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Submissions
Australian Energy Market Commission
PO Box H166
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By email to: submissions@aemc.gov.au

Dear Sir/Madam

Response to Issues Paper - Congestion Management Review

Stanwell Corporation welcomes the opportunity to comment on the AEMC's Issues Paper on Congestion Management, 3 March 2006. Stanwell does not intend to respond to each question in the issues paper in detail but proposes to make comments on the general areas covered by them.

Stanwell's views in brief are:

- The degree of congestion in the NEM is more a question of how it is measured than whether it is material.
- The primary solution to congestion is a stronger market benefits Regulatory Test
- If a constraint management regime is implemented it must be in the simplest, least intrusive form possible

Materiality of Congestion

If Stanwell was to summarise its view of the materiality of congestion it would be *"the statistics do not support the anecdotal evidence"*. This is largely from a Queensland perspective and more specifically a Stanwell perspective. What is the anecdotal evidence?

- A sense that during a large proportion of peak periods, QNI is constrained and there is a material price difference between Qld and NSW.
- The central Qld to southern Qld limit binds sufficiently to cause loss of spot revenue, and the necessity to compete for market share by bidding plant at -1000\$MWh.
- Stanwell's energy limited hydro plant in north Queensland is bid unavailable for commercial reasons partly to avoid being constrained on due to constraints into north Queensland.
- Generators in Queensland who have exposure to the spot market seek to keep QNI unconstrained while NSW price is higher than Queensland.

A further comment Stanwell could make on congestion is *"the majority generator view is driven by generators with commercial interest in maintaining a moderate level of* Stanwell Corporation submission - Congestion Management

congestion". Currently it is viewed that the owners of plant in Victoria are not making expected returns on their investment and therefore have an incentive to maintain price in the region. The South Australian region is sufficiently constrained for the generators there to seek to earn reasonable income from the spot market. NSW government owned generators have justifiable concern with low cost generation from Queensland affecting their revenue potential and displacing new local plant to meet growing demand. Of course, the counter could be argued that generators in an oversupplied Queensland region have an interest in encouraging congestion relief to increase revenue opportunities for them in other regions. Despite this, Stanwell argues strongly that the AEMC should take particular note of participants in regions where congestion is an issue – for example generators in Queensland and customers in South Australia.

The presentation by Macquarie Generation on behalf of the NGF to the AEMC in the forum of 8 March 2006 analysed congestion in 2004/05. Stanwell would like to make the following points in addition to what was presented.

- QNI Qld to NSW in the period July to December 2005 was constrained approximately 21% of the time¹. This was a substantial increase from 5.49% in the preceding 12 months.
- It was noted that in the greatest part of the price difference events, the price difference was in the range 0-\$10. During the last few years a very common situation was a price of \$18.80 (approx) in Qld and prices ranging from \$23 to \$26 in NSW. Assuming a price difference of \$5 between the states, and a short run marginal cost of say \$13-14 for mid range coal fired plant, the price difference represents a halving of gross margin for any capacity exposed to the spot market.² This is a significant driver of behaviour in the spot market.
- A crude calculation of the value of the price differences for Qld to NSW flow (ie price difference x MW x % of time, not unlike the Total Constraint Cost calculation) for 2004/05 results in a gross spot market value of between \$160M and \$190M. Although that is not an economically robust figure, it is indicative of the significance of the constraint in a year in which the statistics indicate only 5.49% of the time the constraint bound. The price difference put pressure on the contract market in Queensland³, and if QNI had have been larger, that pressure would also have applied to the NSW contract market (and perhaps other regions).

The measurement of the economic cost of congestion (or the economic value of reduced congestion) is extremely complex and includes costs that aren't measurable in dollar terms. It is Stanwell's assertion that the simpler the calculation, the fewer costs it takes into account, and there is therefore a tendency to underestimate the real cost. Spot market traders do not always operate according to economic theory, nor in ignorance or defiance of their perceptions of the market around them. They will always aim to legally minimise the impact of constraints and maximise the return to their shareholders, even if it is at the expense of perfect economic efficiency and minimising the cost to customers. Stanwell argues that the true cost of congestion is masked by human behaviour in an energy-only market made complex by the level of congestion which exists.

¹ This is based on QNI flow being within 20MW of the limit, to account for constraint relief by bidding activity

² $\$18.80 - \$13.80 = \$5$ gross margin, $\$23.80 - \$13.80 = \$10$ Gross margin

³ During 2005 the price difference between Qld & NSW Cal 06 Flat contracts ranged from \$1.10 at the beginning of the year to a minimum of \$0.70 and ended the year approximately \$3.50.

The perfectly competitive market is an unconstrained market, an efficient market is one with a low level of congestion. The NEM has been described as having a low to moderate levels of congestion – on the basis of those views, the NEM is inefficient.

The Regulatory Test

Stanwell believes that a large part of the solution to congestion management is the Regulatory Test.

Reliability limb or broader market benefits?

The reliability limb of the regulatory test is creating a large amount of transmission investment in a climate of substantial load growth. Whether this will contribute to congestion relief for generators is questionable because its focus is on reliability of customer supply, not generator access. If generator competition improves as a result, it is more by accident than design.⁴

The market benefits limb needs to play a role in preventing moderate congestion occurring as much as relieving it when it does. For example, if a reliability augmentation will relieve some existing congestion at a point in the future, the market benefits limb should be capable of bringing forward the augmentation (if economic) to prevent congestion. It is doubtful that the current form of the market benefits limb could be used that way.⁵

New generators

Some cause of congestion is the construction of new generators in areas where there is already a concentration of generation. It is not always the case that the new generator can compete on price for access to the network (eg a gas plant in a region dominated by coal fired plant), but it can create access issues at times of high price. Generators tend to concentrate in certain areas for a number of reasons such as access to fuel, water and land. Transmission access tends to be low on the priority list.

The current market model essentially allows the majority of customers to locate where they like. Apart from very large or very remote customers, price signals such as Marginal Loss Factors and Transmission Use of System charges do not factor in locational decisions for customers.⁶ Also, the model recognised that it was more efficient to allocate network charges as close as possible to the ultimate beneficiary, namely customers. Given that model, the price that must be paid is a lack of locational signals for generators. Stanwell argues this is a low price to pay and sees no reason to change the model apart from improving the Regulatory Test to build out the congestion. Generators have an interest to locate such that the cost of generation is as low as possible. It is not unreasonable that customers should pay the (reasonable) cost of transmission necessary to access the low cost generation and encourage competition between the new and incumbent generators. The current market benefits limb does not readily lend itself to this kind of cost-benefit analysis and needs to be improved to deal with this situation.⁷

⁴ Take the central to southern Queensland constraint – it is not a customer reliability problem and will not be built out for customer reliability reasons in the foreseeable future. It does however impact on central Qld generators' access to the Qld & NSW nodes.

⁵ The Tarong constraint is a good example. It has largely been relieved by reliability augmentations which were timed to meet customer reliability criteria. However if the augmentation had have occurred earlier it would have avoided price spikes, negative residues and perverse generator behaviour that resulted from the constraint binding.

⁶ Domestic customers locate for work and lifestyle, and commercial and light industrial load tends to follow.

⁷ Proposals for new generators to have locational signals through deep connection charges or similar are flawed because it will impose a cost on new generators which has to be recovered in an energy only market competing against incumbent generators which have not had that cost.

Complexity & Behavioural Inefficiency

Stanwell asserts that simple economic theory does not account for the complexity of spot market behaviour induced by congestion itself. Some of the complexity, and therefore inefficiency, of the market is created by self interested wealth transfer. However, wealth transfer is not considered in the evaluation of a market based network augmentation despite wealth transfer being one of the prime motivators of market behaviour (along with managing risk)⁸. Ignoring customer benefits is not consistent with the NEM objective – an augmentation which reduces price to customers, increases competition between generators and creates greater efficiency in the market through more accurate price discovery and price signals, and through less opportunity for self interested wealth transfer, is clearly in the long term interests of consumers of electricity with respect to not only price, but reliability and security of supply.

Stanwell has already made a submission to the Regulatory Test Principles consultation on the market benefits limb and its main arguments are:

- The test needs to incorporate all of the benefits, including the non-monetary benefits
- Some level of customer benefits (if not all) needs to be included

With a stronger Regulatory Test, a constraint management regime will only have to deal with a smaller problem and would therefore be less intrusive to the market.

Proposed CSP/CSC Regime

Constraints can be characterised as three types:

- Inter-regional
- Intra-regional which affects supply to the node (and therefore price at the node)
- Intra-regional which does not affect supply to the node

A constraint management regime needs to deal with all three types. The focus on constraint management tends to be on the on the first two, mainly because the third is largely invisible, and difficult to deal with.

Stanwell proposes that work on constrained on (and off) payment needs to be resurrected in this review process and a methodology developed that deals adequately with the market power issues which have plagued it in the past.

With regard to Inter-regional constraints, Stanwell believes that a broader market benefits limb of the Regulatory Test (including customer benefits) will resolve the bulk of the issues.

Stanwell's main interest in constraint management is avoiding perverse generator behaviour, particularly when the second type of constraint binds. At present the only self protective behaviour is to bid constrained off plant at -\$1000 to maximise volume and allow constraint coefficients to dictate the share of a constraint.

The benefit of the CSP/CSC regime would be to provide incentives to bid appropriately during such a constraint. The CSP/CSC regime is often described as nodal pricing by stealth, and if not implemented appropriately, could become that. However, Stanwell believes that a simple, stable and fair implementation of the CSP/CSC regime could

⁸ In other words, greed and fear.

provide some market benefits and make the risks of being constrained off more manageable. It is proposed that once a methodology is agreed, it is applied initially to a limited the number of constraints until it is proven (for example a maximum of 5 in the NEM and 2 within any one region)

Some principles which Stanwell believes which should be considered for evaluating a constraint management regime are as follows:

- The market benefits limb of the Regulatory test could be made to resolve the bulk of congestion problems.
- A constraints management regime must deal with all three types of constraint (and not necessarily using the same methodology for all three).
- The implementation should be initially simple, stable and fair. Additional complexity can be added later for improved efficiency.
- The ability of a constraint regime to value or price constraints (as a way of funding augmentations), should not factor in its evaluation because previous work on constraints has proven this to be pointless.⁹

Conclusion

In conclusion, Stanwell would like to make the following key points to the AEMC:

- There are areas of the NEM in which constraints have an adverse impact on the efficiency of the market. A body of work needs to be undertaken to:
 - Establish a comprehensive methodology for determining the full cost of congestion in the NEM which can be used as a benchmarking tool for congestion management decisions and the Regulatory Test. (Stanwell does not believe the current market benefits limb of the Regulatory Test is adequate.)
 - What level of congestion is optimum and should not be exceeded in the NEM.
 - Establish a comprehensive methodology for establishing the full benefits of transmission augmentation where the network is congested, including a reconsideration of the customer benefits test.
- A market benefits Regulatory Test drawn from the above analysis will resolve a large part of the congestion issues in the NEM.
- If a congestion management regime is implemented in the NEM, it needs to be simple, stable and as least intrusive as possible.

If you have any questions or require further information, please refer to the contact below.

Yours faithfully



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⁹ Previous CRA work for NEMMCO