

29 September 2010

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

Via website: [www.aemc.gov.au](http://www.aemc.gov.au)

Dear John,

### **Transmission Frameworks Review Issues Paper**

Grid Australia welcomes the opportunity to provide a submission to the Australian Energy Market Commission's Issues 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 Issues Paper.

Grid Australia considers that, on the whole, the existing transmission framework is working well. There has been significant investment in transmission, high levels of reliability in the transmission network and the cost of congestion has been very small (1 per cent or less of the value of wholesale electricity, with a lower value observed in 2008/09 than in the previous two years),<sup>1</sup> while transmission prices have remained a small proportion of the average electricity bill (typically 10 per cent or less).

However, Grid Australia acknowledges that there are issues that have not been addressed to the satisfaction of all stakeholders, such as the inability for generators to adequately manage risks associated with intraregional constraints.

It is also fundamentally important that the Transmission Frameworks Review proceed on the basis of a sound understanding of how the existing transmission framework operates and the rationale for its various elements. This is particularly challenging given the number of interrelated measures involved.

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<sup>1</sup> Australian Energy Regulator, 2010, 'State of the Energy Market 2009', p143.

Grid Australia welcomes the opportunity to assist the Commission to ensure stakeholders understand how the existing transmission framework operates and that effective resolutions of outstanding framework issues are reached.

It is also important that the review recognise the previous reviews undertaken into various aspects of the transmission frameworks over the period since NEM start, and that significant reform initiatives impacting on the transmission frameworks have been implemented only very recently or are still in the process of being implemented. In light of the numerous reviews to date, the Commission's commitment for this review to provide a long term vision for the transmission framework – and hence stability for stakeholders – is particularly welcome.

This submission focuses on the high level themes and principles that are relevant to the Commission's review, in keeping with the desire at this stage to identify the issues that the review should consider.

The key points that Grid Australia would like to convey are summarised as follows.

- Grid Australia fully supports a rigorous, evidence based approach to the review;
- Transmission's 'role' should be expressed in terms of how it provides physical, financial and market development services;
- Incentive arrangements should be considered as part of a package that also includes administrative measures;
- Grid Australia is committed to supporting appropriate and practical measures to address the market impacts of intraregional constraints; and
- The benefits of more pro-active planning need to be balanced against the associated risks.

These points are elaborated upon in the attached submission.

Grid Australia looks forward to working 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**

# Transmission Frameworks Review

Response to AEMC Issues Paper

29 September 2010

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## 1. Introduction and Overview

Grid Australia welcomes the opportunity to provide a submission to the Australian Energy Market Commission's Issues 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 Issues Paper.

The commercial interest of Grid Australia's members – which is to build shareholder value by delivering transmission services that enhance the National Electricity Objective (NEO) – is advanced by ensuring an effective transmission framework, which is a key factor in ensuring continued investment in all sectors of the market.

Grid Australia considers that, on the whole, the existing transmission framework is working well. There has been significant investment in transmission, high levels of reliability in the transmission network and the cost of congestion has been very small (1 per cent or less of the value of wholesale electricity, with a lower value observed in 2008/09 than in the previous two years),<sup>1</sup> while transmission prices have remained a small proportion of the average electricity bill (typically 10 per cent or less).

However, Grid Australia acknowledges that there are issues that have not been addressed to the satisfaction of all stakeholders, such as the inability for generators to adequately manage risks associated with intraregional constraints.

It is also fundamentally important that the Transmission Frameworks Review proceed on the basis of a sound understanding of how the existing transmission framework operates and the rationale for its various elements. This is particularly challenging given the number of interrelated measures involved.

Grid Australia welcomes the opportunity to assist the Commission to ensure stakeholders understand how the existing transmission framework operates and that effective resolutions of outstanding framework issues are reached.

Grid Australia notes that the Commission has been directed by the Ministerial Council on Energy (MCE) to undertake this review, with the terms of reference emphasising a holistic consideration of many aspects of the framework for transmission regulation. In this context, Grid Australia welcomes the Commission's acknowledgement that a number of reviews already have been undertaken into various aspects of the transmission frameworks over the period since NEM start, and that numerous reform

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<sup>1</sup> Australian Energy Regulator, 2010, 'State of the Energy Market 2009', p143.

initiatives have been implemented. Indeed, some of these have been established very recently and some are still in the process of being implemented. Grid Australia urges the Commission to draw upon the argument and analysis already presented to those previous reviews. In light of the numerous reviews to date, the Commission's commitment for this review to provide a long term vision for the transmission framework – and hence stability for stakeholders – is particularly welcome.

This submission focuses on high level themes and principles that are relevant to the Commission's review, in keeping with the desire at this stage to identify the issues that the review should consider.

The key points that Grid Australia would like to convey are summarised as follows.

- **Grid Australia fully supports a rigorous, evidence based approach to the review** – While Grid Australia supports the Commission's preference to focus on whether there is evidence to support a need to change the transmission frameworks, the Commission should acknowledge that as a large number of initiatives have been put into effect only recently, their effectiveness cannot as yet be tested empirically. The impracticality of testing the success of these initiatives should not be taken to imply that they will be ineffective or that previously identified shortcomings continue.
- **The 'role of transmission' should be expressed in terms of how it provides physical, financial and market development services** – The inquiry about the 'role of transmission' may be better framed as concrete questions or propositions to ensure that stakeholders are best able to understand and respond to the issues raised in the review. The Commission's reference to the 'role of transmission' would better be expressed as asking whether the transmission framework encourages transmission's physical, financial and market development roles to be performed in a way that best meets the NEO.
- **Incentive arrangements should be considered as part of a package that also includes administrative measures** – While Grid Australia supports the Commission's preference to consider incentive arrangements where possible to encourage outcomes consistent with the NEO, an optimal framework for transmission will need to comprise a combination of incentive measures and administrative arrangements. Grid Australia supports incentive arrangements that are targeted at factors that the incentivised parties can control. Administrative measures may be more appropriate where factors cannot be controlled by TNSPs and so incentive arrangements may create unmanageable risk.

To this end, while Grid Australia considers the current package of measures for transmission to be broadly acceptable, it would support further analysis of whether extending or refining the existing incentive arrangements would

promote the NEO. Grid Australia would be happy to assist the Commission in this exercise.

- **Grid Australia is committed to supporting appropriate and practical measures to address the market impacts of intraregional constraints** – Grid Australia acknowledges the concern among a number of generators about the inability to manage the risk associated with intraregional constraints (that is, even by paying to remove or reduce the risk). Grid Australia is keen to assist the Commission to explore intra-regional constraint issues further and, if required, to develop practical options to address them. In addition, while Grid Australia sees the merit, in principle, of providing locational investment signals to generators, it notes that a number of practical and implementation issues exist, as the Commission has noted. Furthermore, it is helpful to fully understand the signals that already exist and the nature of their operation. Again, Grid Australia intends to assist the Commission to understand the practical and implementation issues with this matter throughout this review.
- **The benefits of more pro-active planning needs to be balanced against the risks** – The Commission has raised the concern that the shared transmission network may not be augmented as quickly as future generators may desire. The existing framework is designed to optimise the timing of transmission infrastructure investment in response to identified needs and connection requirements, but is not intended to deliver pre-building of capacity. The Commission correctly observes that the risk of proactive planning for generation needs to be traded off against the benefits – especially if the location of generation in the future is expected to differ to the past.

It is also important to recognise that transmission businesses are subject to land use planning requirements that, while actively managed by the transmission businesses, place a substantial constraint on the timing of projects. To a significant extent these requirements are outside the Commission's direct reach in that they are usually imbedded in jurisdictional planning instruments.

Furthermore, a number of recent initiatives (e.g. the production of the National Transmission Network Development Plan) are directed at providing improved planning information for all parties involved in investment in the NEM.

These points are elaborated upon in the remainder of this submission.<sup>2</sup>

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<sup>2</sup> Grid Australia has set out a number of observations and general policy positions in its Statement of Policy: Transmission Arrangements in the NEM, 2010. This statement is available from the Grid Australia website at [www.gridaustralia.com.au](http://www.gridaustralia.com.au) and is appended to this submission.

## 2. Overarching comments

### 2.1 Justification for change

#### 2.1.1 Impact of recent reforms

Throughout the Issues Paper, the Commission has expressed a strong preference for evidence of the shortfalls of current arrangements and a demonstration of their materiality in terms of meeting the NEO before a change to the current framework should be contemplated. This is a position that Grid Australia supports. As articulated further below, Grid Australia considers that the existing framework – as refined in line with a number of previous reviews – has served the NEM well to date and, subject to possible further refinement, is well suited to meeting future challenges.

Grid Australia notes that the transmission framework has been the subject of numerous reviews in recent years. A number of initiatives flowing from these reviews have only recently been implemented to overcome problems previously identified or, in some cases, have not as yet been implemented. The initiatives that have been implemented include the following:

- the enhancement of the incentives on transmission businesses to minimise operating costs by introducing the current form of efficiency benefit sharing scheme;
- the enhancement of the incentives on transmission businesses to minimise capital expenditure arising from the move from an *ex post* regime for capital expenditure to an *ex ante* regime;
- the creation and, more particularly, subsequent enhancement of incentives for asset availability and restoration;
- the development and testing of an incentive scheme for asset availability that is related to the market impact of transmission congestion;
- creation of the role of National Transmission Planner and requirement for a National Transmission Network Development Plan (although the first plan has not as yet been produced);
- creation of the planner of last resort power for the Commission; and
- the new Regulatory Investment Test for Transmission (RIT-T), including the capacity to incorporate the value of ‘real options’ associated with different projects into the analysis.

The initiatives that are in the process of being implemented include:<sup>3</sup>

- the implementation of inter-regional transmission use of system charges;
- the creation of a national framework for transmission reliability standards; and
- the introduction of a new class of shared asset to serve connecting generators, which has been called a ‘scale efficient network extension’.

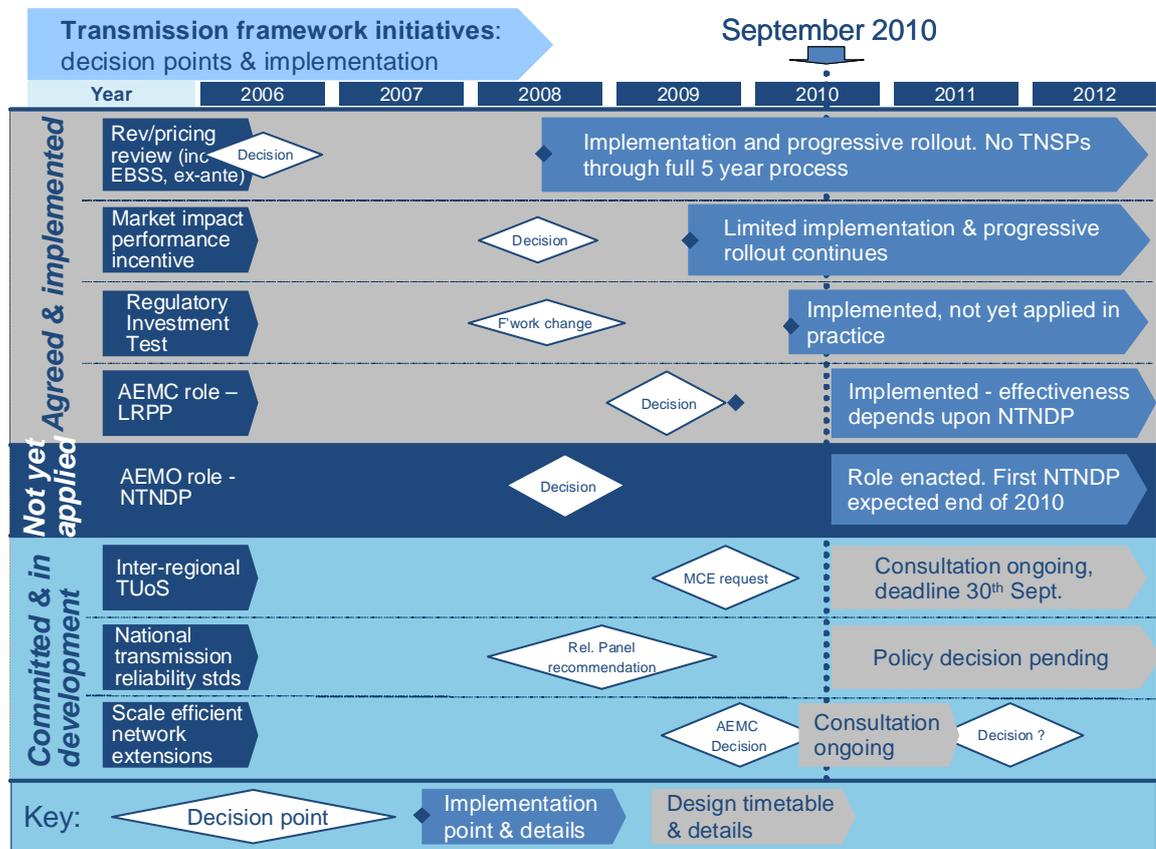
Figure 1 sets out a timeline that shows when these initiatives were decided upon and subsequently implemented. It is notable that a number of initiatives that are material to the Commission’s review have only recently commenced or indeed have not yet commenced or been implemented. For example, the first National Transmission Network Development Plan is not due for release until December 2010, the market impact component of the service target performance incentive scheme has only to date been applied to TransGrid and more recently, Powerlink (and then has operated for less than a year) and the new RIT-T has been in operation for less than two months at the time of this submission and has not as yet been applied by any TNSP.

Thus, while Grid Australia supports the Commission’s desire for evidence to be produced for a change to the framework, the success of these recent initiatives cannot as yet be tested empirically. In this circumstance, it would be appropriate for the Commission to be practicable when analysing the effect of these initiatives. Exercising judgement would be preferable to concluding that the inability to test these initiatives means that previously identified shortcomings necessarily continue.

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<sup>3</sup> These measures include only those that have been implemented as part of the national electricity regime through rule changes or a change to the law. Other measures that may impact upon the transmission framework include the creation of Infrastructure Australia and the more recent election commitment by the Commonwealth Government to ‘invest \$1 billion over the next decade in our electricity networks to connect Australia’s rich but remote renewable resources to Australian homes’ (<http://www.alp.org.au/agenda/connecting-renewables/>).

Figure 1: Time Line for Transmission Framework Initiatives



### 2.1.2 Future challenges for the transmission frameworks

One of the drivers of the current review stems from a belief that the policy responses to climate change are likely to dramatically change the location of new generators and network flows and hence present a substantial challenge for the transmission framework. Even absent such policy change, it could be observed that meeting the projected growth in electricity demand would raise similar challenges to the framework.

Importantly, however, the existing transmission frameworks have already had to deal with such challenges.

For example, Powerlink has connected almost 4900 MW of new generation since 2001 and constructed 2,474 circuit kilometres of transmission network over the 10 years ending 30 June 2010. This new generation has created a major geographical shift in the main generation centre from Central Queensland to South West Queensland.

Similarly, ElectraNet has connected over 1100 MW of new renewable generation plant to its network since 2004, making the concentration of renewable generation in South Australia amongst the highest in the world. While the magnitude of this investment has seen the emergence of network constraints as a potential issue going forward, the current ElectraNet and AEMO joint SA Interconnector Feasibility Study – which is investigating the technical and economic feasibility of augmenting existing interconnector capacity – is an appropriate response to the potential network congestion issue within the existing frameworks.

The Tasmanian transmission network has also had to deal with the impact of connecting a large interconnector and in so doing deal with new technical challenges.

The evidence also suggests that changes in generation fuel sources do not necessarily lead to the need for major new transmission extensions. For example, in NSW three new gas fired generation stations totalling around 1,800 MW were connected in 2009/10 without any real need to expand the transmission network due to the location of these generators. In addition, the vast majority of connection enquiries from prospective wind powered generators are associated with sites proximate to existing transmission infrastructure. The most economic and timely development sites in that state, in the first instance, appear to be those where wind resources coincide with the existing transmission system.

It is important, therefore, that this review not predetermine that because the future will create challenges for the transmission networks, the existing transmission framework would not be able to meet that challenge. Rather, Grid Australia supports the Commission's view that evidence of a specific failing of the existing frameworks should be required before a change is contemplated.

### **2.1.3 Complexity of the transmission framework**

The Issues Paper suggests that the current transmission framework is complex and that this complexity itself is an issue of concern.

Grid Australia would be concerned if amendments were proposed to the transmission frameworks merely as a result of perceived complexity that was not related to a tangible shortcoming in the regime.

The design and operation of the power system, and the capability of the transmission system at any given time are inherently technically complex. This, in turn, means that the design of a market that operates within the technical capability of the transmission networks necessarily will be complex. The complex interactions in the engineering of power systems also mean that incentive based regulation – to the extent that it is applied – may need to be complex in order to cater for the range of possible responses to incentives so that decision makers can be confident that the incentives encourage behaviour that is consistent with the NEO.

Accordingly, Grid Australia observes that a degree of complexity is necessary to create a well-functioning market and regulatory regime. It also notes that market participants are sophisticated and able to understand the workings of the NEM and the transmission framework within this, notwithstanding a level of complexity. Indeed, in a market rich with information about the real time performance of the transmission system and market generally, the ability to understand and manage this complexity is a form of competitive advantage. That is, there is a continuing driver on market participants to improve their capability to manage this complexity.

Having said this, there is merit in the working of the various aspects of the NEM – including the transmission frameworks – being communicated to the wider group of stakeholders in a manner that can be understood without undue effort. Grid Australia considers that the Commission could make a positive contribution in this regard.

## 2.2 Financial incentives are part of a package of measures

The Issues Paper identifies in a number of cases the *outcomes* that the Commission considers the transmission networks should deliver, and then poses the question as to whether the current regime provides an *incentive* for those outcomes to be achieved. This latter question is often stated alternatively as asking whether the transmission businesses are exposed to the ‘market consequences’ of their actions (being a financial incentive).

Grid Australia supports the Commission’s preference for using financial incentives to promote outcomes that are consistent with the NEO. Where they can be applied, incentive arrangements encourage decisions that make the greatest use of information held by individual participants. However, Grid Australia encourages the Commission to make explicit that it will draw upon the full array of mechanisms – including financial incentives and administrative measures - that are available for encouraging outcomes that meet the NEO throughout this review, and have regard to the relative merits of each of those mechanisms.

### Analytical Framework

An analytical framework that the Commission could adopt is first to ask the question of *what outcome* it wishes to see from the transmission framework, and then to pose the separate question of *what is the best mechanism* to deliver that outcome. The next step would be to note that a range of possible measures exist, including different forms of financial incentives and a range of administrative measures, and then to address the relative merits of the different available measures for the aspect of the framework in question.

Financial incentives generally work best and are feasible where:

- the outcome or output that is sought can be clearly described and measured;

- achieving that outcome is largely within the control of the regulated business;
- the regulated business has access to the information required to make efficient decisions – including information where necessary from market participants;
- exposing the business to a sufficient financial reward or penalty to induce action does not expose the business to excessive and unmanageable risk; and
- the entity in question is a profit-maximising entity.

However, financial incentives will not be appropriate in all situations to encourage the desired outcome. The alternatives to financial incentives – which are referred to in this submission as administrative measures – cover a broad suite of measures, from mandated standards (for such matters as reliability and system security) to requirements for transparency that are intended to create a moral suasion for the desired outcome (the requirement to apply the RIT-T and demonstrate the results publicly is one such measure).

Clearly, a key issue for the review of the transmission framework is whether the current framework encourages the transmission businesses to provide the appropriate level of transmission investment (including the connection of new generators and customers), delivers and operates this at least cost, and ensures that it is available and with the level of capability that provides the greatest net benefit. The existing transmission framework employs a combination of financial incentives and administrative measures to achieve these outcomes, the most important elements of which are summarised in Appendix A.

#### Transfer Capability

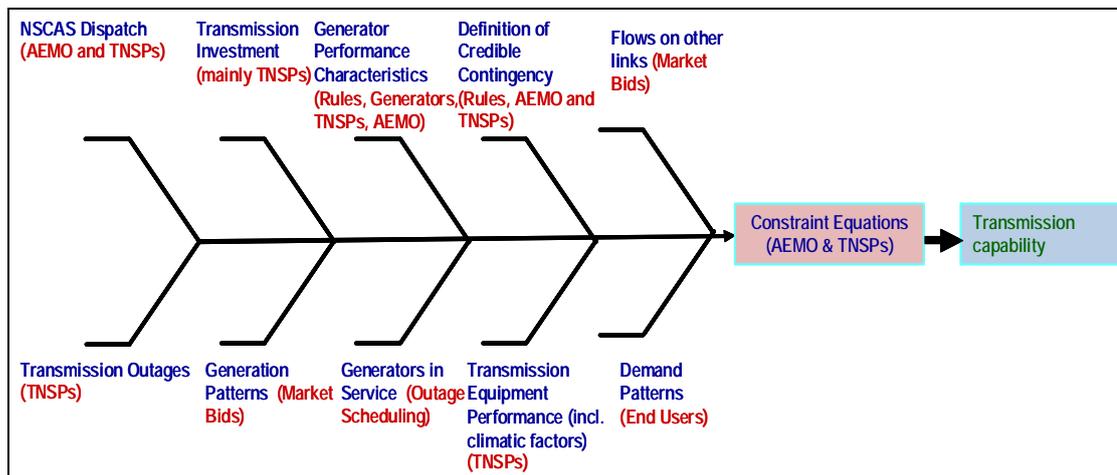
A particular issue that is canvassed in several places in the Issues Paper is whether the transmission businesses should be exposed to the financial consequences associated with the level of transfer capability between nodes of the network that is available at any point of time. This is an area where it has been recognised previously that financial incentives structured to expose TNSPs to the full market consequences of congestion are inappropriate. The reason for this is because the transfer capability that is available in real time between two nodes is a function of a range of matters, many of which are outside of the control of the transmission businesses.

That is, as well as the type and condition of a transmission business's assets, the transfer capability between two points may be affected by generation dispatch (and hence generators' bids) possibly at distant locations, climatic factors (such as temperature and wind speed which impact on the ratings of transmission lines), the level of demand at various locations and the system operation decisions that are made by AEMO.

Whilst it is possible to design and construct networks to accommodate the impact of these factors to varying degrees in order to provide a specified level of transfer

capability under a particular set of planning assumptions, the level of real time capability available is subject to considerable uncertainty. The factors that affect real time transfer capability are summarised in Figure 2 below.

**Figure 2: Factors Affecting Real Time Transfer Capability**



Given this limited degree of direct control, the risk to TNSPs being exposed to the full value of congestion would be large and unmanageable.<sup>4</sup> It would therefore not be reasonable to impose such a risk on TNSPs.

However, financial incentives do have a role with respect to transfer capability. Indeed, the current framework already includes financial incentives with respect to asset availability, part of which progressively will be tied to the market impact of the relevant transmission outage. Moreover, as discussed further in section 3.3.1, Grid Australia would support the Commission exploring improvements to the package of incentives that apply to TNSPs.

It is also noted that TNSPs can, subject to satisfying a range of regulatory and administrative requirements, control the quantity of transmission assets that are in place at any point in time through planning and investment in their networks.<sup>5</sup> Accordingly, if there was a view that transmission networks should be planned with a defined level of redundancy for generators (as they currently are for customers), then this also would be a feasible option to consider.

<sup>4</sup> It is noted that a not-for-profit planner also would not be in a position to bear this risk.

<sup>5</sup> With the exception of SP AusNet which does not plan transmission network augmentations.

In summary, Grid Australia shares the Commission's preference for relying upon financial incentives to encourage outcomes that promote the NEO. However, incentive arrangements are not appropriate in all situations, and the task is better stated as one of finding a *package* of measures that would best promote the NEO, spanning both financial incentives and a range of possible administrative measures.

### 2.3 Timeliness of transmission investment

The Commission comments in section 4.2.2 that transmission businesses are, or may become, unnecessarily slow at augmenting the shared transmission network in response to the demands of generators. The suggestion is made that a remedy for this may be for the transmission businesses to be more proactive in their planning.

It is important to recognise that transmission investment delivery timeframes reflect the nature of the market and regulatory framework, which is designed to deliver transmission investment in response to identified needs, such as reliability requirements and connection requirements, and to optimise the timing of investment in order to maximise net present value for projects involving market benefits. The current framework is not designed to deliver pre-building or over-building of capacity.

On the question of whether TNSPs should be more proactive in planning and investing in the transmission network for generators<sup>6</sup>, the benefits of this need to be traded-off against the risks, as the Commission correctly indicates. This is particularly the case if, as the Commission suggests, the location of new generation may be very different to the location of generation in the past (as has already been observed in Queensland and South Australia). In any market driven investment model there is a need to balance the trade-off between risk and scale efficiency in the timing of infrastructure delivery.

As already noted in Section 2.1.2, transmission investment is accommodating substantial new generation in the NEM. Average congestion costs remain relatively low at less than 1 per cent of traded energy and are showing no upward trend.

While coordinating transmission and generation investments is challenging in a vertically separated market, measures intended to assist with the co-ordination of transmission investment with longer term generation development across the NEM have been introduced recently including the establishment of a National Transmission Planning role for AEMO and the new Regulatory Investment Test for Transmission.

To the extent that the timeliness of transmission investment is an issue, this is largely the result of factors outside of the scope of the NEM transmission framework. The

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<sup>6</sup> The combination of reliability standards and cost-minimising incentives already encourages proactive planning with respect to customer demand growth.

most important of these is the requirement to comply with the required land use planning and environmental approvals processes and the processes required to secure the necessary easement rights. While the transmission businesses actively manage these processes, these processes require a high degree of consultation with the community and typically impose minimum timelines for this. These processes are often the determining factor in the timeliness of new transmission investment, particularly new transmission lines.

Grid Australia also notes that a number of generation location issues were raised and consulted upon as part of the AEMC's Climate Change Review and subsequent Rule change process on scale efficient network extensions SENEs.

Regarding concerns about transmission businesses not being proactive in responding to generators in planning the shared transmission network, Grid Australia members have established processes<sup>7</sup> for early engagement with prospective generators that assist in this regard. These include routinely establishing formal arrangements with prospective generators to assess possible connections well in advance of these generators being able to lodge a Rules compliant connection application. In this way additional information is made available to TNSPs to refine the generation development scenarios considered when carrying out investment planning for the shared network.

However, transmission investment decisions can only proceed when these proposals move to the investment commitment phase, and the vast majority of these proposals never reach this stage or experience considerable delays in reaching this stage.

Significantly for this review, the causes of this are usually not related to the transmission framework. Rather, these projects often fail to meet commercial hurdles due to their cost compared with the sale price of their product, or are unable to meet environmental requirements.

## 2.4 Objective

Grid Australia notes that the Commission's discussion of how the NEO should be applied during the review (section 3.1) focuses on minimising the total cost of supply across transmission and generation. Grid Australia considers that three refinements to this view are warranted.

First, referring only to minimising cost is unnecessarily limiting. One of the key issues in the design of the framework is to trade off the value of enhancements to their cost.

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<sup>7</sup> These are summarised in the Grid Australia Connection Guidelines, which are available from the Grid Australia website at [www.gridaustralia.com.au](http://www.gridaustralia.com.au) and appended to this submission.

Accordingly, the more comprehensive outcome would be one where net benefit is maximised (and, to be clear, is maximised over the long term).

Secondly, while references are made to generators' locational decisions, the decisions of customers are only made in passing. Customers' locational (and usage) decisions also affect the total cost of supply and hence need to be considered when assessing the framework. On a related point, it is important to recognise that both generators and customers already receive locational price signals. The nature and operation of these signals needs to be clearly understood and articulated before any objective assessment of shortcomings can be carried out.

Thirdly, a further important area of coordination that is required is between transmission and distribution networks, given that augmentations on either network may be a substitute for meeting a particular network need. Grid Australia notes that the interface between transmission and distribution networks is addressed in the current transmission framework through requirements in Chapter 5 of the NER for joint planning.

### **3. Response to detailed issues**

#### **3.1 Future role of transmission networks**

One of the key questions the Commission has posed for the review is to understand the appropriate future 'role for transmission'.

Grid Australia observes that, at a high-level, at least three roles for the transmission network can be defined, which are as follows:

- *Transmission has a physical role* – it is physical infrastructure whose role is to permit energy to be transported from generators to directly connected customers or distribution connection points (and thereupon to end use customers) whilst maintaining system security within a defined technical envelope. Investment in, and operation of, transmission infrastructure will determine the level of reliability to customers and the reliability with which supply is provided.
- *Transmission has a financial (market facilitating) role* – as markets have been created to operate either side of the transmission (and distribution) infrastructure, transmission also facilitates financial transactions between buyers (retailers and customers) and sellers (generators) and enables competition. Investment in, and operation of, transmission infrastructure will therefore have a financial impact upon these parties, including by affecting the degree of competition between generators and retailers.

- *Transmission has a market development role* – which is to facilitate the connection of new generators and customers and, more generally, to support the growth in electricity demand and economic and population growth more generally.

The matter of most concern to this review, however, is whether the current transmission framework encourages these roles to be performed by TNSPs in a manner that best promotes the NEO. Grid Australia notes that this inquiry can be reduced to a number of well-defined questions, including:

- How should the standard level of ‘service’ that transmission businesses provide be described? What level ‘of service’ should be provided?
- Whether generators (and possibly customers) should be able to purchase a different level of reliability to which they otherwise would receive?
- Whether the incentive and administrative (regulatory) measures are appropriate to encourage the delivery of the standard level of service?
- Whether the incentive and administrative (regulatory) measures are appropriate to encourage the standard level of service to be delivered at the lowest cost (including through the use of non-network options)?
- Whether the current framework establishes appropriate and consistent roles for setting transmission planning and reliability standards?
- Whether the framework encourages (or requires) prices for the use of transmission to be set that encourage other parties (namely generators and customers) to make decisions that best promote the NEO?

As discussed in section 2.2 above, the current transmission framework has design features aimed at addressing each of these questions. Whilst an overview of these measures generally is provided in Appendix A, they are also summarised against each of these questions in Table 1 below.

**Table 1: Role of Transmission in the Current Framework**

Design questions	Relevant design features of the current framework
<p>How should the standard level of 'service' that transmission businesses provide be described? What level should be provided?</p>	<p>Chapter 6A of the Rules defines two categories of transmission services – prescribed and negotiated, which reflect the degree of market power applying to each. TNSPs also provide non-regulated transmission services which are contestable and, therefore, not subject to economic regulation.</p> <p>For prescribed transmission services:</p> <ul style="list-style-type: none"> <li>• the standard level of service to customers is defined by system performance requirements in schedule 5.1 of the NER and mandated planning standards (except in Victoria – see Appendix A); and</li> <li>• in addition, TNSPs augment the network where net market benefits would be delivered.</li> </ul>
<p>Whether generators (and possibly customers) should be able to purchase a different level of reliability to which they otherwise would receive?</p>	<p>Chapter 6A of the Rules allows generators and customers (to a certain extent) to purchase different levels of reliability through negotiated transmission services. In addition, higher levels of reliability can be accommodated under non-regulated transmission services. However, physical reality limits the extent to which a shared network service can ever be tailored to the needs of an individual user.</p>
<p>Whether the incentive and administrative (regulatory) measures are appropriate to encourage the delivery of the standard level of service?</p>	<p>For prescribed transmission services:</p> <ul style="list-style-type: none"> <li>• TNSPs are required to comply with the system performance standard in Schedule 5.1 of the NER and with the relevant jurisdictional reliability standards.</li> <li>• A series of measures exist to encourage identification and provision of net market benefit projects – namely the publication of the NTNDP, the new RIT-T, and AEMC's last resort planning power.</li> </ul> <p>Financial incentives exist for ensuring assets are available and restored quickly, with an enhanced incentive being introduced to encourage availability when assets are of most value (via the Service Target Performance Incentive Scheme).</p> <p>Services provided to generators and other market participants are currently accommodated under the connection framework of the Rules.</p>

Design questions	Relevant design features of the current framework
Whether the incentive and administrative (regulatory) measures are appropriate to encourage the provision of the standard level of service at the lowest cost (including through the use of non-network options)?	<p>The capital expenditure incentive arrangements under Chapter 6A of the Rules encourage the expenditure required to meet relevant obligations to be minimised. These arrangements also provide commercial incentives to seek out and apply non-network options.</p> <p>TNSPs are required to demonstrate publicly that major proposed projects meet the RIT-T and that all options, including non-network options, have been properly considered.</p>
Whether the current framework establishes appropriate and consistent roles for setting transmission planning and reliability standards?	<p>In all jurisdictions the setting of transmission planning standards is carried out with a significant degree of independence from the transmission investors. This matter has also been reviewed by the AEMC with recommendations being provided to the MCE in late 2008.</p>
Whether the framework encourages (or requires) prices for the use of transmission to be set that encourage other parties (namely generators and customers) to make decisions that best promote the NEO?	<p>Chapter 6A sets out the principles for transmission charges for prescribed transmission services.</p> <p>Generators and major customers pay for the assets required to connect to the shared transmission network.</p> <p>Both generators and customers are exposed to transmission (marginal) loss factors.</p> <p>New entrants face effective locational signals in the form of transmission congestion risk. If they choose to locate at a strong part of the transmission network the risk of congestion is low. If they choose to connect at points where congestion risk is higher or where significant connection investment is required then they face higher negotiated transmission charges and/or are at higher risk of being constrained off.</p>

It is important for the Commission to consider how the current framework has answered these questions, and why that solution was adopted, as a precursor to seeking evidence of a need for change.

Grid Australia considers that by defining the inquiry in terms of well-defined questions rather than in terms of the more abstract concept of the 'role of transmission', it would be easier for stakeholders to understand the issues being considered by the Commission and hence to participate fully in the review.

One matter not addressed in Appendix A is the question of who should be responsible for planning the transmission networks. Grid Australia is firmly of the view that the party who is responsible for transmission service delivery should also be responsible for transmission investment decision making. It is also noted that this position is consistent with the position of COAG – reiterated in the Commission’s terms of reference – which is that:<sup>8</sup>

accountability for jurisdictional transmission investment, operation and performance will remain with transmission network service providers

Lastly, Grid Australia notes that the Commission has expressed concern that the ‘market facilitation’ role of transmission is not explicit in the current framework and that its proper recognition would require a material change to the framework.

Grid Australia considers that this needs to be qualified. In particular, if the planning timeframe is considered, the market facilitation role of transmission is explicit within the requirements of the RIT-T. Similarly, where a transmission investment may improve the functioning of the market and do so in a manner that delivers economic benefits, then these benefits are counted under the existing transmission framework when evaluating projects. Quantifying and analysing ‘competition benefits’ when applying the RIT-T is one such example. A second example, also embodied in the requirements of the RIT-T, is counting the impact of a transmission project on the short and long term cost of generation.

However, while a transmission project may have a financial impact upon individual or group of market participants, the Commission needs to recognise that this financial impact need not translate into an economic benefit, but rather may comprise (or largely comprise) a transfer from one group of participants to another. The RIT-T correctly precludes such a transfer from being counted as an economic benefit that flows from a transmission investment.

Grid Australia considers that the RIT-T is appropriately focused on economic efficiency in the NEM and is therefore focused on the costs and benefits to producers, consumers and transporters of electricity (a partial equilibrium test), rather than on the wider economy (a full equilibrium test) as decisions on strategic investments to further the wider economy are policy matters for Government.

When an operational timeframe is considered, and as discussed above, TNSPs also have limited control over the transfer capability that is available in real time. Even so, the market impact element to the service performance incentive scheme will signal to TNSPs the market impact of asset outages and refinements to this incentive scheme could be considered. This matter is discussed further in section 3.3.1.

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<sup>8</sup> MCE, Terms of Reference – AEMC Transmission Frameworks Review, p.2.

## 3.2 Efficient investment

### 3.2.1 Transmission investment decisions

A number of Grid Australia's comments on the Commission's discussion of the possible issues with the current transmission framework for transmission investment were already addressed in section 2, namely:

- the Commission's focus on financial incentives (or 'market signals') without explicitly including administrative measures in the set of possible regulatory tools to be considered;
- the relevance of the 'complexity' of the transmission frameworks;
- the extent to which the future challenges for transmission alone are sufficient to justify change; and
- issues about the timeliness of transmission investment.

In addition, the Commission referred to a number of other potential shortcomings in the transmission frameworks or areas where improvements may be made, which included:

- observing that transmission businesses do not face obligations with respect to the reliability of supply to individual customers;
- noting that TNSPs face no legal obligation or incentive to evaluate or implement 'net market benefit' projects; and
- observing that TNSPs have relatively low powered incentives to minimise capital expenditure.

Regarding the question of the reliability of supply to individual customers, it is noted that – in principle – where there is a specific reliability obligation with respect to a collection of customers (such as all customers at a particular connection point), then all customers individually can be said to be receiving that standard. It is noted, however, that differences exist in how reliability standards are defined across the NEM. For example, in South Australia specific reliability standards – calculated on an economic basis, but expressed in a deterministic form – are defined for each connection point, which is different to the current practice in most other jurisdictions. Grid Australia supports the expeditious implementation of the Commission's proposed national regime for transmission reliability standards as the appropriate means of addressing any perceived defect in the current system of transmission reliability standards.

Turning to the question of whether the TNSPs have an incentive to pursue net market benefit projects, Grid Australia notes that a range of measures have recently been introduced to ensure that such projects are evaluated.

In particular, the RIT-T has been revised to require TNSPs to ask whether enhancing a reliability-driven project may deliver net market benefits, which was designed to address the concern that such enhancements may not have been routinely being considered. The creation of the National Transmission Planner, National Transmission Network Development Plan and the Commission's Last Resort Planning Power were designed to provide an environment of transparency – and moral suasion – to ensure that net market benefit projects more generally would be evaluated and constructed (where consistent with the NEO). These measures are described more fully in Appendix A. Grid Australia considers that this combination of measures are designed to ensure that net market benefit projects will be identified, evaluated and (if consistent with the NEO) constructed. It is, therefore, unclear whether additional financial incentives on the TNSPs are warranted in this regard.

Having said that, creating an additional financial incentive for TNSPs to identify, assess and progress net market benefit projects would be relatively straightforward to introduce. Grid Australia would be happy to assist with the design of such a measure if the Commission considered that such a measure was necessary.

Lastly, Grid Australia notes that the Commission has identified the incentives for capital expenditure efficiencies provided under Chapter 6A as a matter that may be reviewed. Grid Australia notes that the financial incentives for capital expenditure operate as part of a package of measures, including, for example, the requirement for TNSPs to apply the RIT-T and demonstrate publicly the efficiency of new projects and the incentives that the Chapter 6A processes provide for TNSPs to submit a reasonable and well substantiated capital expenditure proposal to the AER during a revenue cap review. However, Grid Australia would welcome further analysis of whether these incentives could be refined and would be keen to assist the Commission in this regard.

### **3.2.2 Locational charging for generators and capacity rights**

Grid Australia notes that one of the major issues the Commission proposes to explore is the merits of levying locational transmission charges on generators. It also proposes to explore in further detail whether it is feasible to permit generators to pay charges that provide a greater level of certainty of access than would otherwise be the case.

As noted earlier, Grid Australia understands the concern among a number of generators about the inability to manage the risk associated with intraregional constraints (that is, even by paying to remove or reduce the risk). As discussed above, while it would be inappropriate for TNSPs to be required to guarantee a particular level of transfer capability at any point in time (given the large and

unmanageable risk that would be created), transmission networks can be planned to deliver any desired level of reliability to generators just as they are to customers (that is, a desired level of redundancy for an assumed level of demand and pattern of generation dispatch). Grid Australia is keen to assist the Commission to assess the true scope of this problem with reference to the existing framework and develop practical options to address issues that are confirmed.

Regarding locational transmission signals, in principle Grid Australia supports the refinement of market signals so that individual participants can be left free to the maximum extent to make efficient decentralised decisions. Again, it is important to start this assessment with a complete understanding of the locational signals that already operate under the existing framework.

It should also be noted that there are usually practical and implementation issues with designing locational transmission prices or connection charges that provide a reliable and accurate signal of the cost that a generator may cause on the transmission network. Grid Australia is keen to work with the Commission and provide whatever assistance is desirable to understand the practical and implementation issues with the design of such charges.

### **3.3 Efficient operation of transmission networks**

#### **3.3.1 Incentive regime for transmission businesses**

A number of Grid Australia's comments on the Commission's discussion of the possible issues with the current transmission framework as it applies to transmission operation were already addressed in section 2, namely:

- the Commission's focus on financial incentives (or 'market signals') without explicitly including administrative measures in the set of possible regulatory tools to be considered; and
- whether the evidence supports the proposition that intraregional congestion is a problem, with the evidence suggesting that the cost of congestion to date is actually very small.

In relation to network operation, Grid Australia notes that it is important for any consideration of incentive arrangements or other regulatory measures to encourage improved network operation to take account of the myriad other obligations to which TNSPs are subject. These include outages to undertake maintenance, replacements and augmentations, responding to directions from AEMO related to maintaining system security, responding to forced outages, ensuring that transmission reliability requirements are not put at risk, co-ordinating with distribution network outages, public safety requirements, and ensuring the safety of contractors and staff.

Grid Australia agrees, however, with the Commission that small initiatives by TNSPs can, at times, have a significant impact on transfer capability and congestion, although whether opportunities for such initiatives exist will depend upon the circumstances of the particular network.

Again, there are already measures in place that influence these initiatives. These include the requirement under the RIT-T to rank such initiatives in advance of network augmentation (which has been strengthened with the inclusion of an explicit reference to real options), as well as an indirect incentive from the market impact component of the service performance incentive scheme. However, Grid Australia would welcome further analysis of whether a financial incentive that is more directly focussed on initiatives that influence transfer capability may advance the NEO, and is happy to assist the Commission in this regard.

### **3.3.2 Congestion pricing and congestion rights**

The Commission has also proposed considering further the merits of introducing measures for pricing congestion to generators, and possibly introducing an associated right to congestion rents, that were recommended in the Climate Change Review.

Again, Grid Australia notes that it would be inappropriate and unworkable for the scheme to include a requirement for transmission businesses to be financially responsible for the level of transfer capability between two nodes at any point in time because of the large and unmanageable risk that would be created. Subject to this, Grid Australia is ready to assist the Commission to understand the practical or implementation issues associated with these measures to the extent it is able. Grid Australia notes that the Commission has identified a number of complexities with such a scheme and has observed that developing and allocating rights over congestion rent could be problematic (page 40). Grid Australia supports these views.

## **Appendix A: Components of the existing incentive and administrative compliance framework**

The purpose of this Appendix is to provide an overview of the package of regulatory and administrative measures that exist in the existing transmission framework to influence the various desired outcomes for transmission.

### **Efficient operating expenditure**

This is encouraged through setting of a revenue cap for a defined period combined with an efficiency benefit sharing scheme. In combination, these measures provide a financial incentive for TNSPs to minimise their operating expenditure, subject to meeting any mandated requirements or responding to other financial incentives (see below), and ensure that this incentive to reduce cost is approximately constant over the regulatory period.

### **Efficient capital expenditure**

This is also encouraged through setting a revenue cap for a defined period. This mechanism provides a financial incentive for TNSPs to minimise their capital expenditure, subject to meeting any mandated requirements or responding to other financial incentives (see below). Once expenditure has been undertaken, the regime provides substantial certainty that this amount will be recovered thus providing an environment in which TNSP's financing costs can be minimised.

For projects that enter the revenue cap through the contingent project regime (discussed further below), there is also a mechanism that provides a financial incentive for the TNSP to minimise the cost of delivering the selected project. However, unlike for capital expenditure generally, the strength of the incentive to minimise expenditure on a contingent project remains constant for the construction and delivery period.

In addition to the financial incentives to minimise capital expenditure, the TNSPs are required to apply the RIT-T to certain types of projects that passes certain thresholds, which requires a public demonstration that the relevant project is efficient (as defined by the test). The requirement to apply the test and demonstrate this publicly creates moral suasion on TNSPs not to undertake inappropriate projects as well as to consider enhancements to reliability projects where efficient (discussed below). It also provides the opportunity for interested parties to bring forward more efficient alternatives, and for AEMO (and other parties) to consider and comment upon the proposal in the context of AEMO's own assessments as set out in the National Transmission Network Development Plan.

Furthermore, the way in which the RIT-T (as with other administrative requirements) is carried out is also subject to AER oversight on the basis that it is carried out in

accordance with relatively detailed requirements in the Rules and the specific requirements set by the AER in its guidelines. These are legally enforceable requirements and the AER has a clear role under the National Electricity Law to oversee effective compliance with these requirements.

### **Delivery of an efficient level of supply reliability to customers**

All TNSPs are required to plan their networks to meet mandated levels of resilience to outages or events as mandated by schedule 5.1A of the Rules. For most TNSPs, the requirements in the Rules are supplemented through jurisdictional requirements. The AEMC has proposed creating a national regime for reliability standards, but this has not as yet been put into effect.

The exception to the general case is Victoria, where a not-for-profit entity (AEMO) is the planner of network augmentations and is required to undertake assessments on probabilistic basis. In practice, this means that the cost of a reliability project is compared to its expected benefits (in terms of a reduction in expected unserved energy) on a case-by-case basis. This approach requires the probability of individual and collective outages of transmission plant to be estimated and an assumption about the value that customers assign to reducing unserved energy. This approach was considered as part of the AEMC's review and recommendations adopted to address shortcomings with this approach compared with evaluation criteria adopted at the time.

### **Delivery of projects that provide net market benefits (reduce the cost of producing electricity, reduce losses, provide higher levels of reliability to customers)**

A series of measures exist to create a transparency with respect to the possible existence of 'net market benefit' projects and in turn to create moral suasion for these projects to be assessed and implemented, which include:

- a requirement for the TNSPs to conduct an annual planning review and publish an annual planning report that, amongst things, is required to identify emerging network limitations in their Annual Planning Reviews;
- the creation of the National Transmission Planner role and requirement to produce the National Transmission Network Development Plan that, amongst other things, specify a development strategy for each current and potential national transmission flow path;
- the requirement that is part of the new RIT-T for TNSPs to investigate possible enhancements to reliability projects that may generate market benefits that exceed the costs; and

- the capacity for the AEMC to direct a party to apply the RIT-T to a project that is either identified by the AEMC or that is identified by a party at the direction of the AEMC, which is referred to as the AEMC's 'last resort planning power'.

The moral suasion, and Rules compliance obligations, to identify, evaluate and proceed with projects that is created by these administrative measures is complemented by the contingent project scheme, which allows conforming projects to enter the revenue cap during a regulatory period.

### **Ensuring that the capability of transmission is optimised**

The service target performance incentive scheme provides TNSPs with a financial incentive to ensure that their assets are available for use. A specific financial incentive for assets to be available when most valued by the market has recently been introduced (the market impact of transmission component of the scheme). This general availability incentive is supplemented by an additional incentive to restore transmission assets quickly where an outage is leading to a loss of supply to final customers.

In addition to the financial incentives to ensure that transmission assets are available, TNSPs are also required to inform the market about impending planned outages, with the capacity for AEMO to direct the TNSPs to alter their outage plans where this may affect system security.

### **Connecting new generators or major customers**

Under chapter 5 of the Rules, TNSPs are obliged to negotiate with generators or major customers for connection to the network in good faith, with dispute resolution available as a fall-back. The ability for TNSPs to charge for the connection assets ensures that TNSPs do not have an incentive to dissuade new generators or major customers from connecting.



## STATEMENT OF POLICY: TRANSMISSION ARRANGEMENTS IN THE NEM

### **1. Background and rationale for this policy statement**

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Since the establishment of the NEM just over 10 years ago, there have been several reviews of and refinements to a wide range of matters relating to the design of transmission arrangements. The resulting changes include the implementation of new Rules governing regulation of transmission revenues, a new Regulatory Investment Test for Transmission (RIT-T) and the establishment of AEMO as the National Transmission Planner.

During this time there has been significant investment in the NEM transmission networks, consistent delivery of high levels of transmission network reliability, and the value of network congestion has been very small (1% or less) compared with the value of wholesale energy traded. Transmission prices remain a small proportion (typically 10% or less) of the average electricity bill.

The changes to rules affecting transmission over that 10 year period have been largely evolutionary and generally commensurate with the size of the issue being addressed. These changes have been successfully implemented by the transmission entities, with minimal disruption to the NEM. Some recent changes (e.g. RIT-T) are only now being implemented, and need to be given a chance to work in practice.

The impacts of changes in other sectors (e.g. generation mix and location) have thus far been able to be handled within the existing transmission frameworks. In Queensland, for example, there has been a major geographical shift in the main generation centre from Central Queensland to South West Queensland with transmission developments being undertaken accordingly, and without disruption, under the existing transmission frameworks.

However, there are still a number of aspects relating to transmission that are perceived by some to require further change. In some cases, the motivator for change is based on the commercial interests of a particular stakeholder or group of stakeholders. In other cases, the driver for change is based on improving the overall efficiency of the NEM, consistent with the achievement of the national electricity objective. Any changes to the existing transmission framework should be based on an objective consideration of economic efficiency and outcomes for customers.

The implementation of government climate change policies will have implications for transmission networks, although the impact will vary across the NEM. For instance, in South Australia, the influx of large amounts of wind generation beyond the current already high levels is likely to raise issues of congestion and the potential need to reinforce and extend the grid beyond its current geographical boundaries. On the other hand, with the generation pattern in Queensland having already experienced a geographical and fuel source/emissions intensity shift, the future impacts in Queensland may well be less than in the recent past.

In general, Grid Australia will give active consideration to suggested changes to the existing arrangements which are evidence-based, commensurate with the size of the demonstrated problem, and aligned with the national electricity objective. The national electricity objective will be promoted if changes encourage the timely delivery of grid developments and ensure the appropriate allocation of risk between market participants and customers.

## **2. Scope**

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This policy statement sets out:

- (a) the overarching objectives and principles that govern Grid Australia's policy on matters relating to the development of transmission arrangements in the NEM;
- (b) Grid Australia's position on the roles and responsibilities of TNSPs and AEMO in the NEM in relation to transmission planning, transmission service provision and transmission pricing; and
- (c) the key features of Grid Australia's vision for future transmission arrangements in the NEM.

## **3. Overarching objectives**

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Grid Australia's policy on transmission arrangements in the NEM should:

- (a) enhance the achievement of the national electricity objective; and
- (b) recognise the legitimate commercial interests of Grid Australia's members.

To satisfy these overarching objectives, the transmission arrangements in the NEM should provide sustainable commercial incentives and opportunities for TNSPs to build shareholder value by delivering safe, reliable and secure transmission services through efficient investment and network operation.

## **4. Policy outcomes**

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In light of the overarching objectives set out above, Grid Australia's policy on transmission arrangements in the NEM is aimed at achieving the following outcomes:

- (a) safe, efficient and effective delivery of transmission services, system security and reliability across the NEM, including the timely delivery of network developments to meet the needs of electricity consumers;
- (b) equal treatment of Government owned and privately owned participants, consistent with the concept of competitive neutrality embedded in national competition policy and legislation since the Hilmer review in the early 1990s;
- (c) consistency with the following principles (agreed to by COAG in April 2007):
  - (i) accountability for transmission investment, operation and performance must lie with TNSPs;
  - (ii) regulatory approval for transmission investment must be timely; and

- (iii) transmission arrangements must not reduce or adversely impact on the ability for urgent and unforeseen transmission investment to take place;
- (d) effective and efficient coordination of:
  - (i) transmission planning and investment decisions across the NEM;
  - (ii) planning and investment decisions between competitive and regulated sectors of the NEM; and
  - (iii) planning and investment between transmission and distribution service providers;
- (e) provision of a consistent transmission framework across the NEM, which ensures that the roles of organisations responsible for transmission planning, investment, pricing, and service delivery are clearly delineated;
- (f) clarification and clear separation of responsibilities and accountabilities between the MCE, AEMC, AER, AEMO and TNSPs to ensure good governance;
- (g) provision of an appropriate risk-adjusted rate of return for TNSPs for providing transmission services;
- (h) timely, efficient and non-discriminatory connection of new generation, networks and load; and
- (i) sufficient flexibility so that transmission arrangements can adapt to changing circumstances and requirements.

## 5. Policy position

Statement of Policy	Policy rationale and further explanatory information
<p><b>1. Transmission businesses must retain responsibility for transmission investment decision making and transmission service outcomes</b></p>	<p>The policy reflects the sound economic principle that the party responsible for transmission service delivery should also be accountable for transmission investment, operation, pricing and performance. This principle also underpins the decision set out in the April 2007 COAG communiqué, which stated that the national transmission planning function would not bind transmission companies to specific investment decisions, and that accountability for jurisdictional transmission investment, operation and performance will remain with transmission network service providers.</p>
<p><b>2. The transmission frameworks must enable and facilitate the timely delivery of network developments to meet customer needs</b></p>	<p>It is not unusual for transmission owners to have to deliver some major network developments in tight/ compressed timeframes. This often arises in relation to resource industry developments, where new or expanded resource projects involve major new loads that require a network augmentation in the tight/ compressed timeframe of the resource project, and/ or the other elements of the export infrastructure chain (e.g. rail, port capacity upgrades). Frameworks which cannot demonstrably meet such a duty would harm resource developments and exports, and are not “fit for purpose”.</p> <p>The framework for connection of new generators to the grid should also be efficient (e.g. single connection agreement with the network owner rather than multiple, fragmented accountability agreements).</p>
<p><b>3. Responsibilities and accountabilities between the MCE, AEMC, AER, AEMO and TNSPs must be clearly defined to ensure clear separation and good governance</b></p>	<p>Recent reforms in the national electricity market recognised the importance of clarifying the roles and responsibilities of the regulatory bodies and the TNSPs. Importantly, the distinction between policy maker, rule-maker and rule-enforcer is a key element in the new arrangements. Equally, efficient outcomes for customers depend on maintaining clear and appropriate distinctions between the roles and responsibilities of these organisations, and continued adherence to good governance arrangements. AEMO’s roles as national transmission planner and market operator should also be appropriately delineated.</p>
<p><b>4. There should be a clear delineation between AEMO’s longer-term, strategic planning role and the role of transmission owners undertaking investment planning and decision making</b></p>	<p>This policy is consistent with the national transmission planning function prescribed for AEMO in the National Electricity Law and Rules. Under these arrangements, AEMO’s role is as an information provider to inform the market on network requirements from a national perspective with a long term outlook (to at least 20 years). In consultation with market participants, AEMO will also provide a national strategic perspective to transmission planning and coordination. However, AEMO must avoid duplicating the planning and investment decision-making activities that are the responsibility of the TNSPs. The TNSPs will support national transmission planning by providing information on network requirements from a regional perspective.</p>
<p><b>5. Transmission reliability standards should be determined independently of TNSPs</b></p>	<p>Economic efficiency and transparency are best served by ensuring that the reliability standards that drive investment are set independently of TNSPs.</p>

Statement of Policy	Policy rationale and further explanatory information
<p><b>6. Transmission reliability standards should be determined economically, but expressed deterministically</b></p>	<p>The national framework for determining transmission reliability standards should not be a “one size fits all” approach. Rather it should allow for standards to differ according to the significance or criticality of the load centre (e.g. between CBD, metro and rural areas of a jurisdiction) or according to explicit customer valuation of reliability at each connection point. The standard should be based on economic considerations, but expressed in a deterministic form to aid transparency and performance accountability.</p>
<p><b>7. Achieving efficient outcomes requires regulatory certainty and appropriate risk allocation</b></p>	<p>This policy is consistent with the national electricity objective. The on-going provision of adequate regulatory certainty is a key requirement to enable funding of transmission infrastructure investment characterised by long asset lives and commensurately slow rates of capital recovery. Certainty is particularly important in light of expected future investment requirements associated with Australia’s transition to a low carbon economy and ageing assets.</p> <p>Efficient outcomes are facilitated by only allocating risk to a party which is able to effectively manage it. It is therefore crucial that TNSPs are not required to manage risks that are beyond their control.</p>
<p><b>8. Any changes to the transmission framework must be well justified, evidence based and proportionate so as to maintain market stability</b></p>	<p>This policy is consistent with the MCE’s stated objective of “ensuring that any changes to the market framework are well justified, proportionate and maintain market stability” (as reflected in the terms of reference for the AEMC’s review of energy market frameworks in light of climate change policies).</p> <p>Evidence-based and proportionate change is supported, noting that this approach has served the electricity industry and customers well over the last 10 years. Proposals for change based principally on a desire to shift risk must be challenged.</p> <p>Regulatory certainty is required for efficient market outcomes. Therefore, proportionate incremental improvements in the existing arrangements rather than wholesale changes are more likely to lead to efficient outcomes.</p>
<p><b>9. Incentive based arrangements lead to better outcomes than imposing obligations</b></p>	<p>Energy market frameworks should promote efficient use of and investment in the network through decentralised decision-making by individual market participants. This requires regulated network businesses to have the right commercial incentives to operate and invest in networks efficiently. However, incentive arrangements must not impose unacceptable or uncontrollable risks on TNSPs.</p>
<p><b>10. Decisions on strategic projects that rely on economy-wide benefits or broader public interest considerations are policy matters for Government</b></p>	<p>The national electricity objective is focused on economic efficiency and the long term interests of electricity consumers and does not extend to include consideration of economy-wide benefits. Therefore, decisions on strategic projects that rely on economy-wide benefits or broader public interest considerations are policy matters for Government (e.g. such projects could be funded via Infrastructure Australia).</p>

Statement of Policy	Policy rationale and further explanatory information
<b>11. Transmission frameworks should be consistent across the National Electricity Market</b>	<p>Grid Australia's vision is for consistent transmission arrangements across all NEM jurisdictions. Following on from the preceding policy statements, the key features of these arrangements include:</p> <ul style="list-style-type: none"><li>• Transmission investment decisions made by the TNSPs who are responsible for service delivery.</li><li>• TNSPs responsible for transmission pricing and for providing transmission pricing advice to customers.</li><li>• Deterministic transmission reliability standards based on economic considerations set independently of TNSPs.</li><li>• AEMO providing independent advice on matters where it is in possession of information useful for assisting TNSPs in their planning and for all stakeholders (e.g. load and generation forecasts).</li><li>• AEMO providing independent advice on the development of the network from a national perspective, with particular reference to national transmission flow paths, but with no duplication of the planning and investment decision-making activities that are the responsibility of the TNSPs.</li></ul> <p>Victoria's transition to such arrangements may be more challenging compared to other jurisdictions.</p>

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## **6. Executing the policy**

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Grid Australia will use this policy as a basis for guiding its input to consultation on proposals for change to the transmission arrangements in the NEM.

## **7. Timeframes and review**

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This policy was adopted in June 2010.

Grid Australia will keep this policy statement under active review, especially in light of comments from and discussions with stakeholders.



# TRANSMISSION NETWORK CONNECTION GUIDELINES

Version 1 - July 2009



# TRANSMISSION NETWORK CONNECTION GUIDELINES

## GLOSSARY OF TERMS

AEMO – AUSTRALIAN ENERGY MARKET OPERATOR

DNSP – DISTRIBUTION NETWORK SERVICE PROVIDER

NER – NATIONAL ELECTRICITY RULES

TNSP – TRANSMISSION NETWORK SERVICE PROVIDER

# NETWORK CONNECTION GUIDELINES - OVERVIEW

STAGE	WHAT YOU NEED TO DO	RELEVANT LINKS
<p style="text-align: center;"><b>PRE-FEASIBILITY</b></p>	<p>Contact your local Transmission Network Service Provider (TNSP) to discuss options.</p>	<p>Powerlink (QLD) – <a href="http://www.powerlink.com.au">www.powerlink.com.au</a>            TransGrid (NSW) – <a href="http://www.transgrid.com.au">www.transgrid.com.au</a>            SP-AusNet (VIC) – <a href="http://www.sp-ausnet.com.au">http://www.sp-ausnet.com.au</a>            Vencorp (Vic) - <a href="http://www.vencorp.com.au/">http://www.vencorp.com.au/</a>            ElectraNet (SA) – <a href="http://www.electranet.com.au">http://www.electranet.com.au</a>            Transend (TAS) – <a href="http://www.transend.com.au">http://www.transend.com.au</a></p>
<p style="text-align: center;"><b>ENQUIRY</b></p>	<p>Make a connection enquiry pursuant to the National Electricity Rules (NER), including “S” planning level supporting data.</p>	<p>National Electricity Rules – <a href="http://www.aemc.gov.au/rules.php">http://www.aemc.gov.au/rules.php</a>            AEMO Registration Information – <a href="http://www.aemo.com.au/registration/registration.html">http://www.aemo.com.au/registration/registration.html</a></p>
<p style="text-align: center;"><b>APPLICATION</b></p>	<p>Make an application to connect pursuant to Chapter 5 of the NER (including proposed performance standards and “D” level supporting data).</p>	<p>AEMO Guides and Forms (Includes Performance Standards Template):  <a href="http://www.aemo.com.au/registration/registration.html#guides">http://www.aemo.com.au/registration/registration.html#guides</a></p>
<p style="text-align: center;"><b>CONNECTION</b></p>	<p>Enter into a Connection Agreement with your relevant TNSP. This Agreement sets out the terms upon which transmission services will be provided. The agreement for the construction of assets required to give physical effect to the connection service may be incorporated in this agreement or in a separate agreement.</p>	
<p style="text-align: center;"><b>COMMISSION</b></p>	<p>Register with AEMO and demonstrate compliance with performance standards proposed during application.</p>	

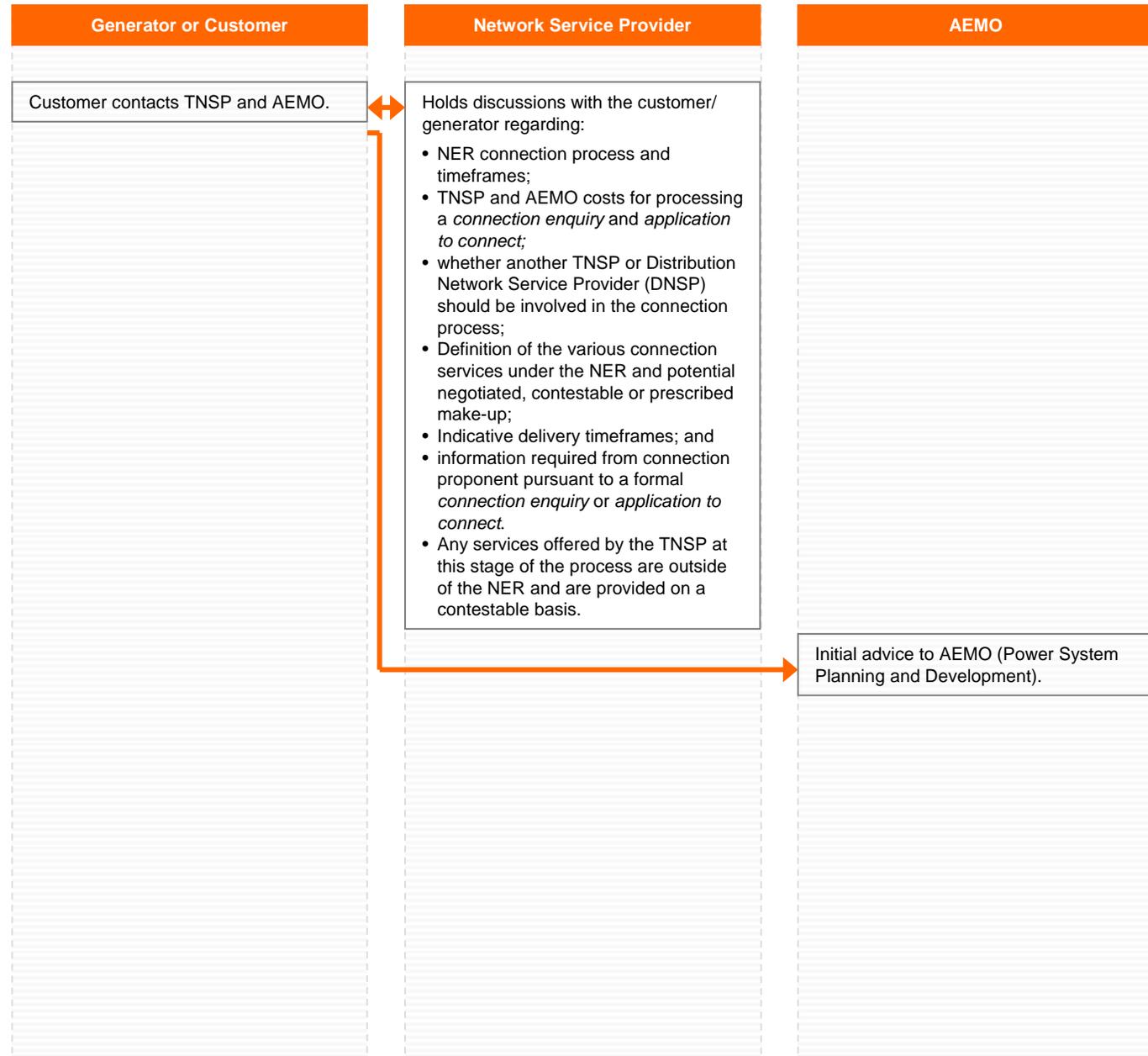
# PRE-FEASIBILITY STAGE

This stage of the connection process is informal and not prescribed under the National Electricity Rules (NER).

This phase generally consists of discussions between the connection proponent and TNSP.

The purpose of these discussions is to ensure that the connection proponent understands the connection process, timeframes and potential connection options.

To make this stage effective, considerable investigation work is usually required regarding possible connection options. The use of transmission system specialists can assist. The transmission companies may be able to offer some services on a 'fee for service' basis.



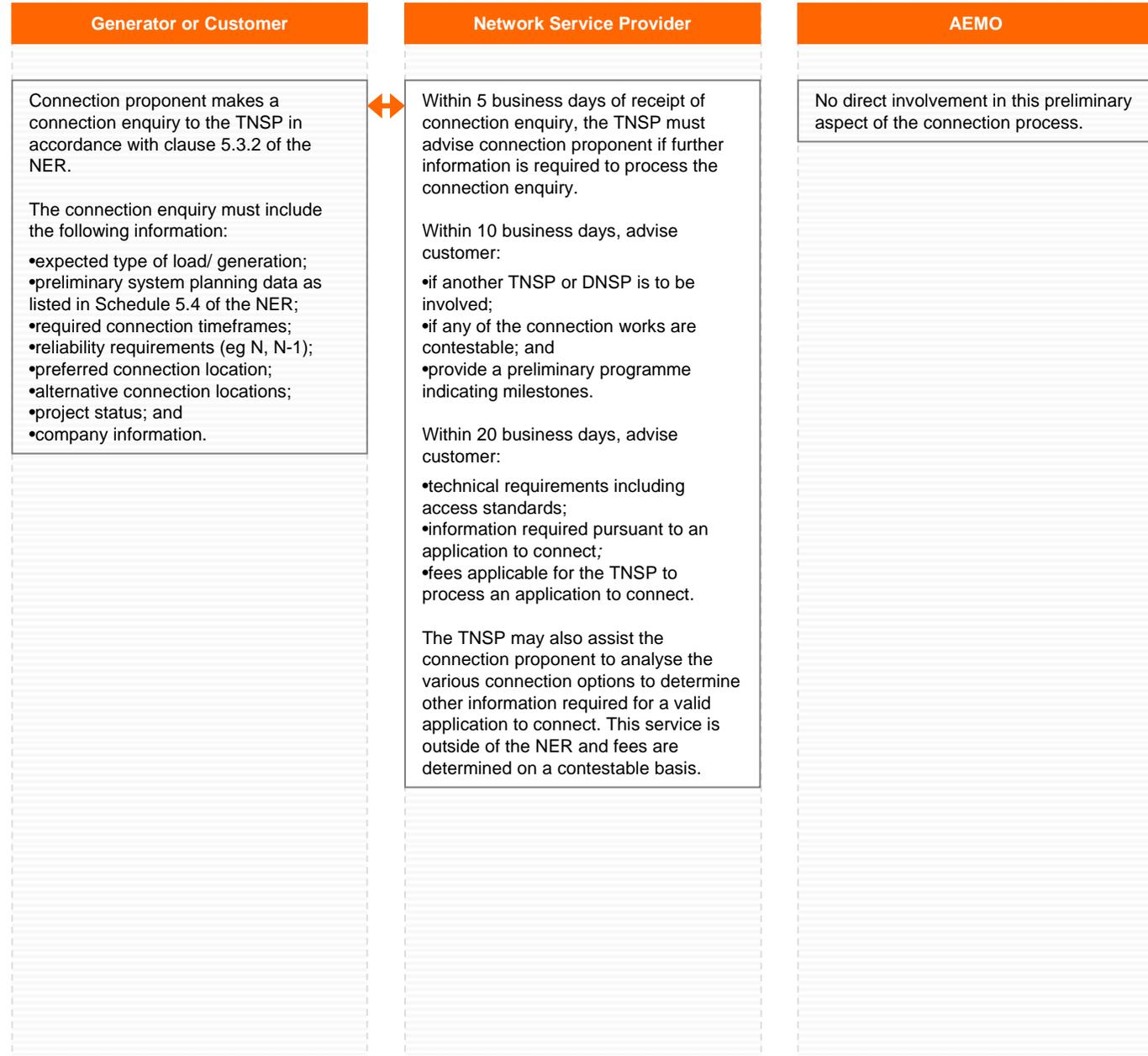
# CONNECTION ENQUIRY STAGE

This stage of the connection process is a formal requirement under the National Electricity Rules (NER). A connection proponent must make a connection enquiry before it can make an application to connect.

This stage requires the connection proponent to make a connection enquiry to the TNSP in accordance with clause 5.3.2 of the NER.

The TNSP must respond to the connection enquiry in accordance with clause 5.3.3 of the NER.

A key objective of this stage is to assist the connection proponent to determine a single preferred connection option before advancing to the application to connect stage. It also clarifies the information required to achieve a NER compliant "Application to Connect".



# APPLICATION TO CONNECT STAGE

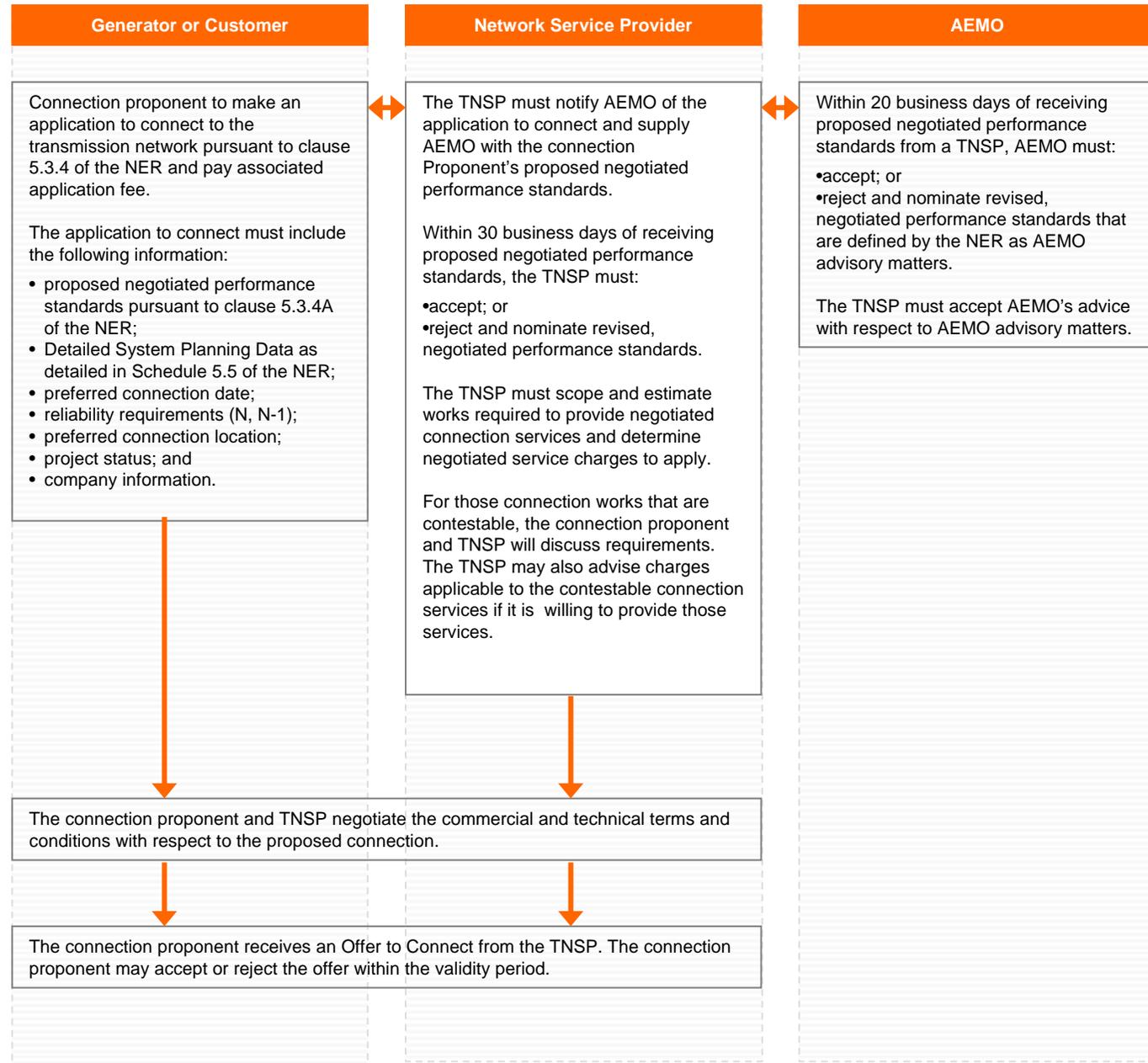
This stage of the connection process is a formal requirement under the National Electricity Rules (NER).

A connection proponent intending to connect to the transmission network must make an application to connect in accordance with clause 5.3.4 of the NER.

Where the connection proponent has made a conforming application to connect in accordance with the NER, the TNSP must make an offer to connect in accordance with the NER.

The key objective of this stage is to finalise the technical and commercial arrangements applicable to the connection, including the negotiation of performance standards pursuant to clause 5.3.4A of the NER. This agreement may also address the delivery of assets required to give physical effect to the connection service.

This stage is finalised when the connection proponent accepts an Offer to Connect.



# CONNECTION AND COMMISSIONING STAGES

This stage of the connection process is informal and not prescribed under the National Electricity Rules (NER).

However, it is usual to have formal agreements covering key aspects of this stage (e.g. delivery of assets to give physical effect to the connection).

This stage commences with the proponent accepting the TNSP's Offer to Connect.

This stage requires extensive collaboration between the connection proponent and the TNSP to ensure their respective activities are complete so as to facilitate connection to the transmission network.

