ELECTRICITY TRANSMISSION NETWORK owners forum

15 February 2008

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Dear Dr Tamblyn

REGULATORY TEST THRESHOLDS AND INFORMATION DISCLOSURE ON NETWORK REPLACEMENTS

The Electricity Transmission Network Owners Forum (ETNOF) appreciates the opportunity make this submission to the Commission's Initial Consultation on the Regulatory Test Thresholds and Information Disclosure on Network Replacements Rule Change Proposal.

ETNOF's submission to the Initial Consultation is attached.

If you have any questions or require clarification of any aspect regarding this submission please contact me on (07) 3860 2143.

Yours sincerely,

Merryn York
CONVENOR
REGULATORY MANAGERS GROUP

Attach.

ELECTRICITY TRANSMISSION NETWORK owners

ETNOF Rule Change Proposal - Regulatory Test Thresholds and Information Disclosure

ETNOF Response to AEMC Consultation

15 February 2008

TransGrid ElectraNet electricity transmission Powerlink TRANSEND SP AusNet

1. Introduction

This submission is made in response to the Australian Energy Market Commission's (AEMC's) initial consultation on ETNOF's Rule Change Proposal relating to augmentation asset thresholds under the Regulatory Test and information disclosure requirements for network replacements. The submission is made by the Electricity Transmission Network Owners Forum (ETNOF), which comprises ElectraNet Pty Ltd, Powerlink Queensland, SP AusNet, Transend Networks Pty Ltd and TransGrid.

ETNOF appreciates the opportunity to provide additional information on this matter and to answer the specific questions raised by the AEMC.

2. Relevance of the Investment Thresholds for Public Consultation

ETNOF would like to clarify a number of aspects associated with the provision of information by TNSPs to market participants and to potential non-network solution providers. ETNOF is concerned that the Regulatory Test consultation processes set out in the National Electricity Rules are viewed by Market Participants as the primary vehicle for communicating information on emerging network needs and opportunities for non-network alternatives. While there is an inter-relationship between the thresholds and the consultation processes specifically associated with the Regulatory Test, increasing the thresholds will not reduce the information made available by TNSPs to market participants or the opportunities for non-network solution providers to offer alternatives.

The main reasons for this are discussed further in the remainder of this section.

2.1 Consultation Processes

To put the discussion about network investments in context, ETNOF considers it useful to provide an overview of the key avenues through which information on emerging network limitations and prospective network developments is currently made available to the market.

In particular, it should be noted that the Regulatory Test consultation process is the last in a series of information disclosures which are provided to the market and made publicly available prior to the decision being made as to the most efficient option (either network or non-network) to implement in order to address the identified need. In fact, the Regulatory Test consultation process is specifically related to an individual investment decision.

Annual National Transmission Statement

As conceived by the Ministerial Council on Energy (MCE), the purpose of the Annual National Transmission Statement (ANTS) published by NEMMCO is to provide an integrated overview of the current state and potential future development of major national transmission flows. The ANTS includes:

- forecasts of future constraints affecting the major national transmission flow paths; and

- information on the nature, costs, scope, impacts and potential timing of augmentation proposals identified in the Annual Planning Reports of individual TNSPs and the ANTS review that relate to major national transmission flow paths.

The ANTS is designed to synthesise and build upon network planning information from existing sources in a single transmission statement which:

- details the major national transmission flow paths;
- forecasts interconnector constraints; and
- identifies options to relieve those constraints.

In developing the ANTS, TNSPs necessarily provide information to NEMMCO on conceptual augmentations upon which NEMMCO undertakes scoping studies and market simulations to forecast flow path utilisation and congestion over a 13-year outlook period. In doing so, a prioritised list of conceptual augmentations is developed which provides an indication of where further and more targeted investigations might occur in the future.

Annual Planning Report

The Rules[1] require that TNSPs publish information on forecast loads, planning proposals for future connection points, forecast constraints as well as specific information in relation to all proposed augmentations to the network. This information is released annually, with an outlook of 1, 3 and 5 years into the future. Among other things, Annual Planning Reports are aimed at providing information to inform and assist interested parties to:

- identify locations that would benefit from significant electricity supply capability or demand side management initiatives;
- identify locations where major industrial loads could be connected;
- understand how the electricity supply system affects their needs;
- consider the transmission network's capability to transfer quantities of bulk electrical energy; and
- provide input into the future development of the transmission network.

The early provision of this information to the market is specifically aimed at providing appropriate lead times for proponents of alternative solutions to develop proposals.

Regulatory Test

In addition to the information provided in the 13-year outlook contained in the ANTS and 1, 3 and 5-year outlook in a TNSP's Annual Planning Report, the Regulatory Test places additional obligations on a TNSP to consult with registered participants, NEMMCO and interested parties on new small and large transmission network assets. It should be noted that the Regulatory Test consultation process is the final stage at which information relating to an emerging network need is made publicly available prior to the decision being made as to the most efficient option (either network or non-network) to implement in order to address the identified need.

[1] National Electricity Rules, section 5.6.2A.

2.2 Economics of Network Capital Investment and Non-Network Solutions

ETNOF's Rule Change Proposal identifies that, in light of its collective experience with applying the Regulatory Test and public consultation processes over the last six years, the overwhelming majority of opportunities for efficient non-network alternatives arise at thresholds much greater than the current $10 million threshold for new large network assets established in the Rules. In fact, non-network options that were clearly commercially and technically feasible were provided as alternatives to network investments estimated to cost a minimum of $33 million ($2001/02).

This experience demonstrates that non-network solutions appear only to be viable as alternatives to large (approximately $35 million) network augmentations. ETNOF considers that this can be explained by considering the relativities between the size of the capital investment and the likely dollars available for non-network solutions. Transmission network investments are long-lived so the annual transmission revenue requirement to support the investment is comparatively low. For example, in its contingent project application for additional revenue to support the costs of under grounding a section of a new transmission line, Powerlink sought additional revenue averaging $1.35 million per annum over a four year period to support an incremental capital expenditure of $21.1 million.

A potential non-network solution proposal, looking to be an alternative to a possible $35 million transmission network investment, would be compared to a $2 - $3 million per annum revenue stream from a network investment for however many years it actually defers the network investment. If the non-network solution is only required for a few years, and a return on and of the investment is required within those few years, a much lower capital investment will result in the annual cost of the non-network solution exceeding the alternative transmission revenue requirement, and so be uneconomic.

As a result, increasing the thresholds for the Regulatory Test will not diminish the opportunities for non-network alternatives to transmission investment. In fact, it may serve to focus the attention of providers of non-network alternatives on those investment opportunities that are most likely to be economically viable and serve to increase the overall efficiency of the NEM.

3. Availability and Viability of Non-Network Solutions

3.1 Existence of DM

ETNOF recognises the benefits of small scale demand management solutions and acknowledges that such solutions can provide broader network benefits in their ability to defer transmission network investment for relatively short periods of time. Such solutions are generally implemented at the distribution level, and TNSPs account for these initiatives at the transmission level in their Annual Planning Reports and Regulatory Test information through the demand and energy forecasts provided by DNSPs. These include all existing and foreseen DSM initiatives such as hot water switching activities, time of use metering and other controlled load measures.

ETNOF accepts that the detailed nature and extent of demand management measures may not be easily identifiable or quantifiable from publicly available transmission network planning documents. As a result, a number of interested stakeholders may not be aware of its existence. Given that demand management initiatives tend to be undertaken at the distribution network level, this is perhaps one area in which the AEMC could provide additional incentives for distributors to provide additional information to the market.

The key point is that TNSPs currently take account of all such demand management measures when developing options to address an identified network need.

Another consideration is that, from a transmission planning perspective, it is often impractical to consider demand management solutions on the transmission network that defer the need for augmentation for periods of only a few months. The lumpy nature of transmission investment, especially where demand-driven augmentations are concerned, means that large demand management initiatives would be required to economically defer transmission investment for a year or more.

ETNOF refers the AEMC to its recent submission in response to the TEC Rule Change Proposal on Demand Management for further details on this matter.

3.2 Performance Standards for Non-Network Solutions

An important issue raised by ETNOF and/or individual TNSPs in previous forums[2], is that a significant factor in determining the comparative economics of non-network options relates to performance standards. In particular, TNSPs have found that while non-network solution proponents may be willing to put forward potential solutions to address certain network limitations, the general tendency has been for such proponents to be much less willing to accept appropriate responsibility for performance in providing services required to meet a TNSPs mandated reliability obligations (e.g. penalties for non-performance).

In South Australia this issue has been recognised by ESCOSA by the introduction of network support standards in the Electricity Transmission Code that must be met by the TNSP in any arrangements made with service providers for the provision of non-network alternatives.

Under the National Electricity Law, TNSPs are also exposed to unlimited liability if found negligent for loss of supply to network users or have acted in bad faith. Consequently, acceptance of appropriate performance standards by network support service providers is an important consideration in investigating the efficiency of non-network proposals.

4. Actual Cost Movements

The ETNOF proposal to increase the Regulatory Test thresholds is based on the practical experience of ETNOF members in working with the consultation processes and implementing non-network solutions over the last six years. It is not based on the significant increases in costs for transmission investment that have been experienced in recent years. Nevertheless the AEMC has requested that ETNOF provide information on these actual cost increases in order to better inform the Rule change process.

To illustrate how transmission investment costs have increased over time, information is provided on:

- movements in relevant input costs; and
- the actual cost of construction of certain types of projects.

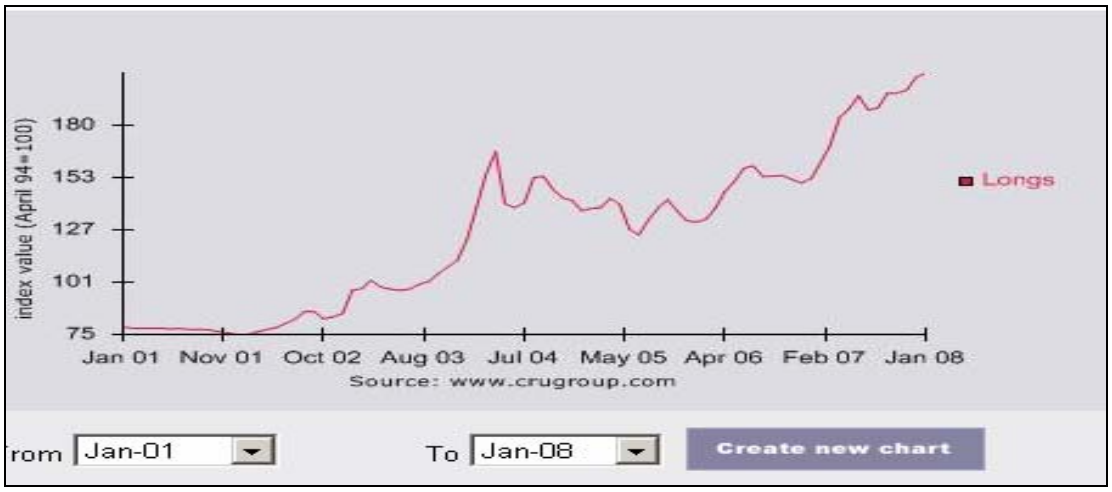
[2] For example, ETNOF Submission to AEMC in response to TEC Rule Change Proposal – Demand Management, 1 February 2008.

Materials Input Costs

Steel and aluminium represent major component costs in the construction of electricity transmission infrastructure. Aluminium is used in the manufacture of conductors and steel is used in towers, poles as well as substation structures. Aluminium and steel comprise approximately 30 per cent and 25 per cent of transmission line costs, respectively.

The charts below show the movements in the steel, aluminium and copper indices (in USD/t) sourced from CRU and London Metals Exchange (LME).

Figure 1: CRU Steel Longs Index



Between January 2002 and January 2008, the CRU steel price index has increased by more than 170%, of which significant escalation has occurred in two waves between late 2001 and mid 2004 and between mid 2005 and the present.

There has also been a steady increase in the LME aluminium index since 2002, exhibiting close to an 80% increase between 2002 and 2008 (see Figure 2).

Figure 2: LME Aluminium Index

Over the same period, copper prices at the London Metals Exchange have risen significantly, with more than a four-fold increase on 2002 index levels at the current time (see Figure 3).

Figure 3: CRU Copper Index

Plant and Equipment

The information above demonstrates that metals prices have undergone significant increase since 2001. As a result, the price of goods manufactured from these metals has also increased. For example, the AER's independent consultants (PB Associates)[3] noted that:

> "… cost increases experienced by Powerlink between 2005 and 2007 are as follows:
>
> - 375 MVA, 275/110kV auto transformers – 41%;
> - 160 MVA, 132/66/11kV auto transformers – 38%; and
> - 100 MVA, 132/66/11kV auto transformers – 27%."

As part of its review, the AER's consultants were also satisfied that the currently higher purchase price of SVCs through competitive tendering processes was reasonable and consistent with the higher costs currently being paid for power transformers noted above.

The experience of TransGrid is similar, where the cost of high voltage transformers has also increased dramatically. For example, 330kV, 375MVA transformers currently cost close to 80% more than 2001 levels. Similarly, 132kV, 60MVA transformers have doubled in price over the same period.

Labour

In addition to the general increase in base materials prices, the construction and mining industries in particular have experienced upwards pressure in labour costs in order to

[3] PB Associates (2007), Powerlink Revenue Reset, Review of Powerlink's Supplementary Submission, Prepared for the Australian Energy Regulator, June, p9 and p11.

attract and retain necessary skilled labour resources. Since around 2005, while these pressures have been most prevalent in Queensland and Western Australia, the impact of the well-publicised skills shortage has been widespread across Australia. Like many other industries, labour cost increases have significantly impacted the construction cost of electricity transmission projects.

The escalation in labour costs is a key issue for TNSPs and the Australian Energy Regulator (AER) as part of the revenue cap determination process. As part of these recent processes, a number of independent reports were published on this issue, including from Synergies Economic Consulting, BIS Shrapnel and Access Economics.

Looking at historical trends, the labour price index in the electricity, gas and water supply industries has grown by an average of 4.7% per annum over the five years from 2002 to 2006 alone[4], not including the additional uplift occurring since then as a result of the skills shortage. Based upon information from the Australian Bureau of Statistics, BIS Shrapnel identified that:

> "Growth over the past 18 months (to April 2007), is the fastest rate of growth in the LPI for the electricity, gas and water sector since its inception in 1997, and is well above the steady 4 to 4.5 per cent per annum growth exhibited over the 200 to 2005 period. It also represents the fastest wages growth (in labour price index terms) of all the industry sectors, including mining and construction, which have also been reporting sever skilled labour shortages"[5].

Actual Costs

The following table provides an indication of the actual cost to completion of typical transmission projects since commencement of the Regulatory Test as well as current estimates to complete similar projects.

Project Type	Description	$
Cap Bank	Mt England 275kV Cap Bank – Commissioned Dec 2003	$1.6 m
	Mt England 2nd 275kV Cap Bank – Target Commissioning 2009/10 summer	$3.0 m
Transformer	Loganlea[6] 275kV, 375MVA Transformer Augmentation – Commissioned Nov 2002	$6.7 m
	Murarrie 275kV, 375MVA Transformer Augmentation – Target Commissioning 2009/10 summer	$11.1m
	Newcastle 300kV, 375MVA Transformer Replacement – Commissioned 2005	$4.4 m
	Sydney South 330kV, 375MVA Transformer Replacement – Target Comm. mid 2008	$6.1 m
Lines	Stanwell-Broadsound Line (approx 127km)– Commissioned Nov 2002	$37.4 m
	SEQ Augmentation (approx 108 km) – Commissioning 2007/08 summer	$137.5 m
	Coffs to Kempsey 132kV (approx 108km) – Comm. 2003	$32.0 m
	Kempsey to Port Macquarie 132kV (approx 43km) – Target Comm. Late 2010	$21.5 m
Substation Establishment	Edmonton 132/22kVkV Establishment – Commissioned Jan 2005	$9.6 m
	El Arish 132/22kV Establishment – Target Commissioning 2008/09 summer	$16.1 m
	Nambucca 132kV Substation – Commissioned 2001	$7.2 m
	Glen Innes 132kV Substation – Target Commissioning late 2009	$12.3 m

[4] See BIS Shrapnel Report on Outlook for Labour Markets and Costs to AER lodged by ElectraNet as part of Revenue Proposal, Table 4.1, p22.
[5] Ibid, p21.
[6] Note, the Loganlea and Murarrie transformer projects include substation works to connect the new transformers. Newcastle and Sydney South transformer projects are replacements of existing transformers.

5. Indexation

ETNOF proposed that, once established, the revised Regulatory Test thresholds be escalated by changes in the Producer Price Index (PPI) released by the ABS to ensure that the monetary thresholds are not diminished by movements in input costs and/or prices over time. To be clear, ETNOF considers that the threshold should be adjusted to take account of annual cost movements, as is generally the case with other economy-wide measures, and should be applied uniformly across the NEM. To smooth any short-term volatility in general cost movements, ETNOF considers that a reasonable approach is to adjust the thresholds once accumulated annual escalations reach a threshold amount (rounded) of $5 million for large network assets and $1 million for small network assets. Once adjusted, any revised thresholds would apply to Regulatory Test consultations commencing from 1 July in the following year. It is intended that escalation of the thresholds be able to occur without the need for activation of the Rule Change process. ETNOF considers that this could be effected by release of a public notice from the AEMC or AER as appropriate.

ETNOF considers that the PPI general construction industry output, provides a more appropriate escalator of cost movements in the construction sector compared to the Consumer Price Index.

While ETNOF recognises that the CPI is a key measure of inflation, as noted by the Australian Bureau of Statistics[7], it is designed to provide a general measure of price inflation for the Australian (metropolitan) household sector as a whole. Consequently, it captures changes in the price of a fixed basket of goods and services acquired by household consumers, such as food, clothing and footwear, alcohol and tobacco, household durables (washing machines, refrigerators, etc), healthcare and education. These items are clearly not representative of the costs facing the electricity transmission construction sector.

By contrast, the PPI is specifically constructed to measure changes in the price of inputs to, or outputs of, a particular economic sector. Like the CPI, the PPI is a national, objective index which is updated regularly and readily available to all interested parties.

The unsuitability of the CPI as being representative of actual project cost movements in the electricity transmission sector has also been borne out in the recent revenue cap determination associated with Powerlink, SP AusNet and ElectraNet with the AER's detailed investigation and acceptance of the prudency and efficiency of expenditure on past capital projects. Further, in the case of Powerlink's Supplementary Revenue Proposal, the AER and its consultants were satisfied that project cost increases of the order of 13% on substation projects and 16% on lines projects between late 2005 and late 2006 were justified, which is clearly out of step with CPI.

[7] ABS (2005), A Guide to the Consumer Price Index: 15th Series.