



## Department of Primary Industries

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Our Ref:

Dear Mr Pierce

The Victorian Department of Primary Industries (DPI), as the portfolio agency responsible for energy market development in Victoria, is pleased to make this submission in response to the Australian Energy Market Commission's First Interim Report for its review of the frameworks governing electricity transmission services in the National Electricity Market.

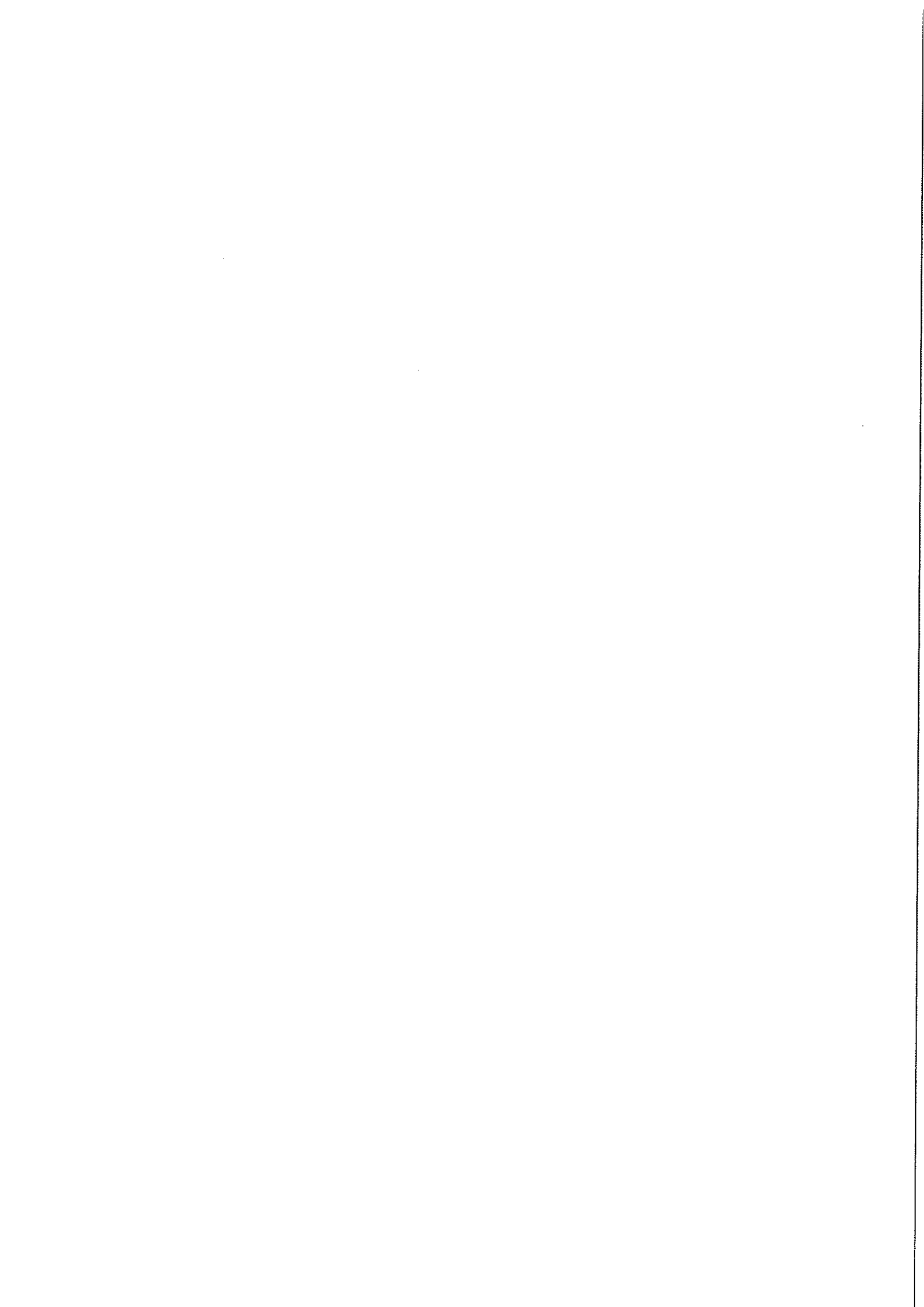
Any queries in relation to this submission should be directed to John Krbaleski, Director, Network Policy by email at [john.krbaleski@dpi.vic.gov.au](mailto:john.krbaleski@dpi.vic.gov.au) or by phone on (03) 9658 4436.

Yours sincerely

**Mark Feather**  
**Acting Executive Director, Energy Sector Development**

27 / 1 / 2012





# **DPI SUBMISSION TO THE AEMC TRANSMISSION FRAMEWORKS REVIEW - FIRST INTERIM REPORT**

## **1. INTRODUCTION**

The Victorian Department of Primary Industries (DPI), as the portfolio agency responsible for energy policy in Victoria, welcomes the opportunity to comment on the Australian Energy Market Commission's (AEMC) First Interim Report for the Transmission Frameworks Review.

As noted in previous submissions to the Review, DPI considers that the Transmission Frameworks Review represents one of the most significant pieces of work on the AEMC work program.

The requirement for new investment in generation to meet load growth and in response to climate change policies has the potential to lead to significant changes in the patterns of generation across the National Electricity Market (NEM). This is likely to drive the need for significant investment in transmission networks.

As noted in previous submissions, there is likely to be uncertainty as to where new generation may locate and the timing of new generation build. This uncertainty may place significant pressures on transmission planning processes.

As such, the regulatory and commercial frameworks governing network planning, and investment in the long term, and network operation and management in the short term, need to be optimal to ensure efficient investment in the face of these challenges and uncertainties. In particular, transmission frameworks will need to be responsive so that investment occurs in a timely and efficient manner and in the most suitable locations.

A failure to meet these challenges could lead to increased network congestion and hamper the ability of generators (including new generation investors) to access the market. This creates investment and operational risks for generation businesses and could ultimately hamper key generation investment decisions when the market is undergoing a major transition. As noted in previous submissions, it will be consumers who bear the costs if efficient sources of generation cannot access the market.

In summary, effective consideration of these issues should help to promote more efficient network investment which is critical given the range of cost of living and business competitiveness issues that arise as a result of rising energy costs.

### The need for evidence

The First Interim Report notes that limited evidence has been provided to the AEMC to effectively demonstrate that there are material problems with the current arrangements governing transmission services in the NEM.

DPI supports the need for robust analysis of possible reform options utilising available evidence. However, given the complexity and difficulties associated with

conclusively calculating the impacts of transmission network congestion in the absence of a market based firm access framework, the AEMC should not focus solely on finding evidence of current problems. Rather, the review should remain forward-thinking, ensuring that transmission frameworks are appropriately aligned to potential changes in the patterns of generation across the NEM and the associated implications for transmission networks. In doing so, the AEMC should apply the precautionary principle, implementing any necessary early policy action using the best available evidence, and in a way that ensures that the transmission frameworks are sufficiently robust and flexible to respond to the uncertainty of future investment patterns and government policy changes.

### Summary of submission

This submission makes the following key points:

- The continuation of current open access arrangements with minimal changes (Package 1) would represent a lost opportunity.
- At the minimum, DPI supports the introduction of a congestion pricing mechanism similar to that proposed in Package 2.
- DPI considers the introduction of a reliability standard for generation (Package 3) to be the least preferred option. DPI has significant concerns regarding the application of deterministic standards to an inherently uncertain generation environment. In particular, the nature, location and timing of future investments in generation technologies cannot be predicted with certainty. DPI also has concerns regarding the proposed treatment of new entrant generators under the model.
- In principle, the regional optional firm access model (OFA) detailed in Package 4 has some merit, although a number of amendments would need to be made to improve the model. In particular, DPI considers that arrangements for deep connection charging raise material competition concerns and barriers to entry. The AEMC should therefore consider mechanisms that would address these risks including mechanisms that provide for tradeability of access rights and which prevent hoarding by incumbent generators. It is critical at a time of significant change in the generation sector to ensure that artificial barriers to entry are not imposed on new generation investment and that all generators can participate on a level playing field.
- DPI is concerned with a number of the proposed arrangements under the full financial transmission rights model (Package 5) and considers substantial changes would need to be made to make this option acceptable.
- In lieu of more substantial changes, DPI supports a number of the proposed incremental enhancements to the transmission planning arrangements proposed by the AEMC.
- DPI considers that the AEMC should provide further rationale to support its conclusions that for-profit transmission network service providers (TNSPs) should be responsible for planning, as opposed to a not-for-profit national transmission planner/procurer. DPI does not consider that the AEMC has provided evidence as to how the existing incentives framework which is applicable to TNSPs drives efficient investment that is in line with the needs of generators in the wholesale market and which in turn promotes competition in generation.

- DPI welcomes the AEMC proposals to improve the clarity of regulated connection processes in Chapters 5 and 6A of the NER, and to clarify construction, maintenance and access arrangements for connection assets.
- DPI supports the AEMC further considering enhancement to the economic regulation of connection services as outlined under Proposal 2 in Chapter 13.

#### Structure of submission

This submission provides DPI's observations on each of the five reform packages presented by the AEMC (Part 2), as well as comment on the various options for reform in the areas of planning (Part 3) and connections (Part 4).

## **2. OBSERVATIONS ON REFORM PACKAGES**

### **Package 1 – Open access (status quo)**

DPI considers that there is sufficient evidence to demonstrate that the open access model is not the ideal model to support efficient investment in generation and transmission networks over the longer term and in the face of a significant transformation in the configuration of generation across the NEM. DPI considers that an opportunity would be lost to improve arrangements for transmission should Package 1 become the preferred option for the AEMC. Indeed, given the need for unprecedented investment in transmission networks, adopting this approach creates material risks that efficient and timely network investment does not occur in response to market demand, including in particular, new generation investment projects.

By contrast, DPI considers that a framework that incorporates a form of financial transmission rights would provide better market signals that should help drive efficient and timely network investment at the right locations. In addition, such a framework would provide generation investors with increased certainty of access and assist generators in hedging the risks of congestion. Such a framework would help promote competition between generators and facilitate efficient generation investment at a time when the market is undergoing a key transformation.

### **Package 2 – Open access with congestion pricing**

DPI considers that the introduction of a form of congestion pricing would be preferable to current arrangements, and should be introduced if the AEMC does not proceed with more significant reform at this time.

DPI agrees that the Shared Access Congestion Pricing (SACP) model should encourage more cost reflective bidding (in turn removing the potential for disorderly bidding) and improve dispatch efficiency. However, as it is focussed only on short term dispatch, it is unlikely to address many of the issues raised in DPI's previous submissions regarding deficiencies with the existing transmission access regime.

As noted in previous submissions, DPI considers that the major challenge facing the transmission frameworks is whether efficient levels of transmission investment occur at the right time and in the correct locations in response to changing patterns of generation. Whilst Package 2 provides some additional information to the market on the costs of congestion, it does not provide any long term investment signals to transmission companies to assist in the planning process or (based on the AEMC analysis) locational signals that could drive generator decisions regarding where on the network to locate.

### **Package 3 – Generator reliability standards**

DPI considers that the introduction of reliability standards for generation, as detailed in Package 3, is the least preferred option for reform being considered by the AEMC.

The First Interim Report indicates that the reliability standards for generation would be economically derived and expressed in a deterministic form and fixed for a period

of time across a range of generation zones, similar to the model proposed by the AEMC for load connected to the transmission network. DPI has a number of concerns with the proposals to establish deterministic generation reliability standards. These concerns are set out below.

Setting deterministic standards in an environment of uncertainty

The implementation of the Commonwealth Government's climate change policy initiatives including carbon pricing, the Renewable Energy Target and Contracts for Closure Program are likely to create an unprecedented investment challenge and technological transformation on a scale that has not previously occurred within the NEM framework. As a result there are likely to be substantial changes in patterns of generation investment, with significant uncertainty as to the nature, location and timing of this investment.

In order to effectively implement a deterministic reliability standard for generation it will be necessary for AEMO and the TNSPs to accurately forecast the timing and location of future generation investments. This is likely to be a challenging task given the uncertainty associated with the location and timing of future generation. Similarly, TNSPs may face significant difficulties in meeting the standard if there is significant uncertainty around timing and location of generation investments.

DPI considers that the uncertainties around future generation investment potentially exacerbate the risk that a deterministic reliability standard for generation will drive inefficient levels of over or under-investment in transmission networks.

DPI also notes that whilst deterministic standards might provide some certainty to generators as to whether network investments might occur, there is a significant risk that deterministic requirements set in advance and applied for a number of years may lead to inefficient network investments. In particular, the standards are unlikely to be sufficiently dynamic to be able to adjust to market events. Again, as noted above, these impacts are likely to be exacerbated in the case of generation where there is significant uncertainty as to future investments. This is because any *ex ante* economic analysis which underpins the standards would make assumptions about future generation projects in an inherently uncertain environment.

In summary, DPI considers that the application of deterministic standards to generation is likely to lead to losses in dynamic efficiencies.

Indeed, if there is a risk that inefficient investment could occur under a deterministic approach, this could also include inefficient under-investment. In this context, there is a risk that deterministic standards could in fact increase investment uncertainty for generators.

It is also noted that the AEMC has recognised these uncertainties in its discussion of Unit Cost Allowances/Contingent Projects and approaches to funding network capital expenditure. In this respect, the application of dynamic revenue drivers within a pricing determination period for generation-led capital expenditure appears somewhat inconsistent with the broader concept of establishing static *ex ante* deterministic standards based on forecasts of future generation developments.

### Institutional arrangements

To the extent that a reliability standard for generation was instituted, DPI considers that it is important that the arrangements underpinning such a framework adequately reflect the existing network planning arrangements that apply in Victoria, under which AEMO acts as an independent not-for-profit system planner and applies a probabilistic cost/benefit planning approach to each network augmentation on a dynamic basis.

DPI considers that a dynamic probabilistic planning approach applied to transmission augmentations is likely to result in more accurate and efficient investment outcomes when compared to the setting of deterministic standards that are applied for a fixed period and which are based on analysis which is likely to become out of date over time as market events evolve.

### Treatment of new entrants

In its discussion of Package 3, the AEMC sets out an option under which new entrants seeking access to the transmission system would be permitted to connect but would be constrained off before the access of incumbents is affected. Another option is to not connect new entrants until the network has been reinforced to meet the new capacity requirements.

As noted in DPI's response to the AEMC Directions Paper, DPI considers that if a new entrant generator is likely to be more efficient than an existing generator (e.g. with higher opportunity costs) then constraining that new generator off the network or forcing it to pay for an augmentation through a deep connection charge is likely to distort competition between generators and reduce allocative efficiencies. As such, DPI has concerns regarding the competition effects of the options set out in the AEMC's paper relating to the treatment of new entrants.

### **Package 4 – Regional optional firm access model**

The AEMC's document indicates that under this package, generators would have the option of obtaining financial access to the regional reference node and that firm access rights would be assigned by TNSPs in response to applications from generators.

DPI considers that, in principle, the regional optional firm access model (OFA) has some merit to the extent that information derived from generator firm access applications should help to inform the transmission planning process with accurate market based signals on the future network requirements of generators.

Further, it should also provide generation investors with some degree of certainty that the financial risks associated with being constrained off the system will be partially hedged.

However, DPI has a number of significant concerns with aspects of the OFA. These are set out below. In the absence of these issues being addressed, DPI considers that this Package is unlikely to be workable.



### Deep connection charging

The AEMC's report indicates that deep connection charging is one possible option for newly connecting generators to secure firm access rights. Under this approach, new entrant generation investors would be required to pay for the costs of any incremental investment required to provide these additional rights.

For the reasons outlined above (and in previous submissions), DPI has concerns regarding the application of deep connection charging approaches. In particular, DPI considers such approaches could unduly discriminate between incumbents and new entrants and distort competition between generators. If a new entrant generator is likely to be more efficient than an existing generator at the same location, then forcing the new generator to pay for an augmentation is unlikely to promote allocative efficiency. Further, it could lead to inefficient and unnecessary over investment in network capacity.

DPI considers that it would be more efficient (from a wholesale market perspective) for the generator with the highest opportunity costs to be able to secure firm access to the existing network, without being required to pay for augmentations, which could impose a significant barrier to entry.

There are potentially a number of mechanisms that could be used to address this concern and which may be worthy of further consideration. These include making the access rights tradeable, so that a new entrant has the opportunity of purchasing the right from an existing holder. Consideration should also be given to whether the access rights are subject to anti-hoarding mechanisms to prevent incumbent generators from hoarding or withholding the rights from the market, including new entrants. In the absence of even these basic protections, it is unclear how a transmission rights model with deep connection charging would be consistent with the National Electricity Objective.

In this context, DPI considers that a Generator TUOS model (the alternative option set out by the AEMC) is preferable to a deep connection charging model.

### Booking of firm rights

The period over which the firm rights are to be booked is not made clear in the description of this package. If firm rights are to be made available and are to underpin network investment decisions, it will be important to ensure that the firm access product is made available for defined periods within the investment time cycle. For example, those seeking long term access certainty could book for longer periods (e.g. booking a right that extends for 5 years), whilst those seeking shorter term access could book for lesser periods. In particular, defining the length of the booking period will provide network planners with more accurate information on network demand to inform planning decisions.

In the absence of defined booking periods, there is a risk that generators may book firm access products and then at a later point, alter their choice to non-firm access. In these circumstances it would be extremely difficult for network planners to place any significant reliance on firm access right bookings. In addition, the ability to switch to

non-firm rights at any time creates a significant risk of asset stranding and inefficient network investment which would be detrimental to customer interests.

DPI notes that the creation of longer term and shorter term access products would potentially result in Package 4 becoming similar to Package 5. In particular if short term access products (e.g booking quarterly capacity rights, on an annual basis) were released (i.e. outside of investment timelines) then this would require some definition of baseline capacity levels against which rights would be released in via a suitable allocation mechanism. Given that short term network capacity levels are largely fixed (subject to some short term operational variation), any release would be via a non-discriminatory rationing mechanism such as an auction, as outlined in Package 5.

#### Interaction with generator reliability standards

In Chapter 9 of its First Interim Report, the AEMC indicates that the main change to the planning arrangements under the regional OFA model would be the introduction of a generation network planning standard. There would also be a firm access operating standard which would provide that under normal operating conditions network capacity would be sufficient to allow firm generators to access the regional reference node.

DPI is concerned that the application of a regional OFA model is potentially inconsistent with setting of an ex ante deterministic reliability standard for generation. In particular, it is unclear how the setting of an ex ante deterministic generator reliability standard that is based on forecasts of generation at the commencement of a fixed period, is consistent with a transmission planning and investment program which is based around more dynamic information derived from applications for generator firm access rights. Some clarification as to how these processes interact would be helpful.

#### Compensation mechanisms

Under the regional OFA model, the AEMC indicates that non-firm generators would be responsible for making compensation payments to firm generators should transmission constraints prevent dispatch of the firm output that would be otherwise be dispatched. DPI believes that the AEMC should give consideration to whether TNSPs should bear a proportion of the costs of any compensation to holders of firm access rights that are constrained off. For example, if compensation needs to be scaled back this may raise questions as to whether the relevant TNSP has invested efficiently or is operating its system efficiently and should therefore be exposed to a proportion of the costs this imposes on generators that have secured firm access rights.

#### **Package 5 – National locational marginal pricing**

As noted in previous submissions to this Review, DPI supports the introduction of a market-based system of financial transmission rights to give generators greater confidence of transmission network access (where desired), and to inform AEMO and the TNSPs as to likely future developments in the network.

However, DPI does not support the model as detailed in Package 5, for the following reasons:

- Flexibility of access rights: In order to prevent 'gaming' by generators in the allocation of financial transmission rights, firm generators would need to be prevented from becoming non-firm, or would need to sell their rights to another participant before becoming non-firm. This is outlined in further detail in the response to Package 4.
- Ability to trade rights: financial transmission rights must be capable of being traded between generators, such that new entrant generators may purchase the rights from incumbent generators where agreed between both parties (see Package 4 for a more detailed discussion)
- Need for reliability standard for generation: DPI has significant concerns with the introduction of a reliability standard for generation (as discussed against Package 3 and Package 4) and does not consider such a standard would be necessary to support a system of financial transmission rights.
- Planning model and role of AEMO: DPI disagrees with the AEMC's conclusions that a single for-profit TNSP needs to be instituted to undertake national planning and manage the auction process for financial transmission rights. DPI considers that AEMO would be well-placed to continue in its current role as National Transmission Planner, and also take on a role in managing an auction and settlement process for financial transmission rights. As noted in previous DPI submissions, an AEMO-led model would need to be underpinned with contracts between AEMO and TNSPs for the delivery of network investments.

### 3. PLANNING

#### Efficiency of current arrangements

As the AEMC notes in Chapter 11 of the First Interim Report, a number of the transmission planning arrangements have only been introduced in the last few years, including the new role for AEMO as National Transmission Planner (NTP), publication of the AEMO National Transmission Network Development Plan (NTNDP) and the introduction of the regulatory investment test for transmission (RIT-T).

While many of the current transmission planning arrangements are relatively new, DPI has some concern that the current planning arrangements are not delivering transparent information to the market on a national basis, and that insufficient consideration and investment is being directed towards inter-regional augmentations in particular. As noted in previous submissions, DPI considers that TNSPs do not currently have sufficient incentives to cooperate in a coordinated manner to optimally design the NEM transmission network.

In the absence of more fundamental reform, DPI would support further investigation by the AEMC of some of the enhancements proposed to existing arrangements. In particular, DPI supports improving consistency of the TNSP annual planning reports (APRs) and the transparency of the RIT-T process, as outlined in the First Interim Report.

DPI also supports in-principle the further consideration of aligning regulatory periods of the TNSPs. The benefits of aligning TNSP regulatory periods would have to be compared against any further mis-alignment between TNSP resets and those of the distribution network service providers (DNSPs), the implementation costs involved, and resourcing implications for the Australian Energy Regulator (AER).

#### Options for greater reform

As noted in the First Interim Report, DPI proposes the extension of Victoria's independent planner-procurer model on a national basis. The benefits of extending the Victorian model are described in the DPI submission to the AEMC Directions Paper and the DPI presentation given to the stakeholder forum in December 2011, and will not be reproduced in this submission.

However, DPI considers it important to respond to some of the AEMC findings in this section of the Report regarding the role of financial incentives and the potential risks associated with AEMO undertaking the role of national planner-procurer.

In Section 11.3.2 of the Report, the AEMC notes its view that financial incentives are likely to provide the most robust and transparent driver for efficient decision making (p. 143). DPI does not consider that the AEMC has provided any evidence to demonstrate how the existing incentives framework which is applicable to TNSPs drives efficient investment that is in line with the needs of generation in the wholesale market. As has been noted in previous submissions, DPI considers that the incentive framework is not aligned with the needs of the wholesale market. In particular, the

incentive framework is not designed to ensure that TNSPs respond in a timely and efficient manner to the needs of the wholesale market, especially changes in generation investment patterns..

Instead, as noted in our previous submissions, the framework provides incentives on TNSPs to delay capital expenditure to the end of the regulatory period, rather than at a time in which investment might be required or justified by the wholesale market and generation developments. Further, the framework provides few incentives on TNSPs to make optimal trade-offs between network and non-network investment options, as investment-based augmentations are automatically rolled into the asset base. In addition, as TNSPs operate on a regional basis there is a risk that efficient inter-regional investment solutions will not be considered in their planning decisions.

As we have noted previously, DPI considers that the AEMO not-for profit planning model is a transparent service based model more aligned with the needs of the market. In view of this, DPI believes that it is necessary for the AEMC to address the criticisms of the incentive framework set out above and set out how TNSPs incentive framework are aligned with the needs of the wholesale market so that timely and efficient investment can occur in line with changing patterns of generation. The alignment of transmission and generation incentives is a key part of the Terms of Reference for the review and it is critical that this issue is given careful consideration.

The AEMC also notes in Chapter 11 that it believes that the not-for-profit nature of AEMO means that reliance is placed on the decision making of the AEMO board, and that creation of a national planner procurer role for AEMO could also potentially conflict with its role as market operator (p.143).

By contrast, DPI considers that AEMO is well placed as an independent not-for profit agency to make impartial planning decisions in the interest of end-use consumers (as intended by the National Electricity Objective). The significant industry representation on the AEMO Board gives DPI confidence that sufficient checks and balances are in place to support unbiased decision-making. It is similarly unclear as to how AEMO's role as national planner-procurer would conflict with its role as market operator.

DPI notes that the planner-procurer model has been successfully introduced in recent years in the electricity markets of both California and Texas, in response to concerns that for-profit TNSPs were under-investing in transmission assets. In California, the role of the independent system operator (Californian Independent Systems Operator, CAISO) has been expanded from market operator to include a pro-active role in identifying, coordinating and planning the necessary development of transmission infrastructure and reinforcements within its region. Under this approach, CAISO identifies the investments that need to be made and can put proposals out to tender for third party investors should the relevant transmission owner be unable or unwilling to undertake the project.

Considering the concerns expressed by the AEMC regarding transfer of responsibility for national planner/procurer to AEMO, one suitable alternative arrangement might be for planning and procurement to be shared between AEMO and TNSPs. Under this approach, AEMO could become principally responsible for 'generator-facing'

planning and procurement, focussing on ensuring that transmission networks are able to respond efficiently to future changes in the pattern of generation across the NEM. Meanwhile, TNSPs would remain principally 'load-focussed', responding to more localised changes in demand and load.

A second alternative, consistent with the model adopted in California, would see AEMO act as a national 'planner of last resort', with the ability to put transmission projects out to competitive tender where identified in the NTNDP and where the TNSP in that region does not efficiently progress the investment. This 'last-resort' procurement power would be similar to the current powers of AEMO in Victoria. By allocating this role to AEMO, the AEMC would no longer need to continue its own Last Resort Planning Power – a role which is not necessarily aligned with the AEMC's core role as rule maker.

In any case, DPI considers that the Second Interim Report should provide more rationale to support the AEMC's comments regarding the role of financial incentives and the risks associated with AEMO as a national planner-procurer.

## 4. CONNECTIONS

### Issues related to current connection arrangements

DPI welcomes the AEMC proposals in Chapters 12 and 14 of the First Interim Report to improve the clarity of regulated connection processes in Chapters 5 and 6A of the NER, and to clarify construction, maintenance and access arrangements for connection assets. As the AEMC has identified, there is substantial ambiguity in a number of areas of the current connection process, particularly in the classification of different connection services and who is (or may be) responsible for building, owning and operating shared network augmentations, dedicated connection assets and extensions. This ambiguity has made it difficult for market participants to gain a clear understanding of the connection process and led to diversion in connection practices across jurisdictions.

### Economic regulation of connection-related services

Regarding the AEMC proposals outlined in Chapter 13 of the First Interim Report, DPI considers that there is a clear rationale to pursue enhancements to the negotiation framework as outlined under Proposal 2. Under current connection arrangements there are insufficient regulatory controls on TNSPs to ensure that connection applicants receive 'fair and reasonable' treatment. The outcome of any given connection process is highly dependent on the willingness of the TNSP to proactively engage, and on the TNSPs providing the required information to the applicant to enable them to negotiate on the basis of full information. Unfortunately, this fair treatment is often not forthcoming.

DPI supports all of the enhancements outlined in Proposal 2 for further consideration. AEMO, in its role as the Victorian planner-procurer for transmission services, is currently finalising its Victorian Connections Initiative, which provides a suitable model template for the enhancements being considered by the AEMC. The AEMO initiative will include publication of standard contract templates as well as a range of indicative connection costs and timelines based on designs of standard connection types. The AEMC proposal for the TNSP to provide a full breakdown of costs and services associated with a specific connection, and evidence of and changes to costs, are also supported.

DPI understands that the reluctance on the part of the connection applicant to pursue dispute resolution is that it is seen as bringing further delays to the project (as most connection negotiations are often well advanced when an impasse is reached), as well as the perceived potential for the TNSP to make future applications more difficult. This means that there is a tendency for applicants to 'persevere' in their dealings with the TNSP despite this often leading to less than satisfactory outcomes for the applicant. In this context, DPI considers that Proposal 1 needs further refinement should the AEMC consider it further for implementation. The proposal as outlined is unlikely to have a significant impact without improvements to the regulatory process as outlined in Proposal 2.

DPI does not support Proposal 3 (migrating connection-related services from 'negotiated' to 'prescribed') at this time. While there are clear deficiencies in the

current negotiation process, shifting all negotiated services to prescribed services would add significant complexity and could also work against the interests of connecting applicants. Setting a "unit cost allowance" for connections is likely to stifle innovation and be more costly for some connecting parties if a cheaper alternative connection arrangement can be agreed through negotiation. It could also further limit access of contestable service providers in providing connection services.



# **DPI SUBMISSION TO THE AEMC TRANSMISSION FRAMEWORKS REVIEW - FIRST INTERIM REPORT**

## **1. INTRODUCTION**

The Victorian Department of Primary Industries (DPI), as the portfolio agency responsible for energy policy in Victoria, welcomes the opportunity to comment on the Australian Energy Market Commission's (AEMC) First Interim Report for the Transmission Frameworks Review.

As noted in previous submissions to the Review, DPI considers that the Transmission Frameworks Review represents one of the most significant pieces of work on the AEMC work program.

The requirement for new investment in generation to meet load growth and in response to climate change policies has the potential to lead to significant changes in the patterns of generation across the National Electricity Market (NEM). This is likely to drive the need for significant investment in transmission networks.

As noted in previous submissions, there is likely to be uncertainty as to where new generation may locate and the timing of new generation build. This uncertainty may place significant pressures on transmission planning processes.

As such, the regulatory and commercial frameworks governing network planning, and investment in the long term, and network operation and management in the short term, need to be optimal to ensure efficient investment in the face of these challenges and uncertainties. In particular, transmission frameworks will need to be responsive so that investment occurs in a timely and efficient manner and in the most suitable locations.

A failure to meet these challenges could lead to increased network congestion and hamper the ability of generators (including new generation investors) to access the market. This creates investment and operational risks for generation businesses and could ultimately hamper key generation investment decisions when the market is undergoing a major transition. As noted in previous submissions, it will be consumers who bear the costs if efficient sources of generation cannot access the market.

In summary, effective consideration of these issues should help to promote more efficient network investment which is critical given the range of cost of living and business competitiveness issues that arise as a result of rising energy costs.

### The need for evidence

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DPI supports the need for robust analysis of possible reform options utilising available evidence. However, given the complexity and difficulties associated with

conclusively calculating the impacts of transmission network congestion in the absence of a market based firm access framework, the AEMC should not focus solely on finding evidence of current problems. Rather, the review should remain forward-thinking, ensuring that transmission frameworks are appropriately aligned to potential changes in the patterns of generation across the NEM and the associated implications for transmission networks. In doing so, the AEMC should apply the precautionary principle, implementing any necessary early policy action using the best available evidence, and in a way that ensures that the transmission frameworks are sufficiently robust and flexible to respond to the uncertainty of future investment patterns and government policy changes.

### Summary of submission

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## **2. OBSERVATIONS ON REFORM PACKAGES**

### **Package 1 – Open access (status quo)**

DPI considers that there is sufficient evidence to demonstrate that the open access model is not the ideal model to support efficient investment in generation and transmission networks over the longer term and in the face of a significant transformation in the configuration of generation across the NEM. DPI considers that an opportunity would be lost to improve arrangements for transmission should Package 1 become the preferred option for the AEMC. Indeed, given the need for unprecedented investment in transmission networks, adopting this approach creates material risks that efficient and timely network investment does not occur in response to market demand, including in particular, new generation investment projects.

By contrast, DPI considers that a framework that incorporates a form of financial transmission rights would provide better market signals that should help drive efficient and timely network investment at the right locations. In addition, such a framework would provide generation investors with increased certainty of access and assist generators in hedging the risks of congestion. Such a framework would help promote competition between generators and facilitate efficient generation investment at a time when the market is undergoing a key transformation.

### **Package 2 – Open access with congestion pricing**

DPI considers that the introduction of a form of congestion pricing would be preferable to current arrangements, and should be introduced if the AEMC does not proceed with more significant reform at this time.

DPI agrees that the Shared Access Congestion Pricing (SACP) model should encourage more cost reflective bidding (in turn removing the potential for disorderly bidding) and improve dispatch efficiency. However, as it is focussed only on short term dispatch, it is unlikely to address many of the issues raised in DPI's previous submissions regarding deficiencies with the existing transmission access regime.

As noted in previous submissions, DPI considers that the major challenge facing the transmission frameworks is whether efficient levels of transmission investment occur at the right time and in the correct locations in response to changing patterns of generation. Whilst Package 2 provides some additional information to the market on the costs of congestion, it does not provide any long term investment signals to transmission companies to assist in the planning process or (based on the AEMC analysis) locational signals that could drive generator decisions regarding where on the network to locate.

### **Package 3 – Generator reliability standards**

DPI considers that the introduction of reliability standards for generation, as detailed in Package 3, is the least preferred option for reform being considered by the AEMC.

The First Interim Report indicates that the reliability standards for generation would be economically derived and expressed in a deterministic form and fixed for a period

of time across a range of generation zones, similar to the model proposed by the AEMC for load connected to the transmission network. DPI has a number of concerns with the proposals to establish deterministic generation reliability standards. These concerns are set out below.

*Setting deterministic standards in an environment of uncertainty*

The implementation of the Commonwealth Government's climate change policy initiatives including carbon pricing, the Renewable Energy Target and Contracts for Closure Program are likely to create an unprecedented investment challenge and technological transformation on a scale that has not previously occurred within the NEM framework. As a result there are likely to be substantial changes in patterns of generation investment, with significant uncertainty as to the nature, location and timing of this investment.

In order to effectively implement a deterministic reliability standard for generation it will be necessary for AEMO and the TNSPs to accurately forecast the timing and location of future generation investments. This is likely to be a challenging task given the uncertainty associated with the location and timing of future generation. Similarly, TNSPs may face significant difficulties in meeting the standard if there is significant uncertainty around timing and location of generation investments.

DPI considers that the uncertainties around future generation investment potentially exacerbate the risk that a deterministic reliability standard for generation will drive inefficient levels of over or under-investment in transmission networks.

DPI also notes that whilst deterministic standards might provide some certainty to generators as to whether network investments might occur, there is a significant risk that deterministic requirements set in advance and applied for a number of years may lead to inefficient network investments. In particular, the standards are unlikely to be sufficiently dynamic to be able to adjust to market events. Again, as noted above, these impacts are likely to be exacerbated in the case of generation where there is significant uncertainty as to future investments. This is because any *ex ante* economic analysis which underpins the standards would make assumptions about future generation projects in an inherently uncertain environment.

In summary, DPI considers that the application of deterministic standards to generation is likely to lead to losses in dynamic efficiencies.

Indeed, if there is a risk that inefficient investment could occur under a deterministic approach, this could also include inefficient under-investment. In this context, there is a risk that deterministic standards could in fact increase investment uncertainty for generators.

It is also noted that the AEMC has recognised these uncertainties in its discussion of Unit Cost Allowances/Contingent Projects and approaches to funding network capital expenditure. In this respect, the application of dynamic revenue drivers within a pricing determination period for generation-led capital expenditure appears somewhat inconsistent with the broader concept of establishing static *ex ante* deterministic standards based on forecasts of future generation developments.

### Institutional arrangements

To the extent that a reliability standard for generation was instituted, DPI considers that it is important that the arrangements underpinning such a framework adequately reflect the existing network planning arrangements that apply in Victoria, under which AEMO acts as an independent not-for-profit system planner and applies a probabilistic cost/benefit planning approach to each network augmentation on a dynamic basis.

DPI considers that a dynamic probabilistic planning approach applied to transmission augmentations is likely to result in more accurate and efficient investment outcomes when compared to the setting of deterministic standards that are applied for a fixed period and which are based on analysis which is likely to become out of date over time as market events evolve.

### Treatment of new entrants

In its discussion of Package 3, the AEMC sets out an option under which new entrants seeking access to the transmission system would be permitted to connect but would be constrained off before the access of incumbents is affected. Another option is to not connect new entrants until the network has been reinforced to meet the new capacity requirements.

As noted in DPI's response to the AEMC Directions Paper, DPI considers that if a new entrant generator is likely to be more efficient than an existing generator (e.g. with higher opportunity costs) then constraining that new generator off the network or forcing it to pay for an augmentation through a deep connection charge is likely to distort competition between generators and reduce allocative efficiencies. As such, DPI has concerns regarding the competition effects of the options set out in the AEMC's paper relating to the treatment of new entrants.

### **Package 4 – Regional optional firm access model**

The AEMC's document indicates that under this package, generators would have the option of obtaining financial access to the regional reference node and that firm access rights would be assigned by TNSPs in response to applications from generators.

DPI considers that, in principle, the regional optional firm access model (OFA) has some merit to the extent that information derived from generator firm access applications should help to inform the transmission planning process with accurate market based signals on the future network requirements of generators.

Further, it should also provide generation investors with some degree of certainty that the financial risks associated with being constrained off the system will be partially hedged.

However, DPI has a number of significant concerns with aspects of the OFA. These are set out below. In the absence of these issues being addressed, DPI considers that this Package is unlikely to be workable.

### Deep connection charging

The AEMC's report indicates that deep connection charging is one possible option for newly connecting generators to secure firm access rights. Under this approach, new entrant generation investors would be required to pay for the costs of any incremental investment required to provide these additional rights.

For the reasons outlined above (and in previous submissions), DPI has concerns regarding the application of deep connection charging approaches. In particular, DPI considers such approaches could unduly discriminate between incumbents and new entrants and distort competition between generators. If a new entrant generator is likely to be more efficient than an existing generator at the same location, then forcing the new generator to pay for an augmentation is unlikely to promote allocative efficiency. Further, it could lead to inefficient and unnecessary over investment in network capacity.

DPI considers that it would be more efficient (from a wholesale market perspective) for the generator with the highest opportunity costs to be able to secure firm access to the existing network, without being required to pay for augmentations, which could impose a significant barrier to entry.

There are potentially a number of mechanisms that could be used to address this concern and which may be worthy of further consideration. These include making the access rights tradeable, so that a new entrant has the opportunity of purchasing the right from an existing holder. Consideration should also be given to whether the access rights are subject to anti-hoarding mechanisms to prevent incumbent generators from hoarding or withholding the rights from the market, including new entrants. In the absence of even these basic protections, it is unclear how a transmission rights model with deep connection charging would be consistent with the National Electricity Objective.

In this context, DPI considers that a Generator TUOS model (the alternative option set out by the AEMC) is preferable to a deep connection charging model.

### Booking of firm rights

The period over which the firm rights are to be booked is not made clear in the description of this package. If firm rights are to be made available and are to underpin network investment decisions, it will be important to ensure that the firm access product is made available for defined periods within the investment time cycle. For example, those seeking long term access certainty could book for longer periods (e.g. booking a right that extends for 5 years), whilst those seeking shorter term access could book for lesser periods. In particular, defining the length of the booking period will provide network planners with more accurate information on network demand to inform planning decisions.

In the absence of defined booking periods, there is a risk that generators may book firm access products and then at a later point, alter their choice to non-firm access. In these circumstances it would be extremely difficult for network planners to place any significant reliance on firm access right bookings. In addition, the ability to switch to

non-firm rights at any time creates a significant risk of asset stranding and inefficient network investment which would be detrimental to customer interests.

DPI notes that the creation of longer term and shorter term access products would potentially result in Package 4 becoming similar to Package 5. In particular if short term access products (e.g booking quarterly capacity rights, on an annual basis) were released (i.e. outside of investment timelines) then this would require some definition of baseline capacity levels against which rights would be released in via a suitable allocation mechanism. Given that short term network capacity levels are largely fixed (subject to some short term operational variation), any release would be via a non-discriminatory rationing mechanism such as an auction, as outlined in Package 5.

#### *Interaction with generator reliability standards*

In Chapter 9 of its First Interim Report, the AEMC indicates that the main change to the planning arrangements under the regional OFA model would be the introduction of a generation network planning standard. There would also be a firm access operating standard which would provide that under normal operating conditions network capacity would be sufficient to allow firm generators to access the regional reference node.

DPI is concerned that the application of a regional OFA model is potentially inconsistent with setting of an ex ante deterministic reliability standard for generation. In particular, it is unclear how the setting of an ex ante deterministic generator reliability standard that is based on forecasts of generation at the commencement of a fixed period, is consistent with a transmission planning and investment program which is based around more dynamic information derived from applications for generator firm access rights. Some clarification as to how these processes interact would be helpful.

#### *Compensation mechanisms*

Under the regional OFA model, the AEMC indicates that non-firm generators would be responsible for making compensation payments to firm generators should transmission constraints prevent dispatch of the firm output that would be otherwise be dispatched. DPI believes that the AEMC should give consideration to whether TNSPs should bear a proportion of the costs of any compensation to holders of firm access rights that are constrained off. For example, if compensation needs to be scaled back this may raise questions as to whether the relevant TNSP has invested efficiently or is operating its system efficiently and should therefore be exposed to a proportion of the costs this imposes on generators that have secured firm access rights.

### **Package 5 – National locational marginal pricing**

As noted in previous submissions to this Review, DPI supports the introduction of a market-based system of financial transmission rights to give generators greater confidence of transmission network access (where desired), and to inform AEMO and the TNSPs as to likely future developments in the network.



However, DPI does not support the model as detailed in Package 5, for the following reasons:

- Flexibility of access rights: In order to prevent ‘gaming’ by generators in the allocation of financial transmission rights, firm generators would need to be prevented from becoming non-firm, or would need to sell their rights to another participant before becoming non-firm. This is outlined in further detail in the response to Package 4.
- Ability to trade rights: financial transmission rights must be capable of being traded between generators, such that new entrant generators may purchase the rights from incumbent generators where agreed between both parties (see Package 4 for a more detailed discussion)
- Need for reliability standard for generation: DPI has significant concerns with the introduction of a reliability standard for generation (as discussed against Package 3 and Package 4) and does not consider such a standard would be necessary to support a system of financial transmission rights.
- Planning model and role of AEMO: DPI disagrees with the AEMC’s conclusions that a single for-profit TNSP needs to be instituted to undertake national planning and manage the auction process for financial transmission rights. DPI considers that AEMO would be well-placed to continue in its current role as National Transmission Planner, and also take on a role in managing an auction and settlement process for financial transmission rights. As noted in previous DPI submissions, an AEMO-led model would need to be underpinned with contracts between AEMO and TNSPs for the delivery of network investments.

### 3. PLANNING

#### Efficiency of current arrangements

As the AEMC notes in Chapter 11 of the First Interim Report, a number of the transmission planning arrangements have only been introduced in the last few years, including the new role for AEMO as National Transmission Planner (NTP), publication of the AEMO National Transmission Network Development Plan (NTNDP) and the introduction of the regulatory investment test for transmission (RIT-T).

While many of the current transmission planning arrangements are relatively new, DPI has some concern that the current planning arrangements are not delivering transparent information to the market on a national basis, and that insufficient consideration and investment is being directed towards inter-regional augmentations in particular. As noted in previous submissions, DPI considers that TNSPs do not currently have sufficient incentives to cooperate in a coordinated manner to optimally design the NEM transmission network.

In the absence of more fundamental reform, DPI would support further investigation by the AEMC of some of the enhancements proposed to existing arrangements. In particular, DPI supports improving consistency of the TNSP annual planning reports (APRs) and the transparency of the RIT-T process, as outlined in the First Interim Report.

DPI also supports in-principle the further consideration of aligning regulatory periods of the TNSPs. The benefits of aligning TNSP regulatory periods would have to be compared against any further mis-alignment between TNSP resets and those of the distribution network service providers (DNSPs), the implementation costs involved, and resourcing implications for the Australian Energy Regulator (AER).

#### Options for greater reform

As noted in the First Interim Report, DPI proposes the extension of Victoria's independent planner-procurer model on a national basis. The benefits of extending the Victorian model are described in the DPI submission to the AEMC Directions Paper and the DPI presentation given to the stakeholder forum in December 2011, and will not be reproduced in this submission.

However, DPI considers it important to respond to some of the AEMC findings in this section of the Report regarding the role of financial incentives and the potential risks associated with AEMO undertaking the role of national planner-procurer.

In Section 11.3.2 of the Report, the AEMC notes its view that financial incentives are likely to provide the most robust and transparent driver for efficient decision making (p. 143). DPI does not consider that the AEMC has provided any evidence to demonstrate how the existing incentives framework which is applicable to TNSPs drives efficient investment that is in line with the needs of generation in the wholesale market. As has been noted in previous submissions, DPI considers that the incentive framework is not aligned with the needs of the wholesale market. In particular, the

incentive framework is not designed to ensure that TNSPs respond in a timely and efficient manner to the needs of the wholesale market, especially changes in generation investment patterns..

Instead, as noted in our previous submissions, the framework provides incentives on TNSPs to delay capital expenditure to the end of the regulatory period, rather than at a time in which investment might be required or justified by the wholesale market and generation developments. Further, the framework provides few incentives on TNSPs to make optimal trade-offs between network and non-network investment options, as investment-based augmentations are automatically rolled into the asset base. In addition, as TNSPs operate on a regional basis there is a risk that efficient inter-regional investment solutions will not be considered in their planning decisions.

As we have noted previously, DPI considers that the AEMO not-for profit planning model is a transparent service based model more aligned with the needs of the market. In view of this, DPI believes that it is necessary for the AEMC to address the criticisms of the incentive framework set out above and set out how TNSPs incentive framework are aligned with the needs of the wholesale market so that timely and efficient investment can occur in line with changing patterns of generation. The alignment of transmission and generation incentives is a key part of the Terms of Reference for the review and it is critical that this issue is given careful consideration.

The AEMC also notes in Chapter 11 that it believes that the not-for-profit nature of AEMO means that reliance is placed on the decision making of the AEMO board, and that creation of a national planner procurer role for AEMO could also potentially conflict with its role as market operator (p.143).

By contrast, DPI considers that AEMO is well placed as an independent not-for profit agency to make impartial planning decisions in the interest of end-use consumers (as intended by the National Electricity Objective). The significant industry representation on the AEMO Board gives DPI confidence that sufficient checks and balances are in place to support unbiased decision-making. It is similarly unclear as to how AEMO's role as national planner-procurer would conflict with its role as market operator.

DPI notes that the planner-procurer model has been successfully introduced in recent years in the electricity markets of both California and Texas, in response to concerns that for-profit TNSPs were under-investing in transmission assets. In California, the role of the independent system operator (Californian Independent Systems Operator, CAISO) has been expanded from market operator to include a pro-active role in identifying, coordinating and planning the necessary development of transmission infrastructure and reinforcements within its region. Under this approach, CAISO identifies the investments that need to be made and can put proposals out to tender for third party investors should the relevant transmission owner be unable or unwilling to undertake the project.

Considering the concerns expressed by the AEMC regarding transfer of responsibility for national planner/procurer to AEMO, one suitable alternative arrangement might be for planning and procurement to be shared between AEMO and TNSPs. Under this approach, AEMO could become principally responsible for 'generator-facing'

planning and procurement, focussing on ensuring that transmission networks are able to respond efficiently to future changes in the pattern of generation across the NEM. Meanwhile, TNSPs would remain principally ‘load-focussed’, responding to more localised changes in demand and load.

A second alternative, consistent with the model adopted in California, would see AEMO act as a national ‘planner of last resort’, with the ability to put transmission projects out to competitive tender where identified in the NTNDP and where the TNSP in that region does not efficiently progress the investment. This ‘last-resort’ procurement power would be similar to the current powers of AEMO in Victoria. By allocating this role to AEMO, the AEMC would no longer need to continue its own Last Resort Planning Power – a role which is not necessarily aligned with the AEMC’s core role as rule maker.

In any case, DPI considers that the Second Interim Report should provide more rationale to support the AEMC’s comments regarding the role of financial incentives and the risks associated with AEMO as a national planner-procurer.

## 4. CONNECTIONS

### Issues related to current connection arrangements

DPI welcomes the AEMC proposals in Chapters 12 and 14 of the First Interim Report to improve the clarity of regulated connection processes in Chapters 5 and 6A of the NER, and to clarify construction, maintenance and access arrangements for connection assets. As the AEMC has identified, there is substantial ambiguity in a number of areas of the current connection process, particularly in the classification of different connection services and who is (or may be) responsible for building, owning and operating shared network augmentations, dedicated connection assets and extensions. This ambiguity has made it difficult for market participants to gain a clear understanding of the connection process and led to diversion in connection practices across jurisdictions.

### Economic regulation of connection-related services

Regarding the AEMC proposals outlined in Chapter 13 of the First Interim Report, DPI considers that there is a clear rationale to pursue enhancements to the negotiation framework as outlined under Proposal 2. Under current connection arrangements there are insufficient regulatory controls on TNSPs to ensure that connection applicants receive ‘fair and reasonable’ treatment. The outcome of any given connection process is highly dependent on the willingness of the TNSP to proactively engage, and on the TNSPs providing the required information to the applicant to enable them to negotiate on the basis of full information. Unfortunately, this fair treatment is often not forthcoming.

DPI supports all of the enhancements outlined in Proposal 2 for further consideration. AEMO, in its role as the Victorian planner-procurer for transmission services, is currently finalising its Victorian Connections Initiative, which provides a suitable model template for the enhancements being considered by the AEMC. The AEMO initiative will include publication of standard contract templates as well as a range of indicative connection costs and timelines based on designs of standard connection types. The AEMC proposal for the TNSP to provide a full breakdown of costs and services associated with a specific connection, and evidence of and changes to costs, are also supported.

DPI understands that the reluctance on the part of the connection applicant to pursue dispute resolution is that it is seen as bringing further delays to the project (as most connection negotiations are often well advanced when an impasse is reached), as well as the perceived potential for the TNSP to make future applications more difficult. This means that there is a tendency for applicants to ‘persevere’ in their dealings with the TNSP despite this often leading to less than satisfactory outcomes for the applicant. In this context, DPI considers that Proposal 1 needs further refinement should the AEMC consider it further for implementation. The proposal as outlined is unlikely to have a significant impact without improvements to the regulatory process as outlined in Proposal 2.

DPI does not support Proposal 3 (migrating connection-related services from ‘negotiated’ to ‘prescribed’) at this time. While there are clear deficiencies in the

current negotiation process, shifting all negotiated services to prescribed services would add significant complexity and could also work against the interests of connecting applicants. Setting a “unit cost allowance” for connections is likely to stifle innovation and be more costly for some connecting parties if a cheaper alternative connection arrangement can be agreed through negotiation. It could also further limit access of contestable service providers in providing connection services.