grid australia
BACKBONE OF THE NEM

26 May 2011

Mr John Pierce
Chairman
Australian Energy Market Commission
Level 5, 201 Elizabeth Street
Sydney NSW 2000

Via website: www.aemc.gov.au

Dear John,

Transmission Frameworks Review Directions Paper

Grid Australia welcomes the opportunity to provide a submission to the Australian Energy Market Commission's Directions Paper for the Transmission Frameworks Review. As the Commission is aware, Grid Australia represents the owners of all major electricity transmission networks in the National Electricity Market (NEM), and as such, its members have a direct and substantial interest in the matters addressed in the TFR.

Grid Australia welcomes a number of the Commission's observations and proposed directions, including that:

- a statement of the role of transmission will be the outcome of the Commission's conclusions and recommendations on each of the aspects of the transmission framework, and is not an issue that can sensibly be addressed as stand-alone;
- the absence of a consistent national framework for setting reliability standards for transmission is a continuing omission, and that there are benefits in having this matter resolved along the lines proposed by the Commission sooner rather than later;
- of the available options for improving the 'firmness' of access for generators, further investigation of generator-facing reliability standards (while raising a number of complex issues) warrants closer examination based on the Commission's implicit recognition that a regime of financial transmission rights would necessarily imply additional risks being borne by customers given the inability of TNSPs to fully manage or bear all of the risks created;
- many aspects of the current transmission framework are new – having been the product of a process of refinement following previous reviews of the framework – and as yet are largely untested. Accordingly, it would be inappropriate to recommend changes based on claims or perceptions that are based on the previous arrangements, such as some of the concerns raised by stakeholders with respect to network planning arrangements.

There are also a number of areas where Grid Australia has concerns with the Commission's proposed direction for the review, most notably:

- while Grid Australia agrees that there is a need to improve the clarity around the procedures and criteria relating to connections – and has commenced a process with the generators to develop an agreed package of measures to improve these – Grid Australia is concerned to ensure that the exercise of clarifying the classification of services is not used to extend the reach of regulation beyond where it can be justified;

- the suggestion that the Commission's experience with the design of inter-regional TUOS warrants a wider review of transmission pricing is not justified, and in any event would be premature if progressed before the Commission has reached a final landing of whether (and on what basis) generators should be charged for the use of the shared network (which in itself would require a change to customer transmission pricing); and

- the Commission's continuing view that there are limited incentives for inter-regional transmission investment – as set out in our earlier submissions, the same financial incentives and rewards apply to inter-regional and intra-regional transmission investment.

The attached submission elaborates upon the above points.

Grid Australia looks forward to continuing to work with the AEMC and stakeholders through the further stages of the review. If you require any further information, please do not hesitate to contact me on (08) 8404 7983.

Yours sincerely,

Rainer Korte
Chairman
Grid Australia Regulatory Managers Group

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BACKBONE OF THE NEM

Transmission Frameworks Review

Submission in response to AEMC Directions Paper

26 May 2011

Powerlink Queensland · TransGrid · ElectraNet electricity transmission · TRANSEND · SP AusNet A member of Singapore Power Group

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1. Introduction and Overview

Grid Australia welcomes the opportunity to provide a submission to the Australian Energy Market Commission's (the Commission) Directions Paper for the Transmission Frameworks Review (TFR). As the Commission is aware, Grid Australia represents the owners of all major electricity transmission networks in the National Electricity Market (NEM), and as such, its members have a direct and substantial interest in the matters addressed in the TFR.

Consistent with the Commission's request, this submission focuses on the key issues identified by the Commission and the proposed directions for further analysis that are outlined in the paper.

Key Messages

Grid Australia welcomes a number of the Commission's observations and proposed directions, including that:

- a statement of the role of transmission will be the outcome of the Commission's conclusions and recommendations on each of the aspects of the transmission framework, and is not an issue that can sensibly be addressed as stand-alone;
- the absence of a consistent national framework for setting reliability standards for transmission is a continuing omission, and that there are benefits in having this matter resolved along the lines proposed by the Commission sooner rather than later;
- of the available options for improving the 'firmness' of access for generators, further investigation of generator-facing reliability standards (while raising a number of complex issues) warrants closer examination based on the Commission's implicit recognition that a regime of financial transmission rights would necessarily imply additional risks being borne by customers given the inability of TNSPs to fully manage or bear all of the risks created; and
- many aspects of the current transmission framework are new – having been the product of a process of refinement following previous reviews of the framework – and as yet are largely untested. Accordingly, it would be inappropriate to recommend changes based on claims or perceptions that are based on the previous arrangements, such as some of the concerns raised by stakeholders with respect to network planning arrangements.

There are also a number of areas where Grid Australia has concerns with the Commission's proposed direction for the review, most notably:

- while Grid Australia agrees that there is a need to improve the clarity around the procedures and criteria relating to connections – and has commenced a process with the generators to develop an agreed package of measures to improve these

– Grid Australia is concerned to ensure that the exercise of clarifying the classification of services is not used to extend the reach of regulation beyond where it can be justified;

- the suggestion that the Commission's experience with the design of inter-regional TUOS warrants a wider review of transmission pricing is not justified, and in any event would be premature if progressed before the Commission has reached a final landing of whether (and on what basis) generators should be charged for the use of the shared network (which in itself would require a change to customer transmission pricing); and
- the Commission's continuing view that there are limited incentives for inter-regional transmission investment – as set out in our earlier submissions, the same financial incentives and rewards apply to inter-regional and intra-regional transmission investment.

The remainder of this submission elaborates upon these points.

As the Commission is aware, the Garnaut Review recently released its Electricity Update Paper 8, which made a number of observations on matters that are relevant to the Commission's review of the transmission frameworks. These include: the arrangements for inter-regional transmission planning, the nature (and potential shortcomings of) the RIT-T, the incentives provided for efficient transmission investment and the related question of reliability standards, and the function of inter-regional transmission charges for encouraging efficiency.

In responding to the Electricity Update Paper, Grid Australia noted that a number of assertions made by Professor Garnaut were based on misunderstandings of the transmission frameworks and that suggestions for change were not based on careful analysis. Given the potential relevance of the issues to the Commission's review, Grid Australia's submission on the Electricity Update Paper is attached.

2. Response to Detailed Issues

2.1 Role of Transmission

The Commission has sought to provide an initial view of its perspective of the future role of transmission in the NEM. In doing so, the Commission has correctly acknowledged that this role is necessarily an outcome of the Review. We therefore support the Commission's view that the role of transmission not be progressed as a work stream in its own right.

2.1.1 Nature of Access

Grid Australia agrees with the Commission that the nature of generator access to the transmission network is a fundamental question for the Review and the NEM, being one of the aspects of the framework that has not been the subject of recent

comprehensive review. Grid Australia also supports the Commission's position that the question of the optimal framework for generator access should be considered on a first principles basis, rather than continuing a debate about how the existing provisions in the Rules (e.g. Rule 5.4A) were intended to operate.

2.1.2 Financial Transmission Rights

For this work stream the Commission discussed a number of options for providing a level of access for generators, including a generator-facing reliability standard and financial transmission rights (FTR). Grid Australia agrees with the concerns identified in the Directions Paper about the difficulties associated with an FTR regime. In particular, Grid Australia agrees with the Commission's acknowledgement (based upon experience overseas) that TNSPs should not be expected to bear the risk associated with changes in transfer capability that are outside their control. This includes changes at a point in time (for example due to generator bidding) or as a result of new generation or load investment. Grid Australia also agrees that a 'financially firm' FTR regime would, therefore, imply a transfer of risk to customers. Grid Australia would support this option being advanced further only to the extent a prima facie case can be established that there are clear net benefits to customers in the longer term. In comparison, the prima facie case for the Commission devoting its resources towards assessing the feasibility of generator-facing reliability standards is more compelling.

2.1.3 Generator facing reliability standards

Grid Australia considers that the option of creating generator-facing reliability standards is an area that warrants further investigation. Such a scheme already operates in the UK and appears to be effective in facilitating new electricity generation capacity.

However, Grid Australia also agrees that a number of other detailed and important implementation issues need to be considered. In addition to those already identified by the Commission, these include the appropriate access standard for intermittent generators, the treatment of new entrant generators relative to existing generators, the timeliness and costs of connection, and the level of confidentiality surrounding connection applications and enquiries. Above all, it is expected that generator-facing reliability standards would lead to additional transmission investment, and, so, the Commission needs to be satisfied that this investment will be efficient. Consideration should also be given to whether such standards should be set by jurisdictions to ensure consistency with the proposed national framework for customer reliability standards. As noted in the Directions Paper, the Commission has previously raised concerns with over-investment in the context of Western Australia's 'unconstrained' network framework. Grid Australia is keen to work closely with the Commission in considering these issues further.

Grid Australia also agrees that creating such a reliability obligation strengthens the case for putting in place generator transmission charges so that generators are exposed (to the extent feasible) to the transmission costs that are caused by their decisions and also so that customers do not bear the cost of the additional transmission investment.

However, it is important to note that there are considerable difficulties in being able to create a meaningful long-run cost based price for generators in the case of transmission. Therefore, Grid Australia also re-iterates that it is willing to provide necessary support to the Commission in working through these issues.

2.1.4 Universal or 'opt-in' Arrangements

Finally, Grid Australia would like to express caution about schemes or models that allow generators to opt in, or choose, whether service performance measures apply to them. The risk with such approaches is that they allow some generators to 'free-ride' off the service levels provided to other generators. This reflects the shared nature of the transmission network.

2.2 Network Charging

Grid Australia agrees that if a case is made to charge generators for shared transmission services that clear definitions of the services provided are needed. In particular, the arrangements should provide transparency and certainty to all participants and avoid unnecessary volatility in network charges. Such uncertainty and volatility can create additional costs for businesses. This includes the costs of managing the risks associated with uncertainty and volatility, as well as administrative costs associated with making necessary changes on an ongoing basis.

2.2.1 Transmission Pricing Methodologies

The Commission has noted a concern that there are inconsistencies between TNSP's pricing methodologies that are affecting its ability to implement inter-regional transmission charges. As such, it has proposed further examination of the framework for transmission pricing as well as the allocation of Settlement Residue Auction (SRA) proceeds. It should be noted that the current network pricing arrangements involving scope for differences between TNSPs operating in different NEM regions was a deliberate Commission objective in its most recent review of transmission pricing arrangements in 2006.

2.3 Congestion

Grid Australia supports the Commission's proposition that, should it identify a need to address congestion management concerns, the option chosen should not materially change the role of transmission. This view gives appropriate recognition to the limited

capacity for transmission businesses to manage the risks associated with network congestion without fundamental changes to the current regime.

However, as noted in its submission to the Issues Paper, Grid Australia welcomes further consideration of how the current incentive arrangements on TNSPs may be enhanced to ensure that operational outcomes match the needs of the market. It is important to note that there are limits to the extent that incentives can be placed on TNSPs. For this reason the framework includes a combination of incentives and obligations. In addition, it is important in the context of cost-based regulation, to ensure that any changes maintain TNSP's capability to recover efficient costs.

Grid Australia also agrees with the Commission that addressing the issue of network access for generators may go a long way to resolving the issues that have been raised in the congestion work stream. Therefore, it is important that there is close interaction between the congestion work program and that for network access.

The Commission has raised a number of questions in an Appendix regarding approaches to measuring the impacts of congestion. Grid Australia agrees that it is useful to seek to develop robust measures of the extent of congestion in order to determine the magnitude of the issue. Grid Australia is willing to work with the Commission on alternative approaches to measuring the impacts of congestion on the market. We note that estimates of the forward-looking costs of congestion are necessarily factored into decision making on transmission investments as part of the RIT-T assessment, where the economic benefits of relieving congestion (which is a reduction of the economic cost that otherwise would be caused by congestion) are a key 'market benefit' that must be considered. To maximise efficiency it is essential for any measure of the economic cost of actual congestion to be consistent with how the economic costs of congestion are forecast.

In addition, the Commission states that it understands competition benefits have not yet been assessed in relation to transmission projects to date. Grid Australia wishes to confirm that this is not the case as there are in fact a number of studies in which TNSPs have sought to estimate the competition benefits arising from a transmission augmentation. One such example is the recent joint study into a new interconnector between New South Wales and Queensland that has been investigated jointly by TransGrid and Powerlink.

Furthermore, Grid Australia notes that the Commission has apparently assumed that competition benefits are material. However, it is not clear what the basis for this assumption. As Grid Australia pointed out in its submission on the Garnaut Electricity Update Paper, estimates of competition benefits are highly contingent on a range of assumptions. These include generator bidding behaviour, customer demand response, and how prices to final customers compare to marginal cost. Moreover, once transfers between affected parties and offsetting impacts are removed, it is not necessarily the case that the net benefits would be material. It is also noted, for completeness, that the use of realistic bidding scenarios in the modelling of market

benefits fully captures competition benefits in any event, even if it is not separately quantified.

2.4 Network Planning

The Commission correctly identifies that planning and investment frameworks should seek to ensure efficient and timely investment in transmission. To this end, as acknowledged by the Commission, a considerable number of enhancements have been made in the NEM, sponsored by the Ministerial Council on Energy (MCE). On this basis, Grid Australia supports the Commission's recognition that the significant reforms undertaken with respect to transmission planning still need time to be proven. It is noteworthy that, despite the frameworks still being relatively new, there is already evidence of their success occurring. For example, all the projects identified in the National Transmission Network Development Plan (NTNDP) as requiring early attention are now subject to detailed planning or will be the subject of more detailed planning in the near future.[1]

Grid Australia also supports the Commission's concern that the framework for setting customer reliability standards for transmission services still needs to be settled. Grid Australia supports efforts to have this matter resolved expeditiously.

The Directions Paper also makes a number of other points with respect to transmission planning upon which Grid Australia would like to make specific comment. Our views on these specific issues follow.

2.4.1 Incentives for Inter-regional Investment

In the Directions Paper the Commission states that the incentives to drive inter-regional investment are weaker than those for intra-regional investment because they have to be justified solely on a market benefits basis. As noted in our submission to the Issues Paper, there are a combination of measures that are designed to ensure that net market benefits projects will be identified, evaluated, and (if consistent with the NEO) constructed.

Therefore, so long as TNSPs are adequately commercially compensated for the risks they incur, TNSPs are highly motivated to invest in projects justified on market benefits grounds.

Indications are that TNSPs are currently actively pursuing a number of studies to investigate the economics of augmenting interconnector capacity between the regions. These include:

[1] AEMO, *National Transmission Network Development Plan, Executive Briefing 2010,* pp.23-25.

- SA interconnector feasibility study – ElectraNet and AEMO worked together in an open and transparent manner to undertake a feasibility study to determine if a project to augment interconnector capacity between South Australia and Victoria or New South Wales could be feasible (a final report was published in February 2011). Further work has now been undertaken to investigate in more detail the economic feasibility of particular options. The results of these studies will be reported to the market in June 2011.

- Powerlink and TransGrid are currently undertaking a further round of upgrade studies on the Queensland New South Wales Interconnector (QNI), consistent with the market development scenarios and options reported in the 2010 NTNDP. This assessment will involve engagement with AEMO to ensure consistency with future NTNDP studies.

- AEMO and TransGrid have undertaken preparatory work and are intending to investigate the benefits of upgrading the Victoria to New South Wales interconnector.

2.4.2 Market Benefits under the RIT-T

The Directions Paper expresses a number of potential concerns with the, as yet largely untested, RIT-T. Specifically, the Commission appears to have concerns about the assessment of market benefits such as competition benefits. As noted above, and in our submission to the Electricity Update Paper released by Professor Garnaut, much of the change from increased generator competition is expected to be a wealth transfer from generators to customers. Therefore, it is not clear to Grid Australia that the assessment of these benefits will have a significant impact on transmission investment decisions.

Grid Australia will shortly publish a RIT-T Cost Benefit Analysis Handbook that is intended to provide guidance on the application of the RIT-T, including the assessment of the various categories of market benefits and under what circumstances they are expected to be material. This will include discussion on competition benefits and option value.

2.4.3 Consideration of Broader Benefits

Grid Australia understands that some stakeholders may hold the view that considering competition benefits in a different way may allow for broader benefits to be captured within the RIT-T assessment. That is, price reductions from competition may lead to broader benefits and costs that may be two or three times removed from those within the market.

At present, customers only fund assets for which they are assessed to receive a direct benefit, be that a reliability benefit or net market benefit. The case for this funding arrangement is supported by the National Electricity Objective which focuses

only on the long term interests of consumers of electricity. This objective is implemented through the requirement for the RIT-T to consider the benefits to those who consume, produce, or transport electricity. As a consequence of these requirements, broader benefits are considered as an externality for the purposes of the RIT-T and are beyond the scope of the NEO.

If broader benefits were to be incorporated into the RIT-T assessment it would imply that customers in the electricity market would be forced to pay for benefits that are broader than those achieved within the market. Grid Australia does not consider that this is an appropriate burden to be placed on electricity consumers.

As Grid Australia has indicated in its submission to the Electricity Update Paper, while broader benefits may not be considered within the RIT-T, this does not mean that broader considerations cannot be applied to transmission investment. Indeed, a role for governments may be to financially contribute to transmission investment where broader benefits are likely to exist or where additional transmission investment assists in the achievement of social policy goals. Such an approach allows governments to make contributions on the basis of broader benefits while ensuring that electricity customers do not solely bear the burden of these decisions.

The Commonwealth Government's Connecting Renewables Initiative is an example of governments supporting electricity infrastructure investment in order to achieve social policy goals outside of the NEM framework.[2] Achieving policy goals in this way also has the benefit of ensuring that the integrity of the NEM decision making framework is maintained consistent with the NEO.

2.4.4 Treatment of Sunk Costs

In the context of the costs caused by generators, the Commission indicates that it intends to give further consideration to the way in which sunk generator costs may influence transmission investments justified on a market benefits basis under certain scenarios. While Grid Australia notes that, in principle, it is always correct to ignore sunk costs when assessing the relative merits of a project, as the Commission has noted a question remains as to exactly when a generator (or other investment) should be treated as sunk, particularly as it is possible for proponents to enter into contracts for the site and construction that are conditional and therefore can be reversed. Grid Australia would welcome further analysis of, and ultimately guidance upon, this question.

[2] See: http://www.budget.gov.au/2011-12/content/glossy/regional/html/regional_overview_20.htm

2.4.5 National Transmission Planning

While the Commission gives due recognition to the role of the National Transmission Planner (NTP) and Last Resort Planning Power (LRPP) in providing appropriate checks and balances for the promotion of efficient transmission investment, it also considers the concept of a single transmission owner and operator across the NEM might have merit in terms of realising scale economies and promoting national consistency. The Commission recognises, however, that implementing such a model would be a challenging task.

Grid Australia considers that as a consequence of the considerable work undertaken in recent years to improve the institutional arrangements and regulatory framework there is now an effective and expanding 'whole of grid' approach to network planning. The framework includes an effective balance between ensuring that national strategic projects are identified through the NTNDP while allowing regional planning processes to consider detailed matters such as the availability of easements, and the impact that local environmental and land use requirements will have on future generation and transmission investments.

It should also be noted, as part of the recent reforms, AEMO has been given expanded rights of involvement in RIT-T processes and revenue cap determination processes. Specifically, TNSPs are required to consult with AEMO at various stages of a RIT-T assessment process and have regard for comments provided. Furthermore, AEMO is able to provide submissions to the AER on revenue cap applications lodged by TNSPs. This provides AEMO with a very effective way of providing input to the capital expenditure forecasts used to set TNSP revenue caps. There is little doubt that the AER would give weight to AEMO input during such reviews. The effect of these arrangements is to strongly encourage close collaboration between TNSPs and AEMO on transmission planning assessments.

As indicated previously, to the extent that the Commission considers that coordination can be improved, Grid Australia is interested in supporting that process.

2.5 Connections

The Commission has included a work stream related primarily to generator connections, identifying a number of issues to address, including:

- the negotiating and procedural framework for network connections;
- the interaction between chapters 5 and 6A of the NER;
- rights of access; and
- complexities associated with the Victorian regime.

Grid Australia acknowledges that there are likely to be benefits in clarifying the connections process for all participants. Indeed, Grid Australia has already commenced working with the generators in order to achieve as much common ground as possible as to how the current connections process could be improved. In this respect Grid Australia and the NGF recently held a workshop to discuss the connections framework.

Some of the issues associated with the connections process relate to Rules provisions, while others do not. However, given the interaction between the connections process and the Rules, Grid Australia supports the Commission sponsoring a continuation of the process involving Grid Australia and the NGF working through the issues. Through this process it is hoped that the Commission can assist participants in unbundling what are the real issues associated with the connections process and where adjustments to the Rules may be justified.

2.5.1 The Negotiating and Procedural Framework for Network Connections

The Directions Paper indicates that it intends to give further consideration to both the technical interactions between generators and TNSPs during the connections process, and information transparency requirements of the negotiating process. Grid Australia agrees that there are likely to be opportunities for improvements in the procedural arrangements for connections. This is reflected in the process we have commenced in conjunction with the NGF to identify issues and solutions for the connections process. To date our experience indicates that the primary concerns for generators are ensuring certainty with respect to the timing and costs of connections. The restrictive confidentiality provisions that surround connection applications and enquiries under the Rules have also been identified as a concern that may be unduly constraining more effective coordination of connections, and may warrant further consideration.

When considering the effectiveness or otherwise of the existing framework it is important that the Commission give consideration to a number of relevant practical issues. For instance, TNSP's overall service obligations often constrain the flexibility that can be afforded with respect to individual connection applications, given the consequences of a service failure for other network users. In addition, timely and accurate information from generators also plays an important role in enabling TNSPs to develop effective connection solutions. Delays or inaccuracies in this information will inevitably lead to delays or inefficiencies in the connections process.

To the extent that there are proposals to require TNSPs to develop and compare multiple connection solutions, it is important to note that the cost of developing these options will need to be recovered by TNSPs. In addition, the time needed to develop such options will also need to be incorporated into connection timeframes.

2.5.2 Interactions between Chapters 5 and 6A

The Commission concludes in the Directions Paper that there is a lack of clarity around what new assets are required for the purpose of connections and how these should be classified and funded. Specifically, the Commission indicates that ambiguity that arises from the interaction of Chapters 5 and 6A leads to uncertainty about the contestability of some transmission services and whether some services should be categorised as negotiated transmission services rather than non-regulated transmission services.

Grid Australia considers that it is important that the level and form of regulation be related to the extent of market power and the costs of regulation. Under the Rules, the classification of services determines whether regulation should apply and the form it should take. However, Grid Australia recognises that there appears to be some uncertainty about how this framework is intended to operate in practice.

Grid Australia has sought to overcome much of the uncertainty about the delineation of services through the development of the Categorisation of Transmission Services Guideline[3]. The purpose of the guideline is to provide practical guidance to prospective connecting parties on how the definitions in the Rules are applied. In this way, it seeks to give effect to the Commission's intentions in the Review of the Economic Regulation of Transmission Services. Grid Australia strongly holds the view that the economic principles that form the basis of the delineation of services in the Rules and the guideline are important and should be maintained. Therefore, to the extent that clarifying changes to the Rules are contemplated, Grid Australia considers that the Categorisation of Transmission Services Guideline forms the appropriate basis for such clarifying changes to be made.

2.5.3 Obligations to offer connection

The Directions Paper states that it is unclear whether there is an express obligation that compels a TNSP to construct a connection asset as part of the connection service. In response, Grid Australia would like to direct the Commission's attention to a number of clauses that it introduced through the Review of the Economic Regulation of Transmission Services. As part of the Pricing of Prescribed Transmission Services Rule changes the Commission introduced a clause that includes a specific enforceable right of access[4], and a clause that requires that TNSPs do not hinder access to prescribed or negotiated transmission services[5].

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3 www.gridaustralia.com.au

4 Clause 6A.1.3(1) and (2) of the National Electricity Rules.

5 Clause 6A.1.3(3) of the National Electricity Rules.

Specifically, the Commission stated in its determination:[6]

> "To address this concern, the Commission had decided to include as a foundation for economic regulation of transmission services, an enforceable right of access, in order to satisfy the requirements of clause 6(4)(b) and (c) [of the CPA]. Clause 6A.1.3 provides an express right of access for both prescribed and negotiated transmission services, subject to and in accordance with, the Rules. The rule provides a right to apply for the provision of prescribed or negotiated transmission services (clause 6A.1.3(1)), and the TNSP must provide the requested service on terms and conditions consistent with the requirements provided in the rules (Rule 6A.1.3(2)).
>
> Given the seriousness of any failure to provide access by a TNSP, the Commission recommends that the right of access provided in clause 6A.1.6 be nominated as a civil penalty provision in accordance with section 58 of the NEL. Due to its importance in the access regime for electricity, it would appear appropriate for the penalty to be significant in monetary terms. This would mean that a failure by a TNSP to provide access to prescribed or negotiated services is enforceable by the AER under the NEL regime as a breach of the Rules and would attract a significant penalty."

2.5.4 Complexities associated with the Victorian Regime

The Directions Paper identifies a number of specific concerns with the Victorian connections regime, these are:

- Tripartite contractual arrangements
- Third party liabilities, and
- The imposition of additional obligations on generators in the consideration of terminal stations.

Grid Australia agrees that the Victorian regime adds substantial complexity for connecting generators in that jurisdiction. Indeed, Grid Australia considers the experiences in Victoria may be a significant driver of perceptions that there are inconsistencies between jurisdictions. Therefore, Grid Australia supports further investigation of the issues that are specific to Victoria under the connections work stream so that the source of inconsistency is identified, and so that policy makers are aware of the issues associated with the Victorian arrangements.

[6] AEMC, *National Electricity Amendment (Pricing of Prescribed Transmission Services),Rule 2006 No.22, Rule Determination,* 21 December 2006, pp.62-63.

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20 April 2011

Professor Ross Garnaut AO
c/- Garnaut Climate Change Review – Update 2011
GPO Box 854
Canberra ACT 2601

Via email: garnautreview@climatechange.gov.au

Dear Professor Garnaut,

Garnaut Climate Change Review – Update Paper 8 *Transforming the electricity sector*

Grid Australia welcomes the opportunity to respond to your Climate Change Review Update Paper 8 *Transforming the electricity sector*.

Grid Australia represents the owners of the main electricity transmission networks across southern and eastern Australia (which is the region covered by the National Electricity Market, or NEM) and Western Australia. Collectively, our members own and operate more than 47,000 km of transmission lines with a combined value of $12 billion, and with a responsibility for funding and delivering an annual investment program of approximately $2.2 billion.

Grid Australia understands the considerable challenges of finding mechanisms that can deliver meaningful carbon signals to businesses and households while ensuring that Australia's power industry remains both sustainable and efficient. Grid Australia supports this objective, but it is a complex problem that tempts easy solutions.

A clear target for the Electricity Update Paper is the current regulatory framework that applies to energy networks. It is asserted that the current arrangements encourage inefficient network investment and cause unnecessarily high electricity prices. However these assertions are not supported by an understanding of the robust economic regulatory framework that operates in the NEM and the principles behind it.

In this regard, it is worth noting that there are very significant differences between transmission networks and distribution networks in relation to their impacts on the NEM and in terms of contribution to the delivered price of electricity. Transmission networks, in addition to being pivotal to reliable supply, play a facilitative role in the NEM by enabling wholesale trading and facilitating the transition to a lower emission generation mix.

In terms of price impact, the transmission component represents less than 10% of the typical electricity bill (compared with about 40% for distribution). The import of these differences is that 'strangling' transmission investment will have a miniscule direct impact on the total electricity bill,

but would lead to increases in congestion. Presently, the costs of congestion remain a very small percentage of the value of wholesale energy traded in the NEM. However, the consequential increases in congestion from 'strangling' transmission investment will lead to higher wholesale energy prices, with an impact on electricity bills that would far outweigh the miniscule direct reductions in the transmission charges.

Grid Australia supports enhancements to the NEM that have been built upon COAG's more than decade long program of industry reform (with many elements focussed on the transmission sector), a program that has made the NEM one of the world's most efficient, competitive and reliable power systems.

Given the success of the framework to date, where the broader objectives of government cannot be met through prices or decisions that are efficient within the context of the electricity sector alone, Grid Australia also supports the introduction of measures that operate alongside the NEM framework.

What is essential is that such measures complement, but do not distort the framework, given that doing so would impair the market's ability to identify customers' needs and to attract the necessary investment. This is of particular importance given the need for Australia's electricity networks to be resilient, both to the direct impacts of climate change, and to the changing patterns of flows of electricity that may accompany carbon reduction policies.

It is noteworthy that the existing transmission frameworks (including recent reforms) are already facilitating demonstrable, and non-trivial, shifts in the generation mix (towards lower emissions).

The attached submission seeks to explain in some detail the careful process of refinement and improvement to the transmission regulatory framework that has occurred over a number of years sponsored by the Ministerial Council on Energy (MCE).

The submission also responds in specific detail to observations and findings in the Update Paper, and highlights the considerable reform effort that has recently been undertaken to strengthen the framework for national transmission planning and investment.

Specifically, the submission focuses upon:

- the arrangements that exist for coordinating transmission planning across the NEM and ensuring that there is sufficient and efficient inter-regional transmission investment;
- the economic test that is applied to assess the efficiency of transmission investments (the 'Regulatory Investment Test for Transmission', or RIT T);
- the incentives that apply to transmission network service providers with respect to investment;
- the return that investors in network assets require, given the risk borne in the 'new normal' post-GFC world ;
- the merits of a national system of transmission charging;

- the rationale for, and characteristics of, the current system whereby network investors are able to appeal the regulator's decision; and

- the appropriate specification of reliability standards for transmission networks .

I would appreciate the opportunity to meet with you and your review team as you work to prepare your final consolidated report to discuss the information provided in our submission, and to provide any further insights that may be helpful.

Please do not hesitate to contact my office on 07 3860 2607 if you would like to arrange a time to meet to discuss these matters, or if Grid Australia can be of further assistance.

Yours sincerely,

Gordon Jardine
Chairman
Grid Australia

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Garnaut Climate Change Review Update 2011

Response to Transforming the Electricity Sector (Update Paper 8)

April 2011

Powerlink Queensland
TransGrid
ElectraNet electricity transmission
TRANSEND
SP AusNet A member of Singapore Power Group

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1. Key messages

1.1 Who are we?

Grid Australia represents the owners of the main electricity transmission networks across southern and eastern Australia (which is the region covered by the National Electricity Market, or NEM) and Western Australia. Collectively, our members own and operate more than 47,000 km of transmission lines with a combined value of $12 billion, and with a responsibility for funding and delivering an annual investment program of approximately $2.2 billion.

The purpose of this submission is to respond to a number of the observations and findings in the Garnaut Climate Change Review Update 2011 paper: 'Transforming the Electricity Sector, Update Paper 8' (Electricity Update Paper) that relate to the performance of electricity networks and the frameworks under which they operate.

1.2 Challenges of climate change policy

Grid Australia understands the considerable challenges of finding mechanisms that can deliver meaningful carbon signals to businesses and households while ensuring that Australia's power industry remains both sustainable and efficient. Grid Australia supports this objective, but it is a complex problem that tempts easy solutions.

A clear target for the Electricity Update Paper is the current regulatory framework that applies to energy networks. It is asserted that the current arrangements encourage inefficient network investment and cause unnecessarily high electricity prices. However these assertions are not supported by an understanding of the robust economic regulatory framework that operates in the NEM and the principles behind it.

Grid Australia supports enhancements to the NEM that have been built upon COAG's more than decade long program of industry reform, a program that has made the NEM one of the world's most efficient, competitive and reliable power systems.

Given the success of the framework to date, where the broader objectives of government cannot be met through prices or decisions that are efficient within the context of the electricity sector alone, Grid Australia also supports the introduction of measures that operate alongside the NEM framework.

What is essential is that such measures complement but do not distort the framework, given that doing so would impair the market's ability to identify customers' needs and to attract the necessary investment. This is of particular importance given the need for Australia's electricity networks to be resilient, both to the direct impacts of climate change, and to the changing patterns of flows of electricity that may accompany carbon reduction policies.

1.3 The current framework is the product of recent, substantial reform

The Electricity Update Paper appears to demonstrate a lack of awareness of the careful process of refinement and improvement to the transmission regulatory framework that has occurred over a number of years.

Sponsored by the Ministerial Council on Energy (MCE), that process has included substantial reviews such as the COAG Energy Market Review (Parer Review), the review by the Expert Panel on Energy Access Pricing, as well as a review by the Energy Reform Implementation Group (ERIG), which reported on measures to achieve a fully national electricity grid[1]. The COAG reform process has considered the findings of each of these reviews in establishing its reform program which has included the following significant steps:

- the Australian Energy Market Commission (AEMC) was established in 2005 to ensure, amongst other things, that the National Electricity Rules (Rules) for planning and delivering transmission services were robust and based on a clear economic objective;
- at the same time, the Australian Energy Regulator (AER) was formed with the power to review the economic efficiency of the investment decisions made by the transmission businesses under those Rules — those reviews must be conducted according to well-established principles of competitive neutrality, favouring neither private nor government-owned transmission businesses;
- in 2008, a limited system of merits review came into operation to ensure that all stakeholders' interests were properly taken into account by the AER in reaching its decisions while minimising the delay and costs to interested parties;
- a nationally co-ordinated planning regime came to fruition in 2010 with the publication by the Australian Energy Market Operator (AEMO) of the first National Transmission Network Development Plan (NTNDP) — a key focus of the Plan is on testing the need for further backbone transmission capacity across the NEM (including interconnectors); and
- since August 2010, all major transmission investments have been required to pass the new Regulatory Investment Test for Transmission (RIT-T), a test that specifically requires the full range of market-wide economic benefits to be considered when testing the efficiency of a transmission project.

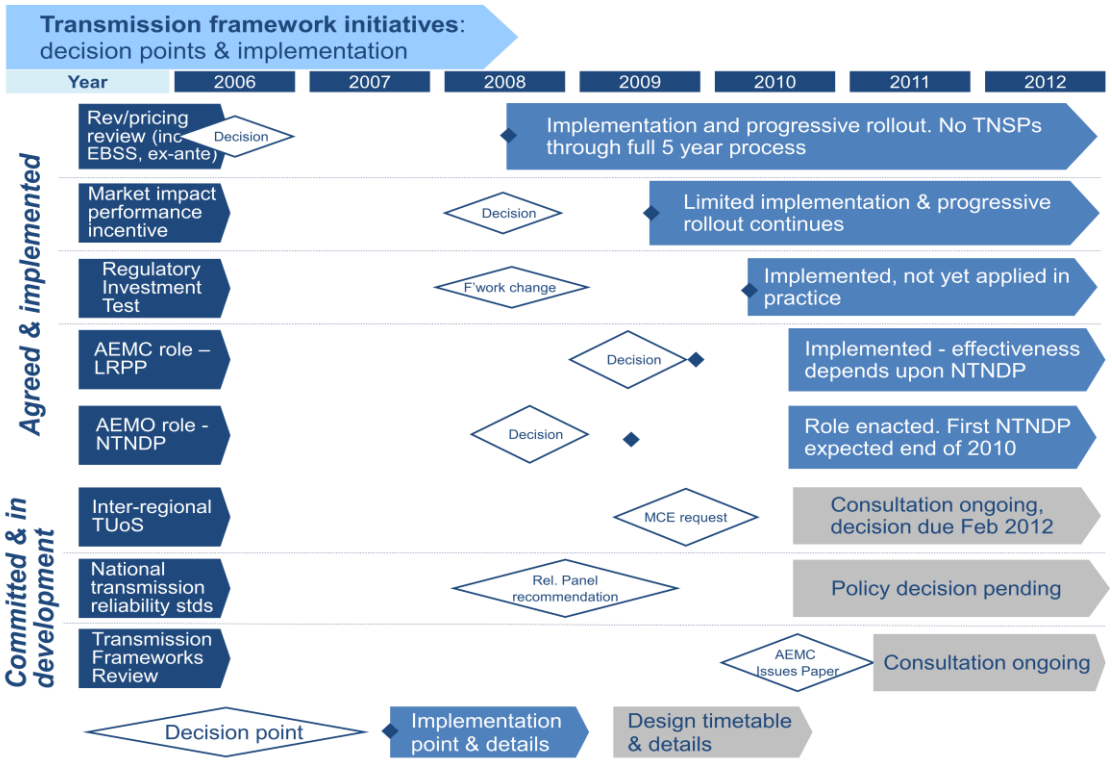
[1] The MCE also asked the ERIG to develop proposals for measures to address structural issues affecting ongoing efficiency and competitiveness and measures to ensure transparent and effective financial markets to support energy markets.

The full benefit of these reforms will necessarily take time to mature and flow through to the broader economy.

Grid Australia also notes that the interaction of climate change policies with energy markets has recently undergone a comprehensive review by the AEMC[2]. Following this review the MCE directed the AEMC to undertake a review of the transmission framework. Grid Australia considers that the AEMC review is the appropriate forum to address transmission framework issues, and reiterates the need for any proposed changes to the existing transmission framework to be supported by a clear and well evidenced rationale.

The figure below sets out the timeline of recent and on-going reforms. It is notable that a number of important initiatives have either only recently been implemented or have not yet commenced.

Figure 1: Time Line for Transmission Framework Initiatives



1.4 Specific concerns with Electricity Update Paper's findings

Grid Australia is concerned that the Electricity Update Paper, in failing to understand the NEM transmission framework and conduct the required analysis, is recommending

[2] AEMC, *Review of Energy Market Frameworks in light of Climate Change Policies*, 30 September 2009.

changes that risk impeding the efficiency of price signals and investment, and the resilience of networks.

The following table reproduces the main findings and recommendations of the Electricity Update Paper and sets out a summary of Grid Australia's response which highlights significant issues with the proposed way forward.

In this regard, Grid Australia regrets that there was no formal consultation with electricity industry stakeholders, including transmission investors and operators, prior to publishing the Update Paper. Doing so may have avoided the factual errors and incomplete analysis identified below.

Table 1: Main Findings, Recommendations and Response

Electricity Update Paper Finding	Grid Australia Response
All transmission planning should be transferred to AEMO through its National Transmission Planner function so as to advance investment in interstate connections.	A national, 'whole of grid' approach already exists for network planning as a result of recent and comprehensive COAG driven reform. It appropriately balances the need for identification of strategic national projects with the practical realities of regional transmission investment and service delivery.
Transmission Network Service Providers (TNSPs) are not well equipped to undertake economic assessments for transmission investments, most importantly an assessment of competition benefits and real options value.	Competition benefits have been considered in TNSP planning decisions, and Grid Australia is working in cooperation with AEMO to develop approaches and ensure that these benefits are included in transmission assessments where appropriate. That said, valuing competition benefits and real options is complex (even for economists), and intuition would suggest that competition benefits are rarely material if only true economic benefits are considered in the assessment.
The regulatory regime provides an incentive for network businesses to gold-plate the network (and gold-plating has been observed).	The existing framework encourages efficient investment, and in fact penalises TNSPs for every additional dollar they spend. The current framework balances the risk between under investing and over investing in network infrastructure, and provides equal incentive for investment within and between regions. The increase in expenditure observed in recent years can be explained in part by the minerals-boom driven increase in materials prices, the effects of continued economic growth, and the age profile of Australia's network assets.
The return on capital does not reflect the risks and costs incurred by the network businesses.	The Law and Rules require the return to be commensurate with risk, and the methods employed are consistent with international practice. The current parameters and approaches reflect extensive and

Electricity Update Paper Finding	Grid Australia Response
Government owned businesses do not need to earn a commercial return.	numerous reviews extending over the past 15 years of market evolution. The most recent 5-yearly review was concluded by the AER in 2009. The proposition that government owned businesses should not earn a commercial return is inconsistent with the accepted view that the cost of capital for a project is unaffected by its ownership, and would otherwise imply a subsidy from tax payers. Policies in support of this competitive neutrality principle were established as an integral part of the Hilmer competition reforms in the early 1990s and endorsed by COAG. The basis for questioning this principle has not been clearly argued in the Electricity Update Paper nor tested through consultation.
The absence of a national system of transmission pricing is creating a barrier to interconnector investments.	There is no direct link between transmission pricing and the incentives for transmission investment. The structure of transmission prices does not have any effect on whether or not transmission projects proceed.[3] It affects neither the incentives of transmission investors nor the economic outcomes of the RIT-T. In any event, a Rule change before the AEMC provides a proportional response to addressing the efficiency concerns of charging customers for assets they use across regional boundaries.
The merits review process favours the businesses and should instead require the entire decision to be reviewed.	Merits review is a key component of a well-functioning regulatory regime and ensures accountability in regulatory decision-making. The merits review process limits the scope of appeals to material before the AER at the time of its decision, and is designed to prevent vexatious or non-material claims. The majority of appeals to date have found material errors in the original decision. A full rehearing of decisions would provide a disproportionate response given it would incur significant costs and time and would call into question the role of the regulator.

[3] As noted below, if inter-regional charging improves the efficiency of prices for final customers, then customers' locational decisions may be affected, which in turn would have an indirect effect on the need for new investment.

Electricity Update Paper Finding	Grid Australia Response
The reliability standards in most states are crude and lead to higher standards compared to an economic approach.	Grid Australia supports the single, national framework for determining reliability standards across the NEM proposed by the AEMC. This involves standards being determined economically and expressed deterministically. Standards should also be set independently from network businesses. Expressing the standards in a deterministic form supports transparency of service delivery and holds network businesses more accountable to customers.

A more detailed explanation of these matters follows in the remainder of this submission.

1.5 Submission outline

The remainder of this submission responds in specific detail to the observations and findings in the Update Paper, and further highlights the considerable reform effort that has recently been undertaken to strengthen the framework for national transmission planning and investment.

Specifically, the remainder of this submission focuses upon:

- the arrangements that exist for coordinating transmission planning across the NEM and ensuring that there is sufficient and efficient inter-regional transmission investment;
- the economic test that is applied to assess the efficiency of transmission investments (the 'Regulatory Investment Test for Transmission', or RIT T);
- the incentives that apply to network service providers with respect to transmission investment;
- the return that investors in network assets require, given the risk borne;
- the merits of a national system of transmission charging;
- the rationale for, and characteristics of, the current system whereby network investors are able to appeal the regulator's decision; and
- the appropriate specification of reliability standards for transmission networks.

These are addressed in turn.

2. Co-ordinated transmission planning and inter-regional transmission investment

- The existing framework applies a 'whole of grid' approach to transmission planning of major flow paths in the NEM
- It facilitates nationally coordinated planning for strategic flow paths but relies on regional planning and investment decisions so that the practical realities of investment and service delivery can be taken into consideration
- This existing framework was the result of relatively recent and deliberate policy decisions at the highest levels of government to address the very issues raised in the Electricity Update Paper, and resulted from extensive consultation with the industry and electricity users
- There is already evidence of the new framework working; however, given it is still relatively new it needs time to mature.
- There are a number problems associated with a not-for-profit central planner model that need consideration should this model be considered further – this includes the application of performance incentives and accountability for transmission service delivery

2.1 Electricity Update Paper Findings

The Electricity Update Paper makes a number of observations about the effectiveness of national planning in the NEM. The Paper argues that there is a failure of nationally co-ordinated planning that is leading to the suboptimal development of the national grid. The evidence, according the Electricity Update Paper, is the lack of long-distance inter-state links while expenditure on local transmission and distribution investments, justified by supplying the extreme peak with reserve capacity, continues.

The Electricity Update Paper suggests that it is highly unlikely that a seamless national network can be built by five state-based transmission planners with regional focuses. It is argued that part of the problem is that the entity with the national transmission planning responsibility (AEMO) has no power to actually develop projects; rather its plan is presented purely as a guide to state based planners who are free to ignore it[4]. The solution that is advocated is for AEMO to assume all transmission planning responsibility and for each state to separate its transmission ownership from its transmission planning.

Grid Australia notes that a framework for national transmission planning has only recently been implemented and that this framework was the outcome of a substantial review of the

[4] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p. 34.

electricity market that was undertaken for all Australian Governments[5]. This included extensive consultation with all parts of the industry and customers, with the key elements of that regime endorsed by COAG. It is far too early to draw an inference that it has or will 'fail' and, given the careful and deliberate policy decisions that led to the current framework, inappropriate to recommend large scale changes based upon only a casual analysis.

In fact the new framework was developed to address the very issues the Electricity Update Paper has identified, and early indications should provide confidence that interconnector projects will be identified and developed in an efficient manner.

The key elements of the new framework are discussed below.

2.2 Framework for national coordination of transmission investment

Efficient national planning of transmission investment requires the strategic, national context for projects to be integrated effectively with practical, local knowledge. There has been a considerable amount of work undertaken in recent years aimed at improving the institutional arrangements and regulatory framework to ensure that this goal is met. As a consequence of recent reforms, there is now a new framework that incorporates an effective 'whole of grid' approach to network planning.

Under the framework that is now in place, national strategic projects are identified through the NTNDP. The NTNDP is a planning coordination document that AEMO is required to prepare. The plan, to be published annually, seeks to consider and assess the appropriate course for the efficient development of the national transmission grid over a planning horizon of at least 20 years. It focuses on important strategic national flow paths across regional pricing boundaries. The plan is developed in close consultation with the TNSPs and is subject to public consultation. AEMO published the first NTNDP in December 2010.

TNSPs' Annual Planning Reports (APR) then translate the strategic national plan into near term regional transmission development plans based on joint planning with distributors. Indeed, it is a requirement of the Rules for APRs to have regard to the NTNDP.

The regional planning process conducted through the APRs is an important step to ensuring that transmission planning takes account of the practical situation in the relevant area. By necessity, the strategic national plan that AEMO develops will be based upon high level assumptions about the cost of projects and other matters, like the potential for new generation entry. This plan will also identify projects some time prior to the projects becoming efficient. The APRs take this analysis to the next level of detail and factor in

[5] Energy Reform Implementation Group, 2007, *Energy Reform: the Way Forward, Report to the Council of Australian Governments*, January.

such matters as the availability of easements, and the impact that local environmental and land use requirements will have on future generation and transmission investments.

Regional Planning will also factor in the potential for efficiency gains to be made through coordinating asset replacement and refurbishment expenditure with augmentations, as well as updated estimates of the cost of projects based upon more recent experience. This more detailed analysis requires 'on the ground' knowledge of conditions for transmission and generation investment. It also requires the ability to integrate with other transmission projects as well as joint planning with distributors for meeting distribution network needs in the area. This model also ensures that network investment decisions are made by the business accountable for service delivery to customers.

In addition, the newly enhanced RIT-T, which is discussed further in the following section, contributes to the delivery of transmission investment that is efficient from the perspective of the NEM as a whole. The test requires the net benefit of proposed investments to be determined without reference to regional boundaries. Indeed the Rules require the test to specify the method or methods permitted for estimating market benefits that may occur outside the region in which the TNSP's network is located.[6] In addition, the RIT T requires extensive consultation, including with AEMO, which provides the opportunity for any national, strategic issues to be raised and taken into account.[7]

Further, when the AER sets the revenue requirements for TNSPs, it is specifically required to have regard to the most recent NTNDP and any submissions made by AEMO. As a matter of practical reality, the AER is likely to place particular weight on the views of AEMO about the appropriateness of the projects that a TNSP has proposed. This, therefore, provides a further check on TNSPs investment decisions.

Lastly, a further safety net exists to address situations where, in spite of the extensive consultation undertaken through the planning process, important strategic projects are not progressed. This is the Last Resort Planning Power (LRPP) that resides with the AEMC. The LRPP empowers the AEMC to direct one or more Registered Participants to apply the RIT-T in relation to a potential transmission project it identifies. The AEMC is required to report annually on whether or not the LRPP should be exercised. The AEMC has not

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6 Clause 5.6.5B(c)(10)(iii) of the National Electricity Rules. The RIT T comprises a number of levels. The Rules require the AER to set out the detail of the economic test and methodologies for assessing transmission projects, and also sets out the consultation obligations and dispute resolution processes. This consultation and dispute resolution process is aimed at both ensuring that the test is applied correctly to network investments, as well as to ensure that non network options (such as demand side response or embedded generation) are considered on an equal basis. The AER has determined the economic test for transmission investments as required, and has also issued a guideline that provides further guidance as to how that test should be applied.

7 It is also worth noting that Registered Participants, the AEMC, Connection Applicants, Intending Participants, AEMO and interested parties may dispute the conclusions made by a TNSP in its project assessment to the AER should they consider the test has not been applied appropriately. As a matter of practical reality, the AER is likely to place particular weight on the views of AEMO should such a dispute arise.

yet seen a need to exercise this power. Indeed, in its latest annual report, the AEMC concluded that while there are some constraints that may increase in terms of the extent to which they bind inter-regional power flows, the TNSPs and AEMO are both already developing measures to address these constraints.[8]

Accordingly, it is incorrect to assume that TNSPs are free to ignore the contents of the NTNDP or the views of AEMO when deriving their own plans and making decisions to invest. Rather, a series of checks and balances exist over the decision making of TNSPs, with the NTNDP, and AEMO more generally, having central roles to play.

2.3 Operation of the framework to date

As already highlighted, the new framework and institutional arrangements described above have not yet had a chance to work fully. Therefore, caution should be exercised in drawing any inference as to whether or not the new regime is 'failing' or a success. However, the indications to date are that the reforms will be effective in delivering coordinated national planning.

In particular, there are currently a number of investigations into interconnector projects in progress. Specific examples of such investigations include the following:

- SA interconnector feasibility study – ElectraNet and AEMO worked together in an open and transparent manner to undertake a feasibility study to determine if a project to augment interconnector capacity between South Australia and Victoria or New South Wales could be feasible (a final report was published in February 2011). Further work is now underway to investigate in more detail the economic feasibility of particular options and whether a RIT-T should be undertaken on these options.

- Powerlink and TransGrid are currently undertaking a further round of upgrade studies on the Queensland New South Wales Interconnector (QNI), consistent with the market development scenarios and options reported in the 2010 NTNDP. This assessment will involve engagement with AEMO to ensure consistency with future NTNDP studies.

- AEMO and TransGrid have undertaken preparatory work and are intending to investigate the benefits of upgrading the Victoria to New South Wales interconnector.

In addition, while the NTNDP identified a number of projects that it considered to require early attention by planners, it also observed that planning had already commenced or was about to commence in relation to each of those projects.[9]

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8 AEMC, *Investigation into the Exercise of the Last Resort Planning Power: 2010*, 10 November 2010, p. i.

9 AEMO, *National Transmission Network Development Plan, Executive Briefing 2010*, pp.23-25.

2.4 Issues with a central planning model

If a central planner approach facilitated through AEMO is to be considered further, it is important to understand that a number of problems arise with this approach. The potential problems identified below are primarily based on the experiences in Victoria where AEMO is the network investment planning body.

Most importantly, a centralised process for investment decision making is incongruous with regulatory policy developments over the past decades, which reflect the inability of a centralised, economy wide decision maker to respond quickly and appropriately to changes in market requirements, commercial drivers and technological change.

Rather, the focus of regulatory policy development has been to encourage decentralised decision making and to design regulatory regimes so that decentralised decision makers are motivated to make decisions that promote the social good. These measures are referred to generally as incentive regulation, and some of the measures that apply to TNSPs and the overall philosophy is discussed further in Box 1.

Box 1: What is incentive regulation?

The term incentive regulation (or, alternatively, incentive compatible regulation) refers to measures included in the regulatory regime that are designed to align the commercial interests of regulated businesses with the social good (which is generally taken as advancing economic efficiency). In short, such measures enable businesses to earn additional profit in circumstances where efficiency is advanced. There are a number of aspects of the regulatory regime that provide TNSPs with financial incentives for advancing the social good, which include the following:

- *Application of a price control* – a revenue cap applies to TNSPs[10]; therefore, the allowed revenue that is determined for a TNSP in a price review is fixed and not reviewed for a defined period (typically five years, with the exception of defined events).[11] This means that the level of profit that TNSPs earn is tied to their actual expenditure, thus additional profit can be earned by controlling expenditure. Such actions benefit the TNSPs in the short term (by raising profit, all else constant) and customers in the medium term. The reward for controlling expenditure arises if operating and/or capital expenditure is reduced, and also results if one form of expenditure can be substituted for another and lower the overall cost, for example, though pursuing non-network solutions.

[10] Grid Australia notes that the same incentive properties for cost efficiency exist irrespective of whether a revenue cap or a price cap applies.

[11] For operating expenditure, a continuation of the efficiency benefit from one period to the next is allowed through a measure known as the efficiency benefit sharing scheme. This measure is designed to equalise the incentive to make operating expenditure improvements over the course of a regulatory period.

- *'Revealed' cost efficiencies passed through to customers* – the cost savings that a TNSP achieves through a regulatory control period are subsequently passed onto customers at the next periodic review of prices. This is because the 'revealed' efficient level of cost is factored into the new prices given the regulator will have regard to expenditure and efficiencies that occurred in the preceding period.
- *Service target performance incentive scheme* – when the revenue caps are determined, targets are set for different measures of service performance over the period between reviews. The revenue that TNSPs are allowed to earn in each year is adjusted to reflect the TNSP's actual performance compared to this target. An important role of this incentive scheme is to act as a counterweight to the incentive to reduce cost discussed above to discourage cost savings at the expense of service reductions. However, the scheme also encourages an increase in expenditure where this may generate a commensurately high benefit to customers, for example, by taking transmission assets out of service for maintenance or augmentation outside of system peak times, albeit at the expense of having to pay higher wages and contractor costs.

The underlying philosophy behind incentive regulation is that it encourages the entities that are in the best position to make operational and investment decisions (that is, the owners and operators of the assets) to make use of their full set of private information to make decisions that promote the social good, including to innovate where possible. This is likely to result in far superior outcomes compared to those decisions being made or dictated by a 'central planning' entity that would have neither the same level of motivation or information.

AEMO is a not-for-profit organisation. It follows that if AEMO were to become the entity that makes all transmission investment decisions, the capacity to use financial incentives to encourage innovation in transmission investment decisions would be lost (the use of financial incentives in this way – which is referred to as incentive regulation – only works where the entity has a commercial objective).

The consequence of not being able to apply incentive regulation to AEMO plays out in a number of ways. For example:

- There would be no scope for incentive regulation to encourage innovation about the optimal means of augmenting the network to meet a defined obligation.
- There would be no role for incentive regulation to encourage an optimal trade-off between network and non-network options for resolving a constraint. This is because there would no longer be an incentive to minimise costs, and hence, the substitution of non-network for network investment within required timeframes.
- There would be no role for incentive regulation to encourage the optimal trade-off between asset investment and maintenance. These roles would instead be split between a central planner and a network service provider. Indeed, the decision for efficient replacement or refurbishment of network assets may be crowded out by a less efficient augmentation decision by a central planner.

- There would be no commercial driver for investment to be responsive, timely and efficient and no checks and balances to guard against over-investment in network infrastructure.

The use of financial incentives to harness the private information of regulated businesses and motivate innovation and continuous improvement has been one of the major developments in economic regulation in recent decades, and removing it would be a major step backwards.

A central planner model would also result in a division of responsibility that unfairly places all of the financial risk with respect to service obligations and service incentive schemes with the TNSP, while the investment decision-making body bears none. Under the existing arrangements TNSPs bear the consequences of outages that impact on market performance. Removing one of their tools for managing this, i.e. the ability to plan new investments, potentially creates a financial risk for TNSPs that they are not able to effectively manage, as well as reducing the benefits to the market from the service incentive scheme.

3. Application of the Regulatory Investment Test for Transmission

- The RIT-T commenced in August 2010 and was the product of a major review for COAG,[12] followed by a more detailed review by the AEMC at the direction of the MCE.[13]
- It has been developed as a result of concerns that the full benefits of various network development options were not being addressed by the former regulatory test process. This includes consideration of benefits to the market including reduced transmission congestion and increased competition across the market
- The RIT-T has an important role to play in ensuring only efficient transmission investment occurs
- The new RIT-T contains important differences over the previous test, most notably, the requirement to consider market benefits for all prospective projects [14]
- There is value in ensuring competition benefits and options values are assessed appropriately, however, caution needs to be taken in managing expectations with respect to the influence these benefits will have on investment decisions
- To the extent the RIT-T does not capture some broader economic or social benefits, the framework should not preclude governments factoring these benefits into decisions to contribute to the costs of transmission assets

3.1 Electricity Update Paper Findings

The Electricity Update Paper makes a number of claims that relate to the assessment of potential investments through the RIT-T. Firstly, the paper claims that TNSPs have under-utilised the opportunities within the existing regulations to identify benefits. Secondly, the Electricity Update Paper suggests TNSPs do not have the economic skills to undertake a proper analysis of benefits.[15]

Again, Grid Australia considers that these comments reflect a misunderstanding of the nature of the RIT-T, how it is applied in practice and the practical issues associated with

[12] Energy Reform Implementation Group, 2007, *Energy Reform: the Way Forward, Report to the Council of Australian Governments*, January.

[13] AEMC, National Transmission Planning Arrangements, Final Report to MCE, 30 June 2008.

[14] We note that a preferred option may have negative net economic benefits where the identified need is for reliability corrective action.

[15] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper Eight: Transforming the electricity sector*, March 2011, p.33.

estimating (and the likely importance of) certain of the benefits that may be provided by transmission investments. Moreover, Grid Australia notes that the current RIT-T – as part of the wider planning and investment decision making arrangements discussed in the previous section – has been the subject of extensive, recent review and consultation with industry and customers, with the key principles endorsed at the highest level of government.

3.2 The new 'Regulatory Investment Test for Transmission'

At the outset, it needs to be understood that the purpose of the RIT-T is to identify the most efficient solution and optimal timing for meeting a defined need on the network. As such, it seeks to ensure that only efficient transmission investment is undertaken. This would include a situation where a transmission investment had the effect of 'crowding out' more efficient non-network solutions, like local generation or demand side response. Thus, the test has an important role as market participants – and, in most situations, final customers – would bear the net costs should inefficient transmission projects proceed.

Like many of the elements of the transmission planning framework, the RIT-T is also new (having commenced operation in August 2010) and was designed to address what were considered as shortcomings in the previous test. The most important change that was made was to require wider market benefits to be considered in all projects. This reflected a concern that TNSPs may have been encouraged under the previous test to focus more on projects to meet customer reliability (as the previous test provided a simpler route for justifying such projects) and could have missed out on possible enhancements that were justified in terms of the other market benefits they would create.

This change in the test was complemented by the new transmission planning arrangements discussed above, as the NTNDP would assist in identifying where an enhancement to a reliability augmentation would provide wider market benefits. As with the other elements of the new transmission planning framework, it is too early to draw an inference about the effectiveness of the new test.

Grid Australia notes, however, that the mere fact that most of the transmission projects assessed by TNSPs are motivated by reliability purposes is not in itself a reason for concern.

- First, the majority of efficient transmission investments will always be motivated by the need to maintain reliability of electricity supply to customers. As demand grows, new generation capacity is required, and network reliability projects are merely the additional transmission that is required to allow that additional generation capacity to reach the customer. In contrast, the other market benefits from transmission arise from such factors as the transmission investment allowing an existing lower cost generator to be operated more often and substitute for a higher cost generator, or from changing a generator's locational decision so that it to locates near a lower cost source of fuel. While this latter class of market benefits is real and valid, the benefits nevertheless should be expected to be much lower than reliability benefits and hence that the projects that could be justified on the basis of market benefits would be fewer in number.

- Secondly, TNSPs have undertaken numerous assessments of 'market benefits' projects over recent years. However, if the initial assessment suggested that the project would not pass an economic test, then further analysis would cease and the initial assessment would not generally be exposed publically for further scrutiny. To do so would have added an unnecessary administrative cost onto TNSPs as well as those who wish to review the proposal. In the future, however, all projects of national importance that may be feasible would be identified and reported in the NTNDP, so that stakeholders would be aware of when more detailed assessments of projects should be expected.

3.3 Application of the RIT-T: Competition Benefits and Real Options

One of the particular comments made in the Electricity Update Paper is that TNSPs have not availed themselves of the full options that are available to transmission planners under the RIT-T to justify transmission projects, most notably the capacity to value competition benefits and real options. Prior to discussing these in detail, Box 2 explains at a high level some of the economic benefits that may flow from a transmission project.

Box 2: Economic benefits from a transmission project

As the RIT-T is an economic test, it requires that only the increase in aggregated benefits across market participants be counted as a benefit when evaluating transmission projects.

When the transmission network is augmented between regions and this affects market prices, then substantial care is required to identify the true economic benefit. The most obvious effect from such an augmentation is that customers in the region where prices are lowered would be made better off. However, if prices drop in one region (the importing region) then prices are likely to rise in the adjoining region (the exporting region) and thus come at the expense of other customers. Moreover, generators are also affected, being worse off if located in the region where prices fall, but better off in the region where prices rise. It is clear that much of the benefit that accrues to individual market participants is cancelled out by adverse impacts borne by other participants. In economic terms, where benefits cancel out in aggregate they are transfers between parties and not true economic benefits and should therefore not be counted when evaluating the merits of a project.

In order to avoid inadvertently counting transfers, the RIT-T requires a focus directly and transparently on the different sources of economic benefit that may flow from a project. These benefits include the following:

- *Reliability* – which is an increase in the likelihood that power will be available to customers when sought (or, equivalently, a reduction in the likelihood that energy sought will not be able to be served).
- *Generation operating costs* – where the transmission project eliminates a constraint and so allows more use to be made of a generator with low operating costs in preference to one with high operating costs.

- *Generator capital costs* – where the transmission project allows for a better sharing of generation reserve capacity across the network, and so reduces the need for new generation capital investment, or the transmission project enables and encourages the new increments of generation investment to be lower cost plant. It is noted, however, that a trade-off occurs between the reliability benefits and generator capital costs given that a deferral of generation entry will also imply that less reserve capacity would exist at any point in time, and so the benefit is the net effect of these factors.
- *Losses* – new transmission projects can reduce aggregate network losses, which is a direct benefit.
- *Increased efficient electricity usage* – where customer prices were previously in excess of the social cost of production (i.e., inclusive of externalities) and a transmission project reduces prices to customers, then the additional demand would deliver customer benefit that exceeds the social cost of production, which is also an economic benefit.
- *Project flexibility* – in addition, different transmission projects will provide differing levels of capacity to adjust in response to new information in the future. For example, a transmission project that can be added in stages provides more scope to adjust to observed future rates of demand growth. Alternatively, by constructing a larger project than otherwise, would provide the flexibility to connect new generators in a region should connection be sought. The 'option' value of this flexibility can validly be counted when evaluating the merits of different projects.

The term 'competition benefits' refers to any of the benefits above that may be increased as a result of a transmission project enhancing the degree of competition between generators. The most likely benefit to be advanced is the 'increased efficient electricity usage' benefit.

Estimating these benefits requires a number of sophisticated modelling techniques. For example, evaluating reliability benefits requires a model of the individual and joint likelihoods that electricity plant (generation and network) will be out of service at any point in time, estimating the generation operating cost benefit requires a model of the future dispatch of generators and estimating the generation capital cost benefit requires a model of the future investment in generation over a reasonable timeframe.

Grid Australia notes that there have been a number of studies in which TNSPs have sought to include an estimate of competition benefits in the total benefits that arise from a transmission augmentation, such as the recent joint study into a new interconnector between New South Wales and Queensland that has been investigated by TransGrid and Powerlink.[16] The reality is, however, that estimating these benefits is complex – even for

[16] Powerlink and TransGrid (2008), Potential Upgrade of Queensland/New South Wales Interconnector (QNI) - Assessment of Optimal Timing and Net Market Benefits, Final Report, October. Note that the standard technique for estimating competition benefits delivers an estimate of the aggregate benefit *inclusive of the*

an economist – and the resulting economic benefit inevitably is likely to be relatively small.

- First, in order to quantify a competition benefit, an assumption is required about how a transmission link will change the intensity of competition amongst generators, and then how that will affect generator bidding behaviour.

- Secondly, the outcome of the change in bidding behaviour is a lower generation price and hence a lower cost to customers. However, much of this change, in the form of prices in the market, is a wealth transfer from generators to customers and is not properly counted as an economic benefit. Rather, an economic benefit arises to the extent that the price to final customers falls and this fall in price induces additional (efficient) consumption. Given the low observed price elasticity of demand for electricity, this benefit would be expected to be small. In addition, for a true efficiency gain to arise at all, the delivered price of electricity must previously have exceeded the social cost, so that additional consumption is efficient.

Turning to real options, many different types of real options may exist in relation to a given project. The Electricity Update Paper correctly points out that by overbuilding transmission capacity, the option would be created to connect new generation in the area at low cost and more quickly than otherwise, which may have a benefit. Equally, real options considerations may also justify spending on higher cost interim measures that allow a large augmentation to be deferred, or to opt for a modular augmentation that is expected to be higher cost, as each of these options provide the flexibility to wait for new information before committing to an irreversible investment.

However, while it is clear that assessing options value will require sophisticated modelling tools, Grid Australia is committed to ensuring that the relevant techniques are developed to be used in the appropriate cases.

3.4 Consideration of broader benefits

The Electricity Update Paper identifies a number of possible benefits from increased interconnection. These benefits include environmental benefits, such as less reliance on high emissions plant to support local demand peaks.[17]

At the outset, it is worth stating that the existing RIT-T is capable of incorporating benefits associating with a carbon price and the costs of meeting a renewable energy target. This is made clear in the AER's guideline on how to apply the RIT-T, which discusses the consideration of carbon pricing into operating costs. However as previously noted, and

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contribution of enhanced competition, and so a disaggregated estimate of the competition benefits alone may not be presented.

[17] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p.32

consistent with the National Electricity Objective set out in legislation the test limits the consideration of benefits to those who consume, produce or transport electricity.

As a consequence, broader benefits, and costs, that may be two or three times removed from those within the market are not captured. Such benefits, which are generally considered as externalities, may include improved environmental outcomes (where the outcome is not properly 'priced') and flow on effects of the direct beneficiary to other firms or industries, such as increased exports, job creation and regional development. Unde the Rules both AEMO and TNSPs are bounded by the scope of the National Electricity Objective in applying the RIT-T.

Introducing broader economy-wide factors within the RIT-T is likely to introduce considerable uncertainty into transmission investment decision making. This is because of the additional assumptions that would be required, and the uncertainty associated with getting those assumptions right. Given this, externalities or other social objectives have to date been addressed outside of the NEM framework. The application of the renewable energy target, and carbon pricing, are examples of this.

While broader benefits may not be considered within the RIT-T, this does not mean that broader considerations cannot be applied to transmission investment. Indeed, a role for governments may be to financially contribute to transmission investment where broader benefits are likely to exist or where additional transmission investment assists in the achievement of social policy goals.

A model where governments make contributions to transmission investments outside the NEM framework allows Government to contribute to investments on the basis of broader objectives while ensuring electricity customers do not solely bear the burden of these decisions and the integrity of the NEM decision making framework is maintained.

Moreover, there is nothing in the existing framework that prevents this sort of policy response from happening today. Addressing social policy issues outside of the NEM framework also ensures that broader assessments can take into consideration particular priorities for the government of the day.

4. Incentive regulation and investment decision making

- In developing the current framework careful consideration was given to the balance between under investing and overinvesting in network infrastructure. We note that the Electricity Update Paper does not expressly consider the consequences of deliberately reducing reliability outcomes in electricity service delivery.
- The same incentives that apply to invest in regional transmission apply to investments in transmission interconnection
- The existing framework encourages efficient investment in transmission networks, it in fact penalises TNSPs for every additional dollar they spend
- While additional investment in networks has been undertaken in recent years, this investment has been warranted and necessary

4.1 Electricity Update Paper finding

The Electricity Update Paper expressed the view that network businesses have an incentive to over-invest in network assets,[18] which in turn is argued to have led to substantial gold plating of electricity networks (with the exception of interconnectors between regions, where the contrary concern was raised).

The Electricity Update Paper also states that the existing financial incentives for state owned network providers to over invest, coupled with the political cost of any failure, have the potential to overwhelm any countervailing incentives to minimise operational costs.[19] These failures that were considered to exist in the regime were considered to have contributed substantially to the recent electricity price rises and that strengthening and improving the regulatory rules may yield large benefits in lower rates of increase in electricity prices. On the basis of these claims, the Paper indicates that there is a need for an early and searching independent review of the framework.

Grid Australia considers that these findings reflect a material misunderstanding of the incentive properties of the regulatory regime for transmission, and also misstate the actual needs for network investment at the present time. Given the significant errors in the Electricity Update Paper, and the potential for those claims to create expectations that

[18] The Paper also asserted that network businesses have an incentive to overstate the size of their regulatory asset bases. In reality, the businesses have no discretion over the size of their regulatory asset bases. Rather, this is a product of an initial regulatory asset base that was determined and 'locked in' over a decade ago for most network businesses, plus actual capital expenditure since that time (according to the businesses' audited regulatory accounts), less depreciation calculated using a prescribed method and lives, adjusted for actual inflation. Indeed, under the Rules, the AER is required to produce a financial model that network businesses are required to apply when making this calculation.

[19] Ibid, p.43.

cannot be met, Grid Australia considers it is important to step through how the framework actually operates and the incentives contained within it.

4.2 Incentive properties of the regulatory regime

When setting the level of a revenue cap the Rules require that actual capital expenditure undertaken in the previous regulatory period is included in the starting Regulatory Asset Base (RAB), and the RAB is projected forward incorporating a forecast of capital expenditure for the next regulatory period.

A return on the RAB – including the forecast of capital expenditure – is included in the revenue cap. That cap is then set for the regulatory period.[20] The incentive features of this process can be considered as having long term and short term components:

- First, by setting the revenue cap such that a return is provided on actual (past) expenditure and a forecast of efficient future expenditure, TNSPs are provided with an expectation that they will earn an appropriate return on capital expenditure. This provides the incentive and capacity for TNSPs to continue to invest in the networks. It is worth highlighting that as part of a revenue reset process, the revenue allowance is subject to AER approval based on its ex-ante assessment of prudency. In making this assessment the AER has regard to its own consultant reports, the views of stakeholders (including AEMO), and TNSP planning and other governance processes.

- Secondly, as the revenue cap is fixed for the period between reviews, TNSPs have an incentive to spend less if it is efficient to do so (subject to meeting offsetting obligations or incentives, such as service incentives) as the same level of revenue is earned irrespective of whether the forecast expenditure occurs or not.

The application of a revenue cap means that TNSPs are in fact penalised for every additional dollar that they spend – it follows, therefore, that they have an incentive to consider whether the relevant project can be deferred or delivered at lower cost. Notwithstanding this, as expanded upon below, Grid Australia notes that the incentive regime aims to ensure that service obligations are met at lowest sustainable cost. By incentivising TNSPs to look for ways to reduce the capital (and operating) expenditure required to deliver services to customers, a lower RAB is the outcome at the start of the next regulatory period which results in a lower cost base for customers.

Clearly, the incentive for TNSPs to reduce their expenditure needs to be balanced with either a requirement or incentive to ensure that an efficient level of service is provided to customers. Indeed, the inclusion of service obligations or incentives is premised on the effectiveness of the economic incentives to encourage TNSPs to minimise costs and avoid inefficient investment. This is currently achieved under the transmission framework

[20] Note, however, that 'pass throughs', contingent projects, or a 'ship wreck' situation can affect the total level of the cap during a regulatory period.

through a combination of reliability obligations (as set out in Chapter 5 of the Rules and in jurisdictional instruments) and through the service target performance incentive scheme. The combination of the financial incentives on TNSPs to minimise cost with the measures to ensure appropriate service delivery imply that:

- TNSPs have an incentive to meet their service obligations at the lowest cost, which includes to:
  - take account of information and analysis reasonably expected to be considered at the time of making the investment, which may adjust the project scope or its timing as necessary (the latter of which includes investing in smaller projects or schemes that may enable a major investment to be deferred);
  - select the lowest efficient cost investment that meets the required timeframe for delivery, including to adopt new technology or techniques as they become available;
  - employ non network options over network options where commercial benefits arise from the incentive arrangements;
  - use innovative work practices, improve outage coordination, and optimise the capital and operating work program; and
- TNSPs have an incentive to spend efficiently (both operating and capital) and improve their service levels where this generates a reward under the service target performance incentive scheme that exceeds the cost of that initiative.

Given these arrangements it is clearly not the case that TNSPs are merely rewarded for delivering more transmission assets.

Notwithstanding the remarks above, Grid Australia acknowledges that the potential may exist to refine the current incentive arrangements and is open to any new practical means of enhancing the incentive properties of the current regime. As previously indicated, the AEMC is currently conducting a Transmission Frameworks Review, which is the appropriate forum to address this issue.

4.3 Drivers of new investment

Grid Australia also rejects the suggestion in the Update Paper that transmission businesses have been ‘gold plating’ their networks in recent years (with the exception of inter-regional investments, where the opposite concern has been expressed).

Contrary to the Electricity Update Paper’s suggestions, no evidence is presented that suggests the recent increase in the rate of investment is excessive. In contrast, the recent increase in investment (part of which merely reflects the substantial increase in materials costs as a result of the ‘minerals boom’) has been essential to ensure that the reliable and secure electricity supply that customers expect and is fundamental to the economy continues.

Indeed, the AER itself has recognised the need for increasing network investment in the future. In its 2010 State of the Energy Market Report, the AER identified the drivers for increases in forecast network investment, observing as follows:[21]

> *The key drivers for rising investment include:*
>
> - *More rigorous licensing conditions and other obligations for network security, safety and reliability*
> - *Load growth and rising peak demand*
> - *New connections*
> - *The need to replace aging assets, given much of the networks were developed between the 1950s and 1970s.*
>
> *Other drivers include changes to system operation due to climate change policies and the introduction of smart meters and grids*.

The AER also noted that each network has unique issues relating to its age and technology, its load characteristics, the costs of meeting demand for new connections, and its licensing, reliability and safety requirements.

[21] AER, *State of the Energy Market: 2010, December 2010*, pp.54-55.

5. Return commensurate with risk

- A commercial return for transmission businesses provides the incentive and capacity needed for future investment to be undertaken
- The current regulated rate of return parameters used reflect extensive and numerous reviews extending over the past 15 years of market evolution. The most recent 5-yearly review was concluded by the AER in 2009.
- The approach applied to estimate the cost of capital associated with electricity network businesses is highly consistent with conventional regulatory practice
- There is no justifiable reason for government owned network businesses to have a different cost of capital to privately owned businesses. Indeed, there are strong arguments to ensure they are consistent.

5.1 Electricity Update Paper findings

The Electricity Update Paper infers that a major cause of recent price increases is the rate of return earned by network businesses, which it asserts is excessive. It argues that there is little recognition that network investment is recouped with near certainty and is passed onto creditworthy retailers who recoup it from customers, and considers it illogical that:[22]

> *the discussion of returns proceeds as if this were a mixture of ordinary business equity and debt investment, earning normal commercial returns.*

It suggests that there is a need for the rules to relate the cost of equity and debt to the riskiness of the investments.[23]

The Electricity Update Paper further argues that where the business is government owned, the regulated rate of return exceeds the true underlying cost of finance to a greater extent than for a private owner, which it argues should be reflected in the rules.[24]

Grid Australia considers these observations to reflect a fundamental misunderstanding of the requirements of the regulatory regime, as well as being inconsistent with mainstream finance thought. The specific concerns are articulated in turn below.

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[22] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p.41

[23] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p.44

[24] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p.42

5.2 Need for a commercial return

First and foremost, Grid Australia emphasises that providing a commercial return on transmission investment (commensurate with the risk involved) is essential for TNSPs to have the capacity to attract the investment funds required to continue to provide the reliable and secure service that customers demand.

5.3 The requirements of the Law and Rules

In contrast to the assumption in the Electricity Update Paper, the regulatory regime does in fact require a return to be provided that is commensurate with the risk of the transmission investments. The National Electricity Law provides explicitly as follows:[25]

> *A price or charge for the provision of a direct control network service should allow for a return commensurate with the regulatory and commercial risks involved in providing the direct control network service to which that price or charge relates.*

In addition, the Rules provide that the rate of return should be determined as follows:[26]

> *The rate of return for a Transmission Network Service Provider for a regulatory control period is the cost of capital as measured by the return required by investors in a commercial enterprise with a similar nature and degree of non-diversifiable risk as that faced by the transmission business of the provider*

Moreover, when undertaking the five yearly review of the inputs or assumptions into the cost of capital, the AER is required to consider the following (amongst others):[27]

> *the need for the rate of return calculated for the purposes of paragraph (b) to be a forward looking rate of return that is commensurate with prevailing conditions in the market for funds and the risk involved in providing prescribed transmission services;*

Given these requirements, there is no basis for suggesting that the framework does other than to ensure that returns are provided that are commensurate with the risk involved. Indeed, when it last undertook its five yearly review of the parameters for the return on capital, the AER remarked as follows:[28]

> *Of particular relevance in relation to the rate of return, is that the [Weighted Average Cost of Capital] (WACC) be set at a level expected to be sufficient to*

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25 National Electricity Law, section 7(5).

26 National Electricity Law, Rule 6A.6.2B(b)

27 National Electricity Rules, Rule 6A.6.2(j)(1).

28 AER, *Final Decision, Electricity Transmission and the Distribution Network Service Providers, Review of the Weighted Average Cost of Capital (WACC), Parameters,* May 2009, p.12.

incentivise efficient investment in electricity network infrastructure, while not set too high so as to incentivise inefficient overinvestment in electricity network infrastructure. The AER considered that if it determined values and methods for individual WACC parameters that produce an overall regulatory rate of return that is expected to achieve this outcome, the AER will have exercised its power in a manner that will or is likely to contribute to the achievement of the NEO. In doing so, the AER also considered that, in respect of each parameter, it would have also had regard to the need to achieve an outcome which is consistent with the NEO.

In reviewing the individual WACC parameters, the AER had regard to a range of theoretical and empirical considerations and evidence, including that presented in submissions to the issues paper, and contained in expert reports commissioned by stakeholders and the AER. Having had regard to this range of considerations and evidence in reviewing the WACC parameters, the AER considered it has achieve the appropriate balance as discussed above.

5.4 Methods used to estimate the rate of return are conventional

The techniques that are applied to estimate a required rate of return for electricity networks reflect standard practice amongst finance practitioners and are also consistent with the practice of many regulators around the world. Indeed, it is also universal around the world for utility businesses to be considered as normal businesses that would be financed through a mixture of debt and equity, both of which demand a commercial return.

Grid Australia notes, however, that the discussion in the Electricity Update Paper appears to assume that there is no account taken of the relatively lower risk of regulated networks when estimating the cost of capital. This assumption is false. Under the Capital Asset Pricing Model – which is the technique that is used to estimate the cost of equity capital – the beta is the measure of the relative risk of an investment.

Currently the beta that the AER employs when stripped of the effects of financial leverage is 0.32, which compares to an average for the assets that are listed on the share market of approximately 0.70.[29] This means that electricity network assets are assumed to be less than half of the risk of the average business amongst those that are listed on the Australia Stock Exchange.

[29] The AER uses an equity beta of 0.80 for an assumed gearing level of 60 per cent debt to assets, which translates into an asset beta of 0.32 (0.8 x 40% equity). In contrast, the share market as a whole has an equity beta of 1, but an average level of gearing of approximately 30 per cent debt to assets, implying an asset beta of 0.70 (1.0x 30% equity)

5.5 Cost of capital for a government owned business

Grid Australia is surprised that the Electricity Update Paper claims that the costs of finance for government entities are lower than for privately owned entities.[30] This statement ignores the settled view in finance that the cost of capital is the same irrespective of whether an investment is undertaken by the private or public sector.

The Electricity Update Paper also appears to suggest that public sector projects are risk free because they can be financed through government borrowing at the risk free rate. However, this view ignores the fact that taxpayers would then bear a liability for providing a guarantee to the project, which is a real albeit unobserved cost of the project.

In addition, ensuring that prices for using networks reflect a commercial cost of capital where assets are government owned is also important for ensuring that the correct signals are provided for efficient decisions by generators and customers. In particular, artificially reducing the price of network services for state owned network businesses could cause customers or generators to alter their location decisions, even if to do so was inefficient from society's point of view.

Finally, policies in support of the principle of competitive neutrality were established as an integral part of the Hilmer competition reforms in the early 1990s and were subsequently endorsed by COAG. The Electricity Update Paper is at odds with the established principle of neutrality and a basis for reviewing this principle has not been clearly argued.

[30] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p.42

6. National transmission charging

- National transmission charging would have no direct influence on transmission investment decisions – it is not a relevant factor in the RIT-T and does not affect the financial returns to TNSPs
- Nevertheless, it is important that customers pay an efficient price for the assets they use
- The Rule change before the AEMC for a load export charge is an appropriate and proportionate response to ensuring efficient price signalling occurs between regions

6.1 Electricity Updated Paper findings

The Electricity Update Paper states that the costs of all new interstate transmission should be recovered nationally. This statement was based on the belief that the absence of a national system of transmission pricing is creating a barrier to interconnector investment, and that all users of power in the regions covered by the NEM would receive benefits from access to a smoothly operating market, wherever they are located within the market.[31]

6.2 Merits of Inter-regional charging arrangements

It is important to note at the outset that inter-regional charging does not factor into the economic assessment of a proposed investment at the RIT-T stage and therefore does not influence the investment decision in that respect.

In addition, the structure of prices that a TNSP sets does not affect its payoff from an investment, and hence inter-regional charging would not affect a TNSP's commercial incentives with respect to interconnection assets. At best, inter-regional charging has a second order impact on transmission planning and investment by potentially improving the efficiency of price signals to customers, thereby disciplining demand to efficient levels. However, the resulting impact in this instance is just as likely to be a need for less investment rather than more.

The need for inter-regional transmission charging was identified in the AEMC's review of the impact of climate change policies on the NEM. Following on from that review the MCE submitted a Rule change to the AEMC to introduce inter-regional transmission charging through a load export charge. The load export charge would reflect the flow of electricity from one region to adjoining regions. The level of the charge would reflect the costs incurred in the use of the transmission network in the region to conduct electricity to an adjoining region, therefore, the charge should be calculated as if the relevant

[31] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p.34.

interconnection with the adjoining region was a load on the boundary of the region. A load export charge is relatively low cost to implement, but facilitates customers that use network assets in an adjoining region to pay for them.

The proposed alternative of a national charging framework, on the other hand, would be particularly complex and costly to implement. Given a load export charge achieves the main aim of signalling the cost of network assets customers use in adjoining regions, it is not clear that the a national charging framework would achieve benefits in excess of the costs of implementing and applying such an approach.

7. Merits review

- Merits review is a key component of an independent and well-functioning regulatory regime
- It is particularly important for electricity transmission businesses given the long-lived nature of transmission assets and their dependence on regulatory outcomes for revenue
- A full merits review, as proposed in the Electricity Update Paper, would significantly increase the costs and time of undertaking a review without a commensurate benefit
- The appeal decisions to date highlight the importance of a cost effective merits review process being in place. The majority of decisions to date have found that, based on the material before the AER at the time of its original decision, the AER had erred to the material disadvantage of the appellant. Indeed, even the AER has conceded that errors have been made, in particular with respect to the value of some parameters for the cost of capital.
- The particular form of merits review now in operation was deliberately designed by the MCE to limit the scope of appeals to material before the AER at the time of the AER's decision. It is also designed to provide barriers to bringing forward non-material claims

7.1 Electricity Update Paper findings

The Electricity Update Paper questions whether the existing appeals process is too generous to the businesses. This question appears premised on the view that the appeal of a decision is free to the firm and without a realistic possibility of an adverse outcome.

Therefore, it is claimed that appeals automatically follow all regulatory determinations. The Paper claims that this burdens the regulator's decision making in favour of the businesses. In response the Electricity Update Paper suggests that any appeal should require a reopening of the whole of the determination so that the appellant would thereby accept the risk of an unfavourable outcome.[32]

7.2 The merits of merit review

While merits review has only been a component of the transmission framework for a relatively short amount of time, it is a key aspect of an independent and well-functioning regulatory regime. Merits review ensures that regulators are accountable for their decisions, thus providing pressure for balanced, consistent and correct decisions. This

[32] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, pp.42-43

view is supported by the Expert Panel on Energy Access Pricing which concluded that it is desirable to provide merits review of decisions of the AER in relation to price and revenue controls, observing as follows:[33]

> *The Panel notes that appropriate provision of merits review increases the confidence of all parties in a regulatory system, but that merits review processes that are not appropriately specified can lead to incentives to game the regulatory system and as a result delays and considerable cost.*

The Panel recommended a model for merit review that addressed its concerns about the potential for parties to withhold important information from the regulator, but make it available in an appeal (the 'game'), which is the model that was adopted in the National Electricity Law.

The consequences of poor regulatory decision making are high for transmission businesses. The long-lived nature of transmission assets, and the dependence on regulatory outcomes for revenue, mean that poor regulatory decisions will have an enduring impact on transmission investment and operation. Ultimately, poor regulatory decision making would be to the detriment of customers.

7.3 The merits of the current merits review model

The existing merit review provisions were designed carefully to provide for a low cost and expeditious process. It allows both the businesses and customers to appeal a decision. It can only be activated in situations where the appellant first demonstrates an error on the part of the AER, is limited to those matters where an error is demonstrated, is also limited to matters that are material issues, and can make use only of the information that was before the AER during the review.

In contrast, the model that has been proposed in the Electricity Update Paper would involve a full rehearing of every element of the decision. In practice this would mean that the review panel would be required to repeat the process undertaken by the AER and make the revenue determine again in its entirety. Such a process would significantly increase the costs and time taken to undertake a review. These costs would ultimately be borne by customers.

Grid Australia notes that the Standing Committee of Officials when considering options for review of regulatory decisions excluded the option of a full merits review from its analysis. The reason for this was the costs and time involved in undertaking a full review of regulatory decisions.

[33] Expert Panel on Energy Access Pricing, *Report to the Ministerial Council on Energy*, April 2006, p.92

7.4 Issues with merits review

Grid Australia is aware of a perception that many more appeals have been lodged in response to AER decisions than policy makers may have expected and that network businesses have been successful a greater proportion of the time than expected.

Any assessment of the workings of the current merits review model must include a balanced review of the matters that were taken to appeal and the decisions of the Australian Competition Tribunal.

Network businesses do not have an unencumbered right to require the Tribunal to rehear matters, but instead bear the onus of having to actively demonstrate an error on the part of the AER. In addition, of the matters where the businesses have been successful, a balanced review would show that the vast majority were matters where the error the AER made was obvious to any independent party, but at the same time material. Denying a low cost remedy in such cases has the potential to diminish materially the investment environment for regulated energy assets.

Lastly, one of the arguments in the Electricity Update Paper is that allowing only part of a determination to be reopened is somehow wrong and would leave the final determination unbalanced in some way. This would seem to reflect an implicit assumption that an error that is adverse to a network business would generally be offset by some other error that was favourable, but that the overall package is somehow reasonable.

This last belief reflects a misunderstanding of the process and decision that a regulator makes when determining prices. A regulator has no way of testing whether the overall package that is reflected in a determination is appropriate, and no such test is invited under the Law and Rules. Rather, a regulator makes a whole series of constituent decisions, with making correct constituent decisions being the only means of ensuring a correct overall result. Thus, to the extent that part of a determination involves an error, the only conclusion that can be drawn is that the overall determination is in error, and that the specific error identified should be remedied.

8. Economic basis for planning standards

- Consistent with the AEMC's recommendations, planning standards should be determined on an economic basis, but expressed deterministically
- Also consistent with the AEMC's recommendations, planning standards should be determined by a party that is independent of the TNSPs
- Expressing economic planning standards in a deterministic form ensures transparency of service performance by TNSPs and, thus, supports clear accountability for performance.

8.1 Electricity Update Paper findings

The Electricity Update Paper notes that the setting of standards and service requirements has not been subject to institutional or regulatory reform. It claims that rather than being based on a probabilistic cost-benefit approach to reliability, most States tend to use a relatively crude and deterministic approach to dictate reliability requirements. It claims that this leads to higher standards being imposed than would be the case under a probabilistic approach.[34]

8.2 Application of Planning Standards

The primary objective of planning standards is to ensure that customers are able to receive a reliable supply of electricity. The standards are typically set to ensure that peak demand can be met with an appropriate level of contingency should some credible event occur. Typically there is a high level of contingency applied for electricity network assets. This reflects the costs of service interruptions, noting that community and business have a very low tolerance of electricity network service failures.

Grid Australia supports planning standards that are determined on an economic basis. Doing so ensures that a trade-off can be made based on the significance or criticality of the load centre and the costs of providing reliable supply. However, Grid Australia considers that there are significant advantages in expressing these economic outcomes in a simple, deterministic form. This is because of the transparency that deterministic standards allow. This position is consistent with the findings of the Reliability Panel, which were accepted by the AEMC as part of the Transmission Reliability Standards Review. In that Review the AEMC found that it is appropriate for deterministic standards to apply when they are economically derived.[35]

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[34] Garnaut, R., *Garnaut Climate Change Review – Update 2011, Update Paper eight: Transforming the electricity sector*, March 2011, p.13.

[35] AEMC, *Transmission Reliability Standards Review, Final Report to MCE*, 30 September 2008, p.vi

In addition, Grid Australia supports the AEMC finding in its review that planning standards should be set by a jurisdictional authority that is separate from TNSPs. This ensures there is sufficient independence and transparency in the process.

The Electricity Update Paper appears to overlook the important fact that all of these elements are features of the current framework in South Australia, where the transmission network business is privately owned. This provides a working model which could be extended across the NEM under the AEMC's recommended framework.