Energy Efficiency and
Conservation Authority
Te Tari Tiaki Pūngao

24 September 2010

Bruce Smith
Director, Modelling and Transmission
Electricity Commission
PO Box 10041
Wellington

Dear Bruce,

EECA submission on the consultation paper on transmission pricing review: stage 2 options

We welcome the opportunity to provide feedback on the Electricity Commission's consultation paper on stage 2 of the transmission pricing review.

Our detailed comments are enclosed.

Yours sincerely,

Steve Torrens,
Senior Advisor

Energy Efficiency and Conservation Authority
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EECA submission on the consultation paper on transmission pricing review: stage 2 options

Executive summary

1. We welcome the opportunity to comment on the Commission's consultation paper on transmission pricing review: stage 2 options.

2. We agree that the Commission's analysis appears to show that there is limited value in providing enhanced locational signals to generation for economic transmission investments.

3. We agree with the Commission's high level analysis on the costs and benefits of the current HVDC charge. An analysis of existing and proposed wind generation projects also provides some *limited* indication that the HVDC charge *may* be holding up the development of wind in the South Island. It also shows that a significant proportion of new wind development in the South island is being progressed by a single large incumbent generator.

4. Given the Commission's high level analysis indicates that the benefits of providing incentives for North Island generation are unlikely to outweigh the costs we have an initial preference to allocate HVDC costs to either:

   - South island generation in a way that does not distort generation investment or operational decisions; or

   - All load, all generation or a mixture of both.

5. Besides firming up on the costs and benefits of the current HVDC charge we agree that potential wealth transfers from South Island generators to consumers will also be an important consideration. We are less convinced that regulatory certainty is a major issue.

6. We agree that further consideration should be given to bestoke postage stamping and flow tracing as a means of providing enhanced signals to defer or avoid reliability transmission investments. We would like to better understand the potential interaction between these mechanisms and lines company price-quality regulation.

7. We are less supportive of the Commission's proposed amendments to the transmission alternatives regime. We not convinced that a third party would add a great deal of value to the successful development of transmission alternatives. Instead, we would urge the Electricity Authority to work with the Commerce Commission to ensure that Transpower's price-quality path includes mechanisms to encourage investment in transmission alternatives.

8. We do not agree that, *in all cases*, connecting parties should be able to negotiate access arrangements for a new connection asset that is 'right sized' for the potential generation resource that it could potentially serve. A 'first mover' may not necessarily invest in the 'right sized' connection asset due to either a lack of information on the size and timing of

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generation projects that may connect and because they may be unable to accept the same level of risk as would be the case if the GIT were applied to the connection asset.

Introduction

9. EECA is a Crown entity established by the Energy Efficiency and Conservation Act 2000. EECA's function is to encourage, promote, and support energy efficiency, energy conservation, and the use of renewable sources of energy.

10. We are interested in transmission pricing given its potential impact on efficient investment in renewable generation, distributed generation and demand side alternatives to transmission investment.

11. Our responses to the Commission's consultation questions follows.

EECA answers to consultation questions

<table>
<tr><td>1</td><td>What, if any, bearing do you consider the Authority's proposed objective has on the review's approach to analysis and evaluation to date?

No general comments. We briefly discuss the implications of the Authority's proposed objective in relation to the HVDC charge in our response to Question 8.</td></tr>
<tr><td>2</td><td>Do you agree that the Commission has identified the relevant factors in its assessment (paragraphs 3.2.6 to 3.2.13) of whether nodal pricing provides adequate signals for efficient generation and load investment? If not, please explain your reasons.

We agree that the three factors identified by the Commission are relevant to considering whether nodal pricing provides adequate signals for efficient generation and load investment.

The practical extent to which consumers are able to respond to nodal pricing is also another important consideration. Many consumers will have limited, if any, exposure to wholesale market nodal price signals. Consumers may also face other barriers that will prevent them from responding to price based signals in general, including:
Lack of information on opportunities, or adequate motivation, to invest in demand side management actions;
Lack of access to capital to finance demand side management investments; and,
Difficulty capturing the full benefits of a demand side management investment. For example, a load shifting or shedding investment may provide multiple benefits (deferred transmission investment, deferred distribution invest, reduced exposure to high wholesale market prices), however a consumer may only be able to capture some of these benefits.
Most of these barriers relate to market arrangements outside of the scope of transmission pricing. They will still, though, impact on the outcomes of a transmission pricing regime and hence should be taken into account.</td></tr>
<tr><td>3</td><td>Do you agree with the Commission's approach (outlined in paragraphs 3.2.21 and 3.2.22) to determining whether any form of additional locational signal through transmission pricing is necessary? If not, please provide reasons.</td></tr>
</table>

	Agreed.
4	**Do you agree that there appears to be limited value in providing an enhanced locational signal to generators to ensure co-optimisation of economic transmission investments and generation? If not, please explain your reasons.** Agreed.
5	**Do you agree that it needs to be determined whether the current locational signal provided by the HVDC charge is causing or is likely to cause inefficient operational and investment decisions? If not, please explain your reasons.** Agreed.
6	**Do you agree with the high-level analysis provided on the costs and benefits of the current HVDC charging regime? If not, please explain your reasons.** We agree with the Commission's analysis and have the following comments: *Impact of current HVDC charge on wind generation development* An analysis of existing and proposed wind generation projects *may* provide some *limited* indication of the impact of the HVDC charge on South Island wind generation development and the degree of competition in the development of South Island wind generation. This is relevant to costs (c) and (f). Table 1 shows that, by MW installed capacity, there are more existing and proposed wind generation projects in the North Island vs. the South Island, regardless of project status. Project Hayes makes up around 50% of total proposed (awaiting construction, under consent or under investigation) wind generation projects in the South island. We also note that Trustpower have stated[1] that: • They will only build 36 MW of their proposed 200 MW Mahinerangi wind project. The project has been downsized to supply the local network and hence avoid the HVDC charge; and • Their 240 MW Kaiwera Downs wind project will not be progressed under the current HVDC charge regime. Differences in the amount of proposed wind generation developments in the North Island and South Island are likely to be due to a number of factors of which the HVDC charge will be just one. In particular, Connell Wagner[2] indicate that the North Island has a substantially greater economic wind resource potential than the South Island. The ratio of North Island to South Island wind resources identified by Connell Wagner, that may be economic in the near future[3], is 1.6. In comparison, the ratio of proposed North Island to South Island wind projects is 3, which may indicate a preference for North island wind resources. Connell Wagner did not, though, consider grid connection costs or project 'consentability' and these factors (amongst others) maybe as important or more

[1] Otago Daily Times, 07/09/2010. Article "Blessed, but Cable Costs Remain" by Stu Oldham.
[2] Connell Wagner. 2008. *Transmission to enable renewables. Economic wind resource study. Electricity Commission.*
[3] Tranche 1 wind resources, page 12 of the Connell Wagner report.

important than the HVDC charge in explaining the differences observed in Table 1.

Table 1 also indicate that a significant proportion of new wind development in the South Island is being progressed by a single large incumbent generator (Meridian). This supports the view that the HVDC charge provides disincentives for developers without existing South Island generation capacity.

Table 1 : Summary of existing and proposed wind generation projects by Island

Status	**Operator**	**North Island (MW)**	**South Island (MW)**
Commissioned	Genesis Energy	9	
	Meridian Energy	234	58
	Other	33	4
	Trustpower	161	
Commissioned Total		436	62
Under Construction	Meridian Energy	64	
	Other	16	1
	Trustpower		200*
Under Construction Total		80	201
Awaiting Construction (with Consent)	Genesis Energy	18	
	Meridian Energy	130	
	Mighty River Power	13	
	Other	371	
	Trustpower		240*
Awaiting Construction Total		532	240
Under Consent	Contact Energy	545	
	Meridian Energy	71	630
	Mighty River Power	303	
	Other	28	77
	Trustpower	135	
Under Consent Total		1,082	707
Under Investigation	Contact Energy		
	Genesis Energy	690	150
	Meridian Energy	880	131
	Mighty River Power	200	
	Other	270	3
Under Investigation Total		2,040	283
Grand Total		4,169	1,492

*Please note discussion above.

Other benefits
The current HVDC charge may contribute to a less geographical diverse wind generation portfolio. This may increase wind integration costs such as those associated with frequency keeping and wind forecast accuracy.

7 **Do you agree that the Commission has correctly identified the four possible options for the HVDC charge? If not, please explain your reasons and provide alternative options.**

Another option may be to slowly phase out the existing pricing regime and phase in

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	Option D, as suggested by NERA[4]. This could address concerns around wealth transfers and regulatory certainty.
8	**What are your views on the validity of each of the options?** Given the Commission's high level analysis so far indicates that the benefits of providing incentives for North Island generation are unlikely to outweigh the costs we have an initial preference for Option C or Option D. *Wealth transfers* We agree that wealth transfers from South Island generators to consumers is an important consideration. While the impact on average retail prices may be one-off and minor, there are already pressures on retail prices from the rate of GST increasing and on going increases in the real cost of electricity driven by such factors as gas and carbon prices. Approaches to lessening the impact on consumers include slowly transitioning away from the existing pricing regime to Option D over a period of years or to allocate a portion of the HVDC charge to generators, as suggested by the Commission. A wealth transfer from South Island generators to consumers is likely to have only a small impact on consumers' consumption decisions. It can be assumed that a 10% increase in electricity prices will reduce demand by 2.4%[5]. If residential electricity prices increase by around 0.8%[6] as a result of the HVDC charge being applied to just consumers then this implies that residential electricity demand will decrease by only around 24 GWh. *Regulatory certainty* We do not think that regulatory certainty is a particularly strong argument in favour of retaining the HVDC charge on South Island generation. If the underlying reasons for the status quo arrangements are weak, as suggested by the Commission's analysis, consensus within the industry and its stakeholders is unlikely to be achieved. The pressure for review and reform will remain and investors will still, hence, be faced with regulatory uncertainty. On regulatory certainty the Commerce Commission have stated "… a prescriptive approach that minimises uncertainty under current conditions – in other words, 'regulatory commitment' – must be balanced against the need for regulation to adapt and remain applicable as industry and market conditions evolve over time."[7] Market conditions relevant to the HVDC charge have changed with the approval of major upgrades to the HVDC link and to the AC grid to support Northward flow in the North Island. There have also been some generation projects proposed in the South Island which supports the contention that there are still high quality energy resources worthy of further development. These developments suggest the need for regulatory flexibility rather than regulatory certainty.

[4] NERA. (2009). *New Zealand transmission pricing project. A report for the New Zealand electricity steering group*. Page 89.
[5] Ministry of Economic Development. (2010). *Pricing in the New Zealand electricity market and its economic impact*. Available at http://www.med.govt.nz/templates/MultipageDocumentTOC____26354.aspx
[6] Assuming the existing HVDC charge ($78.33M in 2009/10) is spread over all load on a kWh basis.
[7] Commerce Commission. 2009. *Reset of default price-quality path for Electricity Distribution Businesses. Discussion Paper*. Page 18.

	User pays The application of the user pays principle[8] to the allocation of HVDC costs may also be worth considering given that it has been raised already by some submitters. In this regard we support the view that the current HVDC charge is only allocated to some of the beneficiaries of the HVDC link and that the beneficiaries of the HVDC link vary from year to year. Key questions for us include the compatibility of the user pays principle to the Electricity Authority's objective, whether the user pays principle is underpinned by fairness and equity or efficiency considerations and the relative weighting that should be applied between fairness and equity and efficiency considerations.
9	**Do you have specific lower-level issues around the structure and details of HVDC charging that you would like considered in stage 3?** We have no specific lower level issues with regard to HVDC charging. With regard to the impact of the HVDC charge on distributed generation we would prefer that this issue is not considered in isolation. We suggest that the transmission pricing methodology and the pricing principles provided for in the distributed generation regulations are reviewed as a whole to establish the extent to which their are inefficient incentives, or disincentives, for the connection of distributed generation.
10	**Do you agree with the analysis provided in the section headed "Analysis of benefits of signalling reliability-driven investment"? In particular do you agree with the conclusion that any incentive through the TPM which defers future reliability-driven transmission investment will likely provide some net benefit? If not, please explain your reasons.** We have no issues with the Commission's analysis.
11	**The Commission has decided not to pursue the options outlined in paragraph 4.1.8. Do you agree with the Commission's assessment (including the analysis contained in section 5 of Appendix 2) that these options are not worth pursuing? If not, please explain your reasons.** No comment.
12	**If the Commerce Commission proposal outlined in paragraph 4.2.16(c) is adopted for the final determination, do you think this will address the regulatory anomaly referred to above?** The Commerce Commission's proposal does make some progress towards addressing the lack of incentives for lines companies to reduce transmission costs for their consumers. We have, though, the following concerns: • It effectiveness, in general, may be limited due to compliance costs and risks; and, • It may not be compatible, or reinforce, the enhanced transmission pricing signals provided by either bestoke postage stamping or flow tracing. *Compliance costs and risks* Under the proposal lines companies will be required to provide information to demonstrate that investments made to lower transmission charges will also lower the

[8] Rule 2.1, Part F, Section IV Transmission Pricing Methodology.

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	total cost of supplying electricity lines services. In this regard the Commerce Commission note that "… Transpower's avoided cost of supplying the electricity lines service may not exactly match the level of avoided transmission charge, as this will depend on the extent to which the Transmission Pricing Methodology reflects underlying costs"[9]. The Commerce Commission have indicated that lines companies will provide this information as part of their annual compliance statement[10]. This ex-post approval of investments made to avoid transmission charges means that lines companies face the risk that such investments will not be approved. Lines companies wishing to invest to avoid transmission charges will therefore be faced with both compliance costs and risks which may reduce the extent to which such investments are made. Lines companies will only be allowed to retain avoided transmission charges for a period of five years after their investment is first approved by the Commerce Commission. There may, though, be on-going costs associated with an investment and it is unclear if such costs will be able to be recovered by lines companies after the initial five year period has ended. *Compatibility with bestoke postage stamping and flow tracing* With bestoke postage stamping if lines companies are to retain avoided transmission charges they may need to demonstrate that they are avoiding or deferring future transmission investments (given that this will may form a component of their transmission charge). This may be difficult in practice if information on the future costs and timing of transmission upgrades is unavailable or uncertain. With flow tracing avoided transmission charges may be less than the underlying avoided cost of transmission. This is because transmission charges will only increase after a transmission investment that serves the lines company's load is made.
13	**The Commission has identified three options alongside the status quo to defer or avoid reliability transmission investments. Do you agree that these options are worth pursuing? Are there other options which deserve further consideration? Please provide reasons.** We support further consideration of bespoke postage stamping and flow tracing. *Compatibility with lines company price quality regulation* We would like to better understand the potential interaction between lines company price-quality regulation and bespoke postage stamping and flow tracing. In this regard there may be issues associated with lines companies retaining avoided transmission charges as discussed in Question 12. Bestoke postage stamping is an adjustment to the existing interconnection charge. Lines companies we be able to pass this signal though to customers in their network without increased risk of breeching their regulated price-quality paths. This is because transmission charges are able to be fully recovered from consumers and are outside of price-quality path control. We are concerned that with flow tracing lines company will be

[9] Commerce Commission. 2010. *Input methodologies (electricity distribution services). Draft reasons paper*. Page 357.
[10] Commerce Commission. 2010. *Discussion and Draft Decisions Paper: DPP Refinements*. Page 11.

	less able to signal *via pricing* the cost of future transmission investment to their customers given that transmission charges will only increase after a transmission investment is made that serves the lines company's load. In effect, this means that lines companies will have no signal to pass through. *Peaking generation bias* As discussed in Question 2 demand side management faces a number of barriers that may limit its uptake even if pricing signals are improved. This may result in an inherent bias to generation transmission alternatives even where these are less cost effective than demand side management transmission alternatives. For this reason we argue that both pricing and non-pricing measures, such as provided for by the existing transmission alternatives regime, will be required to obtain efficient levels of demand side management transmission alternatives. *Transmission alternatives regime* We are less supportive of the Commission's proposed amendments to the transmission alternatives regime. Transpower are in the process of developing their capability to develop transmission alternative projects and we therefore question the extent to which they have a bias against transmission alternatives. We are also concerned that regulatory costs may exceed the benefits of involving a third party in the transmission alternatives regime. Under Section 54Q of the Commerce Act the Commerce Commission "… must promote incentives and avoid imposing disincentives for suppliers of electricity lines services to invest in energy efficiency and demand side management, and to reduce energy losses …". Therefore we would urge the Electricity Authority to work with the Commerce Commission to ensure that Transpower's price-quality path includes mechanisms to encourage investment in transmission alternatives.
14	**Can you suggest other matters to be included in the Commission's stage 3 deliberations on charging for HVDC costs?** Please see our responses to Questions 6 an 8.
15	**Do you agree with these preliminary conclusions? If not, please provide reasons.** Please see our responses to Questions 6 and 8.
16	**Do you agree that connecting parties should be able to negotiate mutually-beneficial access arrangements for independently provided new connection assets? If not, please explain your reasons, giving specific examples where possible.** We do not agree that, *in all cases*, connecting parties should be able to negotiate access arrangements for new connection assets that are 'right sized' for the generation resource that it could potentially serve. In some situations potential beneficiaries of a proposed connection asset may not know with certainty the size or timing of the generation projects that they may wish to connect in the future. For example, they may not have selected a preferred generation equipment supplier or have gone through the resource consent process (which can impact on the final size of the project). Such potential beneficiaries will not be in a position to indicate with certainty how much, and when, they will contribute towards a proposed connection

	asset. The Commission's analysis implies that in such a situation, a 'first-mover' may have to make their own evaluation of the size and timing of generation projects that a new connection asset could potentially serve. If the GIT were to be applied to such an investment, Transpower would also have to make a similar evaluation but with potentially the following advantages: • Potential beneficiaries may be in a better position to disclose potentially commercially sensitive information on project size and timing to a third party such as Transpower; and, • The GIT process may implicitly accept greater uncertainty around the size and timing of potential beneficiaries generation projects than would be the case for an individual investor. This suggests that a first mover would not necessarily invest in the 'right sized' connection asset due to either a lack of information or due to a lower appetite for risk compared to a GIT process. If the economic environment is such that a high renewables future is desirable then it is important that there are no undue barriers that prevent access to high quality renewable energy resources. Rather than relying on anecdotal evidence we suggest that the Electricity Authority progresses analysis recommended in the Phase 1 Transmission to Enable Renewables project[11] to understand the potential generation resource that could be economically unlocked with further transmission investment. This would provide a more robust understanding of the extent to which connection issues could be a problem.
17	**The Commission has developed three options that it considers have potential to encourage efficient investment in static reactive power. Which of these options do you consider best encourages this objective? Please give reasons.** No comment.
18	**Are there other options for the allocation of static reactive power costs that the Commission should pursue?** No comment.

[11] Electricity Commission. 2008. *Final report on the transmission to enable renewables project (Phase 1).* Page 86.