Submission on the Electricity Commission's Consultation Paper on Transmission Pricing Review: High-level options

From

Contact Energy Limited

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Summary

Contact relies on efficient and competitive electricity and gas markets to attract and retain customers and earn acceptable returns for its owners, including 81,000 New Zealand investors. Contact supports initiatives that will enhance the efficiency and competitiveness of our key markets.

Contact believes that these initiatives to introduce scarcity pricing, locational hedging and improve hedge markets and transmission pricing—if implemented well—could increase investor confidence, enhance competition and improve security.

Contact therefore believes more work is needed on how these key initiatives link before advancing to preferred options in either scarcity pricing, locational hedging or transmission pricing. The Electricity Commission (EC) should properly enumerate all its locational hedging options, as it did with its earlier simple LRA approach, before advancing work on a preferred option. There are alternatives that also need to be properly fleshed out. Addressing inter-island price separation caused by transmission constraints must also be a part of the package. This requires issues such as how the HVDC is funded and who receives the constraint rentals to be addressed.

The objective should be to improve security and provide greater opportunities for competition by devising an integrated package of initiatives so that the selected options complement each other. Contact believes that the scarcity pricing and hedge market development can proceed ahead of the more complex location and transmission pricing issues.

Contact supports a thorough review of the transmission pricing methodology (TPM) and would support any changes that result in a material improvement in the overall efficiency of transmission pricing arrangements in the NZ electricity market. These should encourage efficient transmission and generation investment. Contact would be concerned if any change put at risk the current grid upgrade programme.

Location signals are provided at present through (i) nodal pricing, (ii) the HVDC charge to South Island generators, (iii) the definition of "deep" connection assets, and (iv) investments approved by the Grid Investment Test. Any change to the TPM would need to provide a better outcome than this combination of measures. Any

proposed change, therefore, needs to be supported by an analysis that demonstrates that it will result in an overall lower cost of supply to end use customers.

A locational price signal would only be effective (and fair to existing sunk investments) if participants were able to practically respond to it. Choice of location may be possible for certain new generation developments (if the signal is strong enough and is sustained) but a location based signal is unlikely to be a major component driving the location of investments by demand-side participants (regardless of the strength of the signal). Contact believes that demand side pricing signals are best left to more operational signals such as coincident peak and seasonal signals which encourage better use of assets by lowering demand peaks (and improving load factors).

Changing price signalling to generation or major load may result in major reallocations of sunk transmission costs between participants. This in itself may increase the risk premium associated with investment and so caution should be taken before making any substantive change.

Contact recommends:

1. No fundamental change to the definition of existing local Connection assets (substations) but Contact believes a more "shallow" definition of load spurs would provide greater price stability over the longer term, reduce the potential for higher overall costs to consumers.

2. No fundamental change to the definition and allocation of Interconnection assets as these costs are more efficiently and practically recovered from load on a postage stamp basis.

    - An allocation of interconnection costs to generators may improve the long run efficiency of the NZ electricity system but it should not disrupt the maximum usage of sunk assets, be clearly signalled before implementation and be implemented under the clear understanding that locationally enhanced energy generation costs will flow through to consumers as is normal in any market.

- Maintaining a postage stamp interconnection charge on load – as the most practical and efficient way of recovering interconnection charges. A tilted charge to load would be unlikely to achieve any major change in behaviour and could cause price shocks to many New Zealanders.

3. Further consideration of the mechanisms for the allocation of the HVDC charge by treating HVDC assets as interconnection and recovering equivalent HVDC revenue from all generators. Replacing the charge with either:

   - A more sophisticated broader locational price signal (tilt) to generators (increasing south from OTA) that is adjusted periodically based on power-flow characteristics.

   - Or a capacity based market that balances transfer between the North and South Islands.

These options need to be coordinated with the approach taken to managing North Island and South Island locational price risk.

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Submission on Transmission Pricing Review: High-level options

Question No.	Question	Response	General comments in support of response
1	To what extent do you agree that nodal prices can provide efficient signals for the use of the transmission network?		Nodal prices do provide efficient signals for the use of the transmission network and can provide very sharp signals to certain industrial consumers and regional generators but have limited effect on the behaviour of the mass-market. Constraints initiatives are taken to manage high nodal prices and hence network "usage" is managed accordingly and efficiently.
2	To what extent do you agree that nodal prices can provide efficient signals for investment in generation and load projects?		To a great extent. Nodal prices provide a relevant signal for generation investment. While nodal pricing (or augmented pricing signals) may change the sequencing of generation investment it is unlikely to change locations as these will be dictated by renewable resources. Equally they will have little bearing on load projects which may be dictated by many other factors. Energy charges will be largely the same and transmission charges (in proportion to their total energy bill) would be a minor economic consideration. Nodal pricing though can create excessive and disproportionate signals (if a spring washer occurs) that is not representative of an accurate signal reflecting physical flows over the long-run.
3	Do you consider that the nodal prices in New Zealand may be inappropriately suppressed due to the transmission system being augmented ahead of demand?		No, not necessarily. They may be suppressed but this may not be inappropriate. The transmission system being augmented ahead of time (within reason) can be the prudent thing to do. The asymmetric risk of the investment being too late can far outweighs the cost of it being too late – given the increasingly variable and dynamic nature of the power flow characteristics.
4	Can you provide examples where a transmission		Not to the same degree of reliability that transmission grid investment

	alternative could have been undertaken instead of an investment in the grid?		provides. The Stratford Peakers generation has been used as an example - but this was not located in Auckland for a number of reasons that have been explained directly to the Electricity Commission. A TPM locational signal would have had little bearing on this decision. The type of generators used would not provide the same degree of base load reliability that the transmission upgrade does. Any transmission alternative must be considered in terms of equivalent reliability.
5	Do you agree that if locational transmission pricing signals are required to promote efficient participant investment decisions, both generators and loads ought to face these signals?		Signals should only be introduced if you can practically respond to them (such as RCPD, TOU or seasonal signals). The vast majority of existing load and generation cannot practically change locations. New load is unlikely to change location purely based on transmission charges as it would be governed by many other – more important factors (resources etc). The signals are unlikely to be strong enough and if they were they would have to be fixed long-term before load would take these into account.
6	Are there any other jurisdictions whose electricity market arrangements should be examined to assist in the development of high-level transmission pricing options for New Zealand?		It is interesting to assess implications of certain regimes and methodologies but it is difficult to get a fair comparison to the background, political scene, geography, generation mix, Lineco mix and market conditions in NZ. The specific details were not clear and how these compared to the NZ situation but the tradeoffs between locational energy market signals and transmission location signals are consistent. The issue of generators contracting for grid augmentation or maintaining of capacity is an interesting one and requires further consideration in the NZ context – and should not be limited to generation.
7	Do you agree that the summarised issues Frontier identified from the Strata report are correct and relevant?		Yes, but the emphasis of the Strata paper was a summary of a range of issues and was not looking at high-level options.

8	Are there other issues with the current transmission pricing that you think should be considered at this high–level options stage?		Product based pricing – whereby Transpower sets its prices similar to Lineco's and has a stake in the risk sharing and forecasting of demand (to manage their revenue requirement). This would allow a greater degree of flexibility with the model and Transpower's revenue requirement would be relative to their performance of their forecasting, customer management and forward pricing year – as is the case with the Lineco's.
9	Do you think it is appropriate to focus on locational cost allocation issues – as opposed to pricing structure issues – at this high-level stage of the review?		Yes – the locational signals and costs allocation principles are the issues. We believe the locational signal issues should be limited to the alternative HVDC allocation.
10	Are there any particular Pricing Principles that ought to be given precedence over others?		Yes. Principle (3.2.20) 2.3 "pricing for new generation and load should provide clear locational signals" is most relevant. Principle 2.4 is critical to maintain stability and consumer confidence.
11	Do you agree that it is not appropriate to review the Pricing Principles at this time? If not, why not?		Disagree. It is an integral part of this review. Once a new TPM is rolled out then it may be increasingly difficult to change if certain principles were to change.
12	Do you think the existing TPM, combined with the GIT and nodal pricing provide appropriate operational and investment signals to existing and prospective participants? Please give examples or reasons for your answer.		That may be the case. HVDC charges provide a strong signal to generation investment in the South Island (but does not address the regional upper South Island need for generation investment). This discourages investment in the South Island and as a consequence security challenges are emerging over time. Unfortunately the current TPM involved a cost on existing South Island generators that could not be passed onto to customers in the competitive market, despite the system wide security benefits and competition benefits of the HVDC. RCPD signals have encouraged greater demand-side management.
13	If not, are there relatively minor modifications that could be made to the existing regime to enable it		Replacing the HVDC charge with a more sophisticated tilt signal is one option to provide more appropriate locational signals (and allocation) A tilt based on

	to provide appropriate locational signals?		power flows across the HVDC with appropriate gradients for the upper South Island and top of the North Island.
14	Even if the existing approach does not provide efficient signals to participants, to what extent are participants' investment decisions likely to be distorted as a result?		There is likely to be continued generation investment in the North Island and hence the power-flows will increase further North to South over time. This will increase the need for generation build in the South Island and underscores the importance of having some sort of self correcting mechanism that can respond to power flow changes over time.
15	Assuming there is a need for a locational element to transmission pricing, does the tilted postage stamp option provide a reasonable trade-off between signalling objectives and simplicity?		Perhaps – as it is a simple enough concept (applied to generation side only) but would be difficult to get consensus on the correct tilt – due to the evolving power-flow characteristics hence requires a mechanism for "self-correction".
16	What are submitters' initial views on the economic merits of the augmented nodal pricing approach and are these likely to be outweighed by practical implementation considerations?		Contact does not support this and is likely to be outweighed by practical considerations and confusion over timing on investment decisions.
17	Assuming there is a need for a locational element to transmission pricing, is load-flow modelling a reasonable basis for cost allocation?		Yes.
18	If so, do you have a view on whether the CRNP, ICRP or an alternative methodology is preferable?		A methodology that does not penalise sunk investment but provides suitable signals to future investment would be preferable.
19	Are there any other high-level options that the Commission should consider?		Product (tariff) rates similar to Lineco's approach to distribution pricing.
20	Is there merit in pursuing a PJM-style 'deep' connection option in the New Zealand market?		There is merit in a "but for" approach as it tries to address user/beneficiary pays problems that can exist. However it may be difficult to maintain given he nature of the grid in NZ. It would also be difficult to maintain (and agree on) "deep" zones as the grid becomes more interconnected – that would apply to the load-side. The outcome would simply provide unacceptable cost increases to areas such as the upper South Island. These additional deeper connection costs would deter new generation investment where it is most needed and encourage a

			higher level of embedded generation – which may be of a sub-optimal scale and distort the allocation of the HVDC charges. It could also increase the costs for customers relative to the status quo. Also difficult to enforce fairly given organic growth in types of generation and for combinations of load and generation.
21	Are there aspects of connection charging that should be reviewed? If so, please give arguments why.		Some load spur lines such as the Bromley/Islington example and the Hangatiki/Te Awamutu spur. Because the TPM is an "allocation" (not a pricing) methodology and hence any change (in methodology – or operational behaviour) simply transfers costs – sometimes directly from one party to another – which can be unacceptable to both major users and generators. An example of this cost transfer is when connection assets may join (such as Te Awamutu to Hangatiki spurs) – or the opposite (if interconnection becomes connection), or if spur connection costs are shared between AMI/AMD users. This can create major price shocks to some consumers – yet have negligible effect of the majority of (interconnected) consumers – hence a shallower connected grid would provide more stable pricing in the long-run. The connection asset investment process works very well with Transpower and the TPM provides for an appropriate allocation of costs. It is a contestable market and parties may build their own spurs assets but this must be a consultative process to avoid the building of sub-optimal capacity lines.
22	Is it necessary or worthwhile to alter or clarify the existing treatment of transmission alternatives?		Not really. As long as they are of equivalent reliability and have sufficient diversity.
23	Should either a USG or a voluntary insurance scheme be considered within the Commission's Review?		No. Contact believes this should be considered outside this review and can be addressed separately.

24	Are there other options for linking service quality and pricing that you think the Commission should consider? If so, please give details.		This is not an important factor in this review as the services levels on the core grid are very good and likely to improve further. Service can be addressed at the individual connection level and must be kept in context with the level of security provided by the distribution company.
25	Do you agree that the Commission should consider a methodology for allocating the costs of existing and new static reactive power assets as part of the review?		Reactive support assets on the core-grid are interconnection assets.
26	If locational hedging instruments were introduced that had the effect of muting nodal price signals, do you consider that locational signals should be enhanced through transmission pricing?		Not necessarily as they are likely to have a minimal effect on changing a generation location decision.
27	Do you consider that the criteria outlined in this paper are appropriate criteria for filtering high-level options? Please outline your reasoning.		Yes. These are reasonable.
28	Are there other criteria that you consider might be appropriate?		No.