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Competitive neutrality for the connection of generation

Report to MEUG

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Preface

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1. Introduction

The Electricity Industry CEOs' Forum has set up a Steering Group to oversee a project on transmission pricing. The purpose of the project is "to determine whether consensus can be achieved on an appropriate and enduring transmission pricing methodology for New Zealand, and if so, what that methodology may be."[1] On the 2nd September 2009 the Steering Group met to consider a report from NERA Economic Consulting.[2]

The Report contains a lengthy discussion about the effects of the current transmission pricing methodology (TPM) and other regulatory provisions on generators' decisions of where to connect plant to the electricity network and the size of plant to connect. NERA's conclusions from its discussion are:

> *In light of the broad spectrum of potential connection charges for which generators may be liable to pay based on their locational decisions and the type of generation, it is not difficult to envisage generators' investments being distorted inefficiently and inappropriate incentives being created, despite the good intentions of the deep connection regime.*[3]
>
> *… it is conceivable that generation investments with significant net market benefits may be foregone in favour of less beneficial alternatives that entail lower connection costs (including embedded generation), or abandoned entirely.*[4]

The purpose of this paper is to review NERA's arguments and determine whether its concerns are well founded. In the next Section we outline what we understand to be the basis of NERA's concerns and in Section 3 we evaluate their validity. Our conclusion is contained in Section 4.

2. The basis for NERA's concerns

At a general level, NERA's concerns result from it considering the various options available for connecting a hypothetical new generator to the electricity network. It identifies five different ways the connection could be arranged and that the parties to be paid and the nature of the payments will differ depending on which option is

[1] NZ Electricity Industry Transmission Pricing Steering Group, *Review of Transmission Pricing Methodology: Terms of Reference*, November 2008. Hereinafter referred to as the Terms of Reference.

[2] NERA Economic Consulting, *New Zealand Transmission Pricing Project: A Report for the New Zealand Electricity Industry Steering Group*, 28th August 2009. Hereinafter referred to as the Report.

[3] NERA, p. 48

[4] NERA, p. 49.

chosen.[5] From this diversity of potential charges, it concludes the arrangements must inevitably lead to inefficient outcomes.

NERA's more specific concerns are that the existing arrangements create incentives for:[6]

- generators to avoid charges associated with existing connection assets, particularly if they entail long spur lines, by connecting at a grid exit/injection point or becoming embedded in a distribution network
- generators to build small plants with lower transfer capacity in order to calibrate their injections with local load or to reduce their share of connection charges for existing connection assets i.e. to "hide behind load" by reducing their AMI
- generators to avoid building near existing loads if that would result in them being forced to pay for connection assets already in existence and
- off-take customers to persuade Transpower to upgrade interconnection assets instead of installing new connection assets so that costs will be spread across users.

3. Analysis of NERA's concerns

3.1 General concern

The fact that the nature, level and recipient of charges may vary depending on how a generator connection is organised is not evidence that the charging and regulatory regime distorts incentives to invest in assets and results in their inefficient use. If the costs associated with various options differ, as is very likely in practice for options relating to connection to the electricity system, the outcome would be inefficient if charges under each option were the same. Concern should arise if there was no diversity, not because there is diversity.

The proper test for efficiency is whether the charges incentivise decision makers to make inefficient decisions, given the costs and benefits to society of the various alternatives. Inefficiency occurs if one or more options does not impose all of its associated net benefits/costs to society on the parties adopting it.

In Table 1 of its Report, NERA compares how the kind of charges faced by a generator would vary depending on how it connected to the electricity system. According to this table there are two material differences.

Firstly, a generator connecting to existing connection assets, rather than directly to a grid injection point or embedding itself in the local distribution network, would be liable for a share of the costs of the now "shared" connection charges. This concern, however, fails to take into account the "prudent discount policy" which is included in the current TPM to deal with just such situations. The purpose of the policy is to help

[5] NERA, pp. 46-7.

[6] NERA , pp. 48-9.

ensure that the TPM does not provide incentives for the uneconomic bypass of existing grid assets. The policy aims to deter investments that would allow the customer to reduce its own transmission charges while increasing the total economic costs to the nation as a whole.[7] Under the policy, Transpower can charge a customer on the assumption that it undertook the least cost approach even though the connection provided is the one of most economic benefit to society.[8]

NERA is aware the prudent discount policy is an integral part of the current TPM but claims the arrangements "only apply to the embedding of *existing generation*. New embedded generation are not eligible for prudent discounts, since to offer such discounts to discourage new embedded generation is considered contrary to the Government's policy on embedded generation."[9]

As far as we can determine, there is no such government policy. The Government Policy Statement on Electricity Governance certainly encourages distributed (i.e. embedded) generation, where it is efficient, but provides no basis for concluding that prudent discounts cannot be provided to new generation. Even if it did, Transpower is not obliged to give effect to a Government Policy Statement unless it is included in its Statement of Corporate Intent (SCI). Transpower's SCI contains no reference to any obligations regarding prudent discounts only being available to existing generators.

NERA's second difference in charges according to method of connection is that only a generator that embeds in a distribution network is entitled under regulations to a share of the interconnection charges avoided by the distributor. It is certainly correct that the pricing principles under the relevant regulations require charges to embedded generators to "be based on reasonable costs incurred by distributor to connect generator and must include *consideration of* any identifiable avoided or avoidable costs."[10]

However, irrespective of how the generator connects, provided it shares a GXP with a distributor, it should be able to negotiate with the distributor to achieve *consideration* for any reduction in interconnection charges resulting from the lower "off-take" at the distributor's grid connection point. Distributors are charged interconnection charges on the basis of the "*net* quantity of electricity flow out of the grid at a connection location into customer's assets". So a generator reducing the net flow through a GXP should lower the distributor's interconnection charges.

That transmission charges are a pass through for distributors under the threshold regime in the Commerce Act 1986 should not preclude the parties reaching an agreement provided the agreement does not involve the distributor's other customers paying more than they would in the absence of the agreement. The regulatory regime for distributors is a threshold regime aimed at ensuring prices to customers are

[7] Electricity Governance Rules, Part F, Section IV, Schedule F5, Rule 9.1.

[8] EGR, Part F, Section IV, Schedule F5, Rule 9.19.

[9] NERA, p. 48, fn 76.

[10] *Electricity Governance (Connection of Distributed Generation) Regulation 2007*, Schedule 4.

consistent with what would arise in a workably competitive market and not price control.

3.2 NERA's specific concerns

We shall consider each of NERA's specific concerns in turn.

The existing arrangements create incentives for generators to avoid charges associated with existing connection assets, particularly if they entail long spur lines, by connecting at a grid exit/injection point or becoming embedded in a distribution network.

We have already discussed this concern and how it arises because of the failure to take account of the prudent discount policy which is part of the current TPM.

The existing arrangements create incentives for generators to build small plants with lower transfer capacity in order to calibrate their injections with local load or to reduce their share of connection charges for existing connection assets i.e. to 'hide behind load' by reducing their AMI.

The existing parties using the connection assets will continue to have to pay for them irrespective of whether the generator connects. So a generator should be able to negotiate with existing connected parties about its share of the charges should it connect. If by connecting the generator would lower off-take customers' interconnection charges as well, and this is very likely, there should be plenty of scope for the parties to come to a win-win arrangement. Again, we do not see the threshold regulatory regime as interfering with the ability of the parties to reach efficient arrangements which do not disadvantage other customers in terms of the prices and charges they face.

The existing arrangements create incentives for generators to avoid building near existing loads if that would result in them being forced to pay for connection assets already in existence.

The same argument as for the previous allegation applies in this case. The parties should be able to negotiate a win-win arrangement.

The existing arrangements create incentives for off-take customers to persuade Transpower to upgrade interconnection assets instead of installing new connection assets so that costs will be spread across users.

We agree this is an incentive under the current TPM but do not understand its relevance to the issue of whether generators receive inefficient signals under the current TPM as to where and how generators should connect to the electricity network. Our proposal to incorporate a "but for" element into the TPM would go some way to addressing this issue because any investment in the interconnection assets required to meet an off-take customer's needs could be charged to the off-take customer if the TPM included this feature.

4. Conclusion

In our opinion, NERA's concerns that the combination of the current TPM and other regulatory provisions provide generators with signals to undertake inefficient decisions in relation to where to connect plant to the electricity network and the size of plant to connect do not stand up to close scrutiny. They are not well founded.