

06 January 2005

Dr John Tamblyn
Chairman
Australian Energy Market Commission
PO Box H166
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By Email: submissions@aemc.gov.au

Dear Dr Tamblyn,

TRANSMISSION PRICING: ISSUES PAPER

Origin appreciates this opportunity to provide a submission to the *Transmission Pricing: issues paper*, released by the AEMC in respect of its broader *Review of the Electricity Transmission Revenue and Pricing Rules*. Specifically we provide our views on the extent to which current cost recovery is appropriately allocated and whether transmission cost signals are sufficient to encourage efficient production, location and investment decisions in the NEM.

In summary, we consider the fixed costs of the network should continue to be recovered from customers, though we are not convinced that recovery of such costs should occur on a locational basis. Cost Reflective Network Pricing (CRNP), whether utilisation adjusted or not, is highly arbitrary and unlikely to make substantive impacts on locational or consumption decisions as a consequence of the insensitivity of demand to transmission prices. Origin therefore considers that transmission pricing for consumers could be substantially simplified.

The short term variable costs of transmission are currently borne by generators in the form of losses and constraints. Such non-firm access in combination with regional spot pricing and the longer term signals provided by the regulatory test provide substantive forward looking price signals to generators, though we note that there is scope for improving price signals and the sharing of access around intra-regional constraints.

However we do not consider that generator location signals are likely to be significantly enhanced with the introduction of a deep connection regime, as the inability to define appropriate access rights on the network preclude a workable implementation of such a regime.

We discuss our views in more detail below.

Allocation of sunk costs

The most significant component of transmission costs are fixed and sunk and should therefore be recovered in a way that minimises impacts on production and consumption decisions. This should occur, as the AEMC notes, as a fixed charge at a point where the elasticity of demand is lowest. Generators would simply attempt to recover such charges through the spot market and thereby impact energy consumption and dispatch (for instance consumption and utilisation of the network is likely to be reduced in this case whereas if applied as a fixed charge to end users this would not occur). Recovering sunk costs from generators also tends to have little signalling function because costs have already been borne and therefore cannot influence future behaviour. Consequently, Origin considers that the current regulatory framework for recovering fixed and sunk costs from end users is appropriate.

We are less convinced however of the division between postage stamped and cost reflective components in TUOS. Cost Reflective Network Pricing (CRNP) or utilisation adjusted CRNP approaches attempt to reflect the notion that some costs of the shared network have a substantial locational component. However the considerable positive externalities (reliability and security) and negative externalities (consumption and production in one area of the network affects that in other areas) inherent within transmission make any attribution of costs and benefits among customers arbitrary.

The complexity of attempting to attribute costs on a locational basis is exemplified by current approaches. For instance, the CRNP approach discourages utilisation in areas of spare capacity, the opposite of what should be intended; while utilisation adjusted CRNP confuses utilisation with congestion. That is, penalising users in highly utilised areas of the network transmission is only efficient where high utilisation causes congestion; at all other times high transmission utilisation is arguably efficient. A CRNP approach adjusted for utilisation effectively requires consumers to pay for future augmentation costs which may never be needed.

In any case, it is debatable whether most consumers really do or can respond to locational signals, since most are subject to averaged distribution prices and transmission costs typically only makes up a very small component of final energy prices (10 per cent or less). Large business or industrial consumers may also be constrained in responding to locational signals by more important requirements for access to other industry or infrastructure such as roads, ports or rail (for instance the location of a steel plant is unlikely to be influenced by locational transmission prices). As a consequence consumers are likely to be insensitive to locational transmission price signals, which thereby further diminishes the value of CRNP type approaches in establishing such signals.

Origin therefore considers that TUOS may be more simply and transparently recovered as 100% postage stamped charge (and ideally as a fixed rather than variable charge to minimise impact on consumption decisions). We consider that a simple, transparent and stable transmission charging regime for customers (as well as for generators) will facilitate non-discriminatory access to the network and thereby encourage competition in downstream markets.

Origin also notes that such an approach to transmission pricing is consistent with those applied in North America.

Allocation of variable costs

The variable costs of transmission are largely constraints and losses, and thus effectively do not need to be separately charged for by transmission companies. In principle, when combined with a regional pricing framework these should provide incentives for appropriate locational decisions, all other things equal (such as required access to fuel sources etc). For example, the more distant from a load a generator locates the higher the cost in losses it suffers, or if it locates in a highly congested area it may be constrained off the network. In this way constraints and losses encourage generators to locate in less congested areas and/or closer to loads (near regional reference nodes) minimising transmission costs over time. Indeed, losses and constraints can have significant impacts on generator profitability and thus should provide strong locational incentives.

However, some participants in the NEM disagree that these short term non-price signals are strong enough. They argue that because loss signals within regions are averaged and have also until recently been backward looking, their signalling function is substantially diluted. They also consider that non-firm access provides inappropriate locational incentives for the following reasons:

- When a generator gets constrained off it receives a higher price than its bid for the volume it dispatches (due to out of merit supply) and thus the revenue it achieves in this situation will in some cases exceed that which it loses through reduced output.
- Moreover, constrained generators cannot influence price so are able to outbid unconstrained generators whose bids do affect price (and are subsequently more likely to achieve dispatch). These advantages may to some extent counteract incentives not to locate in constrained regions.
- A new entrant locating in a constrained part of the network adds to congestion but may not face the full costs of the congestion it imposes on the network. This is because access to constrained capacity is allocated among generators based on bids in the first instance and then shared in the case of a tie (and this is highly likely if the bids generators submit do not influence market price since they will subsequently have strong incentives to bid at the price floor). The new-entrant's congestion signal is therefore diluted in proportion to the number of existing generators in the constrained region.

However, Origin is unaware of any evidence that suggests locational decisions by generators have as a general rule been inefficient. Investment to date has occurred in the right areas at the right times taking into account a mix of factors such as access to cheap fuel sources, regional prices, access to load and transmission costs (while often generators have located near cheap fuel sources this is surely appropriate); which appears to suggest that the purported deficiencies of current locational decisions may be overstated.

Concerns over insufficient locational signals may be exaggerated because; firstly, such signals only form one element of many to be considered in the investment decision, perhaps dominated by access to cheap fuel sources, infrastructure and land.

Secondly, the methodology for calculating losses has recently been changed from a backward looking to a forward looking approach, which should substantially improve their signalling function. There is also value in averaging losses since this stabilises the cost

signal. Dynamically varying loss signals (like nodal pricing) at an intra regional level are likely to be volatile and unpredictable consequently undermining their value as locational signals.

Thirdly, in respect of constraints, it is in fact the unpredictability of the potential commercial impact of constraints that should discourage location in constrained areas. While we acknowledge that constraints may at times increase revenues for constrained off generators, the key point is that this would be impossible to predict with any certainty *ex ante*. Unless a generator locating in a constrained area is able to predict over the life time of the investment that, on average, revenues from being constrained off will exceed the loss in revenue from reduced output at these times, the disincentive to locate in these areas should hold.

In any case, we note that the AEMC is about to commence consultation on improving price signals around intra-regional constraints, which should lead to greater consistency between pricing and dispatch and thus reduce a key inadvertent benefit of situating behind constraints (being able to bid excessively low and knowing this will not influence market price). Origin supports this review and considers that there may be some value in improving price signals in highly constrained areas of the network.

Fourthly, Origin disagrees with the view that a sharing of congestion costs between incumbents and new entrant distorts locational signals. We consider that it is appropriate that congestion costs are shared simply because there is no alternative in electricity networks characterised by substantive network externalities. A theoretically appropriate allocation of congestion costs would require users to have clearly defined firm access rights, where those exceeding their rights would compensate those whose level of access falls below their allocated rights (due to congestion). However, variations in the distribution of dispatch and demand in one area of the network (which also changes dynamically with new investment) may have significant impacts on energy flows and subsequent line loadings in other areas, which thus make it highly complex to attribute the cause of reductions in access to specific parties¹.

Moreover, implementing access rights on a shared network, particularly where they are difficult to define and vary over time with changes to the configuration of the network (due to new generation and transmission investment), may undermine principles of open non-discriminatory access and thus deter competition across the network.

As a consequence, a well specified and transparent sharing mechanism for congestion costs (which thereby determines an equitable level of access to constrained capacity), which takes into account bids and constraint impacts where feasible, is likely to provide the most correct locational signals possible, while at the same time minimising potential impacts on competition and investment. In this context we look forward to the forthcoming congestion management review, which will explicitly review current mechanisms for sharing access to constrained capacity (which we do agree could benefit from some refinement).

¹ A good discussion of the difficulties in establishing access rights can be found in paper prepared for the ACCC by Daryl Biggar, "Understanding Constraint Support Pricing / Constraint Support Contracts", 21 October 2004

Allocation of long run costs

Currently generators do not pay a direct charge for the long run cost (LRMC) of the network. However, the consideration of network LRMC by generators is implicit in the application of the regulatory test. The regulatory test can be considered to encourage appropriate location decisions because locating in congested areas or at a distance from load centres could incur substantial transmission augmentation costs for new generators. Only where such investments have net market benefits or reliability benefits are they not directly paid for by generators; they must bear the costs of transmission in cases where there location is of benefit to the Generator only.

This approach implies that generators as a general rule will tend to pay for connection assets and customers will pay for augmentations (generally including incremental augmentations occurring as a result of the connection) in the shared network. We consider this to be entirely appropriate in that it is ultimately customers as a class that benefit from an expanded shared network through improved reliability benefits and lower prices due to greater competition and trade.

While this provides an in principle argument against imposing deep connection charges to new generators, there is also a more practical defence of a shallow charging regime. As the AEMC itself notes, moving to a deep connection regime in the absence of firm access rights may deter efficient connections because the connecting party is unable to capture the full benefits its deep augmentation brings to the network (because of economies of scale and scope of transmission).

However, as we have already noted Origin does not consider that a workable regime of property rights is feasible because of the essential difficulty in allocating to individual parties the costs and benefits of augmenting the shared network. It should also be noted that to the extent that incumbent generators have not had to pay deep connection costs imposing such charges on new entrants provides as inadvertent competitive advantage to the former.

Thus, in our view, a deep connection regime in these circumstances would be inefficient and undermine new entry and investment in the NEM. Origin considers that customers as a class are the principal beneficiaries of expanding the shared network and should therefore appropriately pay for deep connection costs.

Conclusion

Origin considers that the fixed costs and sunk costs transmission should continue to be recovered from consumers, though the current location recovery of such costs from consumers may be arbitrary and ineffective. In our view, the transmission pricing regime would benefit from replacing CRNP with fully postage stamped charges (substantially simplifying TUOS).

The transmission pricing regime with respect to generators is largely appropriate. That is, generators face the direct variable costs of transmission in the form of losses and constraints as well as longer term signals in form of the regulatory test. We believe these signals in combination with the current regional pricing regime to be largely sufficient for encouraging appropriate location and dispatch decisions in the NEM.



Any moves to impose a deep connection charges on new connections in an attempt to bolster long term locational signals we consider to be infeasible in the absence of a workable transmission rights regime, and ultimately will deter new entry and investment in the NEM.

However, we acknowledge that there is some scope for refinements in price signalling around intra-regional constraints and the sharing of access to constrained capacity. Origin looks forward to making contribution to the forthcoming congestion management review addressing these issues.

Please do not hesitate to contact Con van Kemenade on 02 8345 5278 if you wish to discuss any of these matters further.

Yours Sincerely,

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