From the Electricity Networks Association

Submission on Transmission Pricing Methodology: LRMC charges

23 September 2014

The Electricity Networks Association makes this submission along with the explicit support of its members listed below.

Alpine Energy Ltd

Aurora Energy Ltd

Buller Electricity Ltd

Centralines Ltd

Counties Power Ltd

Eastland Network Ltd

Electra Ltd

E A Networks Ltd

Electricity Invercargill Ltd

Horizon Energy Distribution Ltd

Mainpower NZ Ltd

Marlborough Lines Ltd

Nelson Electricity Ltd

Network Tasman Ltd

Network Waitaki Ltd

Northpower Ltd

Orion New Zealand Ltd

OtagoNet Joint Venture

Powerco Ltd

Scanpower Ltd

The Lines Company Ltd

The Power Company Ltd

Top Energy Ltd

Unison Networks Ltd

Vector Ltd

Waipa Networks Ltd

WEL Networks Ltd

Wellington Electricity Lines Ltd

Westpower Ltd

Contents

Executive summary 1

1. Introduction 2

2. Context 2

3. Existing incentives in the market 4

4. LRMC charges 5

5. Conclusion 7

Executive summary

1. The ENA is pleased that the Authority is reconsidering aspects of its proposed transmission pricing methodology (TPM) design. However, we are disappointed by the negative tone and limited extent of the LRMC charges working paper.

2. The ENA considers that the LRMC working paper is too high level to assess its efficiency relative to other options, and that the Authority has adopted an unnecessarily pessimistic consideration of what is a relatively accepted approach to transmission pricing. The technical issues the Authority considers insurmountable hurdles to practical implementation of an LRMC charge are rather details of design. The ENA agrees that these will require thought, and trade-offs will be inevitable between accurate reflection of the LRMC at a particular location and other desirable attributes such as stability and durability. This does not make these insurmountable issues.

3. The Authority must not allow its sunk investment in the development of beneficiaries-pay options to affect its consideration of the form of charges that will ultimately deliver the most efficient price signals.

4. The ENA submits that the Authority's role in the design of the TPM, as described in the Code, is to establish principles or guidelines. The ENA recognises that in order to set guidelines the Authority needs to analyse the options in sufficient detail to determine which is preferred. However, the detailed design of the final methodology is the task of Transpower. The ENA requests that the Authority makes it clear the level of prescription it is intending to impose on Transpower.

5. The Authority should step back from what appears to be an entrenched fixation on a particular type of allocation mechanism (the SPD-based approach) and give proper consideration to other possible designs of TPM. In particular, it should consider whether, in the context of the price signals that are already part of the electricity market, additional location-based prices (on whatever basis) would be likely to achieve a material gain in efficiency.

6. This working paper falls short of such proper consideration, and it is the ENA's submission that LRMC-based charges should be investigated further.

1. Introduction

8. The Electricity Networks Association (ENA) appreciates the opportunity to submit on the Electricity Authority's (Authority's) working paper "Transmission Pricing Methodology: LRMC charges" (Working Paper).

9. The ENA is pleased that the Authority is re-considering in its Working Paper series some aspects of its proposed TPM design as set out in its 2012 TPM Proposal.[1]

10. It is the ENA's submission that the Authority must give more thorough and open-minded consideration to LRMC-based charges than the high level assessment presented in this working paper.

11. The ENA submits that:

    (a) the Authority appears to be trying to specify a level of detail that goes beyond its role in the Code to issue guidelines for Transpower to use when developing the TPM

    (b) the Authority should give more consideration to the context within which transmission prices are set, including Part 4 of the Commerce Act and the constraints this provides in terms of dynamic efficiency of investment by Transpower

    (c) it is not yet established that a material improvement in efficiency is available from providing additional location-based price signals; the Authority should give more consideration to the incentives provided by other prices in the electricity market and the extent to which there is a gap

    (d) the Authority should give broader consideration to conceivable packages of charging options, including LRMC-based charges, if material efficiency gains are available.

12. The ENA's contact person for this submission is:

Nathan Strong

Chair, ENA Regulatory Working Group

Email: nathan.strong@unison.co.nz

Tel: 021 566 858 or 06 873 9406

2. Context

13. The Authority has embarked on an extensive review of the Transmission Pricing Methodology at significant cost to the electricity industry and ultimately consumers.

---

1 Electricity Authority, *Transmission Pricing Methodology: issues and proposal*, 10 October 2012.

14. In its submission on the beneficiaries-pay working paper, Vector discussed the role of the Authority with respect to establishing the Transmission Pricing Methodology.[2] The ENA agrees with Vector's assessment of this key issue.

15. The Code provides that *the Authority may review an approved transmission pricing methodology if it considers that there has been a material change in circumstances* (clause 12.86). The Authority has not established that there has been a material change in circumstances that warrant it undertaking a review. And in any event the current review is not following the process specified in clauses 12.91-12.94 of the Code, which would require the Authority to either approve the (existing) methodology after its review or refer it back to Transpower for amendment.

16. The Authority's role with respect to transmission pricing is set out in Part 12 of the Code. It is to establish a ***process*** *for the development of the transmission pricing methodology; and any* ***guidelines*** *that Transpower must follow in developing the transmission pricing methodology* (clause 12.83, emphasis added). Subsequent to Transpower developing the methodology the Authority has a role in approving it provided it is consistent with any Part 4 determination, the Authority's statutory objective and any guidelines established under clause 12.83.

17. The ENA recognises that in order to set guidelines the Authority needs to analyse the options in sufficient detail to determine the approach that should be preferred. However, specifying the detailed methodology is the role of Transpower. The ENA requests that the Authority makes it clear the level of prescription it is intending to impose on Transpower.

18. The ENA notes that Transpower's revenue is set under Part 4 of the Commerce Act by the Commerce Commission (the Commission); that Part also sets out the net benefits test which the Commission uses to approve investments. The role of the transmission pricing methodology therefore is to (efficiently) allocate Transpower's allowed revenue (including that relating to approved new investments) amongst its customers.

19. The TPAG emphasised the importance of the interaction between the Commerce Commission's and Authority's regulation, and in particular noted that the benefits of additional locational signalling depended in part on the effectiveness of the transmission investment approval process and in this context close coordination with the Commerce Commission was required.[3]

20. This is an important part of the context of transmission prices that the Authority seems to lose sight of at times. For example, in the ENA's view the Authority consistently overestimates the ability of parties to effectively lobby to delay or bring forward investment within this framework, hence overstating the extent to which changes to the TPM can influence the dynamic efficiency of investment.

---

2 Vector Ltd, *Submission to the Electricity Authority Transmission Pricing Methodology: Beneficiaries-pay* options, 25 March 2014, paras 44-46

3 TPAG, Transmission pricing discussion paper, 7 June 2011, para 4.3.19.

3. Existing incentives in the market

21. Transmission prices do not exist in isolation. They are part of the overall system of pricing within the NZ electricity market and the Authority should also keep this context in mind when it is considering changes to the existing TPM.

22. The ENA notes that *[t]he objective of the Authority is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.* (s.15 Electricity Industry Act, 2010). The goal of changing the transmission pricing methodology should therefore be a material improvement in economic efficiency.

> *Change for the sake of change is not an objective. In particular, options that simply alter the incidence of transmission changes (which is inevitable) to the financial advantage of one party or another, but do not give rise to any material improvement, will simply impose needless additional regulatory costs. Ultimately, reform will only deliver economic benefits if desirable behavioural change is brought about. A reform option must lead to real changes in the commercial behaviour/decisions of the relevant parties, in the manner intended.*[4]

23. In principle, transmission prices can affect network use, transmission investment, and timing, nature and location of generation and load. However, other parts of the electricity market also affect these choices, for example: differences in nodal prices reflect the short run marginal opportunity cost of transmission and therefore influence some of these choices to some degree, while FTRs allow users to hedge the costs of congestion and transmission losses altering these incentives again.

24. LRMC-based pricing is not synonymous with locational pricing although it can be a way of creating particular incentives regarding location. The two concepts should not be confused, and the other (beneficiaries-pay) options being considered by the Authority also provide some incentive or signal regarding location.

25. The Electricity Commission came to the conclusion that there was limited value in providing for an enhanced locational signal to generators; it considered nodal pricing sufficient. Though the Commission did consider that there may be a more limited scope for further locational signals focusing on *options for providing incentives for participants to take action to defer or avoid reliability transmission investments where there are benefits in doing so; and options for the treatment of HVDC costs.*[5] [6] This conclusion is different to the conclusion arrived at by NERA and may be out of date as forecasts of demand and distributed generation will have changed. This question should be revisited by the Authority.

26. The relevant issue is how different types of transmission charges fit into the overall package of pricing tools. LRMC-based charges could have a place if a package that includes these types of prices provides a better signal relative to other potential

---

4 NERA New Zealand Transmission Pricing Project: A report for the New Zealand Electricity Industry Steering Group, 28 August 2009, p.1

5 Electricity Commission, Transmission Pricing Review: Stage 2 options, July 2010, para 4.1.9

6 The Authority has misinterpreted the Electricity Commission's findings in paragraph 7.3. The GEM analysis undertaken by the Commission could not assess whether there would be benefits from signalling reliability investment. The statement is of the Commission's opinion.

approaches (including the status quo, and beneficiaries pays options). It is important for the Authority to recognise that because of the substantial levels of sunk and fixed costs associated with transmission investment and the presence of loop and two-way load flows it will be impossible to design a "perfectly efficient" method of recovering transmission costs. The Authority needs to focus on the *relative efficiency* of different options within the current market structure not an impossible standard of perfect efficiency where marginal prices reflect marginal costs. As we noted in our submission on the beneficiaries pays working paper *a charge that approximates LRMC over extended periods of time (it need not be perfect) is likely to be more efficient than no such charge, or one that reflects some other economic concept (such as private benefit).*[7]

27. The Authority has not completed sufficient analysis to determine whether change is required, and if it is what the best option is. In this context, LRMC-based charges should be considered further.

4. LRMC charges

28. We commented in some detail in our submission on the beneficiaries-pay working paper on LRMC-based charges and so we do not repeat that discussion here. The Authority should refer to our submission on that working paper also, as many of those comments are relevant to this paper also, and we have not seen any analysis from the Authority to question our ideas.

29. Our submissions on the LRMC should not be interpreted as indicating the ENA's preferred approach to a TPM. In our submission on the October 2012 Issues Paper, we stated:[8]

> *What is now needed is a project and a process that builds on this [Issues Paper] and the previous TPM work and distils from it a small number of practical and well grounded proposals for the IC [interconnection] charge. We think these options need to be ranked relative to their ability to achieve the Authority's statutory objective, using consistent comparative analysis, and using the Authority's Decision-making and Economic Framework as needed. This process needs to also consider the implications each TPM option would have for the price-quality regulatory mechanisms applying to Transpower and to non-exempt EDBs and involve the Commerce Commission in these considerations.*

30. The ENA remains of the view that a consistent comparative analysis should be undertaken to determine the relative efficiency of a range of options, and therefore the best approach to a TPM.

31. In the ENA's view the LRMC-based charges working paper is written from a very negative perspective (in contrast with the beneficiaries pay working paper, for example). The Authority has listed what it terms "practicability" problems, but which are in fact elements of design none of which immediately appear insurmountable. Indeed the Authority notes three other jurisdictions where charges on a LRMC basis for

7 Electricity Networks Association *Submission on Transmission Pricing Methodology: Beneficiaries-pay options*, 24 March 2014, para 53

8 Electricity Networks Association, *Submission on Transmission Pricing Methodology Consultation Paper*, 22 February 2013, para 22

transmission or distribution are either in place or being actively considered. The ENA submits that the Authority should consider the AEMC's draft rule changes, as they may provide useful lessons for developing TPM guidelines in New Zealand.[9]

32. The Authority also notes that LRMC-based charges have been considered a number of times previously in New Zealand to varying levels of detail. The tilted postage stamp method was developed expressly to make an LRMC-based approach practicable. It has some distinct advantages to other possible options in terms of the possibility of implementing a transition path.

33. A number of these technical challenges have parallels between the two options. The Authority has either already spent time developing similar design details for the SPD based charges, or has minimised the issues involved. For example, the meshed grid presents challenges for estimating LRMC, but it also presents challenges for implementing the proposed SPD methods as the order in which assets are removed to complete the SPD "solves" affects the results.[10]

34. The Authority seems to be shying away from LRMC charges because the issues "are likely to require significant time to resolve" (para 9.5). The ENA suggests that the Authority should ensure that it does not choose to prefer beneficiaries-pay options simply because it now has a sunk investment in their design.

35. The Authority highlights the potentially volatile nature of LRMC-based charges where these are based on the next increment in capacity, or a relatively short time horizon.[11] This is not an insurmountable problem (as the Authority suggests), but rather a matter of design, and trading-off accuracy of LRMC signal with durability (a worthwhile principle for prices). For example, NERA noted this issue in their 2009 paper and suggested:

> *[I]t is likely to be more appropriate to be guided by, say, an estimate of the* average *LRMC of forecast transmission requirements in the North Island versus the South Island over a* 20- to 30-year period*, rather than focussing on a large number of more specific locations over a shorter timeframe. Although such an approach would, by definition, under- or over-estimate the current LRMC of capacity at any point in time in a particular location, it is likely to provide a more stable signal* over the longer-term.[12]

36. It is the ENA's view that the Authority has not made the case that LRMC-based charges are less practicable than SPD or beneficiaries-pay options. If the Authority can

---

9 http://www.aemc.gov.au/News-Center/What-s-New/Announcements/New-rules-proposed-for-distribution-network-prices

10 Ibid, para 50, and see also Powerco's submission to the 2012 TPM Proposal, which describes a number of examples of the scope for disputes (i.e. judgments) under the SPD method including: "as the solution of "but for asset A" plus "but for asset B" plus "but for asset C" will not necessarily equal the solution of "but for A+B+C" we would expect to see many disputes about the definitions of assets and their treatment by the SPD method." (p.3)

11 The modelling that the Authority has provided in the Appendix illustrates this result. The assumption that the Authority has made about the coincidence of the timing of capex and a significant increase in peak demand amplifies the volatility of the modelled results. In addition, the choice of a 10 year time horizon means that the volatility is greater than it would be over a longer period. This is a design parameter and a different choice could be made.

12 NERA, op cit, p.15

satisfy the jurisdictional elements we discussed in the first section, then it must give broad consideration to what is the most efficient package of charges (net of transaction costs). We note that there is no requirement that a package of charges containing a LRMC-base charge must also contain a beneficiaries-pay charge (in relation to the residual): this is a choice to be made after considering the way the charges work together and the incentives created.

37. The Authority suggests in its paper that further work is required to determine which option has the greatest net benefits. But the paper then states: "unless it is lower cost to implement than a zonal approach, the less accurate price signal means it is unlikely to provide greater net benefits than a zonal approach, although it may provide greater net benefits than the status quo." (p.8) The ENA submits that the Authority should not make policy on the basis of its opinions and must undertake this further work.

5. Conclusion

38. Fundamentally, the Authority needs to step back from what appears to be a single-minded drive to introduce a particular complex model, with little basis in transmission pricing theory, and ask whether there is benefit to providing additional locational signals in the electricity market given the existing context including nodal prices, FTRs, Part 4 of the Commerce Act and deep connection charges.

39. The ENA submits that the answer to the questions posed by the Authority in paragraph 2.7 is at least in theory yes:

> *Whether LRMC charges could be designed that:*
>
> *a) Would provide sufficiently accurate price signals to promote efficient operation of, and investment in, the electricity industry*
>
> *b) Would complement the signals provided by nodal pricing on the wholesale market*
>
> *c) Would be practicable within a regulatory environment*

40. If the Authority wishes to continue with this workstream, then it must consider a broader range of options than just the beneficiaries-pay options it has so far focused on. It cannot make policy on the basis that it has chosen to invest in developing one option to the exclusion of others without assessing which one would bring greater net benefits.