Delta electricity

9 November 2006

Dr. John Tamblyn
Chairman
Australian Energy Market Commission
Level 16, 1 Margaret Street
SYDNEY NSW 2000

Emailed: submissions@aemc.gov.au

Dear Dr. Tamblyn,

CONGESTION MANAGEMENT REVIEW
NEW GENERATOR ACCESS ARRANGEMENTS

Delta Electricity greatly appreciated the opportunity to present the Generator Access Model (the Model) to the AEMC at the meeting of 18 October 2006. A more detailed explanation of the Model together with an assessment of the market benefits is contained in the attached paper.

In considering the congestion management issue it is prudent to reference the MCE directions and guidance for conducting the congestion management review. The MCE has recognised that there is no material benefit to be gained from a nodal pricing approach to congestion management and recent assessments of the level of congestion across the NEM by the AER and others clearly indicate that, apart from the Snowy region, congestion is not a material problem in the NEM. Delta supports the AER position and also acknowledges that existing network augmentation plans will likely maintain congestion across the NEM at or near current levels. We believe there is no case to be made for special market mechanisms to be put in place to manage existing or emerging congestion as part of a staged approach to congestion management.

It is apparent that there exists a degree of confusion about just what the Model is trying to achieve given its proponents acknowledge that network congestion in the broadest context is not a problem that requires a solution. To put it clearly, the Model seeks to reduce, but not eliminate, future uncertainty associated with market access for generators and in doing so remove an existing barrier to entry for new investors. This is achieved with transparent information on the network capability and deep connection cost signals to drive efficient generation mix over the longer term.

The model is based on improving the regulated transmission planning framework to include an agreed least cost modelling approach and greater alignment between regulated investment in transmission and market driven investment in generation. The premise on which the Model was developed is that the NEM does not need new market mechanisms to address issues associated with investing in new generation.

From a generator's perspective, congestion related risks primarily result from;

(a) uncertainty of access to market for new investment in generating capacity; and
(b) new generation that causes congestion without the impact of that congestion being taken into account in its locational decision making process.

The Model specifically addresses future market access concerns by placing obligations on new generators to contribute to some transmission builds if the new generation location does not align with the least cost transmission plan. It is not intended that access 'firmness' or actual transmission rights be given, although current average levels of access would be maintained. Generators will still have to manage their volume risks under Option 4 constraints formulation during unplanned transmission outages or unusual physical market conditions. The approach taken seeks to deliver improved net economic benefit to consumers through enhancements to current arrangements.

At recent meetings with the AEMC the materiality of congestion has rightly been questioned. There does appear to be some misunderstandings surrounding the materiality of congestion and concerns raised by generators about future access to market. We believe it is important for a clear distinction to be made between consideration of congestion management in the context of an intermediate step between no congestion and a transmission build (or regional boundary change), and the concerns of new generation investors. Whilst there are a variety of views on the level of concern amongst generators, Delta believes that regardless of particularly points of view there is an obvious gap in the NEM arrangements to provide for longer term certainty of market access for both new and existing generators. It is important to appreciate that even a relatively small but unexpected reduction in market access could have a significant impact on a generator's revenue.

Delta is of the view that improving the network planning framework in a manner that achieves least cost outcomes for consumers is consistent with the NEM objective.

Yours Sincerely,

TIM BAKER
GENERAL MANAGER/MARKETING
DELTA ELECTRICITY

Attach:

AEMC CONGESTION MANAGEMENT REVIEW

NEW GENERATOR ACCESS MODEL

The generator access model specifically seeks to address concerns about generator access for new investment and the potential implications of that investment on existing generation. The Model does not include any form of firm access rights or property rights but does provide a reasonable level of access to the regional reference node consistent with economically efficient investment in transmission infrastructure. The Model improves the certainty of access for new generation to underpin investment, whilst not unduly impacting the access of existing generation.

1. Transmission Congestion Issues

There has been much recent discussion about the materiality of the transmission congestion in the NEM. To date, much of the discussion has focused on how emerging inter and intra regional congestion should be managed as an interim arrangement whilst transmission augmentation or regional boundary assessments are undertaken.

Assessment of the current materiality of constraints by the Australian Energy Regulator (AER), the Annual National Transmission Statement (ANTS) process and as articulated in some submissions to the AEMC, supports the view that overall congestion is not material and is not likely to be material in the future. As such, these assessments support the view that there is no need for new market mechanisms such as the CRA's CSP/CSC regime to manage emerging congestion. These assessments however ignore what may be a significant issue for one participant.

Whilst the Model has been developed to better support efficient new generation investment it will not inhibit the implementation of other market mechanisms if required at some future time.

Diagram 1 below shows that the congestion related issues the Model is seeking to address are a component of broader congestion management considerations. One way to consider these components is to view 'managing the emerging constraints' as being performed after the fact, whereas 'managing generator access' is seeking to address an obvious material constraint before it occurs.

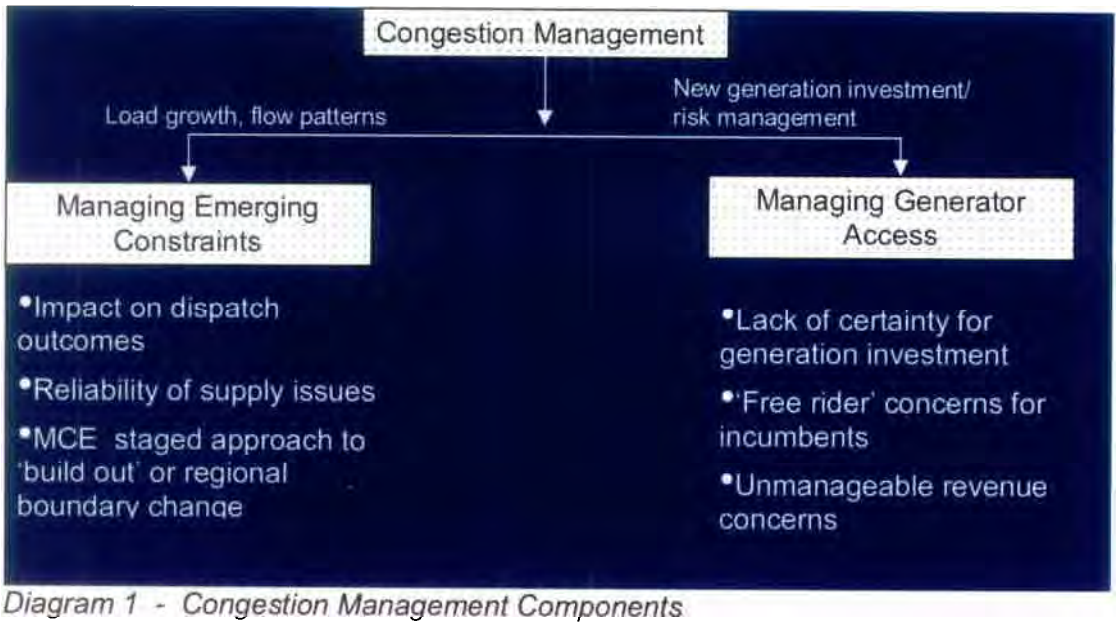


Diagram 1 - Congestion Management Components

Delta does not believe there is a need for the targeted implementation of market mechanisms anywhere in the NEM at this time because there are currently no material NEM wide congestion problems that need to be resolved (apart from the Snowy region).

2. *Range of Problems Resulting from Congestion*

Problems that new and existing generation face under the current regulatory framework include:

- Negotiated 'Deep' Transmission Access Service

  Generators can negotiate 'deep' transmission services but no certainty of access is given in return. Such investment can be significantly devalued by new generators 'free riding' on the transmission investment. It is our view that no significant generator funded 'deep' access could ever be financed under the current arrangements.

  Solution: New generators should not be able to 'free ride' on negotiated network augmentations.

- Locational Signals For New Generation

  New generation investment responds to a range of locational signals that will have significant influence on the location – these include cost of fuel, access to water, planning consents, regional reference prices, transmission losses and shallow connection costs. Unfortunately there is an absence of clear congestion information or cost signals. Whilst such congestion relieving costs may be small, congestion may represent a significant long term revenue risk for an individual generator. The lack of a clear congestion related signals (whether it be costs or transmission access data) actually pose a barrier to new entrants. Uncertainty of access and a means of managing that uncertainty for a project present a revenue risk that will need to be quantified and included in the cost of capital.

The lack of a congestion signal has the potential to drive generators to locate where maximum market benefits are not delivered or where an incumbent generator is forced to compete for limited access. The latter example will most likely result in wealth transfers and no increase in net economic benefit to consumers.

Solution: At the very least a new generator must be aware of the potential for congestion resulting from a locational decision.

- Interface Between Regulated And Market Driven Investment

NSPs do not have any obligation to provide generator access to market. Obligations to deliver unserved energy targets to customers drive NSPs behaviour and investments. There is no NEM process which mimics the integrated generation and transmission planning which existed in the pre-market environment.

Any network build for generation access by the NSP, under the regulatory test, is likely to be "after the facts" and NSPs do not have adequate commercial incentives and regulatory rules to interact with new generator investments.

This disconnect between regulated transmission investment and market driven investment presents another regulatory hurdle and additional risk for a generation investment financed on the expectation that adequate transmission investment will be undertaken in a timely fashion.

Solution: A process is required to lock in transmission augmentations required for generator access between NSPs and generator investors.

- Insufficient Network Capability Information

The ANTS provides detail of congestion on major flow paths but for new generators there is a lack of information on the potential congestion at specific sites. Such information is critical for potential investors to understand up front in the investment planning process what revenue certainty may exist for that connection point.

Solution:

Whilst it would be impossible for an NSP to provide a single number to represent the level of access at a connection point it would be possible for an NSP to estimate maximum addition injection capability for a typical summer or winter load flow (say 10% POE). The information could be presented in the form of classifications such as:

A - 800MW plus
B - 300MW to 800MW
C - 100MW to 300MW
D - 0 to 100MW
E - NIL or negative

In addition to injection capability the NSP could provide some indication of the scope of works required to either:

1. relieve potential constraints through relatively minor works such as line capacity upgrades or new terminal equipment, and include the possible additional injection capability; or

2. identify what major works could be undertaken to provide a significant (i.e. 500MW plus) increase in maximum injection capability .

In both cases the data would be based on typical maximum system demand load flows.

- Network Planning Statements

  NSPs are uncertain where new generation will connect to the network with the exception of committed projects. The jurisdictional annual planning statements clearly indicate that significant system modelling is undertaken for a large range of potential scenarios of supply and load patterns. This modelling attempts to determine a least cost outcome of both transmission and generation for consumers. These plans will to some extent change to accommodate new entrants however at some point TNSPs need to commit to plans well in advance of the time they are needed to meet the customer reliability standards to take account of construction lead times. Any major works, such as TransGrid's 500kV ring project, are based on a range of assumptions about new generation. If these assumptions are even slightly wrong then the transmission works may be economically sub optimal. Such an outcome would represent an inefficient market outcome and be inconsistent with the NEM objective.

  Solution: Transmission planning could be improved by applying an agreed least cost planning approach that uses accepted modelling techniques and input variables such as new entrant costs. New entrant assumptions apart from committed projects should be based on an optimal generation mix.

  Further benefits could be achieved if transmission planning was more flexible with shorter construction leads times. This will naturally drive NSPs to have augmentation options partly planned in response to some 'advanced' generation projects.

3. Examples of the Congestion Affecting New Generation Investment

Confidentially associated with the experiences of Generators precludes Delta from obtaining examples from across the market.

Delta's Munmorah's gas turbine project is not expected to experience transmission congestion because of its location in a heavily meshed part of the network that is close to major load centres. However, in the case of Delta's potential expansion of Mount Piper power station by 1500MW material congestion is likely unless TransGrid's 500kV project proceeds in full. A recent review paper by TransGrid indicates the project may be delayed by two years and at this time there is no

guarantee the project will proceed in the medium term. In the absence of such a guarantee, there are no appropriate arrangements in place to allow a Delta to secure a level of access certainty to reduce the risks associated with such a major generation investment.

A new generation investor has to rely solely on the NSP's annual planning statement, an estimate of the likely outcome of a regulatory test, or the prohibitively risky strategy of "winner takes all" by competing with similar cost competitors that sit behind the same constraint.

4. The Generator Access Model

Diagram 2 shows an overview of the operation of the Model.

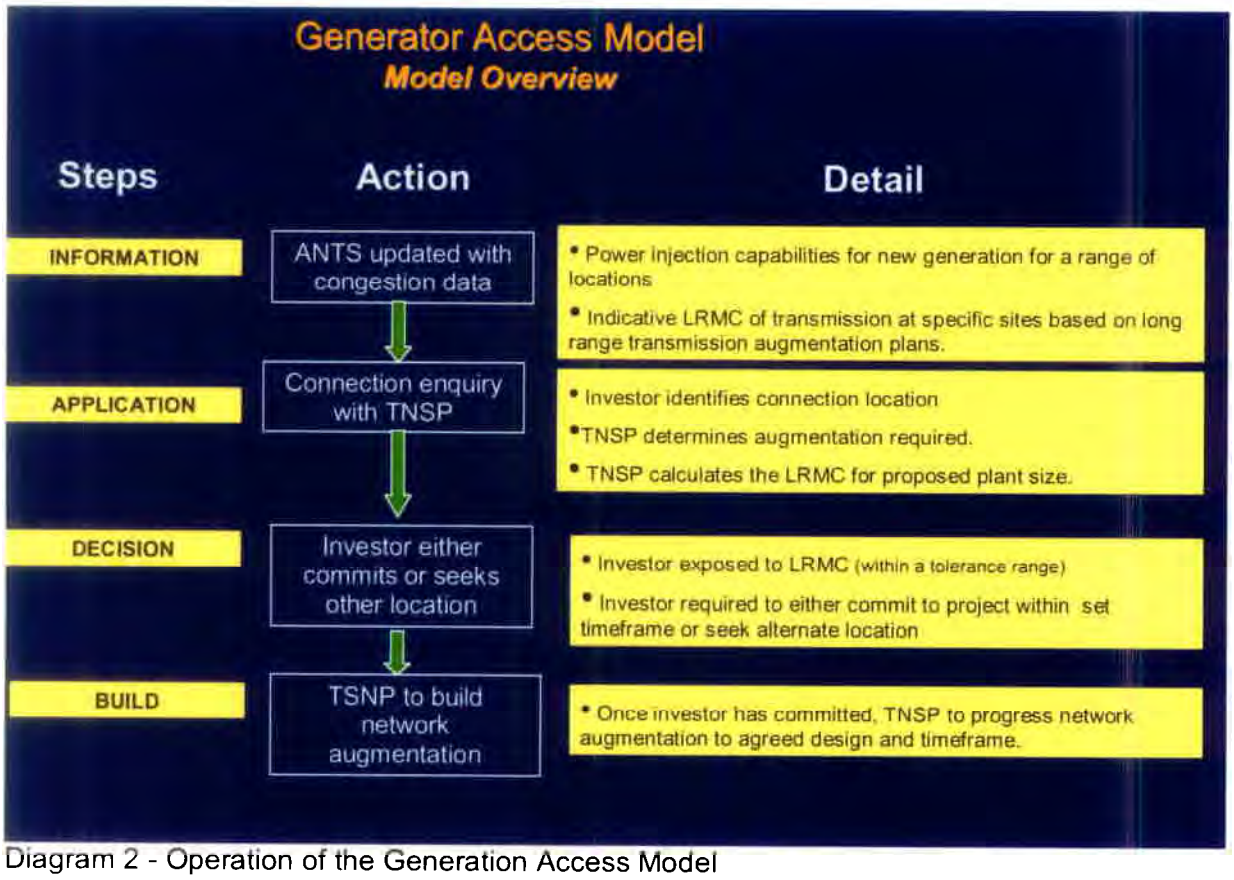


Diagram 2 - Operation of the Generation Access Model

The decision making process for a new generation investor is shown in diagram 3 in a simplified form. The new investor may be exposed to a location related cost. The investor has the choice to either absorb the cost, if such cost can be offset by other benefits (such as portfolio benefits or timing benefits), or abandon the location for one which provides an acceptable return and risk. The location cost signal will drive overall NEM investment towards least cost outcomes for consumers.

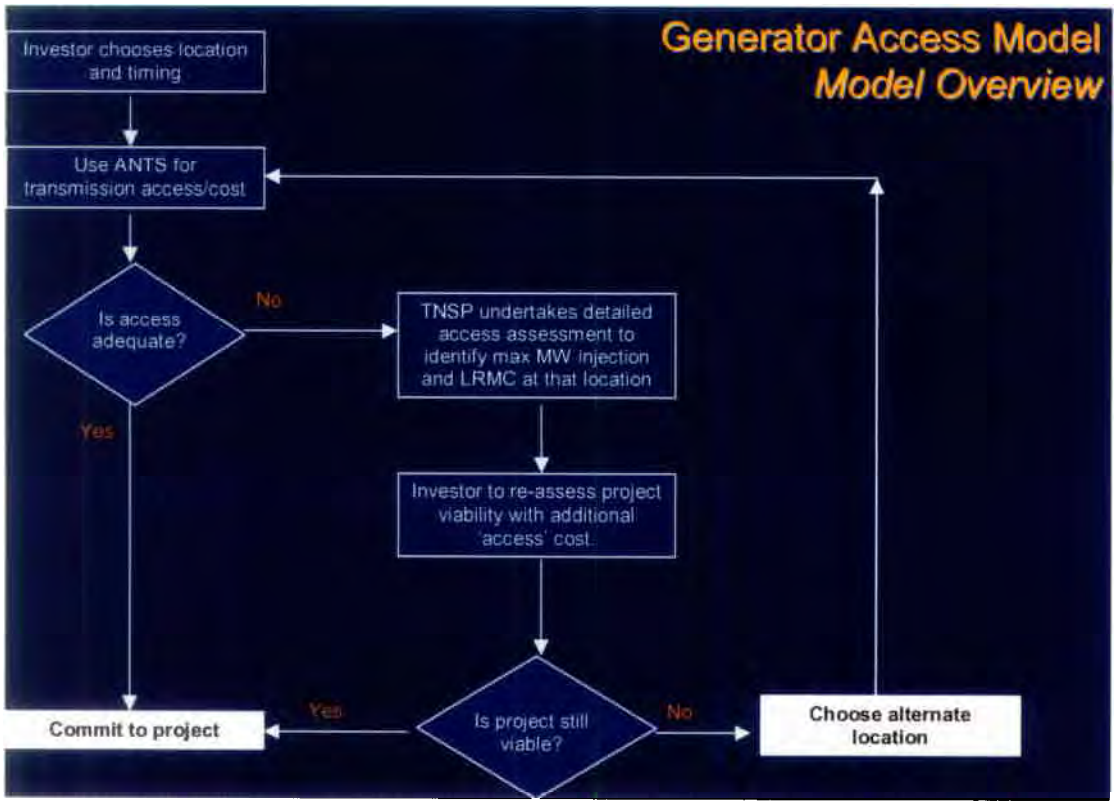


Diagram 3 - Decision Flow Path

4.1 Information

The new generation investor will have a clearer picture from the enhanced ANTS data as to the potential for congestion to occur at peak demand periods both at present and the future.

Given that the congestion information is based on a least cost planning approach there should be close correlation between network augmentation plans and the access needs of new generation investors siting optimally in the network. If commercial reasons drive an investor to locate where congestion could be created, that investor is exposed to contributing financially to building out the congestion to a defined standard (refer diagram 5). The investor would be faced with a cost equivalent to the modelled reduction in net economic benefit of the location.

4.2 Application

The essential component of the Model is the enhanced network planning modelling performed by the TNSPs or planning bodies. The modelling strives to deliver a least cost planning outcome but a lack of an agreed approach, a lack of consistency in approach, and a degree of uncertainly over the ability of a TNSP to build to the plan reduces the effectiveness of the process.

The Model explicitly requires planners to determine least cost network augmentation to an agreed approach. When a new generator makes a connection enquiry a location is nominated and the TNSP can determine if congestion will result (based on an agreed standard such as 10% POE demand and typical load flows). Where congestion is likely to be created by the new generator, the TNSP determines the additional cost of any long term network augmentation (LRMC) required to avoid congestion occurring. If the new generator locates where there is ample transmission access or where the network is likely to be augmented as part of the least cost plan then the LRMC would be zero. If however the generator, for whatever reason, determines to locate where congestion does result and the LRMC is positive (and above a tolerance level), then the generator would be exposed to this cost. In this way an appropriate transmission related locational signal is seen by the new generator that can either decide the cost is reasonable or seek a more appropriate location.

Diagram 4 shows the modelling approach to determine LRMC of transmission.

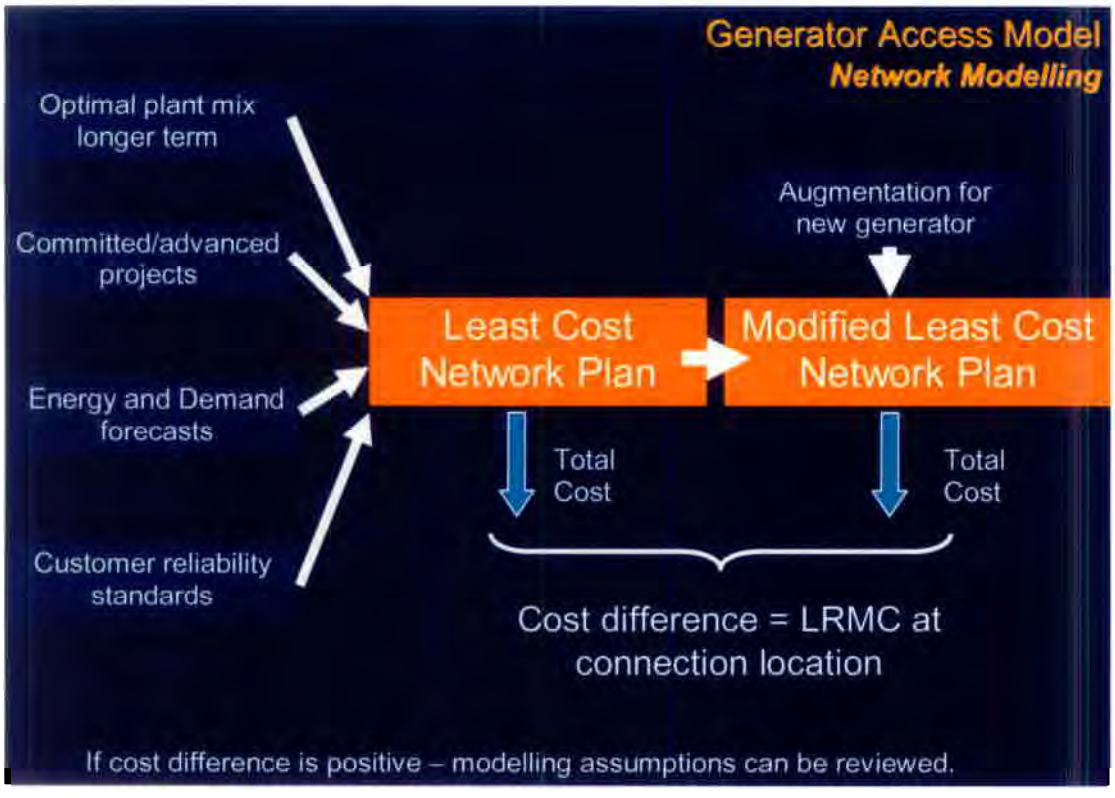


Diagram 4 - Least Cost Network Modelling

It is envisaged that a consistent approach to network augmentation planning based on a least cost planning approach with an optimal generation mix will provide the foundation for new generation and transmission investment decisions. The LRMC calculated is the congestion related locational signal for new generation that will ensure such generation sees the appropriate transmission related financial impact.

It could be argued that the modelling input data is not perfect and therefore the network plans cannot then perfectly determine an optimal outcome with customer benefits. This is true to an extent, however such modelling is now undertaken for

this very reason and by being explicit in their objective network plans should aligned with the NEM objective.

Currently network planners strive to ensure customer reliability standards are met. There is however no standard for generation access to compliment the reliability standard. The setting of a NEM wide standard for new generation access will not only provide greater certainly and transparency for customer supply, but it will also be a useful cost lever for the regulator to ensure transmission is not over developed.

The access standard can be no more than the expected maximum level of power injection at a connection point for system normal and an average of typical load flow patterns. But by using an agreed projected maximum 10% POE demand congestion related costs for new generators will be more transparent.

4.3. Decision of New Generator

It is important to note that the new generator has the option to change its location decision in response to augmentation costs and seek another location that delivers an overall lower investment cost. In practice the generator is likely to be locating close to the fuel source and the transmission choices will be secondary in their decision making.

The obligations on generators and TNSPs for congestion related augmentation would have to be expressed in an agreement that includes relevant condition precedents and arrangements to manage timing misalignments. It is envisaged that regulation would be required to specify respective obligations, the approach to assessing benefits and the minimum contract form to ensure streamlined planning processes.

In addition to the aligned plans of the TNSP and the new generator, the AER will also need to take account of any new build of augmentation n in the periodic revenue review.

5. Attributes of the Model

The generation access model provides an ongoing level of market access for generators within a regulated framework to ensure economically efficient investment. The model has the following key aspects:

Practicallity:

- It is simple, transparent and economically efficient.
- All generators will have transmission access to agreed standard (based on load flow modelling).
- Certainty of access (to an agreed standard) will underpin the long term health of the hedge contract market

- No 'free rider' concerns for generators – surplus augmentation capacity cost allocated to next generator.

- Reduced barriers to entry due to better information and reduced access uncertainty.

Economic:

- Avoids the potential for new generation creating congestion then competing with similar cost generators with not long term benefits to customers (an exercise in wealth transfers only will likely occur),

- New generators have the choices:
  - Locations where 'deep' connection costs are zero; or
  - Locations where 'deep' connection costs deliver other benefits.

- No cost allocation to existing generators:
  - Cost allocation will not drive more efficient behaviour; and
  - Existing generators have factored into their locational decision the price signals at the time of investment.

- TNSP 's long term reliability network planning aligned with committed supply;
  - reduce potential for inefficient augmentation that occurs when actual investment differs from NSP supply assumptions.

- Supports the benefit that will arise from new low cost technology displacing existing higher cost generation, wherever that generation occurs across the NEM.

6. Barriers to Entry and Competition

With the existence of generation rich locations across the NEM (South-West Queensland, Hunter Valley, Central Coast, Latrobe Valley) new entrants in these locations are likely to be of similar technology and cost structure. Congestion resulting from new entrants in these areas will more likely result in wealth transfers between generators rather than delivering competition benefits.

Providing existing generators with certainty of access for long term will;

- Maximise competition;
- Ensure the long term health of the contract market;
- Avoid exposure to transmission costs that will not drive more efficient behaviour;
- Support future investment from the existing generators that will be future investors; and
- Will not protect high cost inefficient generation from being displaced.

Exposing new generators to locational congestion signals with access certainly provided in return will;

- Ensure the optimal siting of new generation investment;

- Provide maximum competition between generators; and
- Reduce the barriers to entry - regulatory and access uncertainty.

In exposing new generators to a locational transmission cost, it is important not to over-signal the need for transmission otherwise market distortions may result. However, based on data in the 2006 TransGrid annual planing statements marginal transmission costs are relatively modest ranging from around $0.30/MWh for a minor upgrade of a transmission line through to around $2.50/MWh for a major new line. These costs assume a 30 year plus life of asset and a high utilisation factor. These cost levels compared to stated generator new entry costs are relatively small.

Attachment No.1 includes two examples of the implications for the market of generation siting under current arrangements.

7. NEM Objective

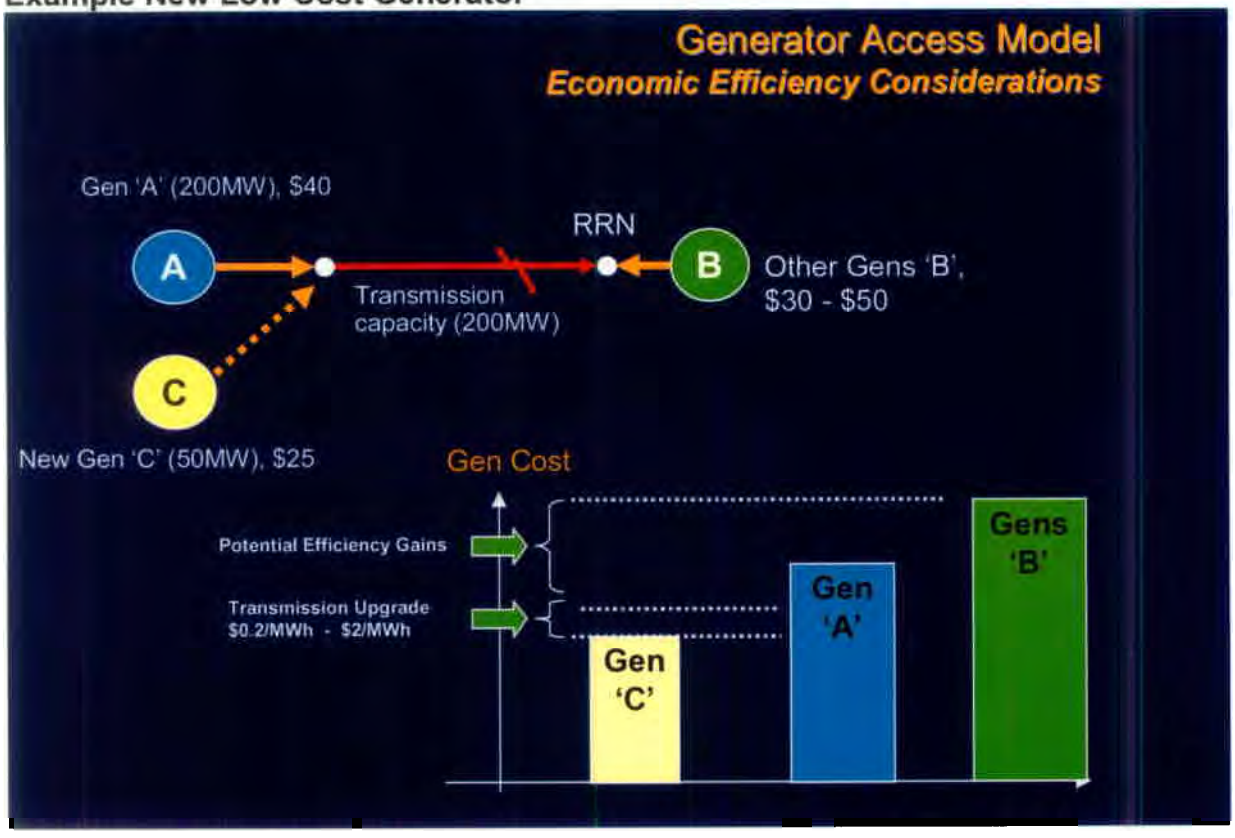
The Model satisfies the NEM objective by:

- Promoting efficient investment:
  - Improved least cost planning approach for transmission; and
  - Improved locational decision making by generators.

- Supporting the long term interests of consumers by;
  - Improving certainty for investors and ensuring the least cost and optimal timing of new plant coming to market;
  - Making locational risks explicit such that new investors can manage those risks; and by
  - Underpinning the long term health of the critically important hedge contracting market.

Appendix 1 - Competition Implications of New Generation in the NEM

Example New Low Cost Generator

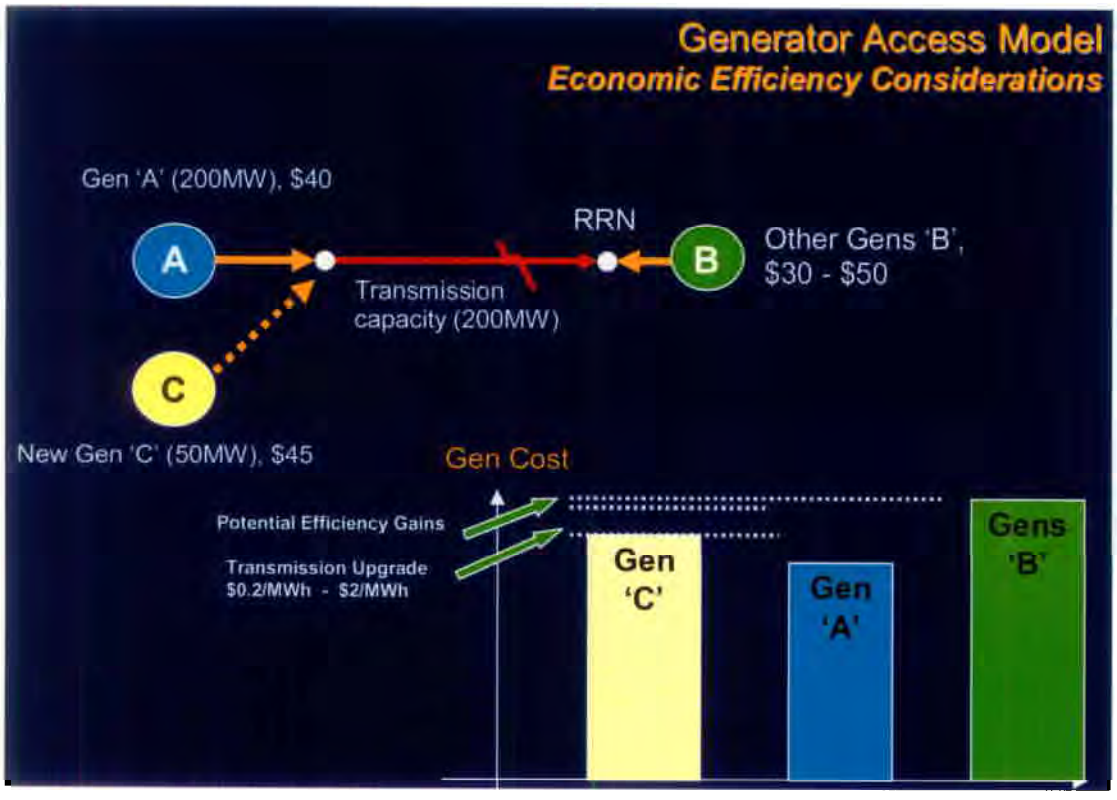


Under current arrangements, Gen 'C' would have to rely on the transmission upgrade passing the Regulatory test. If the upgrade does not go ahead then;

- Competition between Gen 'A' and Gen 'C' will drive dispatch to some level of sharing.
- Gen 'A' and Gen 'C' will seek to contract at RRN but volumes will need to take account of limited access.
- Gen 'C' with no certainty of access is unlikely to be able contract high as fear of Gen 'A' changing cost structure (e.g. renegotiated fuel contracts) – long term health of contract market compromised.
- Given the cost structure of other Gens, the entry of Gen 'C' is unlikely to deliver a lower average RRN for customers.
- The net outcome is a wealth transfer from Gen 'A' to Gen 'C' and no benefit to consumers.
- Locating next to Gen 'A' would likely be too risky a proposition for Gen 'C' and would not likely go ahead under the current access arrangements.
- Gen 'C' could seek out a location where access risk is manageable but may be sub-optimal in the long term.

The Model would support Gen 'C' locating next to Gen 'A' if it financially viable, avoids pointless competition between Gen 'A' and Gen 'C', but maximises competition with Gens 'B'.

Example New Higher Cost Generator



Under current arrangements, the high cost Gen 'C' should not locate next to Gen 'A' because of its cost disadvantage and the constraint. In the absence of congestion information it may inappropriately do so.

Gen 'C' would not likely enter into a TNSP agreement to build out the congestion because there are no access rights given in return and its higher cost increases the risk of future 'free riding' or even an expansion by Gen 'A'.

Locating near the RRN may be possible but if other costs (in excess of the transmission augmentation) are incurred then the market outcomes are less efficient than they could have been.

The Model would enable Gen 'C' to locate next to Gen 'A' and compete with higher cost Gens 'B'.