDC and interconnection pricing based on a postage stamp transition and incentive free allocation to South Island generation.(Contact)</p> <p>When considering the efficiency limb of the statutory objective it is important to consider the materiality of any efficiency gains (Trustpower)</p> <p>Authority does not consider the role that pricing can have in fostering transmission alternatives such as DG (Powersmart)</p> <p>When considering the efficiency limb of the statutory objective it is important to avoid ambiguous methodologies which create disputes over charges (Trustpower).</p>	
<p>Q3 Do you agree that a market-based TPM would tend to promote efficiency in grid use and in investment in the grid, generation, demand management and the electricity industry?</p>	<p>A market approach would be costly, complex, and risky. (Trustpower, Meridian).</p> <p>Multi-lateral contracting has been shown not to work in the past with limited uptake and refusals to pay (Trustpower).</p> <p>International evidence suggests that they don't work (Meridian)</p> <p>Current administrative approach is workable, so why fix it? (Trustpower, Meridian)</p>	<p>Markets-based TPM cannot work because Transmission is a natural monopoly (Contact).</p> <p><i>This is irrelevant to access and use pricing and to cost recovery. Further, pricing methodologies which make consumers responsive to the costs of investment will drive demand response which will over time undermine aspects of the implications of the natural monopoly characteristics of transmission</i></p> <p>Opportunities for free-riding and hold-out are key and it is unclear how a market based approach resolves these (Unision)</p> <p><i>We agree that this was not adequately addressed in the consultation paper. However, we think that, in principle these issues can in many cases be resolved effectively (if not entirely) with the right rule design.</i></p> <p>Nodal pricing already sends sufficient locational signals for load and generation (Trustpower).</p> <p><i>We disagree with this claim and agree with the Vector submission (p. 9) which noted that nodal and transmission pricing are complements, not substitutes.</i></p> <p>Theoretically workable markets in transmission services break down with attention to realistic assumptions like economies of scale in interconnection costs. (Meridian)</p> <p><i>The existence of economies of scale do not per se preclude workable markets. Whether or not market-based approaches can work is a question of (a) the kind of asset in question (as is apparent in the case of connection assets) (b) market design and (c) the objective.</i></p> <p><i>In terms of (b) the hybrid approach to market design, while not immediately being a fully workable market, would not face the problems confronting merchant-investor models of transmission markets.</i></p> <p><i>In terms of (c) there is a trade-off between dynamic and static efficiency. Objectives of productive/static efficiency may well favour lumpy investment. This may not be the case for dynamic efficiency.</i></p>

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<p>Q4</p> <p>Do you agree that a market-based TPM is likely to be more durable and stable than approaches involving administered charges?</p>	<p>International evidence suggests that they don't work (Meridian, Contact).</p> <p>The inability of the transmission owner to exclude customers means a market cannot work.(Transpower)</p> <p>Current administrative approach is workable. (Trustpower, Meridian, Transpower)</p> <p>Contentious, complex and increase uncertainty (Trustpower, Contact).</p> <p>Current contracting for connection assets is heavily regulated and not the market-based system it is made out to be.(Transpower)</p>	<p>Transmission is a natural monopoly and there is limited prospect for increased competition (Tranpower, DEUN, Pan Pac)</p> <p><i>The relevant benchmark for competition with respect to transmission services should be whether more competition can be achieved . Even if there are limited prospects of increased competition, marginal gains would be beneficial and in keeping with the Authority's statutory objective.</i></p> <p>What is a market-based system trying to fix? There is a disconnect between the existing GIT and TPM which needs to be addressed – otherwise TPM is only about sunk costs.(Trustpower)</p> <p><i>We agree that there seems to be a disconnect between grid investment tests and the TPM. A TPM which focussed on ways to charge users based on willingness to pay would help to resolve this disconnect (indirectly) because the marginal costs of investment on users would be more apparent – a market-based check on investment.</i></p> <p>Opportunities for strategic behaviour e.g. withholding capacity. (Contact)</p> <p><i>We agree that this was not adequately addressed in the consultation paper. However, we think that, in principle these issues can in many cases be resolved effectively (if not entirely) with the right rule design.</i></p> <p>Market-based system is just another set of rules which may be challenged over time.(Meridian)</p> <p><i>It is true that disputes cannot be eliminated. However, administrative pricing gives greater opportunity for participants to socialise the costs of unfavourable market conditions</i></p>
<p>Q5</p> <p>Do you agree the Authority's first preference should be to adopt market-based approaches to TPM charges wherever it is confident such charges will be efficient and their implementation will be practicable and that any Code changes needed to do so comply with the Authority's Code amendment principles?</p>	<p>The visibility of transmission pricing would be lost as part of these charges would fall on generators and end up in energy prices.(Trustpower)</p> <p>The inability of the transmission owner to exclude customers means a market cannot work.(Transpower)</p> <p>Unrealistic to think such charges can be efficient, both in principle and given numerous past reviews and international experience (Meridian, Pan Pac, Powerco, Transpower, Mighty River)</p>	<p>Before this is contemplated, empirical analysis (CBA) required to clarify whether it would be beneficial (Contact)</p> <p>It would undermine dynamic efficiency because it would not be in keeping with the objectives of the current grid upgrade.(Contact).</p> <p><i>A market-based approach which revealed "willingness to pay" for grid upgrades would be dynamically efficient even if it revealed that grid upgrades were not optimal.</i></p> <p>Monopoly assets should, <i>a priori</i>, be priced administratively (Mighty River).</p> <p><i>Not so. When the issue is efficient access and use, market-based pricing can be welfare improving. This is because it makes users responsive to e.g. incremental costs of use and effects of congestion. This should not be confused with the need to regulate returns of a monopoly provider. Further if market-based pricing provides signals about "willingness to pay" this can be a useful signal to the regulator of the value of the regulated asset base and the need for new investment; thus complementing administratively determined allowable revenue.</i></p>
<p>Q6</p> <p>In light of TPAG's views, do you consider there would be any merit in the Authority devoting further effort to developing market-based TPM charges for interconnection and/or HVDC link assets?</p>	<p>Need status quo bias (Genesis):</p> <p>Status quo is working for the HVDC.(DEUN)</p> <p>Any change to interconnection pricing needs to yield large efficiency gains to offset the costs of change (DEUN).</p> <p>Unrealistic to think such charges can be efficient, not least in light of past reviews and international experience (Meridian, Transpower)</p> <p>Powerco).</p> <p>Contentious, complex and increase uncertainty (Trustpower).</p> <p>Nodal pricing already sends sufficient locational signals for load and generation (Meridian)</p> <p>The most efficient approach for HVDC pricing would be to take forward the suggestions by TPAG (Mighty River)</p> <p>Concerned about size of transaction costs (Powerco, Transpower).</p>	<p>Opportunities for strategic behaviour e.g. withholding capacity. (Transpower)</p> <p><i>We agree that this was not adequately addressed in the consultation paper. However, we think that, in principle these issues can in many cases be resolved effectively (if not entirely) with the right rule design.</i></p> <p>What will this solve? Upgrade costs are already sunk.(Meridian, Transpower)</p> <p><i>A market-based approach which revealed "willingness to pay" for committed upgrades would be dynamically efficient even if it revealed that grid upgrades were not optimal.</i></p> <p>Authority has ignored the monopoly characteristics of the transmission network (Contact)</p> <p><i>When the issue is efficient access and use, market-based pricing can be welfare improving. This is because it makes users responsive to e.g. incremental costs of use and effects of congestion. Note that transmission pricing methodologies do not eliminate the regulation of Transpower's return on assets.</i></p>

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<p>Q7</p> <p>Do you agree the Authority's second, third and fourth ranked preferences should be to adopt the administrative approaches to TPM charges of exacerbators pay, beneficiaries pay and other charging options wherever it is confident such charges will be efficient, implementation will be practicable, and that any Code amendments needed comply with the Authority's Code amendment principles?</p>	<p>Difficulties identifying exacerbators or beneficiaries mean the Authority should focus on evidence based decisions and achievable efficiency gains not principles. (Meridian)</p> <p>Identifying beneficiaries or exacerbators would be costly (Mighty River).</p>	<p>What will identifying exacerbators solve? Upgrade costs are already sunk. Changes to investment decisions could lead to inefficient reductions in asset use (Meridian, Mighty River, Contact, Trustpower)</p> <p><i>We agree that it is not clear that there would be efficiency gains (in-principle) from administrative identification and charging of exacerbators.</i></p>
<p>Q8</p> <p>Do you agree these actions can exacerbate investment? Are there other actions?</p>	<p>Difficulty identifying who the exacerbator is in practice (Meridian, Transpower).</p> <p>Incentives to free-ride or delay investment to avoid charges (Transpower).</p>	
<p>Q9</p> <p>Do you agree that exacerbators should be identified by determining which party or parties have the ability to act differently, thereby avoiding the need to augment the network? Is there an alternative approach?</p>	<p>Difficult or even imposible to identify who the exacerbator is in practice, in part because inaction will matter as much as action. Other administrative approaches are better (Transpower, Meridian, Mighty River, Trustpower).</p>	<p>This approach would raise investment hurdles and result in inefficient delays in transmission and generation investment (Contact, Transpower)</p> <p><i>We agree that exacerbator pays approaches have downsides. However, if other approaches do not pass CBA tests it may still be useful for the exacerbator pays principle to be entrenched for future investment decisions. Whether or not that is the case is a matter for further analysis.</i></p> <p>Opportunities for free-riding and hold-out are key and it is unclear how a market based approach resolves these (Unison, Transpower)</p> <p><i>We agree that this was not adequately addressed in the consultation paper. However, we think that, in principle these issues can in many cases be resolved effectively (if not entirely) with the right rule design.</i></p>
<p>Q10</p> <p>Do you agree with the assessment of the price that should apply to exacerbators? Do you agree with the assessment of how exacerbators pay should apply in practice? Do you agree with the proposed approach for identifying the preferred option or options for applying exacerbators pay?</p>		<p>Irrelevant given this only applies to new investment and the big issue at stake is recovery of costs from investment already committed (Contact, Trustpower)</p> <p><i>This point does reduce the usefulness of an exacerbator pays approach. However, if other approaches do not pass CBA tests it may still be useful for the exacerbator pays principle to be entrenched for future investment decisions.</i></p>
<p>Q11</p> <p>Do you agree these considerations should be taken into account under an exacerbators pay approach?</p>	<p>Irrelevant given exacerbator pays is only useful where exacerbators are readily identifiable and able to act differently to control costs. This is not the case here. (Contact)</p>	<p>Irrelevant given this only applies to new investment and the big issue at stake is recovery of costs from investment already committed (Trustpower)</p> <p><i>This point does reduce the usefulness of an exacerbator pays approach. However, if other approaches do not pass CBA tests it may still be useful for the exacerbator pays principle to be entrenched for future investment decisions.</i></p>
<p>Q12</p> <p>Do you agree that these ways can be used to identify beneficiaries? Are there others?</p>	<p>Authority's analysis ignores the practical implications of identifying beneficiaries. (Contact)</p>	<p>'What if analysis' (e.g. CGE modelling) too subjective to be useful. (Mighty River, Meridian)</p> <p><i>All administrative approaches will suffer from this subjectivity problem. It is unavoidable.</i></p> <p>"Users as a proxy" for beneficiaries is a blunt method that may not adequately target beneficiaries and may not send efficient price signals. (Transpower, Mighty River, Meridian)</p> <p><i>We agree.</i></p> <p>Benefits and beneficiaries will change over time and this limits the usefulness of 'what if' and ex ante analyses (Mighty River, Meridian)</p> <p><i>We agree that this is a problem with administrative approaches, however if an administrative pricing regime is in place it is preferable, from the point of view of dynamic efficiency, to try and differentiate between beneficiaries than to spread costs in a uniform way which mutes efficient pricing signals.</i></p>

Question	Points of contention raised in submissions which should be dealt with in CBA and other analysis relevant to code amendment	Points of contention raised in submissions which are of relevance to a decision-making and economic framework (NZIER view in italics)
<p>Q13 Do you agree with the assessment of the price that should apply to beneficiaries? Do you agree with the assessment of how beneficiaries pay should apply in practice?</p>	<p>What is the marginal gain? Alternative charging options are likely to be simpler and less controversial (Trustpower). Identifying beneficiaries of connection assets is simple but not so for interconnection assets. The current postage stamp system works (Transpower, PowerCo).</p>	<p>The Whirinaki example is wrong (Contact). <i>It seemed to us that it is hard to disagree with the general point that disconnect is plausible and especially plausible with transmission cost increases in the pipeline. On the specifics, we defer to the asset owners.</i></p>
<p>Q14 Do you agree that prima facie the increase in transmission costs in the next few years may provide incentives for some direct connect customers to disconnect from the grid?</p>	<p>The analysis is too narrow. A wider analysis of risks and costs from disconnection versus reliability from grid connection would likely show net benefits of grid connection long term (Transpower, Mighty River, Contact)</p>	<p>The Whirinaki example is not a good/accurate one (Mighty River, Contact). <i>It seemed to us that it is hard to disagree with the general point that disconnect is plausible and especially plausible with transmission cost increases in the pipeline. On the specifics, we defer to the asset owners.</i></p>
<p>Q15 Are there other alternative pricing options? Do you agree with the assessments of how incentive free and postage stamp pricing should be applied in practice?</p>	<p>Favoured approaches Postage stamp pricing and TPAG variants thereof (Contact, Meridian, Mighty River, Trustpower) Unfavoured approaches: 'Incentive free' allocation is an arbitrary exercise of statutory power and is unlawful (Meridian). 'Incentive free' allocation is likely to be controversial and untenable (Mighty River, Transpower, Powerco)</p>	