10 March 2006

Dr John Tamblyn
Chairman
Australian Energy Market Commission
PO Box H166
AUSTRALIA SQUARE 1215

Submission by email: submissions@aemc.gov.au

Dear Dr Tamblyn

AEMC REVIEW OF THE REVENUE AND PRICING RULES – TRANSMISSION PRICING ISSUES

RESPONSE TO POWERLINK SUPPLEMENTARY SUBMISSION TO ISSUES PAPER (TRANSMISSION PRICING) FROM "THE GROUP".

This further submission is made on behalf of "The Group" comprising TRUenergy, NRG Flinders, International Power and Loy Yang Marketing Management Co.

The AEMC has published a supplementary submission from Powerlink dated 13 January 2006 which comments on some alleged "assertions" in our submissions to the above AEMC Issues Paper. Powerlink has stated that:

> "*we feel compelled to challenge the accuracy of a number of assertions in (The Group) submission….and in the individual submission from TRUenergy*."[1]

The claims of inaccuracy arise from misunderstandings of these original submissions. We restate our positions below to ensure that our statements and the context in which they are made are properly understood.

Regulatory Test/Transmission Augmentations

Powerlink has taken some statements in our submission out of context and has incorrectly interpreted our submission as asserting that the Regulatory Test is directly triggered by generation connection.

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[1] Powerlink Supplementary Submission, opening paragraph

The principle put forward by the AEMC[2], is that new entrant generators need to see or "consider" the full incremental costs of transmission which their investment decisions bring about. When faced with these costs (or locational signals), a rational investor will choose a generation location which minimizes the *delivered* cost of electricity – i.e. generation plus transmission costs – and which is therefore efficient for the market as a whole and to the long-term benefit of the consumer.

The locational signals arise from the cost of new augmentation, new or increased congestion or a combination of these. The AEMC paper suggests that in practice the current market arrangements, i.e. the Regulatory Test and the open access regime provide these signals.

We agree with the underlying principle put forward by the AEMC. However, the point of divergence between our submission and the AEMC paper is that we do not agree that in practice the current market arrangements will deliver on this principle and encourage investment decisions in transmission and generation that are efficient for the market overall.

Our submission addresses the flaws in the argument put forward by the AEMC[3] where it provides examples of locational incentives which purport to demonstrate that by "implication of its application"[4] the Regulatory Test should provide investors with efficient locational signals.

Furthermore no additional locational signals are required according to the AEMC because;

> *"any separate charges to generators would have, in order to send efficient signals to be based on a Regulatory Test type analysis",*
>
> *"Such prices could produce no more efficiency than the Regulatory Test itself would promote"*
>
> *"Therefore the incremental effect of generator charges on locational decisions is likely to be minimal, although if such charges are poorly defined they may harm locational investment efficiency."*[5]

The implication is that the Regulatory Test, by its existence, will encourage a rational investment process in the competitive market similar to that a central planner would undertake.

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2 AEMC Issues paper - Section 5 "Efficiency and Transmission Pricing – Key Concepts" and in Appendix 1 - Locational Incentives from the Regulatory Test.
3 AEMC Transmission Issues Pricing Paper Nov 2005 in Appendix 1
4 AEMC Transmission Issues Pricing Paper Nov 2005 page 71
5 AEMC Transmission Issues Pricing Paper Nov 2005 page 71

The main flaws in this argument are that;

- The Regulatory Test has been designed to determine whether or not a particular investment in regulated transmission will provide reliability benefits or a market benefits. The test has not been designed to coordinate investment in a competitive marketing by competing entities, or drive efficient investment by these entities.

- Because the Test is designed to assess regulated investment it correctly treats committed or existing generation differently to future or potential generation

Section 4 of our submission responds to the AEMC analysis and highlights flaws in the logic underlying the examples it has given[6].

An assumption made by the AEMC in its analysis (but not stated in the Appendix) is that load growth has occurred and a new generation investment is required. Our submission states:

> *"As the AEMC Issues Paper notes, augmentation on the shared network is limited to projects which the Regulatory Test shows to be economic or necessary (footnote: ie to meet reliability standards)"*[7]

The conclusions which follow summarise the results from our example and are qualified by the opening statement "assuming that there is a need for new generation *somewhere*,"

<u>The underlying assumption in both the examples of the AEMC and our submission is that there is or will be in the future sufficient load growth to support new generation investment.</u>

The title of our section 4 "New Generator Causes Augmentation" may have confused Powerlink, but the second sentence after it states:

> "*The connection of new generation will change the economics of transmission and may lead to some augmentation projects passing the Regulatory Test which would otherwise have failed and therefore lead to such projects being built or brought forward*"[8]

The remainder of this section of our submission then demonstrates:

- How the Regulatory Test (both legs)[9] is affected by the presence of a new generator, and

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6 Appendix 1 Figure 9: Transmission vs local generation – relative costs
7 The Group Submission, page 10
8 The Group Submission, page 10
9 This applies not only for market based assessment but also for the reliability augmentation where this leg of the test is triggered by the need to meet state-based planning standards, which relate to the risk of failing to serve load.

- How knowledge of this effect can drive inefficient locational decisions by generation investors.

This is demonstrated in the following table which is based on the example provided by the AEMC[10].

Option	Includes	Fixed costs $M	Variable Costs $M	Total Costs $M	Regulatory Test Costing Outcome	
					Remote generator NOT committed	Remote generator committed
Remote generation	Generation	210	40	250		
	Transmission Augmentation			50	300	90*
Embedded generation	Generation			200	200	200

* Because the remote generator is committed the fixed costs ($210M) are excluded from the test. The more costly (and less efficient) remote generation option therefore passes the test.

Our detailed explanation of this effect corrects the AEMC Issues Paper's apparent misunderstanding where in an example it included of the construction costs of a committed generator in a Regulatory Test decision.

The main point of our argument is that the existence or anticipation of the application of the Regulatory Test cannot be relied upon to provide locational signals to generators because (providing new generation is required now or in the future) a committed new generator could expect that the transmission augmentation required to transport its output to the market will pass the Regulatory Test, wherever it decides to locate, so long as the cost of the augmentation itself (on a $/MW basis) does not exceed the fixed costs of new, local generation. (This would normally be the case.)

Hence the following statements in our submission hold[11];

> *"To all intents and purposes, the new generator has caused the augmentation, even though it may not have requested or proposed such augmentation."*
>
> *"Thus, a generator will commit where it knows that its commitment will cause the necessary augmentation to pass the Test and proceed."*

[10] Appendix 1 Figure 9: Transmission versus local generation – relative costs.
[11] The Group Submission, page 10

Management of congestion in the current NEM design

Powerlink has criticised the TRUenergy statement: "Future new-entrant generators may degrade the presumed level of access". Specifically it commented:

> "*We would re-characterise the…sentence as 'if a new entrant generator comes along with sustainably lower costs, it can displace some of the incumbent's capacity in the market dispatch'. We would disagree with TRUenergy's characterization of this as an '*inefficiency*'*".[12]

Both the Group and the AEMC consider that under the Regional Pricing structure where constraints arise within regions there is the potential for inefficiencies to arise.

The AEMC Issues paper notes[13]

> "*Where constraints arise within regions, the cost is smeared across the relevant region and participants may not receive efficient signals*."

This inefficient allocation of congestion costs is addressed in the Group submission which notes:[14]

> "*This potential inefficiency is seen in Example 1 [see table above][15]. Because, in this example, intra-regional congestion is not efficiently priced – but is instead shared between the existing generators and the new generator – the investor decides, inefficiently but rationally, to locate remotely from the load centre.*"

The TRUenergy submission explains in detail why the NEM's congestion management mechanism is unaffected by generator costs:

- *"All generators within a region are paid the regional price rather than a locational price, and congestion affects them only by way of a volume constraint.*
- *The dispatch engine will ration volume on the basis of offered price, however all generators respond to this by bidding at the market floor price when faced with a transmission constraint.*
- *Other things being equal, the volume constraint is then pro-rata shared by generators behind the constraint. Thus a new entrant will suffer only a share of the impact of its locational decision. It is perversely better to site at a location where there are more neighbouring generators rather than less.*

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[12] TRUenergy submission, page 3
[13] AEMC Issues Paper Page 38
[14] The Group Submission page 5
[15] The Group Submission page 6

- *Where an interconnector and generator(s) are behind an intra-regional constraint, the regime leads to the generator(s) receiving preference.*

- *In some cases, technical inflexibilities result in some generators being constrained-off less than the pro-rata share, perversely rewarding inflexibility."*[16]

Thus all intra-regional constraints in the NEM are effectively rationed either as:

- Pro-rata to capacity in simple radial constraints;

- In favour of the generator within an importing region where the congestion is also affecting an interconnector; or

- Effectively random where technical variations or very small loss factor differences within a looped network come into play;

We have attached a Queensland "bid stack" to demonstrate typical generator bidding behaviour in the presence of a binding intra-regional constraint.

It is possible that enhanced future congestion management regimes may drive a dispatch outcome where rationing is achieved more closely according to the true short-run marginal cost[17]. But such a regime would still not consider the capital costs of the generator. A generator with higher long-run but lower short-run costs may inefficiently locate next to and displace a lower total cost generator and displace its transmission access. This inefficiency can at least in part be addressed through more appropriate transmission pricing but can also be addressed within a congestion management regime through the allocation of access rights.

Powerlink has questioned the thinking behind the wording "presumed level of access" used in the TRUenergy submission.

As noted in the Group submission the AEMC issues paper has not offered any solutions to the problem of the inefficiencies caused by intra-regional constraints.

The group submission has considered potential solutions[18] which in summary are;

- introduction of a new region – effectively ruled out by the MCE, or
- modifying and enhancing existing provisions for Generator Access; or
- introducing new intra-regional congestion management mechanisms, as envisaged by the MCE.

These are discussed in more detail in the Group submission. The latter two solutions are based on the presumption of a level of access by generators;

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[16] TRUenergy Submission, page 3

[17] For example, the CSC/CSP concept exposes generators, at the margin, to effectively a nodal price settlement and there is no advantage gained through bidding below marginal cost.

[18] The Group submission page 5

- in the first case this is the underlying objective of clause 5.5 of the NER, ie to establish rights to transmission capacity, and

- in the second case by defining a level of access through a congestion management mechanism such as the CSP/CSC proposal.

Presumption of a level of access is a solution that will allow incumbents and new entrants to compete with each other on an "efficient" basis to minimise the delivered cost of energy to the consumer, rather than the current inefficient basis.

New generation locational decisions

Powerlink has said that;

> *"the Group's submission suggests that transmission pricing is a key issue in the locational decisions of new generation,"*
>
> *"Our observation is that it is a third or fourth order issue in generation investment decisions."*[19]

Our submission made no comment on the relative importance of transmission pricing compared to other factors such as those identified by Powerlink that influence generator locational decisions. (These are signals such as fuel availability, site environmental considerations, access to water and proximity to the grid.)

However, we would note that it may be the lack of adequate transmission pricing signals provided to new investors under the current framework that effectively relegates this decision to a third or fourth order issue. In any case the relative importance of transmission costs relative to the other costs that determine the location of individual generators is not central to the issue being discussed.

The objective that the AEMC is addressing is to ensure that the competitive market delivers the generation project which minimizes the *delivered* cost of electricity – i.e. generation plus transmission costs – and which is therefore efficient for the market as a whole and to the long-term benefit of the consumer.

Faced with all the costs (including those with a locational component), a rational investor (and ultimately the competitive market) will deliver the projects that minimise the total delivered cost of electricity.

It is the relative delivered cost of energy from different projects, including full transmission costs, that is important. The difference in transmission costs between remote and embedded generation projects is likely to be significant. The fact that the present arrangements allow new generators to ignore the community imposed costs of creating congestion or augmentation in their siting decision is of major concern as discussed in detail above.

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[19] Powerlink Supplementary Submission, page 3

Given the demonstrated propensity of investors to adjust their behaviour in the presence of other locational drivers, we have no doubt that once also exposed to efficient transmission pricing their behaviour would be influenced in this regard. This will drive an outcome closer to market-wide efficiency, with the correct trade offs and balances between delivered fuel costs, transmission cost, site suitability etc..

The Group's submission concurs with the AEMC in that transmission pricing is a key issue in ensuring the market delivers economically efficient investment.

Powerlinks' final paragraphs refer to the large size of the Queensland network and the range of fuel options that exists there. Again these points further emphasise the need to ensure that transmission is taken into account in generation siting decisions to achieve overall efficiency.

Powerlink claimed that "Both submissions suggest that generation that is remote from the load centre is inherently inefficient" and concluded with:

> *"The suggestion that 'remote' equates to 'inefficient' is dubious." (p4)*

The Group agrees with this statement and cannot find any suggestion to the contrary in its submission. Our view is summarised in our introduction:

> "*When faced with these (congestion or augmentation) costs, a rational investor will choose a generation location which minimizes the delivered cost of electricity-i.e. generation plus transmission costs-and which is therefore efficient for the market as a whole and to the long-term benefit of the consumer*."

Conclusions

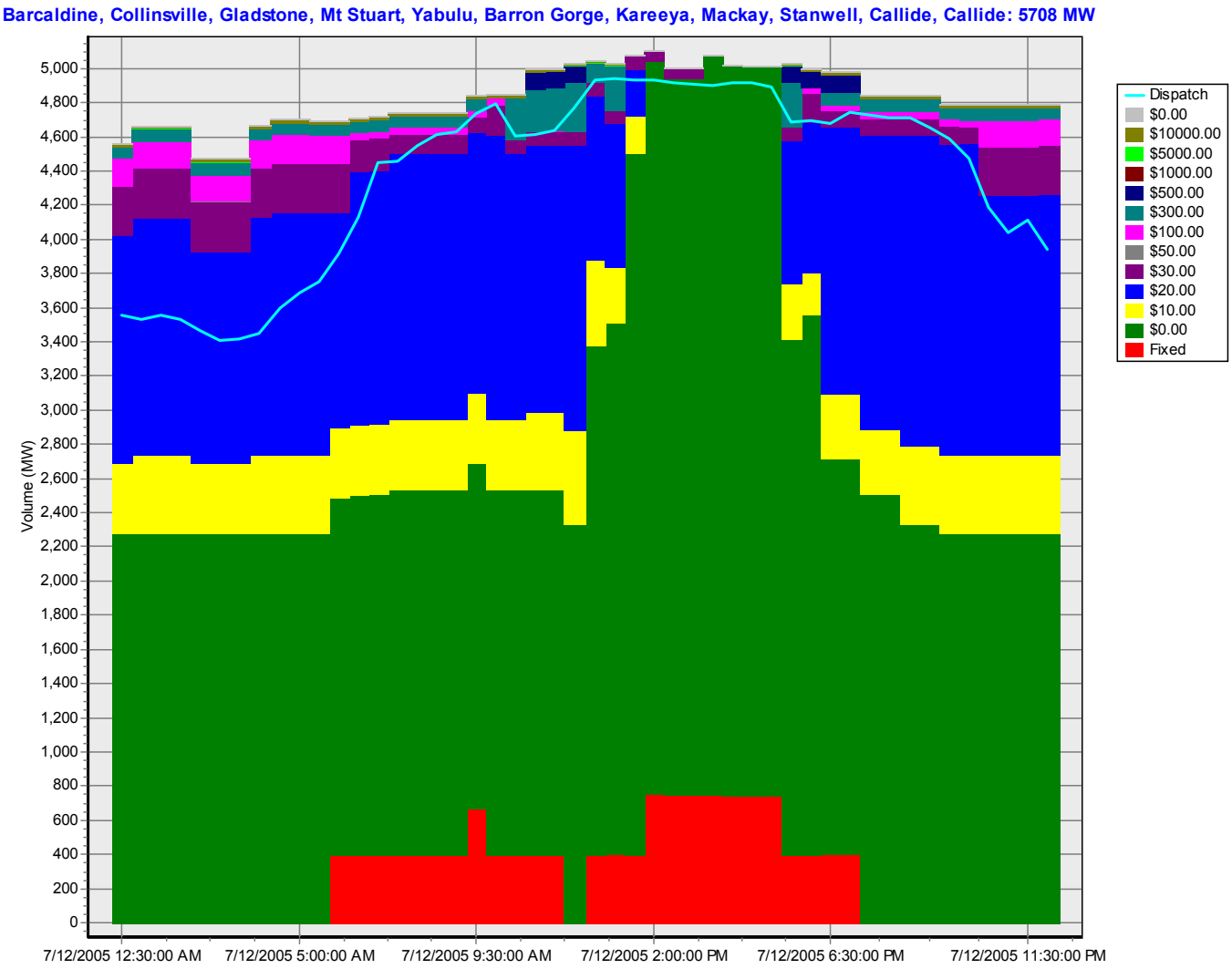
The locational choice of a new entrant generator can influence the timing and outcome of a network augmentation proposal under the regulatory Test in a socially suboptimal manner.

Improved transmission pricing signals would drive more efficient locational generation investment decisions from a market perspective.

Yours sincerely

TRUenergy, International Power,
Loy Yang Marketing Management Co.
and NRG Flinders.

Attachment: “Bid stacks” of generators affected by a binding constraint



The Green section is the volume of generation offered to market at -$1,000/MWh (the market floor price). This increase coincided with the binding of a Central to South Qld constraint bound. One published rebid reason stated: “'Response to Central to South Constraint”.