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TXU Submission to Issues Paper of Review of the Regulatory Test

Please accept this submission on behalf of the TXU Australia group of companies, registered in the National Electricity Market as a market generator, market customer and distribution network service provider. TXU is a global energy provider and has invested approximately AUD5 billion in Australian electricity and gas markets. Our electricity activities include large positions in each of peaking generation, retailing (affected by maximum tariffs) and regulated networks. It is therefore difficult to categorise our natural position on new network investment, but wish to note that our vested interest tends towards an efficient market with least regulatory uncertainty.

TXU staff have considerable experience in the area of new regulated transmission going back to the Victorian Power Exchange's 1997 decision to construct series compensation at South Morang Terminal Station. Our staff includes well known spokespersons from both sides of that and similar debates. The impact of such decisions upon our own assets and customer base are well understood, indeed our trading and retail pricing activities consider the impacts of projects under test. We therefore believe our comments to have particular value to your deliberations and would be very pleased to engage in meetings. Please contact Mr. Ben Skinner (03) 8628 1280.

Yours sincerely

Ben Skinner
Electricity Trading Regulatory Manager

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Summary

TXU does not agree there is a compelling case that the NEM lacks an efficient level of long-distance transmission and interconnection. We are concerned that a widespread misinformed view has developed following considerable pressure from parties with interests in regulated assets or in short-term price relief.

TXU does not agree with the key findings of the interconnector process working group that appear skewed toward expanding the regulated transmission network. In particular the recommendation regarding competition benefits appears to contradict regulatory practice regarding market efficiency and the need for a more straightforward test.

TXU recommends the retention of the intent of the present regulatory test with certain clarifications to ensure the process is less open to influence from vested parties and that reliability approvals are not permitted to distort the competitive energy market.

The "Truth" regarding Australian Electricity Transmission

The ACCC, NECA and most certainly NEMMCO and the IRPC are very much aware the strong political views on new regulated interconnection. No observer could deny these groups have struggled to defend their independent stature against the pressure applied by state governments and their institutions, the bulk of which has been in favour of more interconnection. State government policy has been driven by a range of influences but in particular a view that new transmission provides short-term price reductions and reduced risk of shortage attractive to governments, whilst the costs of inefficient over-investment are felt less sharply over the long term.

It is an oft stated view that historical planners failed the industry by being too state focused, under investing in transmission that crossed state boundaries which is now harming the NEM through reduced efficiency, competition and reliability. This view has been successfully promoted by parties keen to expand transmission, but is a gross simplification of the reality.

The Australian electricity industry is characterised by sparse, but very urbanised load centres adjacent to low cost fossil fuel reserves. With distances of at least 700km between each urban centre, the capital cost per MW of interconnector construction generally exceeded the capital cost of local peaking plant, and the same applies for contemporary greenfield interconnectors such as SNI, QNI and Basslink[1]. As fuel cost differentials are low, there was negligible value beyond that of capacity sharing to justify extension. Indeed, the marginal cost of transmission (losses) often exceeded the marginal difference in fuel cost, e.g. price of Victorian vs. South Australian gas, leading to low usage factors of interconnectors.

It is well accepted by engineers that energy is more economically transported in gas pipelines than electricity transmission lines due to their lower capital costs and lower losses. For this reason the central planning engineers located their gas fired generators at load centres[2]. As the electricity industry moves naturally to gas for new generation, the need for new long-distance transmission should be reducing.

In fact NSW, Victoria and especially South Australian vertically integrated utilities *did* invest in interconnection beyond an economically efficient level of the time, as the

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[1] This may not be true for brownfield projects such as Snovic400 and Southernlink.

[2] Page: 2

A unique Australian exception to this rule is the late 1970's SECV construction of Jeeralang Gas Turbine in the Latrobe Valley which was driven by black start needs and a readily available site with excess transmission during a capacity shortage. Interestingly, an inefficient electricity transmission charging regime and lack of locational energy pricing has seen a new gas fired generator also locate in the Latrobe Valley to take advantage of slightly reduced gas transmission charges!

engineers did see long term benefits (and certainly higher reliability) by pooling their resources.

The case for more interconnection

The present trend for state jurisdictions to push for greater regulated interconnection could be summarised into three justifications (with our bulleted responses):

1. Increased Competition-Reduced Prices

By expanding the pool, the NEM will evolve to accumulate more competitors and break down perceived generator market power. This argument postulates that a technically inefficient over-investment in transmission is worthwhile as it transfers a greater value from producers to customers.

- Such an argument denies to the NEM a level of efficiency that was achieved by government owned monopolists. It implies that an uncompetitive generator structure (ironically in some cases implemented by the same jurisdictions voicing this argument) requires otherwise unnecessary investments to counteract it. If true, this is a disappointing outcome of a deregulated market. Should generator market power be truly[3] evidenced this would be more efficiently eroded by new merchant entry or direct regulatory means.
- By seeking a short-term price relief, it discourages efficient and competitive investment in local merchant plant. There is evidence that proposed Victorian merchant plant was cancelled as a direct outcome of the approval of SnoVic400. Note the plant cancelled was of greater capacity than the interconnector itself.
- By transferring investment from the energy market to regulated networks, a greater burden of socialised regulated charges will be imposed on all consumers regardless of their use of the asset. For example, customers who participate in demand-side interruption and therefore not use the capacity will still contribute to its cost via TUOS.
- Due to the operating drivers of network owners, regulated interconnectors have seen low reliability during congestion. This creates a non-firm risk on those contracting across the interconnector and causes its capacity to be inefficiently underutilised by the contract market. For example, when retailing in South Australia supported by inter-regional hedges on the Vic-SA regulated interconnector, it is normal risk-management practice for retailers to purchase 2 MW of interconnector capacity for every 1 MW of customer load in expectation of regular 50% deratings.

2. Greater Reliability for the voter

With new generation investment left to the market, governments are attracted to achieving higher levels of reliability by using new regulated interconnection. The regulated investment process can be encouraged through statutory planning organisations without risking government money, and less overtly interferes in the energy market as would direct subsidy to merchant generating plant.

- Whilst reliability has a clear economic value, there is clearly a market/regulatory failure if that value is perceived to be higher than that which the energy market will deliver on its own. If price caps and regional boundaries are set appropriately, the energy market will efficiently deliver the community's desired level of reliability either through new generation or merchant links. There is no barrier to the entry of either.
- By intervening through the encouragement of new regulatory plant, merchant investment is crowded out. This creates an intervention spiral of intervention-less investment-lower reliability-more intervention.

[3] Note that TXU does not imply significant generator market power is evidenced in the NEM with the great majority of electricity contract prices being struck well beneath new entrant price

3. A new market for idle, government-owned generation

With over 1000MW of mothballed NSW black coal plant, there is an attraction to finding a new market for this idle capacity.

- Such benefits are correctly captured in the existing regulatory test, however it is interesting to note that for those studies actually carried out, the net market benefits of the displacement of higher fuel cost remote plant is actually very minor.
- Most market modelling, including that provided by the IRPC to these analyses, show that as a result of the ownership structure of this mothballed plant compared to remote regions, the highest returns are provided to the owners of the plant if they do not materially displace the volume of the remote plants.

Workings of the regulatory test

TXU accepts that the regulatory test has not operated expediently to date, but we do not agree with much of the criticism from parties who appear to have an expectation that new interconnection should not need proper justification. It seems this expectation has influenced the creation, terms of reference, membership and certainly the recommendations of the interconnector process working group and this is evidenced by the tone of all 5 key recommendations listed in the issues paper.

Our view is that the regulatory test did take too long, but eventually approved the wrong interconnectors for the wrong reasons!

A regulatory test that seeks to prove net market benefits is philosophically and economically sound given the nature of regulated investment. The test is non-prescriptive of the process used to describe these benefits. Problems are then related to the implementation of process, where influence can be used to bias the process to demonstrate a specific outcome. In these cases, it may be necessary to make the test more specific such that the process cannot be diverted away from the original philosophy, whilst making the test quicker and less open to dispute.

Reliability Benefits

Recent approvals have derived up to 80% of their benefit from what the IRPC describes “reliability benefit” representing the benefits of capacity sharing created by the new link. This is thus the critical feature of interconnector justification to the point where some commentators suggest that non-reliability benefits could be simply ignored to speed up the assessment process.

The reliability benefits of the IRPC’s analyses have been heavily influenced by the last sentence of note (5) “These scenarios should include projects undertaken to ensure that relevant reliability standards are met.”

This has placed NEMMCO and jurisdictions in an interesting position with regards to their role in setting reliability standards, and the link between these standards and its effect on approval of regulated interconnection.

If reliability standards are unrealistically high for the current market design (including VoLL price cap) to achieve, then this sentence ensures that modelling shows that a reserve trader or other safety net intervention mechanism will be required at some future time to deliver it. Any regulated interconnection can then be shown to defer the need for this intervention and thus reduce its cost. The trade off then simplifies to a comparison of the cost of interconnection against the expected cost of reserve trader intervention-which is assumed to contract a greenfield open cycle gas turbine.

It is most peculiar that 80% of the benefits of these interconnectors has derived from deferral of the need for the reserve trader, a mechanism that has never actually been utilised in the NEM!

Setting reliability standards in the NEM has been a most confused and non-transparent process. NECA’s reliability panel initially recommended and continue to

endorse a maximum target for unserved energy (blackouts) to average 0.002% of annual energy demand, but then subsequently allows jurisdictions to set differing levels, and finally permits NEMMCO to interpret this recommendations in whatever operational means they prefer.

At market start, NEMMCO chose to deviate from this probabalistic measure to a deterministic n-1 trigger level of the largest generator capacity to be held in reserve above a 1 in 10 year demand. This occurred partly for operational simplicity, but also as a transitional method as it resembled the process used previously in the government owned utilities. Subsequently studies have shown (including NEMMCO's own presentations to the reliability panel[4]) that this trigger level is at least ten times more conservative than the 0.002% standard, i.e. modelling shows it leads to less than 0.0002% of unserved energy.

TXU expected that in time NEMMCO would ease their trigger level to that which more accurately reflects the reliability panels recommendations. This has not occurred, indeed the standard used for Victoria and South Australia since the 2000 statement of opportunities has become more conservative![5] NEMMCO has rejected softening the trigger level to date following jurisdictional pressure apparently resulting from criticism that NEM reserve standards fall short of that used by some regulated US utilities. Indeed, had NEMMCO softened the trigger level, jurisdictions may have exercised their right to impose harsher requirements.

In the absence of guidance of a move back to the probabilistic standard, the IRPC chose to assume that the current NEMMCO deterministic trigger level would remain for the modelling period. It is quite straightforward to prove that merchant plant will not invest with the current $10,000/MWh price cap to anything like that level of reliability. The logic then follows that a reserve trader will certainly be required and a simple gas turbine vs. interconnector investment trade-off cost can be used.

Such a series of historic events has lead to a regulatory test precedent where a great many potential projects have net market benefit that otherwise could not be justified. Furthermore, the major players in setting reliability standards, being NEMMCO and the jurisdictions, have become aware of the linkage between these standards and the approval of new interconnectors. NEMMCO have recently recommended to the reliability panel an extension for three years of the deterministic trigger levels despite their own analysis showing it is at least ten times more conservative that what was intended. TXU suspects this recommendation has been influenced by the trigger level's effects upon IRPC work as observed by NEMMCO personnel.

It is bemusing that a deterministic criterion implemented by NEMMCO for operational simplicity has migrated into probabalistic studies of the long-term economic benefit of transmission-whilst the original probabalistic criterion would have been simpler to model.

It seems to TXU that a fair interpretation of reliability benefits is more fairly and efficiently represented by its improvement to the value of trade, being the product of any avoided unserved energy and VoLL. This is the technique used by VenCorp to analyse the benefits of their own transmission proposals, and we would note that their expectations of the benefits of their proposed Snovic400 was only a fraction of that expected by the IRPC.[6]

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[4] We can provide this to the ACCC on request

[5] NEMMCO now "combines" the analysis for Victoria & South Australia. In doing this, they assume that the one in ten year half hourly demand in Victoria and South Australia will co-incide, and a reserve margin of the largest unit in Victoria *plus* the largest in South Australia is retained above this.

[6] Vencorp consulted on the continued use measuring unserved energy times VoLL in the net market benefit test in 2001. TXU would be pleased to provide its submission that recommended continuance. Vencorp have continued that philosophy.

Alternatively, should the process continue to require the meeting of reliability standards, then there must be absolute independence between those setting the standards and those modelling the benefits or financially affected by the project. We would recommend explicit guidance in the regulatory test towards standards suggested by an independent reliability panel.

How should interconnectors justified on reliability grounds be operated?

One of the fundamental features of the design of the code's reliability safety net-the reserve trader-is that capacity presented by it to the market should not artificially lower prices and therefore begin an low price/more intervention spiral. All reserve trader plant must be offered at VoLL, i.e. operated after all merchant plant is earning maximum return. This is not the case for the new interconnectors presently being approved as an alternative to reserve trader yet will be offered to the market at marginal cost. It would seem that interconnectors whose prime benefit is to act as an alternative to the reserve trader should be presented to the market in the same manner. This deserves explicit guidance from the regulatory test.

Competition benefits

The working group's second key finding appears unfair and inefficient in an energy market where merchant players attempt to earn a return on a playing field affected by regulated investment.

As stated earlier, inefficient over-investment for the purpose of an inter-sectoral value transfer denies to the NEM a level of efficiency that was achievable to the integrated monopoly utilities. It is of great shame that such over-investment is considered a pre-requisite to an electricity market by some. The best limitation to the exploitation of market power is the threat or actual entry of entrepreneurial competition. The market should rely on the potential for new non-regulated players, such as MNSP's to ensure a reasonable sharing of the economic surplus.

In fact, the finding contradicts NEMMCO's own recent "measurement of market efficiency" consultation which determined that investment in new market operator infrastructure should be justified on net market benefits alone whilst competition benefits are specifically excluded.

Evaluating "competition benefits" would be extremely problematic and challengeable. How is a transmission planner to estimate what level of market failure there will be in the future? How can he evaluate market power, and guess at its use in the complex dealings of the pool and opaque contract market? Estimating competition benefits implies the same problematic modelling judgements as dogged the assessment of SANI customer benefits in 1998.

Intra-Regional Investment to meet service standards

As mentioned earlier, Vencorp proves a net market benefit for all large regulated Victorian investment. This approach was reconfirmed in their 2001 consultation and is strictly adhered to by them. Other TNSP's however appear to rely upon part (a) of the regulatory test for most of their intraconnections, in particular a view that an n-1 service standard can be used to justify numerous constructions.

This n-1 standard means that much transmission infrastructure that could not be justified in Victoria is in fact constructed in other states. The 2001 consultation highlighted that such service standards are in fact gross simplifications of a form of net benefit, but for these projects a more robust approach through part (b) is quite achievable.

Recommendations

- That the Interconnector Process Working Group's key finding regarding the inclusion of competition benefits in a regulatory test be set aside.

- That the commission considers to the 2001 Vencorp consultation to identify if part (a) of the regulatory test can be deleted.
- That the regulatory test should either:
  - (Preferably) exclude the last sentence of the first paragraph of Note (5) of the methodology requiring reliability standards to be met, with specific explanation that reliability benefits should only be assessed by calculating the market value of energy otherwise unserved, or
  - State that where projects are approved as the minimal cost of meeting reliability standards that these projects must subsequently be operated in the market in the same manner as would other interventions to meet reliability standards such as the reserve trader.