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Submission

Review of the Electricity Transmission Revenue Pricing Rules Scoping Paper

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1. Introduction

Investment in transmission infrastructure across the National Electricity Market (NEM) is currently neither efficient nor timely. The pattern of investment also encourages the inefficient use of energy services by consumers, contrary to the National Electricity Law (NEL) objective. While improvements to transmission regulation are part of an overall solution, a whole of system approach that goes beyond pricing and revenue regulation, and beyond the narrow focus on transmission networks, would be preferable to the limited scope proposed by this review.

In order to make transmission network investments more timely and efficient it is necessary to first review energy services from the perspective of consumers – what do they need and how can this need be delivered at the lowest cost (including environmental and social costs)? Such a review would necessitate the investigation of interval metering and uninterruptible power supplies and then work its way up through retail, distribution and transmission networks and generation to comprehend how best these can be regulated to deliver the desired outcomes.

Despite these reservations, Total Environment Centre's addresses the issues raised in the Scoping Paper and focuses on the aspects of current transmission pricing and revenue regulation that create barriers to non-network approaches.

As with the Scoping Paper, the current transmission network revenue and pricing Rules are inappropriately focused on the supply of electricity at the expense of a focus on the provision of energy services, including demand side or other non-network approaches. The current focus on generation and supply has resulted in:

- enormous and unnecessary costs of inefficient network investment;
- hidden subsidies to new, remote generators;
- the erasure of accurate price signals at multiple points throughout the NEM, including transmission networks;
- the creation of a less reliable electricity system that is reliant of a few large generators;
- barriers to distributed generators and demand management (DM) providers; and,
- a greenhouse gas emission intense electricity system that brings with it a disproportionate risk of future carbon liabilities.

2. Need *for comprehensive review of the potential of and barriers to demand management and distributed generation in the NEM*

Regulation to enhance the utilisation of demand management and distributed generation is minimal in network regulation throughout the NEM. It is virtually non-existent in transmission network regulation. It is also relegated to an inappropriately minor status by the Scoping Paper. This is in contrast to the huge potential for savings from non-network approaches and the urgent need for such regulation to create a more efficient and reliable electricity supply system and to reduce consumers' electricity bills.

Total Environment Centre has previously pointed out the ways in which the regulation of transmission pricing could be improved to encourage DM responses to network constraints. In '**Demand Management and the National Electricity Market**', for example, case studies set out the failure of two transmission network service providers (TNSPs) – TransGrid and VENCorp - to consider and/or implement viable, cost-effective DM solutions despite the savings on offer.[1] In the case of TransGrid, the particularly flawed decision to augment the Sydney CBD supply instead of implementing more cost-effective options has been extensively documented in subsequent reviews by the ACCC.[2] We encourage the AEMC to review the case studies in the attached report to further understand the array of barriers facing DM in the NEM.

The TransGrid CBD augmentation problem is merely one example of many transmission augmentations across the NEM that fail to properly investigate or undertake cost-effective non-network solutions. The failure of the regulatory bodies to undertake a comprehensive review of the barriers to DM and distributed generation will only prolong the losses to consumers as they pay for expensive and unnecessary investments by the monopoly networks. To address this problem, it is recommended that the AEMC undertakes a comprehensive review of the potential of and barriers to DM and distributed generation across the NEM.

Recommendation: The AEMC initiate a comprehensive review of the potential of and barriers to demand management and distributed generation in the NEM.

3. Revenue

3.1 Need for revenue cap

The role of the revenue cap is an important means of encouraging networks to carry out their investments prudently. Without such a cap, networks have a reduced incentive to carry out their operations within budget, and could instead

[1] At Appendix 1, Total Environment Centre, *Demand Management and the National Electricity Market*, 2004
[2] For example, Mountain Associates for ACCC, *An assessment of the prudency of TransGrid's investment in the MetroGrid project*, April 2004.

seek to make up for the shortfall by encouraging greater consumption of electricity.

A more critical problem with price cap regulation, however, is the lost incentive for non-network solutions to transmission constraints. In contrast, under a price cap, networks have an incentive to sell more electricity. As Gavin McDonell points out:

> One of the most deficient aspects of price cap regulation is that it *provides the incentives to increase the transport of energy through the grid*, since the greater the quantity of energy moved, the greater the revenue and hence the opportunity for profits. That is, *this system of regulation provides direct incentives both to increase industry's economic costs* and *to encourage greater household demand.*[3]

If, as we recommend, incentives for demand management are adopted in the regulation of pricing, a price cap would undermine such incentives.

Recommendation: The current CPI-X building block approach to maximum allowable revenue should be retained.

3.2 Clarify treatment of expenditure on non-network solutions

There is currently no guidance for the treatment of expenditure on non-network solutions to transmission constraints. This issue has been identified repeatedly as one of the key barriers to investment in non-network solutions.[4] An example of the problem is outlined by National Economic Research Associates in its report for TransGrid:

> **The Inclusion of DSM Expenditure in TNSPs' Revenue Requirement**
>
> Many of the DSM programs included in our assessment rely on the payment of subsidies to consumers to provide them with an incentive to adopt more energy efficient technologies. However, there remains a degree of uncertainty as to whether the expenditure associated with any funding by TransGrid of such DSM programs could be included in its regulated revenue requirement.
>
> Clause 5.6.2(k) of the Code states that the costs of the relevant assets for the 'project' arranged by the NSP are to be included in the calculation of network prices. The term 'project' would appear to be a generic term that includes network augmentation, generation, DSM or another alternative. However, alternatives other than network augmentation or generation options are not explicitly included in clause 6.2.4(c) of the Code, which covers the factors that should be considered in determining the regulated revenue requirement.

[3] Gavin McDonell, *COAG's Quandary: What to do with the Energy Markets Reform Program?*, February 2005, p. 36 (italics in original).
[4] For example, IPART, *Inquiry into the Role of Demand Management and Other Options in the Provision of Energy Services*, Oct 2002, Recommendation 7; and Australian Ecogeneration Association, *COAG Energy Market Review Issues Paper*, April 2002; National Economic Research Associates for TransGrid, *Augmentation of Supply to the Western Are: Preliminary Cost Effectiveness Analysis*, May 2003, p. 40.

> IPART, in its determination in relation to the NSW distribution network service providers (DNSPs), explicitly stated that: 'If a network commits expenditure on network support through non-network means, this expenditure would be recovered on the same basis as direct expenditure in its network.' IPART goes on to note that this cost-recovery would be subject to the same 'efficient cost' assessment as applied to network expenditure. In its recent Issues Paper in relation to the regulatory period from 1 July 2004, IPART has expressed a preference for passing DSM costs through with transmission payments.
>
> In contrast, the ACCC has not made any firm statement in relation to the treatment of DSM expenditure. The issue of the inclusion of non-network expenditure is not explicitly covered in the ACCC's Draft Statement of Principles for the Regulation of Transmission Revenues. The ACCC's decisions in relation to transmission network service providers (TNSPs) have noted only that the ACCC is 'mindful' that alternatives to capex proposals can include DSM alternatives, and have not explicitly addressed the issue of how expenditure on such alternatives will be recovered.
>
> Any uncertainty as to the regulatory treatment of DSM-related expenditure by TNSPs has the potential to undermine the practical consideration of such alternatives. We would recommend that the ACCC include a statement in its final Statement of Principles as to how expenditure on DSM will be recovered, in order to remove the current uncertainty. [5]

To encourage TNSPs to undertake cost-effective expenditure on non-network solutions there is clearly a need to provide certainty as to the way in which those expenditures will be treated and the rate of return that those expenditures could be expected to deliver.

Recommendation: The AEMC should investigate and formally set out the treatment of avoided TUoS and DUoS costs.

3.3 Incentive mechanisms for demand management

At present the absence of incentive mechanisms for the implementation of demand management and other non-network solutions is resulting in inefficient, peak-demand driven transmission infrastructure investments. Incentive mechanisms for the pass-through of DM costs are needed to counter the inappropriate and inefficient focus on the supply-side of energy service provision in the NEM.

The recent 'D-factor' incentive mechanism initiated by the Independent Pricing and Regulatory Tribunal (IPART) in its determination for NSW DNSPs has helped to catalyse networks into investigating and carrying out cost-effective DM solutions. It enables networks to pass-through the costs of DM projects, ensuring an appropriate rate of return on this investment. More broadly, it is helping to create a viable DM provider industry that is able to respond to networks' calls for

5 National Economic Research Associates for TransGrid, *Augmentation of Supply to the Western Are: Preliminary Cost Effectiveness Analysis*, May 2003, p. 40.

DM. The response to the D-factor incentive mechanism in NSW to date is promising, indicating that this approach is a valid means of capturing savings from more timely and more efficient network investment.

Recommendation: The AEMC should investigate mandatory incentive mechanisms to encourage DM solutions to transmission network constraints.

3.4 Assessing the prudency of network spending

In order to ensure that TNSPs properly consider non-network solutions to network constraints, it is essential that regulators undertake a meaningful and substantiated assessment of past network investment and disallow recovery of imprudent investment that should have been deferred. While examples of the failure of TNSPs to undertake appropriate investigation and consideration of DM are numerous throughout the NEM, the more recent example of TransGrid's failure to undertake the most cost-effective response to the constraints to the Sydney CBD were highlighted by the ACCC's final determination in which it penalised TransGrid for this failure.

Recommendation: The AEMC should develop protocols to ensure that the AER undertakes a meaningful and substantiated assessment of past network investment and disallow recovery of imprudent investment that should have been deferred through the use of DM or distributed generation.

4. Pricing

4.1 The allocation of costs between generators and customers

Allowing all network costs except connection costs to be passed on to electricity consumers provides a hidden and perverse subsidy to generators, in particular, large generators. This subsidy creates an inappropriate advantage for large, remote generators at the expense of more efficient small, distributed generators and DM providers.

Recommendation: The AEMC should review the allocation of network charges to consumers and seek to ensure that the majority of network augmentation costs caused by new generators is appropriately allocated to those generators.

4.2 Entry charges for generators and allocation of shared network costs

Current pricing arrangements fail to properly allocate the full network costs of the connection of large, remote generators. The full costs of network augmentations that are required as a result of these generators' operation should be charged to the causer of those augmentations – the generators. The failure of the TNSPs to charge these generators 'deep' connection costs results an unfair and inefficient subsidisation of large, remote generators at the expense of more efficient small, distributed generators and DM providers. Without an indication of the full,

network-wide costs of the augmentations caused by new generation, it is unreasonable to expect that an accurate discount for avoided TUoS charges can be established.

Recommendation: The AEMC should review the allocation of charges to new remote generators and seek to ensure that the full network augmentation costs required as a result of their operation be included in connection costs.

4.6 TUoS rebates

Embedded generation offers a range of benefits not entirely reflected in avoided TUoS rebates. In particular, embedded generation offers value to a TNSP through its potential to enable the deferral of new transmission augmentation. Embedded generation also offers the benefit of reducing environmentally damaging greenhouse gas emissions, the cost of which is currently externalised in the NEM. The value of TUoS rebates should include the value of deferral of new network augmentations and should include the following:

- Annual operating cost of the deferred augmentation
- Total annual net cost of servicing the capital expenditure of the deferred augmentation including:
    - financing charges
    - capital depreciation

Including the full value of deferral of network augmentations in the calculation of TUoS rebates would provide more accurate price signals to distributed generators and DM providers. Such an approach would also encourage TNSPs to more fully utilise the benefits of non-network solutions, to the benefit of electricity consumers.

Recommendation: The AEMC should review the valuation method for TUoS rebates to ensure that embedded generators and DM providers obtain the full value of transmission infrastructure deferral.

4.2 Congestion costs

Congestion costs are integral to the determination of the value of non-network solutions to network constraints such as demand management and distributed generation. Without accurate prices that signal congestion, it is difficult to determine the appropriate price discounts for providers of non-network solutions.

Recommendation: The AEMC should review the absence of price signals that indicate congestion costs with a view to the inclusion of congestion costs variable.

4.8 Time of use pricing

At present, investment in transmission infrastructure is driven by peak-demand that usually only occurs for a few hours every year. This results in very inefficient transmission network augmentations that are built to service a small percentage of demand. It is therefore inappropriate that the Rules offer TNSPs discretion over the structure of usage prices. The failure of prices to reflect the relationship between time of use and peak-driven network augmentations ensures inefficiency and higher prices for consumers. It also creates an inappropriate subsidy of consumers with high, peak electricity demand by those that consume less and at more appropriate times. By obscuring this important pricing information from consumers and DNSPs, excessive and inefficient consumption is encouraged, unnecessarily raising prices for consumers.

Recommendation: The AEMC reviews the price structure of 'off-take' customers to ensure that appropriate time-of-use price signals are passed through to distribution networks and consumers.

6. Non-transmission alternatives - testing the market for demand management prior to augmentation decisions

A further issue that has not been considered in the Scoping Paper, but which is integral to the regulation of TNSP revenue and pricing, is the planning processes that TNSPs are required to undertake under the Rules. Currently, TNSPs are not required to solicit proposals for alternative non-network solutions before deciding to augment their networks. This creates a natural barrier for cost-effective non-network solutions and forecloses on the potential for networks to operate more efficiently by avoiding unnecessary or premature network augmentations, and thereby create savings for consumers.

Before TNSPs undertake major network augmentations, they should be required to solicit proposals for alternative non-network solutions. This would involve clear protocols for information disclosure, specification of constraints, requests for proposals, and evaluation of proposals. To facilitate this process, the AEMC and the AER should promote a comprehensive approach through mandatory DM Codes of Practice for network service providers. This would be a key step in facilitating a DM services market. Furthermore, recognising that transaction costs of participating in a request for proposal process would be very high for many small DM opportunities, the AEMC should also promote standing offers for small DM services.

NSW has begun adopting such an approach for distribution network service providers, which is detailed through a DM Code of Practice.[6] A central feature of the DM Code of Practice is that it requires NSPs to provide planning information and solicit Requests for Proposal from DM service providers and providers of other non-network options.

[6] Department of Energy, Utilities and Sustainability, *Demand Management for Electricity Distributors – NSW Code of Practice*, September 2004.

A DM Code of Practice requiring testing of the market prior to adopting network augmentation decisions would have two primary benefits. First, it would lay out in some detail key steps for TNSPs to take in investigating the opportunity to avoid or defer network augmentation. This goes well beyond the general guidance provided in the Rules, which require only that NSPs identify and examine DM and other non-network options.

Second, such a DM Code of Practice should ultimately encourage proponents of DM services to come forward. In particular, a DM Code of Practice increases the transparency of the network evaluation process by requiring TNSPs to provide access to the information. It also should increase proponents' confidence that their proposals will be appropriately evaluated. In contrast, while DM proponents are free to come forward in the current planning approach, their proposals need not be specifically sought, and it is unclear how such proposals would be treated.

Recommendation: As part of a comprehensive review of the potential of and barriers to demand management and distributed generation, the AEMC should investigate the benefits of regulation that ensures TNSPs solicit proposals for alternative non-network solutions before undertaking major network augmentations.

7. Information disclosure

The timely, annual public disclosure of information on emerging network constraints is essential to the development of non-network responses to constraints. Information presented both in tables and in map form is necessary to engage non-network providers. An excellent model for the disclosure of such information is currently part of the NSW DM Code of Practice.

The DM Code of Practice contains a Disclosure Protocol that is intended to ensure that distributors provide all necessary information in a clear and consistent form, without wasting effort in providing unnecessary information. To encourage the uptake of cost-effective non-network alternatives to transmission augmentation, such information should be required of TNSPs.

Recommendation: As part of a comprehensive review of the potential of and barriers to demand management and distributed generation, the AEMC should investigate the benefits of annual, public disclosure protocols on emerging network constraints.