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Dear Mr Pierce

The Victorian Department of Primary Industries (DPI), as the portfolio agency responsible for energy market development in Victoria, welcomes the Australian Energy Market Commission's review of the frameworks governing electricity transmission services in the National Electricity Market.

DPI is pleased to be able to make this submission in response to the 18 August 2010 Issues Paper.

Any queries in relation to this submission should be directed to Mark Feather, Director, National Energy Development by email at mark.feather@dpi.vic.gov.au or by phone on 03 9658 4793.

Yours sincerely

Peter Naughton
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29 / 9 /2010

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The Place To Be

DPI SUBMISSION TO THE AEMC's TRANSMISSION FRAMEWORKS REVIEW ISSUES PAPER

The Victorian Department of Primary Industries (DPI), as the portfolio agency responsible for energy policy in Victoria welcomes the Australian Energy Market Commission's review of the frameworks governing electricity transmission services in the National Electricity Market.

DPI is pleased to be able to make this submission in response to the 18 August 2010 Issues Paper.

AEMC's approach to the review

DPI considers that the NEM is potentially facing its most significant period of change since its commencement in 1998. DPI agrees that the requirement for new investment in generation to meet load growth, and the impacts of climate change policies have the potential to lead to significant changes in the patterns of generation across the NEM.

With forecasts suggesting that Australia's electricity generation is projected to grow by nearly 50% by 2030, the role of networks will be critical to ensuring that generation capacity can be delivered to the market. Further, the challenges faced by network businesses will be even greater to the extent that much of the new generation is located at significant distances from load centres. This is likely to be the case for renewable generation such as wind power.

In addition, it is important to emphasise that there is likely to be significant *uncertainty* as to where new generation is likely to locate and the timing of the new generation build. This uncertainty is likely to place significant pressures on the transmission network planning processes.

It is critical that the transmission frameworks deliver planning processes that can deal with these uncertainties. It is also critical that the transmission businesses themselves are responsive, so that the necessary network investment is occurring in a timely and efficient manner and in the most suitable locations.

Since the commencement of the NEM, regulation of network businesses has focussed on delivering cost efficiencies within the existing network businesses. Significant gains have been made in delivering more efficient network businesses. However, going forward, the challenge for networks will be to ensure that they are reacting to changes in the configuration of generation and, where necessary and efficient, reinforcing or expanding their networks to meet this demand.

A failure to meet these challenges could lead to increased network congestion and hamper the ability of generators to access the market. As the AEMC correctly points out, this in turn creates both investment and operational risks for generation businesses.

Contractual risk premiums could increase, and at the extreme, congestion could hamper generation investment decisions at a critical time.

A holistic review

DPI therefore agrees that the AEMC's review should consider the transmission frameworks in a holistic manner from both a long term investment perspective and a short term operational perspective. There are significant interactions between long term investment frameworks and short term operational frameworks. For example, to the extent that the long term investment and planning framework fails to deliver timely and efficient investment this could lead to increased congestion in the short term.

There are also important linkages between the planning framework and the regulatory framework under which transmission businesses invest and operate. Ideally, the planning framework should help to inform the capital expenditure assessments undertaken by the AER through the network price control review processes.

Recognising the significant interactions between the elements of the framework – investment, planning, operation, network access and congestion management - DPI therefore considers that any reforms which may be developed by the AEMC should ideally consider *all the aspects of the transmission regime holistically rather than separately*. DPI is therefore supportive of the concept of internally consistent reform packages (should the AEMC determine that reforms are necessary) which deliver a long term vision for the role of transmission.

In addition, DPI also agrees with the AEMC that any reforms that are delivered by the review should be planned with the objective of creating a long term and stable framework that promotes a more certain climate for investment in generation, but at the same time is sufficiently flexible and capable of responding to the need for change.

A new approach

DPI would encourage the AEMC to look "outside of the box" in considering potential reforms to the transmission frameworks. Transmission debates in Australia have often focussed around issues including nodal pricing and deep connection charging. DPI would encourage the AEMC to look internationally at different approaches to developing holistic and workable transmission frameworks.

A forward looking review

In its Issues Paper the AEMC is placing significant weight on the need for evidence of deficiencies in the existing transmission frameworks. Whilst evidence of existing deficiencies is important to establishing a case for reform, it is equally important to note that the changes and challenges currently being faced by the market are new and significant. It is therefore important that the AEMC's review is forward looking and focuses on ensuring that the frameworks are robust to the potentially significant and

uncertain changes in the nature, location, size of generation that arise in the future. Evidence of past deficiencies is important, but given the likely paradigm shift being faced by the market, it is unlikely to provide the full picture in "future proofing" the regime.

Notwithstanding this, we have set out below some clear examples of the problems associated with the existing transmission frameworks.

Objectives for the review

DPI considers that it is important for the AEMC to establish a series of high level objectives for the Transmission Frameworks, which are ultimately linked back to the National Electricity Objective. Each element of the framework can then be assessed to determine whether it meets these objectives.

At a high level, DPI agrees that the key objective for the review is to assess whether the current transmission frameworks ensure that investment and operational decisions across generation and transmission are optimised in a manner that promote efficient outcomes across the supply chain and minimises the total system costs imposed on consumers.

Given this high level objective, a series of subsidiary objectives could be created. These could include:

- Long term transmission investment should be efficient and responsive to demand from generators and consumers
- Transmission network planning frameworks should deliver and utilise robust market based information
- Transmission network planning should be undertaken on a national basis
- Transmission network capacity is maximised by Transmission Network Service Providers (TNSPs) within operational timescales (i.e. in the short term, where investment is not possible).
- Clear and transparent identification of the costs of transmission network constraints
- Clear and transparent information on transmission network maintenance, outages and capability
- Transmission network maintenance and constraints are efficiently managed by TNSPs
- Increased certainty for generators on the availability of transmission network capacity in both investment and operational timescales

- Transparent and efficient signalling of the costs of transmission network capacity to generators and consumers, in the short run (when the level of network capacity is finite) and in the long run, where network investment and expansion can occur.

- Efficient targeting of the costs of transmission network reinforcement on those parties that benefit from them, including generators and consumers.

Taking into account these objectives, DPI offers the following observations and comments on various aspects of the transmission frameworks. DPI considers that the issues identified below should be considered by the AEMC in its review.

Transmission planning and investment

As has been noted above, changing patterns of generation are likely to place significant pressures on the transmission framework. DPI therefore agrees with the AEMC that the planning process will need to be sufficiently dynamic to deal with uncertain long term changing patterns of generation and load.

In addition, to the extent that generation locates at significant distances from load centres, this is likely to drive the need for inter-regional transmission network augmentations. For example, to the extent that clusters of renewable generation locate in South Australia, this may require reinforcement of transmission lines to deliver this energy into New South Wales and Victoria. DPI therefore considers that planning is likely to take on a greater national dimension than has previously been the case.

Whilst there have been recent reforms made in the planning area including the creation of the National Transmission Planner and the new Regulatory Investment Test for Transmission, DPI considers that there is scope for further enhancements to the regime to address the uncertainties that are likely to exist and the need for an even greater focus on national transmission planning.

Managing the uncertainties

Under the current central planning framework, there remains a risk that the need for transmission investment in particular areas is not recognised and acted upon early enough through planning processes. Whilst modelling of different scenarios through the National Transmission Network Development Plan can be used to explore a broad range of generation and transmission outcomes, DPI considers that the inputs into the NTNDP process would be enhanced with more reliable market based signals.

Market based signals could be generated from the sale of contractual instruments such as financial transmission rights. The sale of long term financial transmission rights which provide generators with access to the transmission network would enhance the information that network planners rely upon to make decisions on whether to augment the network (i.e. through the RIT-T process). Under such an approach, rights to use the

transmission would be sold to generators (through an efficient allocation process) several years in advance. The market based information provided through the sales of these rights could be critical at a time of significant uncertainty for the market in informing the need for network investment.

In addition to informing the "needs" case for transmission investment, the sale of long term financial rights should also assist the AER in evaluating the capital expenditure programmes of TNSPs through the regulatory price control process. Under such an approach, the framework for the sale of long term rights could be developed in such a way that it sits alongside and enhances the existing price control process for the TNSPs.

Ultimately, by providing improved information through the planning and regulatory process, consumers should benefit through more efficient investment decisions.

Such an approach would also provide additional certainty to generators in planning their own generation investments. In particular, long term certainty of access to the transmission network through ownership of transmission rights should assist generators in procuring finance for generation projects.

DPI recognises that such an approach would represent a fundamental change to the nature of the existing access regime that applies in the NEM. In practice it would mean that electricity prices are effectively unbundled from network capacity prices via a separate network capacity product.

The development of any such change would require a significant work programme. Such a work programme would need to consider how the rights are allocated, and how they would inform the network investment process. In addition, protections would need to be introduced to prevent hoarding of rights. Similarly care would need to be taken to ensure that a financial transmission rights model *does not translate into a deep connection regime* which might unduly discriminate against the interests of new generation entrants in favour of incumbents.

Given the changes facing the market and the uncertainties that exist, DPI considers that it is important for the AEMC to consider the scope for financial transmission rights to assist in managing these uncertainties. DPI would be willing to develop its ideas in this area further.

<u>A national approach to planning</u>

As noted above, DPI considers that planning is likely to be required on more of a national dimension than is previously the case with more inter-regional network augmentations potentially becoming necessary to transport electricity from generators located long distances from load centres.

In this context, DPI considers that there are risks and potential costs associated with having multiple network planners across the NEM responsible for augmentation

decisions. Different TNSPs in different regions of the NEM will not necessarily adopt a national focus to network planning decisions. Further, augmentations of transmission networks in one region can impact system conditions in other regions. A fragmented approach to planning creates risks that local planners do not properly capture inter-regional or national impacts in making their planning decisions. As noted in the January 2007 ERIG report, efficient system wide development requires planning to be undertaken on a coordinated basis across generation, transmission and load on a NEM wide basis.

DPI therefore considers that the challenges posed by significant changes in the configuration of generation across the NEM require consideration being given to further embedding a national approach to planning, and more broadly, service provision. Whilst AEMO has acquired the NTP function, DPI believes that consideration should be given to whether AEMO's planning role is broadened further so that it takes on responsibility for making transmission planning and investment decisions on a national basis.

By having AEMO take on a greater role in planning, this should reduce the negative impacts of the existing fragmented and regionalised planning structure. Under such an approach, AEMO would take on responsibility for making planning and investment decisions and in turn contract with TNSPs for the delivery of these investments.

DPI notes that a planner procurer model was considered in the 2007 ERIG report and ruled out at the time. However, DPI considers that this model should now be further considered given the challenges facing the transmission sector going forward. Indeed, such a move would further embrace the establishment of a truly national framework for transmission planning and investment.

With an independent not for profit planning body with no commercial interest in decisions, there would be limited risks that planning and investment decisions would be distorted.

DPI also considers that a planner procurer model could be developed alongside a regime in which long and short term financial transmission rights are sold and allocated to generators. Under such an approach AEMO could sell the rights on behalf of TNSPs, and contract with TNSPs through service agreements for the delivery of investments that are underpinned by the sales of the rights. DPI would be happy to develop these ideas further.

<u>The regulatory framework - Deficiencies in investment incentive arrangements</u>

Under the existing transmission frameworks, TNSP's investment programmes are driven primarily by the need to meet demand growth and comply with reliability obligations, rather than by generation patterns. Indeed, DPI considers that TNSPs have limited incentives to respond dynamically to changes in the configuration of generation.

As the AEMC notes in its Issues Paper, under the present economic regulatory framework TNSPs are not exposed to the costs of any inefficient over or under

investment. This is because actual capital expenditure undertaken by TNSPs in a regulatory control period is rolled into the asset base in the following period. There is no ex post assessment of inefficient over investment – i.e. where TNSPs invest in assets which subsequently become stranded. In addition, there is no mechanism to reward TNSPs for delivering timely investment or conversely no mechanism to penalise TNSPs for delays in delivering investment.

DPI considers that the absence of effective incentives on TNSPs over the timely and efficient delivery of investment in response to the demands of the wholesale market is a significant defect in the current arrangements. DPI believes that TNSPs should ultimately be more accountable to the market for their investment programmes.

Ultimately, a failure on the part of TNSPs to invest efficiently or in a timely manner in response to changing patterns of generation could create significant costs to the market, namely:

a. Efficient generation developments are constrained off the market leading to higher costs to consumers

b. Generators increase their contractual risk premia to manage the risk of being constrained off

c. Investment decision making on the part of generators could be undermined, if generators are concerned that they will not be able to deliver their generation to market.

In the light of the global financial crisis generators are likely to face project finance challenges in funding future generation investment. A consideration in obtaining such finance is whether a generator will be able to deliver its generation to market over the transmission network or whether this is likely to be placed at risk due to transmission constraints and the possibility of being constrained off in the dispatch process.

Given these considerations, it will be important to ensure that TNSPs are responding dynamically to new demands for transmission investment. To the extent that transmission investments are delayed or poorly managed this is likely to have adverse impacts on the ability of generators to secure finance for their investment projects at a critical time.

Earlier in this submission we have discussed the concept of sales of long transmission network rights. Under such an approach, a TNSPs investment programme would be more closely linked to the sales of long term rights to use the system. In particular, where the sales of long term transmission rights suggest that additional network investment is necessary, TNSPs would then seek to progress network augmentations to underpin the sale of the transmission rights. Incentive regimes could be established which reward TNSPs for successfully investing in network capacity in response to demand signalled from the sale of the rights.

As noted above, the sale of transmission rights should also assist the AER in considering the needs case for investments as part of the regulatory control process each 5 years.

To the extent that a TNSP had failed to invest and transmission constraints begin to occur, TNSPs could be required to buy back the rights "on market" from the generators that hold them. An incentive scheme could be established under which the TNSPs bear a proportion of the costs of these buy backs. Any such incentive schemes would need to be developed by the AER.

Alternatively, under a planner procurer model, AEMO would buy back the rights (having sold them initially) and pass through the costs to the relevant TNSP through its service agreement. An incentive scheme would need to be developed to determine the extent to which the relevant TNSP should be exposed to the costs of these buy backs and the extent to which these costs could then be passed through to consumers.

As we have noted above, DPI would be happy to develop these ideas further.

Network charging, access and connection

As has already been noted above, under the open access framework that currently applies within the NEM generators face the risk of being constrained off the system. For the reasons outlined above, this can increase costs to consumers and undermines certainty for generators and generation investors at a critical time in the evolution of the market.

In addition, as has been noted by the AEMC, the risk of being constrained off a congested system can also lead to dis-orderly bidding by generators seeking to maximise their likelihood of dispatch (e.g. by offering generation at non-cost reflective prices).

To the extent that TNSPs fail to meet the future network investment challenge, it is likely that the costs of congestion and the consequential risks and impacts that this has on the wholesale market will increase in the future. This could ultimately destabilise the NEM and increase security of supply risks if the necessary levels of generation cannot be delivered to market.

As we have noted above, DPI believes that in the light of the challenges facing the market, it is necessary for the AEMC to explore options which directly and holistically address these deficiencies.

DPI considers that the AEMC should explore options which include moving away from the existing open access regime, to one which provides for the long and short term sale of financial transmission rights.

The sale of transmission rights should help provide generators with more certainty over access and at a market price (as noted above protections would need to be introduced to prevent hoarding of rights). To the extent that a generator is not able to transmit

electricity in line with the rights it has purchased, the generator would be entitled to compensation through the buy back of the rights.

In addition, the sale of transmission access rights would help to ensure that generators are contributing to a proportion of the costs that they impose on the transmission system. DPI considers that it is important that the costs of operating and investing in the system are efficiently targeted to those that cause the costs. This means in practice that generators contribute to a *proportion* of the costs of any incremental investments that they may trigger in the shared network. Care should be taken however to ensure that prices of access do not ultimately amount to deep connection charges which may discriminate against new entrants.

From a short term operational perspective, where the capacity of the network is fixed, DPI considers that the AEMC should explore options which would involve the efficient rationing of financial transmission rights to those generators that value them the most. This would also have the benefit of ensuring that the costs of network constraints are made clear and transparent to the market.

Network operation

From an operational perspective, DPI considers that TNSPs should be subject to financial incentives that provide rewards to TNSPs for maximising the available capacity of the network and for minimising the costs of congestion and constraints. These incentives should also encourage TNSPs to make efficient trade-offs between investment in the network and network operation. For example, in some cases it would not necessarily be efficient to build out a constraint, but instead ensure that the system is operated in an efficient manner to minimise its impacts.

DPI notes that there are already limited incentives which apply to TNSPs through the Service Target Performance Incentive Scheme. However, to the extent that the AEMC explores the introduction of financial transmission rights, DPI considers that the AEMC should also consider the incentives that could be built around sales and buy backs of transmission rights. For example, financial rewards could be provided to TNSPs for managing the operation of their systems in such a way as to deliver additional network capacity. Similarly, rewards and incentives could be developed around buy backs of capacity.

Evidence of problems

In this response we have set out a significant number of deficiencies with the existing transmission frameworks. As we have noted above, the AEMC is also seeking practical evidence of these deficiencies.

A review of the reports of the AER's reports on events where the electricity spot prices exceed $5000/MWh provides compelling evidence of the problems associated with the existing transmission frameworks.

One clear example of the problems faced by the wholesale market in dealing with transmission constraints is highlighted by the constraints that have frequently arisen on the transmission lines between the Mt Piper and Wallerawang power stations in NSW. On several occasions in a sustained period over the course of the past year constraints on these lines have led the NSW region to reach the price cap (e.g. 7 December 2009, 17 December, 4 February 2010, 22 February 2010, 10 August 2010). These particular events have each been reported on by the AER in line with its requirement to publish reports whenever the spot price exceeds $5000/MWh[1]. The effect of this constraint is to constrain off or limit the dispatch of otherwise low priced generation and reduce imports into NSW from Queensland and Victoria. This then acts to reduce the level of competition between generators providing electricity to the NSW region and therefore contributes to increases in prices. For example, on 7 December 2009 the spot price in NSW exceeded $5000/MWh for six out of eight trading intervals with prices significantly higher than forecast.

It is also important to note that the AER's reports cover those instances where the spot price has exceeded $5000/MWh. As such it is possible that numerous other non-reported constraint events may have occurred on these transmission lines with consequential price impacts on the wholesale market and ultimately consumers.

The AER's reports also provide a good account of how the reduced capability of these transmission lines can cause generators (who are at risk of being constrained off as a result of the congestion) to bid (or re-bid) at negative prices in order to help ensure that they are dispatched. As the AEMC has noted in its Issues Paper this form of bidding undermines the economic efficiency properties of the bid-based merit order dispatch approach used in the NEM and creates a risk that efficient generators are not able to access the market as they have no mechanism to truly signal the value they place on access.

It should also be noted that the AER has also prepared $5000/MWh reports on other recent events where price levels have been influenced by the presence of transmission constraints. For example, on 22 April 2010 in Victoria a series of planned transmission outages restricted imports into Victoria from NSW and SA, contributing to spot prices significantly higher than forecast, along with negative price bidding by participants on the wrong side of the constraint.

DPI would recommend that the AEMC analyse these examples more closely. Such an analysis would need to focus on considering the possible wholesale spot price outcomes both with and without the constraint binding. This would determine whether the presence of the constraints has effectively added significant costs to consumers associated with prices exceeding $5000MW/h.

Further, consideration could also be given to whether a non-discriminatory allocation of tradeable transmission network capacity rights at these points on the system would help

[1] See www.aer.gov.au

to promote a more efficient dispatch outcome by ensuring that those generators that valued access to the NEM at these times were able to obtain it on an efficient basis.

Similarly, the examples provided illustrate the significant inter-regional and national impacts that transmission constraints can have on the wholesale market. This raises a legitimate question as to whether a more national and market based planning process would prevent constraints such as these developing in the future, potentially saving significant costs for consumers.

Concluding comments

DPI considers that the Transmission Frameworks Review represents one of the most significant pieces of work on the AEMC's work programme. The challenges facing the NEM are significant and it is critical that the transmission frameworks deliver an environment which promotes efficient network investment and operation and which is responsive to the wholesale market and which provides more certainty to generation investors and operators.

Without this the arrangements are likely to undermine generation investment with long term security of supply impacts.

Any queries in relation to the submission should be directed to Mr Mark Feather, Director National Energy Development by email at mark.feather@dpi.vic.gov.au or on telephone (03) 9658 4793.