Ministerial Council on Energy
Standing Committee of Officials

Consultation Regulation Impact Statement

Separation of generation and transmission

11 August 2011

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Glossary

ACCC	Australian Competition and Consumer Commission
ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
BSA	Basslink Service Agreement
CCA	Competition and Consumer Act 2010 (formerly the Trade Practices Act 1974)
COAG	Council of Australian Governments
Cth	Commonwealth
DNSP	Distribution Network Service Provider (regulated)
EC	European Council
GBE	Government Business Enterprises
kWh	Kilowatt hour
MCE	Ministerial Council on Energy
MNSP	Market Network Service Provider (unregulated)
MTPASA	Medium Term Projected Assessment of Supply Adequacy
MW	Megawatt
MWh	Megawatt hour
NCP	National Competition Policy
NEL	National Electricity Law
NEM	National Electricity Market
NER	National Electricity Rules (the Rules)
NSP	Network Service Provider
NSW	New South Wales
NT	Northern Territory
NTNDP	National Transmission Network Development Plan
OECD	Organisation for Economic Co-operation and Development
OTC	Over-the-counter
Qld	Queensland
PASA	Projected Assessment of System Adequacy
RAB	Regulated Asset Base
RIS	Regulatory Impact Statement
RIT-T	Regulatory Investment Test for Transmission
SA	South Australia
SFE	Sydney Futures Exchange
Tas	Tasmania
TNSP	Transmission Network Service Provider (regulated)
TPA	Trade Practices Act
US	United States of America
Vic	Victoria
WA	Western Australia

Executive Summary

Summary of the current issue

Co-ownership of generation and transmission assets create significant competition concerns. Generators operate in a competitive environment, whereas transmission is by its nature monopolistic. Where transmission owners also participate in the competitive generation market, they have the power and incentive to reduce competition by:

- raising the price of electricity transmission
- lowering the quality and quantity of localised electricity transmission
- reducing the timeliness of transmission to competitors while making strong provision for affiliate generators.

These anti-competitive behaviours are difficult to both police and prevent. Vertical integration is generally more likely to result in the exercise of market power if at least one of the segments of the integrated entity is a monopoly.

Purpose

This Regulation Impact Statement (RIS) has been undertaken to facilitate discussion about any risks that may be associated with future generation and transmission co-ownership in the National Electricity Market (NEM). The RIS examines the adequacy of current legislative protection against possible market failure and reduced generator competition. Several options to limit the ability for future co-ownership are also outlined for stakeholder consideration.

Objective

In developing a policy position with regards to cross-ownership of generation and transmission businesses, the MCE's objective is to balance preventing anti-competitive behaviour and allowing businesses to achieve economies of scale and scope. The intention of this consultation RIS is to therefore obtain feedback from relevant stakeholders that will allow the MCE to obtain an optimal balance between these when developing its final position.

Background to potential future generator and transmission co-ownership

This RIS highlights the impact of Australia's 1990s competition reforms in the electricity industry.

The 1993 Hilmer Report identified that electricity transmission threatened reduced generator competition if it was vertically integrated. Subsequently, all jurisdictions, except the Northern Territory, separated transmission and generation ownership.

The NEM commenced on 13 December 1998. The NEM is the market for the wholesale supply and purchase of electricity in south eastern Australia and is based on linkages of link interstate transmission networks and interconnectors to facilitate strong competition in the market. Subsequently, there have been some success with having a linked electricity market, however, regional markets have displayed a growing tendency to seek re-integration. This gave rise to the concern that competition could be impeded if reintegration occurred.

In 2007, Ministerial Council on Energy (MCE) recommended specific provisions to maintain the separation of generation and transmission, at the request of Council of Australian Governments (COAG). These were consulted upon but not finalised.

Recent market changes that influence co-ownership

Since that time, several market changes have occurred that could alter the possibility of generation and transmission co-ownership in the future. These include:

- a changed definition of transmission assets for Distribution Network Service Providers (DNSPs);
- national transmission planning becoming a function of the Australian Energy Market Operator (AEMO) on 1 July 2009;
- the transmission Service Target Performance Incentive Scheme which potentially reduces incentives for co-ownership;
- congestion management developments in the NEM that potentially reduce the ability to exploit market power;
- the Transmission Frameworks Review which is currently underway and impact on future co-ownership, depending on the review outcomes; and
- the Review of Enforcement Regimes which is currently being instigated that may strengthen the existing penalty arrangements.

The RIS establishes that co-ownership of electricity generation and transmission currently occurs to a very limited extent. It is unknown whether co-ownership will be pursued in the future. Several reasons are outlined as to why it may not be considered attractive, including:

- government-driven structural separation as the preferred NEM ownership model;
- different business models and risk exposure between generation and transmission businesses;
- structural limitations within the NEM limit efficiency opportunities for co-ownership; and
- potential investor anticipation that the Competition and Consumer Act 2010 (CCA) may prevent a merger or acquisition.

The RIS balances these with several reasons why co-ownership may be pursued as a beneficial option in the future:

- investors seeking portfolio diversification to balance risks and provide higher returns;
- generators can positively hedge their physical capacity in the financial market, becoming more attractive to a low-risk investor also interested in a transmission asset;
- jurisdiction-based government business enterprises may seek re-integration in an attempt to reduce overhead costs or improve cost efficiency;
- investors may seek co-ownership to improve the profitability of generation through coordinated activities with transmission; or

- government focus on structural separation has lessened following competition reforms in the 1990s and early 2000s.

Current regulatory overview governing co-ownership

COAG is continuing to proactively drive a competitive electricity market. In 2006, COAG recommended a recommitment to the Competition Principles Agreement.

COAG also recommended further energy reforms, including:

- improving demand price signals for energy consumers and investors
- ensuring the transmission system supports an efficient national electricity market
- fostering energy market structures that promote competition.

However, it remains unclear whether the CCA provides adequate protection against generation and transmission mergers that raise competition concerns.

Section 50 (under Part IV of the Act) prohibits acquisitions that would have the effect, or likely effect, of substantially lessening competition in a substantial Australian market. Recent common law, such as the appeals case AGL v ACCC (2003), suggests Australian Competition and Consumer Commission (ACCC) may face difficulties in proving 'likely' harm before a court.

Moreover, Section 46 of the CCA may provide the ACCC with some recourse if a generation-transmission merger resulted in a misuse of market power. However, electricity markets have unique competition issues due to the nature of their operation, and market power following integration may be difficult to detect.

The ACCC has argued strongly for specific provisions to be developed to deal with generation-transmission electricity mergers. The consultation on the previous RIS process found that some support this argument while others believe CCA can adequately deal with the issue.

The prospect of co-ownership of generation and transmission has raised the strongest concerns within the electricity supply chain. The potential inadequacy of industry and regulatory checks and balances are of primary concern. These may enable future co-ownership to result in anti-competitive behaviours creating generation monopolies.

In contrast, some stakeholders supported the continuing reliance on existing mechanisms under the CCA. In this regard, it was noted that section 50 operates as a non-specific regulatory instrument and is not intended to accommodate special provisions targeting industry sectors and specific activities within those sectors. Further, it was argued that introducing amendments to the CCA could be far more intrusive and costly than the status quo, exposing some integrated entities to higher degrees of financial risk, and as a result increasing the cost of conducting business in the NEM.

Hypothetical analysis of co-ownership competition issues

The RIS outlines a hypothetical analysis of the competition issues that could arise in the advent of a future co-ownership of generation and transmission businesses in the NEM. A gauge of likelihood and significance is given to each of the hypothetical risks, which are as follows:

- Reduction in transmission service quality and connection for competing generators. High likelihood and significance with limited regulatory protection.
- Investment and maintenance decisions made in favour of the co-owned generator. Moderate likelihood and high significance, with a large degree of autonomy available to transmission businesses.
- Sharing commercially sensitive information between the co-owned businesses in order to improve the co-owned generator's bidding or re-bidding strategies to maximise profits. Moderate likelihood and high significance, with current ring-fencing guidelines potentially unenforceable in their current form.
- The transmission business could change short-term current ratings to assist a co-owned generator to take advantage of demand and supply balances, including through bidding or re-bidding opportunities. Moderate likelihood and significance, with insufficient guidelines to determine line ratings.
- Transferring costs incurred by a co-owned generator into the co-owned TNSP's regulated asset base. Low likelihood and moderate significance, with difficulties in monitoring true compliance with ring fencing provisions.
- Perceived loss of market integrity by market participants could occur in the future if a generation/transmission co-ownership arrangement was established in the NEM. Moderate likelihood and high significance, with insufficient NER provisions to effectively monitor and correct a breach relating to market power concerns.

Examination of international approaches to co-ownership management

The RIS examines international approaches to managing co-ownership issues for electricity markets, including 'operational unbundling' in the US; 'ownership unbundling' in European Union; transmission business licensing in UK; and cross-ownership provisions in Victoria, Australia.

Management of co-ownership issues in the Australian gas market are also examined including a forced divestiture requirement under ring-fencing provisions.

Options for addressing future co-ownership

Options are outlined for the reduction or removal of market power concerns associated with a future co-ownership of generation and transmission connected in the NEM. These are to:

- maintain the current arrangement relying on the CCA and current rules;
- enhance the current transmission ring fencing guidelines to formalise existing provisions; or
- reconsider the preferred option of inserting a generation/transmission provision in the National Electricity Law containing an exemption test, proposed under the original Consultation RIS in 2007.

The RIS considers each option with regard to potential risks and benefits. 'Benefits' are considered with respect to the creation of regulatory certainty and the extent to which each option would be expected to reduce or remove the market harm associated

with co-ownership in the future. 'Risks' are considered with respect to whether the market power concerns potentially associated with co-ownership in the future would be likely to persist under each option.

Cost-benefit analysis

A cost benefit analysis is outlined for the proposed options, drawing on numerous studies referencing the economic costs of vertical separation.

The RIS cites Kaserman and Mayo (1991); Kwoka (2002); Piacenza and Vannoni (2004); Nemoto and Goto (2004). All four studies identified cost savings for an integrated firm compared with a 'distribution' business with no generation assets, particularly where the co-owned generator and the co-owned 'distributor' had high levels of electricity output.

Current research literature is of limited relevance, however, as the electricity markets considered in reviewed studies were in Japan, the US and Italy. These markets are not directly comparable to the Australian market arrangements used in the NEM. Therefore, it is expected that the costs of vertical separation would be lower than those identified in the studies.

Recommendations

It is recommended that stakeholders consider the following questions to progress the implementation of safeguards against reduced competition arising from future co-ownership:

- Should a provision limiting co-ownership of generation and transmission connected in the NEM apply to all registered generators?
- What are the benefits of co-ownership, besides diversifying risk in a portfolio of a business?
- What are the costs of prohibiting future co-ownership of generation and transmission?
- Do competition concerns remain if a co-owned generator is located in a different region to the transmission network/interconnector?

Questions to Stakeholders

1. Do you believe the current CCA provisions are likely to be sufficient to prevent potential market harm resulting from co-ownership of transmission and generation businesses?
2. Do you agree with the assessment of likelihood and significance for each of the market power concerns as outlined in section 3.4?
3. What kinds of issues should be considered to enhance the ring fencing guidelines and use of their content in the NEL, if this option is preferred?
4. What is your response to the likely costs, benefits and risks of each option as described under 'Costs and benefits of regulatory provisions to limit co-ownership in the NEM' in section 5.3?
5. Should a provision that limits co-ownership of generation and transmission connected in the NEM apply to all registered generators (being scheduled, semi scheduled and non-scheduled)?

6. What are the benefits of co-ownership, besides diversifying risk in a business's portfolio?
7. What are the costs of prohibiting future co-ownership of generation and transmission?
8. Do competition concerns remain if a co-owned generator is located in a different region to the transmission network/interconnector?

1. Context and Purpose

1.1. History and context of this RIS

In 2006, the Council of Australian Governments (COAG) requested that the Ministerial Council on Energy (MCE) develop recommendations for specific provisions to maintain the separation of generation and transmission ownership. In 2007, the MCE initiated a Regulation Impact Statement (RIS) process to look into this issue and provide recommendations back to COAG. The objective of this process was to:

- complement, but not replicate, section 50 of the *Trade Practices Act 1974* (TPA) [1];
- not interfere with the ongoing application of section 50 of the TPA to the electricity market and other sectors of the Australian economy;
- promote competition and prevent anti-competitive distortion;
- have an appropriate enforcement regime for the administration of these provisions;
- have clear and simple provisions to provide certainty and clarity to market participants in the application and enforcement of the provisions. This would ensure that all parties are clear about their obligations and would limit the subjectiveness in the implementation of the provisions; and
- ensure the appropriate scope of the cross-ownership restriction to maintain limited impact on system security, efficient investment in generation and transmission activities, and that generator access to the market is not restricted or limited by these provisions, while recognising the potential risk in allowing integration of generation and transmission.

On 15 October 2007, the MCE Standing Committee of Officials (SCO) released a consultation RIS outlining options for the form of the generation / transmission separation provisions. The consultation RIS presented five options for proceeding with the COAG commitment. These included:

- Option 1: Retain the status quo and rely on existing mechanisms to deal with market power issues stemming from cross-ownership.
- Option 2: Amend Section 50 of the TPA to reflect a presumption that ownership of both generation and transmission assets represent a substantial lessening of competition.
- Option 3: Amend the NEL by inserting a provision that presumes the prohibition of ownership of both generation and transmission activities.
- Option 4: Insert a generation/transmission provision in the NEL which limits a person from having an entitlement to generating capacity within the meaning of the separation of generation, transmission and distribution sector provisions of more than 200 MW.

[1] The *Trade Practices Act 1976* was superseded on 1 January 2011 by the *Competition and Consumer Act 2010.*

- Option 5: Insert a generation/transmission provision in the NEL containing an exemption test that would consider both a percentage and MW level of ownership and control.

In response to the consultation RIS, seven submissions were received. The key issues raised in the stakeholder submissions included:

- the basis for the threshold levels for exemptions to the cross-ownership provision is unclear;
- whether Market Network Service Provider's (MNSPs) would be covered by the cross-ownership provision;
- the definition of the crown exemption is unclear;
- whether an exemption to the cross-ownership provisions would apply if the asset is not controlled by the owner;
- the potential for forced divesture for existing entities; and
- the implications for owners of distribution assets classified by then NEMMCO (now AEMO) as transmission for the purposes of supporting a transmission system.

In response to the consultation process, a decision RIS was drafted. This was not, however, finalised due to shifting priorities in the MCE work program.

Since the original consultation RIS was undertaken, there have been several market and regulatory changes which relate to the issue of generation and transmission co-ownership. Some of these were raised via stakeholder consultation.

Relevant changes include:

- **Changed definition of transmission assets for Distribution Network Service Providers (DNSPs):** transmission network assets of most DNSPs can now be defined as 'dual function assets' if approved by the Australian Energy Regulator (AER). Approval enables the assets to be treated as distribution assets for regulatory purposes (Rule commenced 1 July 2008). This removes concern raised by some stakeholders at the time of the 2007 consultation RIS that a DNSP may be prevented from future generation investment because it had some transmission assets.
- **National transmission planning:** national transmission planning became a function of the Australian Energy Market Operator (AEMO) on 1 July 2009. The inaugural National Transmission Network Development Plan (NTNDP) was released on 15 December 2010. The NTNDP considers future supply and demand scenarios for national transmission flow paths over a 20-year planning horizon. While it does not direct or oblige any development of the transmission network itself, the NTNDP is expected to frame the investment augmentation options considered by Transmission Network Service Providers (TNSPs). This may influence the regulator in approving regulated expenditure.[2]
- **Transmission Service Target Performance Incentive Scheme:** The AER published its final Transmission Service Target Performance Incentive Scheme in

[2] See AEMO's *National Transmission Network Development Plan Consultation Paper*, 29 January 2010 p9 http://www.aemo.com.au/planning/0418-0002.pdf

March 2008[3] (as required by Rule 6A.7.4). This incentive means that regulated TNSPs will receive:

- a bonus or penalty of ± 1 per cent of its maximum allowed revenue based on its performance against a service component target; and
- up to 2 per cent of its maximum allowed revenue for meeting performance targets related to market impacts (reducing congestion).

This bonus scheme may reduce the incentives for a co-owned TNSP to reduce service to competing generators.

- **Congestion management developments:** transmission congestion (in the absence of generator and transmission co-ownership) can reduce the level of generator competition. It does so by restricting the ability of a generator/s to supply the market. Several reforms have been introduced to manage the impact of congestion in the National Electricity Market (NEM). These follow the Australian Energy Market Commission's (AEMC) *Congestion Management Review*, published in June 2008. Reforms include the service performance bonus scheme for regulated transmission businesses (referred to above) and the establishment of a Congestion Information Resource by the AEMO (due September 2011).

  Congestion may carry additional risks in the advent of co-ownership. The transmission business may have the incentive to create or exacerbate congestion for the commercial gain of its affiliate generator. The introduction of these congestion management tools may, to some extent, limit such ability or incentive.

- **Transmission Frameworks Review:** the MCE tasked the AEMC with conducting a Transmission Frameworks Review in April 2010. The review is currently in its consultation phase. It will examine the role of transmission in the NEM, particularly with regards to:
  - transmission investment
  - network operation
  - network charging
  - access and connection
  - management of network connection.

  These issues may all have some relevance to the issue of co-ownership. For example, if the review recommends changes to transactions between transmission businesses and generation businesses. Should this occur, any subsequent changes to the National Electricity Rules (NER) may potentially reduce or increase possible market power concerns if generation and transmission co-ownership takes place in the future. The Transmission Frameworks Review is currently exploring a number of areas that are yet to be settled. While there are some similar issues being canvassed, the Transmission Framework Review will not consider issues around ownership, consequently it is considered that this RIS process is appropriate for consulting on issues related to the separation of ownership for

[3] See the AER's website:
http://www.aer.gov.au/content/item.phtml?itemId=717931&nodeId=646746a38f2aa81d2bae3184693c3beb&fn=Final%20service%20target%20performance%20incentive%20scheme%20version%202.pdf

generation and transmission. Further, this work is intended to deliver specific advice to COAG about options for addressing possible issues associated with co-ownership.

- **Review of enforcement regimes:** in June 2010 the MCE agreed to a comprehensive review of enforcement regimes across all the national energy legislation to ensure that the interests of customers continue to be protected, and the integrity of the energy markets is maintained. While this will not consider issues around cross-ownership, the review will consider whether the existing enforcement approaches remain appropriate given changes to the NEM framework. This review is expected to look at penalty arrangements which may have a bearing on the effectiveness of the existing co-ownership provisions.

In light of these and other market changes, this consultation RIS provides an updated assessment of market impacts that may result from future co-ownership. The RIS further provides options to address those impacts. Original stakeholder feedback provided in response to the 2007 consultation RIS have been considered in the framing of this document. To avoid unnecessary duplication, however, the present RIS does not directly address some of the issues raised in the previous consultation RIS.

1.2. Statement of problem

The NEM is an integrated market for the production, transportation and consumption of electricity within Australia's eastern and south eastern jurisdictions. Generators operate in a largely competitive environment. Their price point for electricity supply is a key determinant of whether or not they are called into production.

By comparison, transmission networks are naturally monopolistic. There are prohibitive costs and inefficiencies associated with duplicating a transmission network to create network competition. Transmission networks are therefore regulated (with the exception of Market Network Service Providers). The revenue they are able to earn is determined by the AER. Transmission networks provide a critical service in the electricity supply chain by transporting electricity from generators to the distribution network (which supplies electricity to end users).

Economic theory suggests that there are two channels by which vertical integration can improve the profitability of firms' activities. The first of these is through securing operational efficiencies. For vertical integration to improve efficiency, it must be a superior arrangement to arms-length contractual arrangements. A second channel through which vertical integration could enhance profitability is by increasing the incentive to exercise market power.

Vertical integration is generally more likely to result in the exercise of market power if at least one of the segments of the integrated entity is a monopoly. Firms in such circumstances are much more likely to have the incentives and ability to leverage the monopoly power they have to restrict competition in the other market.

Potential market power concerns associated with the co-ownership of both a regulated Transmission Network Service Provider (TNSP) and a generator exist due to the:

- critical role of the transmission network in transporting electricity for all connected generators; and

- incentives of a co-owned TNSP to provide transmission services that favour the affiliate generator in order to maximise its profits.

Higher profits could accrue to the co-owned generator either through being dispatched at higher wholesale prices, or at larger volumes. Each of these possibilities could be assisted by the actions of the co-owned TNSP. Such assistance could take the form of information sharing between the co-owned businesses. Alternatively, the co-owned TNSP may reduce the quality of transmission services provided to competing generators. Such discriminatory actions are not adequately addressed within the current National Electricity Rules. This could be either because the Rules do not directly address the specific co-ownership concerns, or because penalty provisions are low (if present at all) and are unlikely to deter such anti-competitive behaviour. Vertical integration could also present opportunities for regulatory evasion, for instance, through the smuggling of costs of unregulated businesses into an affiliated regulated business.

The CCA could theoretically prevent a proposed merger or acquisition between a TNSP and a generator from taking place in the NEM if it raised significant competition concerns. It is unclear, however, whether such a proposal would actually be blocked if such a case were taken to court. Additionally, the CCA cannot prevent co-ownership as a result of a TNSP building a generator (or vice versa).

The weakness of legal constraints is mainly a reflection of the fact that they were not designed to constrain an integrated entity that would seek to leverage its TNSP function to favour its other activities. The existing arrangements for the operation of the electricity transmission network fundamentally rely on the goodwill and good practice of the relevant parties.

A key issue is whether a modified regulatory regime, additional regulatory resources, and/or modifications to the financial incentives available under various contractual arrangements could better control an integrated entity's incentives or ability to exercise market power. Experience from overseas jurisdictions suggests that strengthened behavioural regimes (tighter ring-fencing and disclosure requirements for example), in the absence of structural separation, have a limited impact on curbing the exercise of market power. This in turn reflects, in part, limitations on the capability of regulators to verify compliance and to pick out instances of anti-competitive behaviour. It is not clear from experience elsewhere whether this capability could be much improved by the devotion of additional resources to regulators.

If regulatory action is initiated retrospectively through litigation, itself a costly process, the lag between abuse and the implementation of action could further aggravate welfare costs. Moreover, a perception by participants that the containment of market power is uncertain could itself act as a barrier to entry.

Co-ownership currently exists to a very limited degree in the NEM and involves very small generation interests. There are, however, concerns that if more co-ownership arrangements were to develop in the future it could have significant market impacts on the outcomes in the NEM. Therefore, this RIS focuses on the issue and associated risks of future co-ownership in the NEM, recognising that a key MCE objective is to balance preventing anti-competitive behaviour and allowing businesses to achieve economies of scale and scope.

The impact on the market of cross-ownership in other aspects of the supply chain have different impacts on the degree of competition in the market. Between the competitive generation sector and the retail sector there is a natural synergy that can be optimised through vertical integration. This is because retailers can hedge against high and volatile wholesale electricity prices through ownership of a generator that operates in the NEM, preferably in the same region as the retail business' operations.

In contrast, where distribution and retail assets are owned by the private sector, an overwhelming trend has been the separation of the formerly stapled distribution and retail businesses, and specialisation in either regulated or competitive entities. The reasons for this are that unlike the case with generator/retailer mergers, there are no 'natural hedge' benefits; there are markedly different costs of capital for regulated and competitive assets; the different business models required of the distribution and retail sectors; the presence of strong retail competition; an effective regulatory regime; and the capacity of specialist network firms to leverage network businesses as a pure infrastructure investment.

Given these differences, this RIS relates solely to separation of ownership of generation and transmission. However, the MCE's Standing Committee of Officials would appreciate any feedback from stakeholders about whether there are any other relationships that need to be taken into account when developing a policy position in relation to co-ownership.

1.3. Current co-ownership of generation and transmission in the NEM

As described in more detail in Attachment A, there is only one current example of a co-owned generation and transmission business in the NEM. Energy Infrastructure Investments owns:

- two small generators of around 30 megawatts (MW) in Queensland (one of which is not connected to the NEM); and
- two transmission interconnectors which link the transmission networks of South Australia and Victoria, and New South Wales and Queensland, respectively.

However, it should be noted that the MCE's Standing Committee of Officials (SCO) has no concerns with this co-ownership arrangement.

It is currently unknown whether further co-ownership will be pursued in the future. It is a possibility for current NEM participants seeking mergers; investors seeking to purchase both types of electricity assets; and NEM participants who may decide to build an asset in the adjacent upstream or downstream part of the electricity supply chain.

To date, there have been few co-ownership attempts since the establishment of the NEM. It is unlikely that co-ownership will be pursued by large numbers in the current market environment. Some of the reasons why co-ownership may not be pursued in the NEM could include:

- Governments have to date touted structural separation as the preferred ownership model in the NEM.
- Generation and transmission businesses have different business models and risk exposure. These differences may mean that an investor will not seek ownership of

both asset types. For example, a TNSP faces low risk and regulated return. Meanwhile, a generator operates in a competitive sector and generally faces higher risks.

- The NEM structure may limit opportunities for scope efficiencies as a result of owning both generation and transmission businesses. Such limitations could include AEMO's role of co-ordinating least cost dispatch, which may otherwise have been the responsibility of a TNSP. Economies of scope and possible limitations to such economies in the NEM are discussed further in the Cost-Benefit section of this RIS.
- Investors may anticipate that a merger or acquisition will be prevented under the CCA, thereby deterring some businesses from seeking integration.

Conversely, there are also reasons why co-ownership could become attractive to some businesses in the future including:

- investors seeking portfolio diversification to balance risks and provide higher returns. Some international investment companies have sought portfolios with a range of electricity assets across several countries
- the extent to which a generator can hedge its physical capacity in the financial market may affect its perceived riskiness as an investment asset. A well-hedged generator may be more attractive to a low-risk investor also interested in a transmission asset
- jurisdiction-based government business enterprises may seek re-integration in an attempt to reduce overhead costs or improve cost efficiency
- investors may seek co-ownership to improve the profitability of the generation business through coordinated activities with the transmission business.

In addition, while structural separation was actively pursued by governments as part of the National Competition Policy reforms, this focus has lessened following actual separation in the 1990s and early 2000s.

A Network Service Provider may have a network service dispatched and settled through the market by classifying the service as a market network service and a scheduled network service and registering as a Market Network Service Provider (MNSP). As a market participant, MNSPs submit bids into the competitive market in a similar manner as generators and end users. Given this difference in role, it is intended for MNSPs to be excluded from any co-ownership provisions. With the current ownerships in the NEM, at this stage this would exclude Basslink from having to comply with any agreed policy.

1.4. Government objective

The objective of government action is to ensure that applied regulation is effective and proportional to the issue being addressed. This requires:

- consideration of the extent of the problem;
- establishing whether there is a case for action;
- undertaking adequate consultation with relevant stakeholders;
- considering a range of feasible policy options; and

- adopting the option that generates the greatest net benefit to the community, where the benefits must outweigh costs.

The intended outcome of this RIS is to ensure that there are adequate protections in place to prevent market harm or reduction in generator competition resulting from future co-ownership of a transmission and generation business in the NEM.

This RIS aims to canvass the relevant issues associated with any future co-ownership of generation and transmission in the NEM. Such issues include:

- quantifying the risks of potential market power that may be exercised with co-ownership; and
- identifying current provisional shortcomings in preventing potential market harm.

The RIS also raises several options for reducing the potential for such market harm by limiting the ability for future co-ownership.

Stakeholder input is sought on:

- the extent of market power concerns;
- the effectiveness of current regulatory provisions;
- proposed regulatory options;
- assumptions contained within the RIS; and
- an assessment of the costs, benefits and risks of each of the regulatory options.

This RIS is strictly for consultation purposes only. It should not be read as a settled or final view of the Standing Committee of Officials, participating jurisdictions or the MCE regarding future co-ownership. In addition, this paper does not presuppose the outcome of the current Tasmanian Expert Panel Review (see Attachment A).

2. Background to the Issue

2.1. Competition reforms in the electricity sector

Historically, Australia's electricity industry was characterised by jurisdiction-based, vertically integrated entities with limited interconnection. As part of the 1990s competition reforms, a national competition policy inquiry known as *The Hilmer Report* was released in 1993. This Report was the impetus for the development of a national competition reform agenda. The Hilmer Report highlighted the need for effective competition in markets traditionally supplied by public monopolies. Further, it recommended structural reforms to separate natural monopoly and competitive elements within a supply chain where the monopoly element was essential for effective competition in the downstream or upstream market[4].

Electricity transmission was identified as one such monopoly element. The Hilmer Report considered that if transmission was vertically integrated with electricity generation concerns would be raised for competing generators seeking access to the transmission service[5]. The report concluded that, even if transmission access was not prevented by an integrated firm, the potential for such behaviour could deter new generation entry or limit the extent of generator competition.[6]

The Hilmer Report informed the competition reforms developed by COAG. The overarching COAG National Competition Policy (NCP) was implemented in 1995 by the signing of three intergovernmental agreements being:

- the Competition Principles Agreement;
- the National Competition Policy and Related Reforms Agreement; and
- the Conduct Code Agreement.[7]

The NCP outlined governments' responsibilities to consider:

- structural reform of public monopolies;
- access regimes for essential facilities;
- competitive neutrality between public and private sectors; and
- reviews of anti-competitive legislation.

The Commonwealth provided financial assistance to states and territories in the form of competition payments. Such payments were based on their progress against agreed reform objectives.[8]

To action the agreements with respect to electricity, each jurisdictional government undertook to restructure their electricity sector. They committed to applying competitive neutrality and reviewing electricity regulation that restricted competition. All jurisdictions (excluding the Northern Territory) separated the transmission and generation supply functions of their integrated electricity monopolies during the late 1990s and early 2000s. Each function was assigned to different Government Business

[4] Hilmer 'National Competition Policy' http://ncp.ncc.gov.au/docs/Hilmer-001.pdf Chapter 10
[5] Hilmer 'National Competition Policy' http://ncp.ncc.gov.au/docs/Hilmer-001.pdf p219
[6] Hilmer 'National Competition Policy' http://ncp.ncc.gov.au/docs/Hilmer-001.pdf p219
[7] http://ncp.ncc.gov.au/pages/electricity
[8] http://www.coag.gov.au/coag_meeting_outcomes/1995-04-11/index.cfm#competition

Enterprises (GBE) or sold to private or public investors.[9] Most governments also disaggregated horizontal generation ownership. Smaller portfolios of generation were grouped into different GBEs or sold to the private sector. Retail and distribution was not always separated as a matter of course.[10]

Following disaggregation of the supply chain, the NEM was created in 1998 to connect Australia's southern and eastern electricity grids. The NEM now links the transmission networks of Queensland, New South Wales, the Australian Capital Territory, South Australia, Victoria and Tasmania. This is achieved through six transmission interconnectors that have enabled generators across the NEM to compete with one another[11].

The NEM is the focus of this RIS.

2.2. Re-integration and reviews of competition reforms

A number of reviews were conducted in the early 2000s to assess the outcome of the NCP reforms[12]. The electricity reforms, including structural separation and competitive neutrality, were found to have enhanced productivity and competition in the market[13]. However, there were clear examples where the objective of the reforms had not been realised. The Productivity Commission's Review of National Competition Policy Reforms concluded that:

> For a range of reasons, including inadequate transmission links, the regional markets have yet to be effectively transformed into a national market.[14]

Of concern to some of the reviews was a growing tendency for electricity businesses to seek re-integration. This was being pursued through:

- expanding horizontally at one point of the supply chain; or
- incorporating several elements of the vertical supply chain into a single business, such as retail and generation, or retail and distribution.[15]

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[9] Note that Power and Water, a Northern Territory Government Owned Corporation, retains both generation and transmission interests

[10] Victorian Department of Infrastructure, *Cross-ownership Rules of the Energy Sector – Issues Paper* January 2005 p6. Victoria undertook the greatest degree of reform, and privatised all aspects of the State's supply chain. Currently the Victorian Government only retains a partial interest in the Snowy hydro scheme.

[11] The effectiveness of the competition of the regions is also affected by the settling of a regional price – generators can currently only receive the spot price in their own region, with additional payments available through settlement residue auctions

[12] Reviews of competition reforms include: *Productivity Commission Review of National Competition Policy Arrangements* 2005 http://www.pc.gov.au/projects/inquiry/ncp; *OECD report Restructuring Public Utilities for Competition,* 2001 www.oecd.org/dataoecd/6/60/19635977.pdf; Energy Reform Implementation Group, *The Way Forward for Australia,* January 2007 http://www.ret.gov.au/energy/Documents/erig/ERIG_main_report20070413181231.pdf

[13] For example, see Productivity Commission *Review of National Competition Policy Arrangements*, 2005 p22

[14] Productivity Commission *Review of National Competition Policy Arrangements*, 2005 p22

[15] A list of electricity industry merger activity from 2000 was compiled by the ACCC in 2004 in its submission to the Productivity Commission *Review of National Competition Policy Arrangements*. See ACCC *Submission to the Productivity Commission Discussion Draft: National Competition Policy Reforms*, 10 December 2004, Appendix E http://www.pc.gov.au/__data/assets/pdf_file/0014/48011/subdr165.pdf

While integration can have benefits associated with greater economies of scale and scope, there can also be significant negative impacts related to the development or increase in market power. The original structural and access reforms were intended to introduce and support competition. However, the threat of re-integration raised questions of whether the competition benefits may be reversed with re-integration.[16]

Of all the types of mergers possible within the electricity supply chain, the prospect of integration between generation and transmission has raised the strongest concerns.[17]

This is because transmission:

- is an essential part of the supply chain;
- provides a natural monopoly service (as it is too costly to duplicate a transmission network); and
- is the only viable means by which generators connected to the transmission grid can supply electricity to the market.

The availability of transmission networks is therefore a key determinant of whether a generator can compete.[18] The Australian Competition and Consumer Commission (ACCC) provides a useful summary of the issues:

> Generation-transmission and retail-transmission mergers can give rise to significant competition concerns. When the owner of essential infrastructure also participates in a contestable market it typically has the ability and the economic incentive to restrict the level of competition in the contestable market in ways that are difficult to police and prevent. It has the ability to harm competition by restricting access to the essential facility by raising the price, lowering the quality and quantity of service provided or reducing the timeliness of the services it provides, relative to the services the integrated firm provides to its own affiliate. These problems are widely acknowledged.[19]

The ACCC also outlines why the undesirable conduct of an integrated TNSP is likely to be exercised:

> Such conduct is likely to occur within the electricity industry because:
>
> - Regulatory regimes were set up on the basis of structural separation. Rules to counter problems which may arise where an integrated monopolist uses market power did not form part of the focus of the governing legislation.
> - Generally there are considerable difficulties associated with stopping a monopolist using vertical integration to evade regulatory disciplines, especially when the regulator depends on information provided by the regulated entity.

[16] ACCC *Submission to the Productivity Commission Review of National Competition Policy Arrangements*, 13 July 2004 p32
[17] ACCC *Submission to the Productivity Commission Review of National Competition Policy Arrangements*, 13 July 2004 p32
[18] Productivity Commission 'Review of National Competition Policy Reforms' *Productivity Commission Inquiry Report No .33 28 February 2005* pp190,193
[19] ACCC *Submission to the Productivity Commission Review of National Competition Policy Arrangements*, 13 July 2004 p34

- Network service monopolists' revenues are capped (given the constraint on profits placed by regulatory revenue caps set under the National Electricity Code) and this creates incentives to capture monopoly rents foregone through engaging in price and non-price discrimination.[20]

Discussions of structural re-integration have generated additional debate. Varying opinions exist as to whether the CCA could effectively prevent all forms of co-ownership in the Australian electricity market where competition concerns are identified.

2.3. Effectiveness of the CCA in regulating electricity vertical integration

Proposed Australian mergers or company acquisitions are often analysed by the ACCC for competition issues under Section 50 of the CCA.[21] Section 50 (under Part IV of the CCA) prohibits acquisitions that would have the effect, or likely effect, of substantially lessening competition in a substantial market in an Australian state or territory.

Previously, the ACCC has argued strongly for the development of specific provisions to deal with generation-transmission electricity mergers. There have been some market participants and interest groups in agreement with this sentiment. However, there are also staunch supporters of the CCA who believe the legislation can adequately deal with all electricity merger proposals.[22]

In 2006 the Energy Reform Implementation Group (ERIG) commissioned Acacia CRE Pty Ltd (Acacia CRE) to provide advice on structural issues that may affect the ongoing competitiveness and efficiency of the NEM, particularly with respect to the effectiveness of the TPA (noting that this has subsequently been superseded by the CCA).

The November 2006 Acacia CRE Report concluded that the TPA was effective. In drawing its conclusion, Acacia CRE referenced a July 2006 ERIG Issues Paper regarding reforms to the NEM.[23] The ERIG Issues Paper requested that stakeholders provide feedback on whether there were any potential limitations to section 50 of the TPA in terms of providing adequate protection against energy sector mergers which may lessen competition substantially.

In summarising stakeholder submission to the ERIG Issues Paper, Acacia CRE noted:

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[20] ACCC *Submission to the Productivity Commission Discussion draft: National Competition Policy Reforms*, 10 December 2004 p14

[21] There are several means by which the ACCC can undertake a competition assessment under s50 of the TPA. These include an informal assessment or formal clearance from the ACCC, or an assessment by the Australian Competition Tribunal. A company is not obligated to advise the ACCC of its intentions to merge or acquire another business, however a failure to do so may result in the ACCC investigating the merger or acquisition after it takes place, and taking legal action where a substantially lessening of competition case can be made. See the Mergers guidelines the Mergers Guidelines 2008 on the ACCC's website

[22] Acacia CRE report to the Energy Reform Implementation Group, *The Effectiveness of the Trade Practices Act to Guide Mergers in the Australian Electricity Market*, 22 November 2006 – see page 15 for supporters of electricity specific provisions. The report also discusses why others believe the TPA is adequate.

[23] Acacia CRE report to the Energy Reform Implementation Group, *The Effectiveness of the Trade Practices Act to Guide Mergers in the Australian Electricity Market*, 22 November 2006, p14

> The majority of views presented in submissions to ERIG Issues Paper argued that section 50 of the TPA, as is, are effective, to the extent that it is possible to gather evidence and demonstrate the presence of market power and the likelihood that a merger will result in a substantial lessening of competition. The provisions of section 50 are sufficiently broad that it can address all possible in-principle sources of a substantial lessening of competition, across all types of horizontal and vertical electricity industry mergers.[24]

Further:

> None of the submissions to ERIG Issues Paper provided a substantive case for specific changes to section 50 or to any other part of the TPA to improve its effectiveness in protecting against anti-competitive electricity industry mergers. The changes that have been suggested generally involve implementing restrictions on energy industry mergers in addition to the existing TPA provisions and processes.[25]

As section 50 of the TPA is contained in the CCA, this finding is also relevant for this consultation RIS process.

Conversely, in submissions to the Productivity Commission's competition review of 2005, the ACCC presented several arguments for the development of electricity-specific provisions. These focused on the prevention of generation and transmission business co-ownership.

> Section 50 is not designed to promote competition in markets that aren't already competitive. Section 50 is designed to protect competition in contestable markets that are already effectively competitive. We think this is a problem with electricity in some areas, where we don't think competition in electricity generation is effectively competitive.[26]

Further:

> Problems of a 'regulatory evasion' nature, which are consequent on the existence of information asymmetries, are unlikely to be fully captured in the substantial lessening of competition test in section 50. [27]
>
> The Commission strongly agrees that re-aggregation between transmission and generation is undesirable. The Commission believes that there are very few if any benefits and significant competition risks.[28]

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[24] Acacia CRE report to the Energy Reform Implementation Group, *The Effectiveness of the Trade Practices Act to Guide Mergers in the Australian Electricity Market*, 22 November 2006, p14

[25] Acacia CRE report to the Energy Reform Implementation Group, *The Effectiveness of the Trade Practices Act to Guide Mergers in the Australian Electricity Market*, 22 November 2006, p15

[26] Transcript of Ed Willett, ACCC Commissioner, to Productivity Commission 'Review of National Competition Policy Reforms' *Productivity Commission Inquiry Report No .33 28 February 2005* Transcript of Proceedings, Canberra 13 December 2004, p 265.

[27] ACCC/AER submission *Energy Reform Implementation Group Response to Issues Paper,* August 2006 p 17.
http://www.aer.gov.au/content/item.phtml?itemId=708279&nodeId=5703c07e280a839b28cf60f7f73f5234&fn=AER-ACCC%20submission%20to%20ERIG%20Issues%20paper%20(Aug%202006).pdf

[28] ACCC submission to the Productivity Commission *Review of National Competition Policy Reforms,,* 'Comments on electricity market structure issues', p1.

Section 50(3) of the CCA provides guidance to the ACCC on the issues they must consider in making a merger assessment. The section expressly notes, however, that the list is non-exhaustive. At first glance, this may suggest there are no difficulties regarding the ACCC's ability to consider other competition issues as they relate to electricity. Nonetheless, the ACCC is most significantly concerned that it will not be able to convince a court of the gravity of those concerns.

In its 2006 Report Acacia CRE sums up these concerns:

> To the extent that they exist, the limitations of the TPA lie with the difficulties faced by the ACCC (and, to a lesser extent, affected third parties) when trying to gather and consolidate sufficient evidence to support opposition to proposed mergers that *prima facie* are expected to result in a substantial lessening of competition. This may be, in part, related to future concerns and intent that are not observable *ex ante*.[29]

In circumstances where the ACCC believes the merger would contravene section 50 of the CCA and the merger parties take the decision to Court:

> The ACCC has to substantiate its concerns in court, but needs to somehow establish a case against the merger that is, by definition, based more on suspicion than evidence based on past outcomes.[30]
>
> Consequently, the real concern with the effectiveness of the TPA merger processes to guide the development of the electricity industry lies with the ACCC's ability to gather evidence (such as opinions from industry experts and supporting market data and analysis) to establish convincing cases. This point has been acknowledged by the ACCC.[31]

The strongest example of these challenges was seen in the appeals case *AGL v ACCC* (2003)[32]. Here, the ACCC failed to substantiate that the acquisition of generation shares by AGL of Loy Yang in Victoria would have led to the substantial lessening of competition. This case highlighted several difficulties the ACCC may face in convincing a court of a poor competitive outcome largely based on economic theory. In his judgement over the case, presiding Justice French said:

> In my opinion, having regard to the statutory context provided by the other section of Pt IV the correct construction is that 'likely' refers to a significant finite probability or "a real chance" rather than 'more probable than not'. … The meaning of 'likely' reflecting a 'real chance or possibility' does not encompass a mere possibility. The word can offer no quantitative guidance but requires a qualitative judgment about the effects of an acquisition or proposed acquisition.

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[29] Acacia CRE consultancy *The Effectiveness of the Trade Practices Act to guide mergers in the Australian Electricity Market* prepared for Energy Reform Implementation Group 22 November 2006, p 16.

[30] Acacia CRE consultancy T*he Effectiveness of the Trade Practices Act to Guide Mergers in the Australian Electricity Market* prepared for Energy Reform Implementation Group, 22 November 2006 p 16.

[31] Acacia CRE consultancy *The Effectiveness of the Trade Practices Act to Guide Mergers in the Australian Electricity Market* prepared for Energy Reform Implementation Group, 22 November 2006, pp 16-17.

[32] Acacia CRE consultancy *The effectiveness of the Trade Practices Act to guide mergers in the Australian Electricity Market* prepared for Energy Reform Implementation Group, 22 November 2006, p 14.

> *The judgment it requires must not set the bar so high as effectively to expose acquiring corporations to a finding of contravention simply on the basis of possibilities, however plausible they may seem, generated by economic theory alone. On the other hand it must not set the bar so low as effectively to allow all acquisitions to proceed save those with the most obvious, direct and dramatic effects upon competition. By the language it adopts and the function thereby cast upon the Court and the regulator in their consideration of acquisitions s 50 gives effect to a kind of competition risk management policy. The application of that policy, reflected in judgments about the application of the section, must operate in the real world. The assessment of the risk or real chance of a substantial lessening of competition cannot rest upon speculation or theory***.**[33] [emphasis added]

Another major outcome of this case was the significance of the definition of '*the market*'[34]. ACCC had argued that the regions of the NEM constituted separate markets for a competition assessment, due to interconnector constraints that at times creates island regions within the NEM. Justice French, though, found the NEM in this case to constitute a single market:

> The geographic market is not to be determined by a view frozen in time or by observations based on short-run time scales. The NEM is an evolving market which is intended and designed to operate as a single market for electricity throughout the regions which it covers. Transient price separations between those regions may define temporally limited sub-markets which can be referred to for the purposes of competition analysis. And they may well attract the appellation 'market' in the ordinary parlance of suppliers and retailers operating within them. In my opinion, however, having regard to the structure of the market and the extent to which its major participants operate across regional boundaries, I am satisfied that there is one NEM-wide geographic market for the supply of electricity, and associated with that, entry into electricity derivative contracts.[35]

The scope of what is considered to be 'the market' on a case-specific basis has significant implications for an electricity competition assessment.[36] Despite Justice French's reference to the evolving nature of the NEM, *AGL v ACCC* may set a precedent for the market definition of the NEM. In turn, this suggests that the ACCC may find it difficult to establish a competition case involving electricity, due to the assessment of lower market concentration if the market is defined as the NEM.[37]

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[33] AGL v ACCC (No 3) [2003] FCA 1525; (2003) 137 FCR 317 [PDF]; ATPR 41-966

[34] CCA s 50(4) defines market to mean, for the purposes of s 50, a substantial market for goods or services in (a) Australia; or (b) a state; or (c) a Territory; or (d) a region of Australia.

[35] AGL v ACCC (No 3) [2003] FCA 1525 19 December 2003, paragraph 387 – downloaded from http://www.austlii.edu.au/cgi-bin/sinodisp/au/cases/cth/FCA/2003/1525.html?stem=0&synonyms=0&query=title(Australian%20Gas%20Light%20and%20Australian%20Competition%20and%20Consumer%20)

[36] ACCC *Submission to the Productivity Commission Review of National Competition Policy Arrangements*, 13 July 2004, p 33.

[37] Acacia consulting touches on this issue, but does not believe the market definition from AGL v ACCC must necessarily bind the decision of the Court in other cases. Pp19-20

2.3.1. Section 46 of the CCA: misuse of market power test

Section 46 of the CCA may provide the ACCC with some recourse if a generation-transmission merger proceeded and was found to result in a misuse of market power[38]. Put simply, the tests for misuse of market power requires three questions to be answered.[39]

1) Does the company have substantial market power?

2) Is the company taking advantage of that power?

3) Is the company using that power for an illegal purpose? This is defined as:

- eliminating or substantially damaging a competitor;
- preventing the entry of a person into that or any other market; or
- deterring or preventing a person from engaging in competitive conduct in any market

However, there are still some difficulties with the ACCC using section 46 following a generator and transmission merger. Firstly, the onus of proof would be on the ACCC to monitor behaviour and gather sufficient evidence for a breach.[40] This in itself may be problematic, as there may be difficulties in detecting the market power due to regulatory evasion:

> Even if the pricing of transactions were perfectly monitored, levels and quality of service (for example the maintenance of transmission lines) may not be. Difficulties associated with stopping a monopolist using vertical integration to evade regulatory disciplines appear considerable, particularly in industries in which the regulator is dependent on information provided by the regulated entity. This tends to be the case in most utilities.[41]

Also, section 46 'would not remedy the problems that arise if the merged entity did not abuse its market power, but became inefficient in ways not easily addressed by market processes…such as gold plating or other excess costs.'[42]

[38] Acacia consulting p16
[39] From ACCC website http://www.accc.gov.au/content/index.phtml/itemId/816380
[40] Acacia consulting p16
[41] Frontier Economics *Assessing generation-transmission mergers in the NEM*, report prepared for ACCC, August 2004, pp 10-11.
[42] Acacia consulting p16

It is unclear whether the CCA would enable the ACCC to successfully block generation and transmission mergers that raise competition concerns. Difficulties in proving 'likely' harm before a court may erode this ability. Electricity markets have unique competition issues due to the nature of their operation and market power following integration may be difficult to detect.

Stakeholders are asked to comment on whether they believe the current CCA provisions are likely to be sufficient in preventing potential market harm resulting from co-ownership of transmission and generation businesses. In considering this, stakeholders are to note that the CAA is intended to be of general application to the economy including to those sectors that claim unique competition issues.

COAG's 2006 Review of National Competition Principles[43] considered Australian governments' achievements with respect to competition reforms. The Review also recommended both a recommitment to the Competition Principles Agreement and further energy reforms, including:

- improving demand price signals for energy consumers and investors;
- ensuring the transmission system supports an efficient national electricity market; and
- fostering energy market structures that promote competition.[44]

On 10 February 2006, COAG agreed to recommit to the Principles contained in the Competition Principles Agreement (Decision 1.1). In addition, Decision 2.4 explicitly committed COAG to continued market structures reform to enable competition.[45]

The Decision stated:

> Governments reaffirmed their commitment to implement national energy market structures that foster competition by:
>
> (a) endorsing the ongoing structural separation of the competitive generation and retailing activities from the natural monopoly transmission functions in the National Energy Market to protect and promote the benefits of competition;
>
> (b) requesting the MCE to develop specific recommendations under the National Electricity Law to maintain such separation of generation and transmission activities in a form that complements the provisions of the [CCA] that prohibit the substantial lessening of competition;
>
> (c) considering the operation, and structure, of government-owned businesses with a view to ensuring there is equivalence between government-owned and private sector businesses in terms of the policy, legal and market arrangements under which they operate; and

[43] The COAG review built on the findings of the Productivity Commission's Review (which COAG had commissioned)
[44] COAG Background Paper: *COAG National Competition Policy Review*, February 2006, p 2.
[45] COAG meeting – 10 February 2006 Communique Attachment B pp 1-3

(d) removing any barriers to the evolution of fully efficient financial markets affecting energy by:

a. fostering transparent and effective financial markets to support energy markets; and

b. committing to maintain and increase reliance on market-based risk mitigation and hedging measures, and to remove barriers to full retail competition.

3. Problem Definition and Size

3.1. Likelihood of the problem arising

As previously noted in this RIS, it is not possible to predict whether vertical integration between generation and transmission businesses will be pursued in the future.

Additionally, the Transmission Frameworks Review (currently underway) will examine issues surrounding how transmission networks serve the needs of generation businesses. It will also consider whether improvements could be made to the current arrangements.

The Transmission Frameworks Review is not expected to specifically address issues surrounding transmission and generation co-ownership. It is possible, however, that any related changes to the market framework could have some bearing on market power issues associated with future co-ownership.

The Review of Enforcement Regimes will look into penalty arrangements. This may result in strengthening the penalty arrangements, which may limit the likelihood of co-owned businesses exercising market power.

3.2. Ability to game the market under co-ownership

Notwithstanding the above points, serious competition issues could arise in the advent of future co-ownership in the NEM. This section provides a comprehensive discussion on these potential problems, including the ability and incentives to game the market for a business following vertical integration.

3.3. Analysis of potential market power abuse concerns and review of current arrangements

This section examines specific market power concerns which may result from a generation-transmission business co-ownership. Here, the RIS assumes that:

1. section 50 of the CCA did not prevent the co-ownership; and
2. the co-ownership is between a generator and a regulated TNSP or interconnector (both connected in the NEM) and the generator is not distributed (i.e. it is connected to the transmission network).

This assessment is hypothetical and does not refer to any actual co-ownership currently in the NEM.

This section includes:

- a description of each ‘form’ of market power that could be exhibited by either a TNSP or a generator under a co-ownership arrangement. This is distinct from generator market power that may exist currently in the NEM in the absence of co-ownership. These forms are presented as ‘issues’ for ease of discussion;
- a ‘likelihood of occurrence’ section that provides an assessment of whether the market power would be likely to be exercised, given the provisions currently available to prevent the behaviour. An estimation of the potential size of the reward to a co-owned generator/transmission business for carrying out that behaviour is also provided. For example, a market power opportunity for an

integrated business with a perceived high reward and low penalty would be defined as 'high' likelihood;

- 'Significance of the Issue', which outlines an assessment of the potential impact of market power (as a result of co-ownership) on the NEM. This is based on whether the competition or financial detriment to the NEM (or its participants) would reasonably be expected to be significant or not;
- an examination of the provisions currently available through the National Electricity Rules (the Rules) and the National Electricity Law (NEL) which may address, limit or prevent the market power concern to some degree; and
- an assessment of whether those provisions would reasonably be expected to actually address, limit or prevent the market power concern to any great extent. This is based on the size of the penalty and the ease of a regulator to detect the market power concern.

The rankings of 'likelihood' and 'significance' in this section are estimates only. These have been based on an assessment of how the potential impact of market power may be experienced in the NEM. Given that little co-ownership currently exists in the NEM, the rankings do not reflect actual experience. The real economic impacts of generation and transmission co-ownership in the NEM would be determined by the way the integrated business operated. This section attempts, however, to recognise the opportunities for such a business to exercise market power in order to increase combined profits and reduce generator competition.

Stakeholders are asked to comment on whether they agree with the assessment of likelihood and significance for each of the market power concerns.

These rankings will be taken into consideration to determine what, if any, regulatory action should be undertaken to protect the market from harm in the advent of generation and transmission co-ownership in the future.

3.4. Discussion of Key Issues

Six issues are covered in this section. These are:

1. reduction in transmission service quality and connection for competing generators;
2. investment and maintenance decisions (such as planned and unplanned outages) made in favour of the co-owned generator;
3. sharing of commercially sensitive information between the co-owned businesses in order to improve the affiliate generator's bidding or re-bidding strategies to maximise profits;
4. the TNSP could change short-term current ratings to assist a co-owned generator to take advantage of demand and supply balances. The co-owned generator may enjoy such advantage through bidding or re-bidding opportunities amongst other channels;
5. transferring costs incurred by a co-owned generator into the co-owned TNSP's regulated asset base; and

6. perceived loss of market integrity by market participants.

Issue 1: Reduction in transmission service quality and connection for competing generators.[46]

Likelihood of occurrence: high

Significance of the issue: high

The transmission network is critical to delivering competition amongst generators. A generator typically has no alternative to connection with its regional TNSP because bypass is too costly.

Description:

A co-owned TNSP has a strong incentive to improve the profitability of the integrated firm by assisting its affiliate generator to be dispatched more regularly and/or at higher prices. The TNSP may also reduce the ability of other generators to compete. It has the opportunity to reduce the ability of competing generators to supply the market by:

- imposing upon competing generators terms and conditions for transmission service access, including delaying or restricting connection; or
- reducing quality or reliability of transmission services for competing generators (e.g. through sustained congestion or network outages).

Current provisions which limit the market power concern:

- NER 3.7.2(e) – Network service providers must provide AEMO with an outline of planned network outages as required by the MT PASA. Civil penalties apply under the Rules for non-compliance.
- NER 4.15 – A Registered Participant must ensure that its plant complies with (meets or exceeds) the performance standard applicable to its plant.
- NER 4.16 – Prescribed minimum access and performance standards and network performance requirements.
- NER 5.2.3 – Obligations of network service providers:
  - 5.2.3(d)(7) – Advise any market participant with a connection agreement upon request of any expected interruption characteristics at a connection point or on the network
  - 5.2.3(e1) – A Network Service Provider must arrange to perform management, maintenance and operation in accordance with the connection agreement (including to agreed capability at a connection point).
- NER 5.3 – A TNSP must respond to a connection enquiry within a prescribed timeline.

[46] See Frontier Economics *Assessing generation-transmission mergers in the NEM* report prepared for the ACCC, August 2004, p 17; Australian Competition and Consumer Commission (ACCC) *Submission to the Productivity Commission Review of National Competition Policy Arrangements*, 13 July 2004 p34; *OECD Report on experiences with structural separation*, Competition Committee, 7 June 2006 p 10.

- NER 5.3.8 – Provision and use of data by a TNSP as a result of the connection enquiry and application process must be treated confidentially.
- NER 5.4A – Access arrangements relating to transmission networks require a TNSP to negotiate 'in good faith' with a Connection Applicant when responding to a connection enquiry, application or subsequent connection agreement.
- NER Schedule 5.1 – A network service provider must fully describe the quality and quantity of network services which it agrees to provide under a connection agreement, as well as the transmission (or distribution) system as a whole.
- NER6A.1.3 – Obligation for TNSP to provide prescribed or negotiated transmission services as required under Chapters 4, 5 and 6A. The TNSP must not engage in conduct for the purpose of preventing or hindering access to those services (relates to Part IIIA of the CCA).
- NER 6A.7.4 – Transmission Performance Incentive Scheme: rewards or penalises a TNSP based on a comparison of current service performance compared with historical based target. The service performance component is worth +/-1% of the maximum revenue allowance.
- NER 6A.30 – A connection applicant may dispute the terms and conditions of access offered by a TNSP. A commercial arbitrator can be appointed to make a binding determination regarding the terms and conditions to be implemented. A breach of this determination will be treated by the AER as a breach of the Rules actionable under the NEL.
- National Electricity Law section 157 – A regulated network service provider or party who seeks or has an agreement with a regulated NSP must not engage in conduct for the purpose of preventing or hindering the access of another party.

Effectiveness of provisions

The provisions prevent a TNSP from refusing to connect a competing generator. There are, however, limitations to the likely effectiveness of the Rules in preventing a co-owned transmission business from subtle forms of discrimination against competing generators. These limitations include:

- The negotiating provisions and access arrangements as referred to in NER 5.4A leave a TNSP with a high degree of discretion. Terms such as 'good faith' and 'reasonable' or 'best endeavours' could be used to benefit affiliate generators.
- A TNSP retains the ability to deliberately delay connection with competing generators for as long as possible within prescribed time frames (where they exist). The TNSP can also reduce reliability and service quality while increasing outages to competing generators once connected. Of these provisions, only a failure to meet the disclosure required under the MT PASA attracts a civil penalty.
- Subtle reductions in the service provided to competing generators may be hard to detect by the AER.[47]

[47] OECD *Report on experiences with structural separation*, Competition Committee, 7 June 2006, p 11.

The provisions may not effectively target the potential for transmission businesses to manage the operation of their network so as to discriminate against existing connected generators in order to benefit co-owned generators. For example, transmission networks could use network operations to cause congestion and prevent independent generators from being dispatched in the NEM, thus favouring their co-owned generation business.

Issue 2: Investment and maintenance decisions (such as planned and unplanned outages) made in favour of the co-owned generator.[48]

Likelihood of occurrence: moderate

Significance of the issue: high

Congestion is a short to medium-term problem and can be created or exacerbated by a TNSP's investment and maintenance decisions. Congestion reduces the ability of constrained generators to compete in the NEM. This in turn may lead to higher wholesale prices if lower cost generation is displaced by high cost generation.

Congestion can also create opportunities for the exercise of market power. If a network constraint prevents low cost generators from moving electricity to customers, there is less competition in the market. Subsequently, the remaining generators can adjust their bidding to capitalise on their position, increasing the likelihood of inflated electricity prices[49]. This could be exacerbated in co-ownership situations where a TNSP could benefit their own generator by 'enabling' congestion. Such enablement would assist the generator to implement more profitable bidding strategies.

Without effective separation of networks from activities of generation and supply (effective unbundling), there is an inherent risk of discrimination not only in the operation of the network but also in the incentives for vertically integrated undertakings to invest adequately in their networks'.[50]

Description:

Some congestion is caused by factors within the control of network service providers. These include:

- scheduling of outages
- maintenance and operating procedures
- standards for network capability (such as thermal, voltage and stability limits)
- changes in its network monitoring procedures and decisions regarding equipment upgrades[51].

A co-owned TNSP has the incentive to increase congestion where it is likely to have:

- a positive impact on its affiliated generator (through higher prices)

  or

[48] See Frontier Economics *Assessing generation-transmission mergers in the NEM*, report prepared for the ACCC, August 2004, p 17; Australian Competition and Consumer Commission (ACCC) *Submission to the Productivity Commission Review of National Competition Policy Arrangements*, 13 July 2004, p 34.

[49] AER *State of the Energy Market 2009*, p 142.

[50] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009, paragraph 9

[51] Australian Energy Regulator *State of the Energy Market* 2009, p 140.

- a negative impact on the generator's competitors (such as being constrained).

A TNSP may even allow congestion in several areas if it would influence the overall level of wholesale price volatility to benefit the co-owned generator. An efficient level of congestion exists where the costs to the market for building out the congestion with new network assets outweighs the benefit[52]. In this case, a co-owned TNSP could create or perpetuate congestion where there was a positive net benefit to the NEM of removing the congestion and where it served the interests of the co-owned generator[53].

TNSPs have a large degree of autonomy regarding their own investment decisions, so long as they meet reliability standards and the AER's approval for investments.

Current provisions which limit the market power concern:

- NER 3.7.2(e) – Network service providers must provide AEMO with an outline of planned network outages as required by the MT PASA. Civil penalties apply under the NER for non-compliance.
- NER 3.13.3(f) – Network service providers must provide AEMO with expected network capability and operating procedures and practices for network operation and maintenance.
- NER 3.13.3(h)(i) – Network service providers must notify AEMO of any changes or additions to technical data one month prior to the implementation of planned changes and without unreasonable delay for unplanned changes. This clause is a civil penalty provision under the NEL.
- NER 5.6.4 – Under the Last Resort Planning Function, the AEMC can require a TNSP to consider interconnector investment under the Regulatory Investment Test for Transmission (RIT-T).
- NER 5.6.5 – TNSPs must undertake an RIT-T for transmission investments above $5 million in order to identify the credible investment option that will maximise the value of net economic benefits to the market
- NER 6A.7.4 – Transmission Performance Incentive Scheme: market impact of transmission congestion component. Rewards TNSPs with an annual bonus of up to 2% of its maximum allowed revenue for improving operating practices in areas such as outage timing and notification, live line work and equipment monitoring, with the goal of eliminating all outage events with a market impact greater than $10 per megawatt hour.

Effectiveness of provisions

The provisions require TNSPs to report known outages and scheduled maintenance to AEMO. There is, however, substantial discretion as to when and how TNSPs implement outages, and unscheduled maintenance is, by its nature, not reported in advance.

[52] The AEMC has produced a Congestion Management Review which concludes that there is an efficient level of congestion http://www.aemc.gov.au/Market-Reviews/Completed/Congestion-Management-Review.html - see the final report

[53] The AEMC's *Congestion Management Review* examines the change in bidding behaviour for a generator positively or negatively impacted by congestion, which is referred to as 'mis-pricing'. Such opportunities to bid at prices not reflective of short run marginal costs may increase with the co-ownership of generation and transmission in the NEM, depending on the location of the congestion.

The performance incentive scheme would encourage TNSPs to reduce the market cost of their line outages and maintenance. In the case of a co-owned TNSP, though, the incentive for reducing congestion may be less than the benefit to its affiliated generator if congestion was continued or enabled.

Issue 3: Sharing of commercially sensitive information between the co-owned businesses in order to improve the affiliate generator's bidding or re-bidding strategies to maximise profits. Relevant information could include:

- operations of competing generators obtained by the TNSP; or
- the operations or intentions of the co-owned businesses (such as intended network outages or bidding/rebidding intentions of the generator).[54]

Likelihood of occurrence: moderate

Significance of the issue: high

A co-owned generator could receive a significant advantage compared to its competitors depending on the nature of information provided by the co-owned TNSP or shared between the affiliates.

Higher wholesale prices as a result of more effective bidding by the co-owned generator could flow through to higher retail prices for consumers.[55] In addition, actions by the co-owned TNSP and generator to reduce competing generators' ability to supply while simultaneously increasing the spot price could create financial difficulties for competing generators which have financial market obligations and are not able to supply the market (either for technical reasons or due to the deliberate actions of the co-owned TNSP in limiting transmission access to that generator).

Description:

A transmission and generation business co-ownership would have incentives to share information obtained through their own operations. Under rule 5.2.5(b)(3), a generator must provide load forecast information to the relevant network service provider. A co-owned TNSP could share this information regarding competing generators to improve the affiliated generator's bidding or rebidding decisions. The TNSP could also share information regarding the technical capabilities and connection service agreements of competing generators. The TNSP could further provide more accurate information regarding network limits, ratings methodologies, stability and transient limits. The co-owned generator may inform the TNSP of its bidding intentions, which could be used by the TNSP to plan maintenance or network outages.

Improved bidding strategies could increase wholesale prices as a result of the co-owned generator withholding capacity during periods of high demand. Alternatively, the co-owned TNSP could reduce the ability of competing generators to supply the grid. Through service reductions as a result of outages, line rating decisions and maintenance, the TNSP could enable its affiliate generator to bid at higher prices (if it previously knew the TNSP's intentions) or re-bid larger quantities at higher prices.

[54] See Frontier Economics *Assessing generation-transmission mergers in the NEM: Report prepared for the ACCC*, August 2004, p 17.
[55] Note that retail prices are typically fixed in the short term but pass through average wholesale prices (to varying degrees) in the long term.

Better knowledge of line ratings, thermal limits, planned and unplanned outages would provide a significant advantage to the co-owned generator in portfolio-maximising bidding strategies.

Current provisions which limit the market power concern:

- NER 5.3.8 – Provision and use of data by a TNSP as a result of the connection enquiry and application process (under Rule 5.3) must be treated confidentially.
- NER 6A.21 – Ring fencing provisions for transmission businesses:
  - Transmission ring fencing guidelines 7.1– A TNSP that provides a ring fenced service (or 'prescribed service' – which is a transmission service for which a revenue cap applies) may not carry on a related business (generation, distribution or retail) unless the related business attracts revenue of no more than 5 per cent of the TNSP's total annual revenue.
  - Transmission ring fencing guidelines 7.2(b) – A TNSP that provides ring-fenced services must not make decisions or act in a manner that discriminates in favour of an associate in relation to the terms or conditions on which those services are provided.
  - Transmission ring fencing guidelines 7.6 – A TNSP that provides ring-fenced services must ensure that preferential treatment is not given to an associate that takes part in a related business through sharing of operational activities or information not available to any other party.
  - Transmission ring fencing guidelines 11 – The AER can waive the obligation to undertake ring fencing (as required under clause 7) if it is satisfied that the benefit, or likely benefit, to the public is outweighed by the administrative cost to the TNSP and its associates of complying with the obligation. The AER may impose additional obligations on the TNSP if it decides to waive the ring fencing obligations under clause 7.
- The sharing of information may trip insider trading provisions under the *Corporations Act 2001* (Cth) if derivatives are traded on the basis of the information and this is not announced publicly.
- The misuse of market power for the purposes of reducing competition may trip provisions under the CCA, such as section 46.

Current provisions to limit the generator's ability to change its bidding strategy:

- NER 3.8.22A(a) requires a generator to 'act in good faith' when providing offers to bid and re-bid. The generator must be able to provide a verifiable justification with a bid and rebid offer under NER 3.8.22(c)(3).
  - Civil penalty provisions apply to these clauses. Clause 3.8.22A attracts a penalty for a corporation of $1 million plus $50,000 for every day the breach continues. Penalties for a corporation that breaches 3.8.22C are $100,000 plus $10,000 for every day the breach continues.

Effectiveness of provisions

There are concerns that the ring-fencing guidelines are not enforceable in their current form and may need to be placed in legislation in order to be enforceable. Of particular concern is the level of ability the AER has to prevent co-ownership above a threshold income level.

No civil penalty provisions apply to either a breach of the transmission ring fencing provisions or sharing of confidential information under Rule 5.3.8. Therefore, the actions available to the AER for a breach of the rule may not be enough to prevent a co-owned TNSP from acting outside of its ring fencing and information sharing obligations. An exception to this may be an injunction order made by a Court preventing the sharing of confidential information. Heftier penalties would apply under the Corporations Act for insider trading or the CCA for anti-competitive conduct, if it were proven that those provisions were breached.

It would be hard to monitor TNSPs for strict compliance with these Rules and laws.

With regards to a co-owned generator's bidding strategies, the AER has experienced considerable difficulty in obtaining sufficient evidence to prosecute a breach of good faith.

The current penalties may not act as a sufficient deterrent against market power, particularly if significant financial gains can be made by undertaking strategic bidding or rebidding.

Issue 4: The TNSP could change short-term current ratings to assist a co-owned generator to take advantage of demand and supply balances. The co-owned generator may enjoy such advantage through bidding or re-bidding opportunities amongst other channels.[56]

Likelihood of occurrence: moderate

Significance of the issue: moderate

Access to transmission services is critical in delivering competition amongst generators. Frequent changing of line ratings by a co-owned TNSP, however, may be unlikely.

Description:

A co-owned TNSP may temporarily decrease the rating of a transmission line in an area with many competing generators to reduce their ability to supply electricity to the grid, which could assist the co-owned generator to dispatch a larger capacity or receive a higher spot price.

Current provisions which limit the market power concern:

- NER s5.1.12 – NSPs must advise AEMO of the maximum current that may be able to flow (under conditions nominated by AEMO) through each transmission line that forms part of its transmission system.

[56] See Australian Competition and Consumer Commission (ACCC) *Submission to the Productivity Commission Review of National Competition Policy Arrangements,* 13 July 2004, p 34; Frontier Economics *Assessing generation-transmission mergers in the NEM* report prepared for the ACCC August 2004, p 17.

- A TNSP is entitled to advise AEMO of short-term current ratings which may apply for nominated periods of time to the relevant transmission line or item of equipment. This is provided that those ratings do not materially affect the safety of the transmission line, equipment or persons.
- Short-term ratings for transmission lines or items of equipment may be implemented by a methodology or algorithm in a format agreed with AEMO.

Effectiveness of provisions

An agreed methodology for determining line ratings was discussed but does not appear to have been implemented. Discussions followed a progress report made by the Transmission Line Working Group to the ACCC Service Standards Working Group in 2004. These discussions centred on development of an agreed transmission line operation ratings methodology to be implemented by all TNSPs.

AEMO does not have sufficient knowledge or resources to assess the legitimacy of a TNSP's line rating decisions due to the complexity of each transmission network. It could, therefore, be difficult to monitor and prevent discriminatory line rating decisions.

Issue 5: Transferring costs incurred by a co-owned generator into the co-owned TNSP's regulated asset base.[57]

Likelihood of occurrence: low

Significance of the issue: moderate

There are incentives for the TNSP to include costs associated with the co-owned generator in its Regulated Asset Base (RAB). It would, however, be difficult to apportion large generator-related costs without raising the suspicion of the AER.

Description:

The accounting for costs incurred by a co-owned generator could be included in the TNSP's regulated asset base if it was not easily detected by the AER. The co-owned generator would improve its profits by the size of the allocation.

Ambiguous costs such as maintenance may be most likely to be transferred to the RAB. This is because such costs would presumably be more difficult to trace to either business compared to asset purchases.

Current provisions which limit the market power concern:

- NER 6A.21 – Ring fencing for prescribed (regulated) transmission services requires a TNSP to maintain separate accounts for its ring-fenced activities and related businesses. A ring-fenced TNSP must provide certain financial statements and compliance reports to the AER. It must also ensure that each ring-fenced activity has a separate marketing team. The AER may waive ring-

[57] See Frontier Economics *Assessing generation-transmission mergers in the NEM* report prepared for the ACCC, August 2004, pp 10-11; *OECD Report on experiences with structural separation*, Competition Committee, 7 June 2006 p 10; OECD *Restructuring Public Utilities for Competition*, 2001 p 11.

fencing obligations if the benefit to the public is less than the costs for the TNSP to comply.

Effectiveness of provisions

Ring fencing provisions recognise the incentives of an integrated TNSP to smear or absorb the costs of related businesses in the RAB. Nonetheless, there may still be difficulties in monitoring true compliance with the ring-fencing provisions as the incentives to include costs associated with a contestable business within the RAB would remain.

Issue 6: Perceived loss of market integrity by market participants.[58]

Likelihood of occurrence: moderate

Could occur in the future if a generation-transmission co-ownership arrangement was established in the NEM. Likelihood would be increased if the only means to mitigate the market power concerns were the current NER provisions. These may be perceived as having weak enforcement or penalty provisions for dealing with co-ownership concerns.

Significance of the issue: high

It is possible that a future co-ownership between a TNSP and generator connected in the NEM will greatly concern competing generators. This is particularly due to the perception that the co-owned TNSP is likely to favour its own generator in the provision of its transmission service. Such sentiment could have a significant impact on the NEM. In fact, it may prevent future generation investment if generators are concerned that they will receive a poorer quality transmission service. It may also create contractual uncertainty in the electricity financial market, as a competing generator may not want to enter a hedging contract with a generator that is affiliated with a TNSP because the TNSP and generator might share commercial information that is not disclosed to counterparties or act in concert.

Frontier Economics has also identified the potential for a co-owned generation and transmission business to use available information to schedule transmission outages. The co-ownership would profit from inter-regional settlement residue auctions by purchasing residues at a low price (when interconnector outages are not scheduled) then subsequently changing the timing or duration of outages to increase the value of the residues. Such an occurrence could reduce confidence in the inter-regional settlement residues.[59]

Current provisions:

If the co-ownership is not prevented by a CCA assessment or if it is a greenfield investment, it is unlikely that generators will have confidence in current NER protection. Most generators will not consider the current NER as being able to prevent the co-owned TNSP from providing discriminatory service or creating market harm.

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[58] Hilmer, *National Competition Policy*, http://ncp.ncc.gov.au/docs/Hilmer-001.pdf p 219. Hilmer refers to the possibility of new generation being deterred by the presence of co-ownership, even if no market power is currently being exercised as a result of the ownership. Also, 'perceived risk' is discussed in OECD report *Restructuring Public Utilities for Competition*, 2001 Box 3 p36 "Affiliated transmission companies…may not be trusted by market participants even with elaborate protections… We believe that market participants are likely to suspect that the safeguards will be gamed. This, in turn, could affect investment behaviour'.

[59] Frontier Economics *Assessing generation-transmission mergers in the NEM*, August 2004.

Effectiveness of the provisions:

The current provisions available under the NER are unlikely to be effective at monitoring and correcting a breach of the rules with regard to market power concerns.

4. Separation of Generation and Transmission Options

4.1 International experiences of managing co-ownership issues for electricity markets

Internationally, there are several approaches to electricity transmission and generation separation. The table below outlines a summary of selected approaches together with their advantages and disadvantages.

Summary assessment of the pros and cons of the policies for promoting competition[60]

Policy	Advantages	Disadvantages
Access Regulation places access regime obligations upon monopoly transmission service to provide competing generation with access. NB: Australia currently has access regulation with respect to transmission services	Certain economies of scope are preserved while costly separation is avoided.	Requires active regulatory intervention. Regulator may not have sufficient information or instruments to overcome all forms of anticompetitive behaviour. Requirement to monitor and control service levels which is difficult to perfectly implement.
Ownership Separation involves disaggregation of transmission and generation co-ownership into independent businesses.	Eliminates incentives for discrimination and allows for lighter-handed regulation.	Potential loss of economies of scope. May require costly and arbitrary separation, though unlikely in the Australian context.
Operational separation involves an independent system operator managing daily operations of the TNSP. Co-ownership of TNSP and generation can remain where the TNSP owner cannot participate in market operations.	Removes ability of TNSP owner to exercise discrimination and anti-competitive behaviour over competing generators.	Possible that inefficiencies in TNSP operation would ensue as a result from separating the system operator from the profit incentive. Instead, profit incentive is retained by the owner and may otherwise result in greater customer responsiveness or dynamic solutions.
Accounting, functional	Easy to implement and	Ineffective at changing

[60] Based on OECD report *Restructuring public utilities for competition*, 2001, p 20 and other information within the report.

and corporate separation (ring-fencing) requires the co-owned business to maintain separate accounts for both TNSP and generation businesses. Separate operational activities into different business divisions (which could include separate management). Alternatively separate different operations of the business into different corporate entities, but maintain ownership by the same company.[61] NB: Australia currently has ring fencing provisions for transmission as referred to in the NER and contained in AER guidelines.	does not prohibit co-ownership where economic efficiencies can be gained.	the co-owned business' incentives to discriminate in favour of co-owned generator. May be unable to prevent regulatory evading techniques or discriminatory practices that are hard to monitor.

4.2 Specific international approaches to the separation of generation and transmission

United States

The US originally imposed functional separation of generation and transmission in the electricity market. The model imposed did not remove the incentive or ability of a co-owned business to exercise market power. In the face of mounting evidence of functional separation failure, the regulator eventually imposed more significant separation.[62]

Operational unbundling is now used in parts of the US to manage incentive problems associated with co-ownership. Under operational unbundling, an independent system operator is responsible for operating the transmission network to ensure open access and transparent pricing. Meanwhile, network ownership is retained by the original owner (who can also own and operate generation).[63]

The benefit of operational unbundling is effective removal of the ability for the co-owned TNSP to act anti-competitively. The disadvantage is that the independent

[61] Accounting separation is perceived to be weak at addressing market power concerns associated with generation and transmission co-ownership. It may, though, supplement other forms of separation such as access regulation (as accounting separation may provide information to confirm access pricing) – OECD report *Restructuring Public Utilities for Competition*, 2001 pp18-19.
[62] OECD report *Restructuring Public Utilities for Competition*, 2001 p 34.
[63] OECD report *Restructuring Public Utilities for Competition*, 2001 pp 15, 35-36; and OECD Competition Committee *Report on Experiences with Structural Separation*, June 7, 2006, p 32.

transmission operator may not operate as efficiently or be as responsive to customer needs as if they were owned and operated by the same party.[64]

European Union

In Europe, 'softer' approaches to separation of vertically integrated network and generation businesses have been unsuccessful at preventing transmission service discrimination. The European Parliament and European Council (EC) initially attempted more subtle introduction of competition within the electricity markets of Member States. This proving ineffective, the EC has introduced progressively stronger directives (excerpts below) to manage cross-ownership of generation and transmission. The most recent directive now requires ownership unbundling to be achieved by:

- splitting network businesses away from other supply businesses; or
- enforcing an independent system operator.

Directive 96/92/EC did not specifically require unbundling, but rather that:

- the [transmission] system operator shall not discriminate between system users or classes of system users, particularly in favour of its subsidiaries or shareholders (Article 7(5);
- unless the transmission system is already independent from generation and distribution activities, the system operator shall be independent at least in management terms from other activities not relating to the transmission system (Article 7(6);
- there is account ring-fencing (Article 14(4)); and
- there are rights for customers to obtain access where network capacity is available (Article 17).

Directive 2003/54/EC identified that tougher provisions were needed to reduce the risk of market dominance, predatory behaviour and non-discriminatory network tariffs publication before they are implemented.

According to the Directive:

> For competition to function, network access must be non-discriminatory, transparent and fairly priced.[65]
>
> In order to ensure efficient and non-discriminatory network access it is appropriate that the distribution and transmission systems are operated through legally separate entities where vertically integrated undertakings [sic: organisations] exist.
>
> It is necessary that the independence of the distribution system operators and the transmission system operators be guaranteed especially with regard to generation and supply interests.

In addition, the Directive **2003/54/EC**:

- does not require transmission assets to be separated except in terms of its legal form, organisation and decision making from other activities (Article 10(1));

[64] OECD report *Restructuring Public utilities for Competition*, 2001, p 15.
[65] Directive 2003/54/EC of the European Parliament and the Council of 26 June 2003 paragraph 6

- proscribes those persons responsible for the management of the transmission system operator from participating in company structures of the integrated electricity undertaking responsible, directly or indirectly, for the day-to-day operation of the generation, distribution and supply of electricity (Article 10 (2a)); and
- calls for account ring-fencing (Article 19).

Directive 2009/72/EC recognised that 'non-discriminatory access and an equally effective level of regulatory supervision in each Member State do not yet exist'.[66]

According to this directive:

> Without effective separation of networks from activities of generation and supply (effective unbundling), there is an inherent risk of discrimination not only in the operation of the network but also in the incentives for vertically integrated networks to invest adequately in their networks.[67]
>
> The rules on legal and functional unbundling as provided for in Directive 2003/54/EC have not, however, led to the effective unbundling of the transmission system operators. At its meeting on 8 and 9 March 2007, The European Council therefore invited the Commission to develop legislative proposals for the 'effective separation of supply and generation activities from network operations.[68]
>
> Only the removal of the incentive for vertically integrated undertakings to discriminate against competitors as regards network access and investment can ensure effective unbundling. Ownership unbundling, which implies the appointment of the network owner as the system operator and its independence from any supply and production interests, is clearly an effective and stable way to solve the inherent conflict of interests and to ensure security of supply.[69]
>
> Member States should be required to ensure that the same persons or person are not entitled to exercise control over a generation or supply undertaking, and at the same time, exercise control or any right over a transmission system operator or transmission system. (Paragraph 11)

In the advent of vertical integration between transmission and other supply:

> Member States should therefore be given a choice between ownership – unbundling [through direct divestiture or splitting up shares according to supply functions] and setting up a system operator or transmission operator which is independent form supply and generation interests. (Paragraphs 17-18)

United Kingdom

Licensing arrangements of transmission businesses in Great Britain require that offshore transmission owners shall not conduct any business or activity other than transmission. An exception applies where the activity does not exceed an annual turnover of more than 2.5 percent of the licensee's aggregate transmission business'

[66] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009, paragraph 4
[67] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009, paragraph 9
[68] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009, paragraph 10
[69] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009, paragraph 11

turnover and the share held by the licensee of any such investment is no more than 2.5 percent of the total shares of that investment.[70]

Australia – Victorian cross-ownership provisions

Victoria introduced its own cross-ownership provisions for the separation of generation and transmission in the 1990s. The impetus was to preserve, at least for a transitional period, the pro-competitive structure of the electricity market following the Victorian energy market competition reforms.

The provisions require that the owner of a licensed Victorian transmission, generation or distribution business cannot have a controlling interest (of at least 20 percent) of another corresponding business. Further, such a business can only have a substantial interest (defined as 5 percent or more) in one other licensed Victorian transmission, generation or distribution business.

The Victorian provisions were largely superseded by s50 of the CCA, Section 50 provides for ACCC to assess the likelihood of a proposed acquisition or merger to substantially lessening competition. The Victorian provisions still, however, have the remnant effect of preventing a proposed co-ownership from being heard in an Appeals Court where:

- the ACCC claims that the merger will substantially lessen of competition and the party seeks to appeal the decision; and
- the extent of the proposed co-ownership breaches the Victorian thresholds.[71]

Management of Co-ownership Issues in the Australian Gas Market

The gas market has a similar supply chain to electricity. Here, transmission plays a critical role in enabling gas producers or suppliers to compete for the supply of gas downstream.

The National Gas Law has implemented a forced divestiture requirement under its ring-fencing provisions (s 139):

> Carrying on of related businesses prohibited. On and after the compliance date, a covered pipeline service provider must not carry on a related business.[72]

4.3 Options for the reduction of market power concerns

These options relate to the reduction or removal of market power concerns associated with a future co-ownership of generation and transmission connected in the NEM. In considering the below options, stakeholders should be mindful of the MCE objective to balance preventing anti-competitive behaviour and allowing businesses to achieve economies of scale and scope..

[70] OFGEM 'Electricity Transmission Licence: Standard Conditions' Condition E7 p282

[71] In 2005 the Victorian Department of Infrastructure released an issues paper debating whether the Victorian provisions should be repealed or enhanced. No decision was made. See the Issues Paper *Cross-ownership Rules for the electricity sector*
http://new.dpi.vic.gov.au/__data/assets/pdf_file/0019/9406/COR-Issues-Paper.pdf

[72] http://www.legislation.sa.gov.au/LZ/C/A/NATIONAL%20GAS%20(SOUTH%20AUSTRALIA)%20ACT%202008/CURRENT/2008.19.UN.PDF

Option A: Maintain the current arrangement

As noted in section 1.3, to date, there have been few co-ownership attempts since the establishment of the NEM. This is likely due to the different business models and risk exposures to generation and transmission businesses, the limited scope for efficiencies with owning both generation and transmission businesses and the existing rules under the CCA. As such there may be minimal benefits in developing detailed rules to address a risk that is unlikely to arise in the future.

Currently, the CCA and associated rules provide the only statutory protection against anti-competitive behaviour by co-ownerships. As previously outlined in this RIS, the ACCC has raised several concerns regarding maintaining the current provisions as the only defence against market harm following co-ownership. However, there is limited evidence that co-ownership will be a problem in the future. It is also possible that the outcomes from the current reviews (see section 3.1) such as the Transmission Frameworks Review would mitigate any future risks, although this is currently unclear.

It has not been proven that the CCA will be unable to prevent a future co-ownership between generation and transmission in the NEM. There could, however, be considerable risks created by co-ownership of generation and transmission if such a situation did develop in the NEM. This RIS process intends to explore the level of risk associated with possible co-ownership and the potential impacts on the market of retaining the status quo if this were to occur.

Option B: Enhance the current transmission ring fencing guidelines to formalise the provisions and review the 5 percent revenue threshold level for co-ownership.

- The transmission ring fencing guidelines are the only NER provisions that explicitly target discrimination of service and sharing of confidential information as a result of a co-ownership arrangement. They also provide the AER with a discretionary power to prevent co-ownership above a threshold level, or waive the ring fencing provisions altogether.
- The guidelines are referred to in the Rules (6A.21). These rules require that all TNSPs (including Market Network Service Providers) must comply with the transmission ring fencing guidelines. However, there is some concern that these provisions would be unenforceable in their current form. This is because such provisions are not embedded in the law, unlike the comparable provisions for gas.
- The ring fencing guidelines, with respect to TNSPs that perform ring-fenced services currently.[73]
    - refuse a TNSP from carrying on a related business if the related business earns at least 5 per cent of the TNSP's annual revenue (clause 7.1a(ii)
    - enable the AER to use its discretion in deciding to waive any of the ring fencing obligations if it deems it appropriate (where benefits outweigh costs) (clause 11)

[73] AER *Compendium of Electricity Transmission Regulatory Guidelines*, pp 69-82, available at http://www.aer.gov.au/content/item.phtml?itemId=688824&nodeId=77350c2953a9c34a4192dd2b9ec53d20&fn=Compendium%20of%20electricity%20transmission%20regulatory%20guidelines.pdf

  - allow the AER to impose additional (non ring fencing) obligations on a TNSP with a related business at its discretion (clause 9)
  - require AER to consult if it intends to change the ring fencing guidelines; waive a TNSP's ring fencing obligations; or impose additional obligations on a ring-fenced TNSP (clause 17)
  - prevent the sharing of information by the TNSP which is not available to any party other than the related business (clause 7.6a)
  - prevent the TNSP from making decisions or acting to discriminate in favour of the 'associate' business (clause7.2b)
  - require a TNSP that provides ring-fenced services to allocate costs under a methodology agreed by the AER ('The purpose of clause 7.4 is to prevent TNSPs subsidising contestable activities through regulated activities') (clauses 7.4 and 8)
  - apply to both acquisition and greenfield investments (where the CCA only applies to mergers and acquisitions).

- The current transmission ring fencing guidelines fall short of preventing all co-ownership. In particular, the ring fencing guidelines allow a TNSP to carry on a related business if such endeavour earns less than 5 per cent of the TNSP's annual revenue.
- If this option is preferred, the threshold level of ownership of 5 per cent should be reviewed as part of the development and implementation process of transferring the guidelines into the NEL. This is important to ensure market power concerns are sufficiently addressed. A general review of the current guidelines would need to be undertaken to ensure that they are appropriate for the current market arrangements. Issues that should be considered when reviewing the guidelines include:
  - whether co-ownership of a generator for network support services warrants an exemption. This could include an assessment of the alternative grid support services availability and whether market power concerns may be reduced if the generator is used primarily for grid support
  - ensuring co-ownership is well defined, such as the classification of generator and transmission system types that would need to comply with the provisions (i.e. scheduled, semi-scheduled etc); and the definition of 'co-ownership' or 'control' which should be prevented
  - ensuring the AER's discretionary powers are well defined.
- Penalties for a TNSP that does not meet its ring fencing obligations could include de-registration until the provisions are complied with.

Stakeholders are invited to comment on the kinds of issues that should be considered to enhance the ring fencing guidelines and the use of their content in the NEL.

Option C: Reconsider the preferred option proposed under the original Consultation RIS in 2007 (refer to Option 5 in Appendix C)

The preferred option canvassed in the original consultation RIS was titled 'Option 5 – Generation/Transmission Mechanism with a Percentage Exemption plus MW Exemption.'

This option would insert a generation/transmission provision in the NEL containing an exemption test. The test would consider both a percentage and MW level of ownership and control. It should also provide that a person exercises control if they:

- have 'company interests' in the registered participant who owns a generation asset;
- have 'company interests' in the registered participant who owns a transmission system. Company interests should include beneficial entitlements to shares; an interest in shares; control of votes; beneficial entitlement to a dividend of the company; or an entitlement on winding up or other circumstances. It should not be limited to companies incorporated under the Corporations Act and should extend to any form of incorporated or unincorporated body such as trusts, partnerships and joint ventures;
- have a chain of such interests, or multiple chains which amount to such interests, in companies which end with the registered participant;
- are in a position to appoint, secure the appointment of, or veto the appointment of, at least half the directors of the registered participant; or
- are in a position to exercise control over the operations of a registered participant.

This prohibition should extend to control by a person together with their associates. An associate of a company is a director or secretary of such a company; a holding company of such a company; a subsidiary of such a company; or another subsidiary of the same holding company of such a company. Associates should also catch other partners, unit holders/beneficiaries/trustees of a trust, joint venturers; other such persons, employers and employees; and for natural persons, a spouse, parent, child or sibling. It should catch agents of principals (and vice versa) and generally a person who acts or is accustomed to act in accordance with directions of the person.

The test should provide that a person exercises control according to the same principles provided above, excepting that the person has control if:

- their 'company interests' in a registered participant that owns a transmission system exceed 20 percent of the total share, and
- their 'company interests' in a registered participant that owns a generating system exceed 5 percent of the total share, unless that ownership relates to total generating capacity of less than 30 MW (greater than 5 percent ownership will be allowed if that ownership relates to total generating capacity of between 30 MW and 150 MW, with the approval of the Regulator, if that capacity is predominantly for the purpose of providing network or grid support).

The test will also need to contain exceptions for:

- passive institutional investments and for the Regulator to determine compliance with this. This exception should only operate for as long as the investment continues to be passive and institutional;

- current direct Crown ownership; and
- arrangements by regulations, in particular to exclude particular types of shareholding and other company interests.

Exceptions to the provision would apply under this option based on submissions to the Regulator.

OPTIONS	Option A: Status Quo	Option B: Enhance the current transmission ring fencing guidelines	Option C: Generation/transmission mechanism with a % exemption plus MW exemption
Application of CCA provisions including section 50	Applicable under all options		
Application of access regime including access framework and regulatory framework	Applicable under all options		
Legislation the provisions would be in	N/A	NER	NEL
Description of option including any tests	Continue to rely on existing mechanism including the CCA generic provisions and the access regime	*Test:* A provision that prevents all co-ownership under the ring fencing guidelines	*Test:* A provision that prohibits ownership of both generation and transmission activities
		Exemptions: An exemption for co-ownership of a generator for network support services is currently being considered	*Exemptions:* The exemption provisions could take the following form: • their 'company interests' in a Registered participant that owns a transmission system do not exceed 20 percent of the total share; and • their 'company interests' in a Registered Participant that owns a generating system do not exceed 5 percent of the total share, unless that ownership relates to total generating capacity of less than 30 MW (greater than 5 percent ownership will be allowed if that

			ownership relates to total generating capacity of between 30 MW and 150 MW with the approval of the Regulator if that capacity is predominantly for the purpose of network support). A discretionary arrangement for the Regulator concerning intermittent generation will be required.
Does the option require grandfathering provisions	No	No	Yes That is, persons who are in breach of the date of these provisions have three years from the commencement of the amendments to remedy that breach, in particular to divest relevant interests. A power should be provided to extend this period by regulation if necessary.
How amendments will be implemented	N/A	Rule change process	Amendments to the NEL through the SA parliament followed by adoption by all participating jurisdictions, including the Commonwealth.
Other comments		This is a strengthening of the current ring fencing arrangements to remove the loophole that a TNSP can carry on a related business if it earns less that 5 percent of the TNSPs annual revenue.	• Investigative and information gathering powers would apply to these provisions. • A civil penalty will also apply to these provisions.

5. Cost-Benefit Analysis of Proposed Options

5.1 Studies that consider the economic costs of vertical separation

Several published empirical studies over the past 20 years have considered the economies of scope that can exist for a vertically integrated electricity generation and 'distribution' business. In these studies, 'distribution' incorporates both transmission and distribution.

The studies undertaken by Kaserman and Mayo (1991); Kwoka (2002); Piacenza and Vannoni (2004); Nemoto and Goto (2004) examined whether there were cost savings for an integrated generation and 'distribution' business versus a 'distribution' business with no generation assets. All four studies identified that there were cost savings for an integrated firm compared with a 'distribution' business with no generation assets. This was found to be particularly true when the co-owned generator and the co-owned 'distributor' had high (and preferably similar) levels of electricity output.

Note that the electricity markets considered in these studies were in Japan, the US and Italy. The study findings are therefore not directly comparable to the market arrangement used in the NEM.

Reasons identified for the cost benefits of vertical integration

Not all the studies identified why there were cost savings for a vertically integrated firm. However, the study undertaken by Nemoto and Goto (2004) considered the Japanese electricity industry between 1981 and 1998. Here, the following benefits of vertical integration between generation and 'distribution' businesses were identified.[74]

These were:

- savings associated with centralised investment decisions, including improved management of connections to reduce network congestion costs and locational decisions; and
- the ability of a vertically integrated business to internalise the cost of electricity production. This compared with a separate 'distribution' business that must purchase electricity at the market price in the upstream market to sell in the downstream market.

Kwoka's study also identified sources of cost savings in his 2002 study of US electricity businesses, which included.[75]

- savings associated with least-cost dispatch of generating units in order to achieve system minimum cost;
- coordination of scheduled shut-down for maintenance;
- better information about downstream load for purposes of determining future capacity requirements;

[74] Nemoto, J and Goto M (2004) 'Technological externalities and economies of vertical integration in the electric utility industry', *International Journal of Industrial Organization.*
[75] Kwoka, J (2002) 'Vertical economies in electric power: evidence on integration and its alternatives', *International Journal of Industrial Organization*, Vol 20, pp 653-671.

- conservation of reserves by supplying consumption points with diverse load patterns; and
- joint decisions regarding plant size/sitting and transmission systems.

Kwoka's study concluded that the 'distributors' with the least amount of generation co-ownership incurred significantly higher average total costs than the vertically integrated generation and 'distribution' businesses. This was particularly so where the generator produced similar volumes of electricity as the 'distributor' sold downstream. The average relative costs to each type of business were estimated at 6.27 cents per kWh for the least integrated 'distributors', versus 5.35 cents per kWh for the most integrated.[76]

Relevance of the studies to the NEM

The markets considered in the studies appear to have quite different features to the NEM, including:

- The studies assume that 'distribution' businesses purchase electricity from generators and on-sell it downstream. A TNSP in the NEM, however, does not purchase and on-sell electricity and has only a transportation function. Therefore, TNSPs' costs in the NEM are not affected by the wholesale price of electricity.
- The studies combine the costs/benefits of integrating both distribution and transmission elements of the NEM with generation, while this RIS only considers the transmission element.
- AEMO is responsible for ensuring least-cost dispatch in the NEM, so savings associated with system minimum cost currently exist in the NEM.
- The Projected Assessment of System Adequacy (PASA) and market reports published by AEMO provide significant amounts of information to market participants in order to anticipate or manage maintenance shut downs. Certainly a vertically integrated business may be expected to share this information more efficiently within its own business. However, the costs of mismatched transmission and generation outages in the NEM are likely to be lower than the studies predicted for 'distribution' businesses that were not vertically integrated.
- AEMO released its first NTNDP in December 2010. This report aims to assist transmission businesses in planning investment by predicting how generation and demand is expected to evolve over a 20-year projection. A vertically integrated business would incur lower planning and investment costs because they can simultaneously consider investment in generation and transmission. However, the NTNDP may reduce some of the planning costs of a transmission business that is not vertically integrated.
- Given the above features of the NEM, it is expected that the costs of vertical separation (with regards to lost economies of scope) would be lower than those identified in the studies.

[76] Kwoka, J (2002) p 657.

5.2 Studies that consider the benefits of vertical separation

Faye Steiner prepared an OECD working paper examining the benefits of electricity market reforms including structural separation and access regime enhancement. Steiner's study concluded that the electricity reforms introduced in many OECD economies have generally brought benefits of lower electricity prices and an improvement in the utilisation of capacity in electricity generation[77].

Additionally, this RIS contends that vertical separation avoids the costs associated with anti-competitive discrimination by a co-owned TNSP to assist a co-owned generator. These costs may be very significant.

Costs and benefits of regulatory provisions to limit co-ownership in the NEM

This section begins to examine the costs and benefits of regulatory options canvassed in this RIS. It is difficult to identify the costs and benefits in financial terms and stakeholder feedback is welcomed in this area.

In order to begin the assessment of likely costs and benefits associated with each of the regulatory options, this document sets out 'benefits' and 'risks' associated with each of the options on the following basis:

- 'Benefits' have been considered with respect to the creation of regulatory certainty and the extent to which each option would be expected to reduce or remove the market harm that could be associated with future co-ownership.
- 'Risks' have been considered with respect to whether the market power concerns potentially associated with future co-ownership would be likely to persist under each option.

5.3 Likely costs, benefits and risks of each option

Stakeholders are encouraged to respond to the likely costs, benefits and risks of each option**.**

Following stakeholder input, the cost-benefit analysis of each option will be further developed to consider the:

- benefit to each party impacted by the option, such as the ACCC, AER and generators in the NEM (depending on whether they may attempt integration with a TNSP in the future or not); and
- cost to each party affected by the options.

Option A: Retaining current provisions and reliance on the CCA and NER

Benefits

No changes would be made to the current provisions. This would avoid deterring future co-ownership if it had a market benefit and passed the competition tests under the CCA. It cannot be proven that the current CCA is inadequate, although significant

[77] Faye Steiner, 'Regulation, industry structure and performance in the electricity supply industry', *OECD Working Papers* No. 238, 2000 p7

questions remain regarding its effectiveness in preventing future co-ownership of generation and transmission in the NEM.

A further benefit of Option A is that it would avoid the need for significant regulatory action in this area (and the associated costs of this), in circumstances where there is limited evidence to suggest that significant issues relating to cross-ownership between transmission and generation are likely to occur in the future. As has been noted previously in this RIS the risks associated with vertical integration across generation and transmission are likely to be low given that there are different business models and risk exposure associated with generation and transmission.

Risks

Section 50 of the CCA cannot prevent co-ownership if it results from a greenfield investment (such as the building of a generator by a TNSP). Also, as discussed throughout this RIS, there are concerns that the ACCC may not be able to convince a court of the market power risks associated with a merger or acquisition transaction involving a TNSP and generator.

Reliance on current NER provisions to manage the market risks associated with potential co-ownership could lead to a poor market outcome. Firstly, the penalty regime under the NER is relatively 'soft' and is not designed to manage anti-competitive conduct. The NER alone would be unlikely to deter a co-owned generation and transmission business from exercising market power if the benefits were significantly larger than the penalty. In addition, monitoring the market for anti-competitive conduct is difficult. For example, subtle reduction in transmission services available to competing generators would be difficult to detect.

Option B: Revising the ring-fencing guidelines for transmission and inserting relevant components in the NEL

Benefits

This option would enable the AER to make discretionary determinations as to whether the ring fencing provisions should apply. This would remove the uncertainty of a CCA analysis and would also apply to greenfield investments. Thus, the AER would be able to make an assessment of whether benefits resulting from the co-ownership outweigh costs to the market. Further, the AER could allow such co-ownership where there is a net benefit to the market. Certainly such an AER assessment may come to the same conclusion as a Court ruling. However, empowering the AER to make a discretionary judgement on the competition benefits is consistent with the organisation's daily work and would remove some of the costs associated with a Court ruling. Such an outcome could be perceived to be complementary to the CCA too. (A full analysis of competition issues specific to the electricity industry could be duly considered by the AER. Currently s50 of the CCA does not set out industry specific issues).

This option is a current provision, which would broadly remain the same. The key change would be to ensure the provisions were enforceable under the NEL. Details within the guidelines should also be reviewed for appropriateness in the current market.

Formalising the transmission ring fencing guidelines into the NEL would more closely align the electricity and gas laws. This would not, however, extend to

electricity distribution ring fencing arrangements which are currently different for each jurisdiction and would warrant separate analysis.

Legal advice would be required to:

- confirm the shortcomings in the existing enforcement arrangements
- review the content of the guidelines
- ensure their appropriateness for inserting into the NEL.

Risks

In its current form, the guidelines do not consider other non-ownership market arrangements. An example is where one business has some degree of control over another business operating in the NEM. This could, however, be rectified by clarifying definitions of 'related business'.

The current transmission ring fencing guidelines consider only the actions of the TNSP which owns a related business. They do not refer to the actions of the related business, such as informing the co-owned TNSP of its bidding or maintenance intentions. However, this concern would be removed if co-ownership could be prevented where it does not result in a net benefit to the market.

This option should review the appropriateness of the 5 per cent revenue threshold requirement under which co-ownership between a TNSP and generator could not be prevented.

Other considerations

- Issues such as the effect of a fluctuation in annual revenue above the 5 per cent threshold should be explicitly considered.
- Debate should ensue over whether the current 5 per cent threshold level for co-ownership removes competition concerns, or whether this sufficiently lowers the risk of discriminatory conduct by the co-owned TNSP, so as to not warrant the AER's discretionary judgement.

Option C: Reconsidering options proposed in the 2007 Consultation RIS

Generation/Transmission Mechanism with a Percentage Exemption plus MW Exemption

Benefits

This option:

- complements Section 50 of the CCA
- manages both Greenfields and merger/acquisition activity
- provides certainty to business
- avoids regulatory approval under the threshold limits of generation and transmission co-ownership.

Risks

This option doesn't prevent market power concerns that may exist below the threshold level of co-ownership. Risk remains that a co-owned business falling below the

threshold level will still have incentives and opportunities to create market harm. This is particularly so given the:

- nature of the electricity market
- vulnerabilities to the exercise of generator market power that may not be determined by generator size alone (but also network congestion and availability, and the availability of interconnectors for imports/exports across regions).

Issues for stakeholders

- Should a provision that limits co-ownership of generation and transmission connected in the NEM apply to all registered generators (being scheduled, semi scheduled and non-scheduled)?
- What are the benefits of co-ownership, besides diversifying risk in a business' portfolio?
- What are the costs of prohibiting future co-ownership of generation and transmission?
- Do competition concerns remain if a co-owned generator is located in a different region to the transmission network/interconnector?

5.4 Consultation

Stakeholder comments are invited on the content of this RIS, and will be used to assist the MCE in making its final decision on the implementation of the COAG commitment.

The MCE's Standing Committee of Officials recognises the importance of ensuring that stakeholders have the opportunity to provide advice on issues that may impact on their decision-making processes. In light of this, after advice has been received during the consultation process, the Standing Committee of Officials may follow up with individual stakeholders in relation to their submissions.

In developing the final policy position for the decision RIS, the Standing Committee of Officials will consider all submissions received from stakeholders and provide a table outlining its position with regard to any issues raised or recommendations. It is intended that answers to the questions raised in this document will be taken into account with developing a cost benefit analysis of the preferred option.

Appendix A – Background information on the operation of the NEM

Current ownership in the NEM

Currently there is very little co-ownership within the NEM. The only example is Energy Infrastructure Investments' co-ownership of two small generation interests and transmission (interconnectors).

Details of major transmission and generation ownership features in NEM regions are provided in the table below.

Region	Generation	Transmission (including interconnectors)	Co-ownership
QLD	• Majority Qld Government owned. • Major Qld GBEs with generation portfolios are CS Energy, Tarong Energy & Stanwell Corporation. • Some private ownership	• Powerlink (transmission – Qld Government owned) • Directlink (Qld/ NSW interconnector) – privately owned by Energy Infrastructure Investments • QNI (Qld/NSW Interconnector co-owned by TransGrid (NSW Govt owned) and Powerlink (Qld Govt owned)	*Yes* • Energy Infrastructure Investments owns transmission interconnectors Directlink and Murraylinkplus two small Qld generators (Daandine (33MW) • Registered in NEM as non-scheduled generator; and X41 (30MW) • Not connected to the NEM and supplies power to Xstrata's mining operations in Mount Isa.
VIC	Private ownership (including small degree of interstate government interests)	• SP Ausnet (transmission – publicly listed company, 51percent share held by Singapore Power International) • Note that network asset ownership by SP Ausnet is separated from planning and investment decision making, which is undertaken by the	*Yes* See above regarding Energy Infrastructure Investments for Murraylink.

		Australian Energy Market Operator (AEMO). NB: AEMO is responsible for planning and directing network augmentation and buys bulk network services from SP AusNet for sale to customers. • Murraylink (SA/Vic interconnector owned by Energy Infrastructure Investments) • Heywood (SA/Vic interconnector owned by ElectraNet which is a public/private venture – public interest share owned by Powerlink – Qld Government) • Snowy Victoria interconnector (Snowy Hydro – owned by NSW, Vic and Commonwealth governments)	
SA	Private ownership, including small degree of interstate government interests	• ElectraNet (transmission – public/private venture – public interest share owned by Powerlink (Qld Government) Heywood and Murraylink SA/Vic interconnectors as per Vic above)	*Yes* See above regarding Energy Infrastructure Investments for Murraylink.
NSW	• Majority NSW Government owned. • Major NSW GBEs with generation portfolios are Macquarie	• TransGrid (NSW Government) Snowy NSW interconnector (Snowy Hydro – owned by NSW, Vic and Commonwealth governments)QNI and Directlink Qld/NSW	*Yes* See above regarding Energy Infrastructure Investments for Directlink

	Generation; Delta Electricity; Snowy Hydro). • Remainder privately owned	interconnectors (as per Qld above).	
TAS	• Majority Tas Government owned. • Major Tas GBEs with generation portfolios are Hydro Tasmania; AETV.	• Transend (transmission – Tas govt owned) • Basslink – unregulated interconnector (publicly listed company – CitySpring Infrastructure Trust).	*No* However, Hydro Tasmania has bidding rights over Basslink.

The analysis shows that there is limited co-ownership in the NEM. There are, however, commercial arrangements between some market participants which result in one having some degree of control over the other. The Basslink Service Agreement is one example. Here a generator holds some degree of control over a transmission link, even though there is no co-ownership. However, it is intended to exclude Basslink from the separatory requirements as it operates as a Market Network Service Provider rather than as a regulated network business.

Basslink Services Agreement

Basslink is the only MNSP or unregulated interconnector in the NEM. MNSPs derive revenue by trading on the spot market. They purchase energy in a lower priced region and sell it to a higher priced region. Alternatively, MNSPs sell the rights to revenue traded across the interconnector[78]. MNSPs are also allowed to bid interconnection capacity for the transfer of electricity from one region to another.[79] Unregulated interconnectors are not required to undergo the regulatory test evaluation.[80]

Basslink operates under the Basslink Services Agreement (BSA). This is an agreement between Basslink and Hydro Tasmania, the major generation owner in Tasmania which is owned by the Tasmanian Government. The BSA provides that Hydro Tasmania must pay a facilitation fee to Basslink. This is in exchange for an amount of money equal to the differences in price between Victoria and Tasmania which accrue to Basslink through the transfer of electricity between the regions.[81] In addition, the BSA gives Hydro Tasmania bidding rights over Basslink with some

[78] AEMO *An Introduction to Australia's National Electricity Market*, December 2009.
[79] ACCC 'Applications for authorisation Tasmanian Derogations and Vesting Contract Tasmania's NEM entry' 14 November 2009 p17http://www.accc.gov.au/content/trimFile.phtml?trimFileName=D03+38178.pdf&trimFileTitle=D03+38178.pdf&trimFileFromVersionId=756492
[80] http://wwww.aemo.com.au/planning/interconnectors.html
[81] ACCC 'Applications for authorisation Tasmanian Derogations and Vesting Contract Tasmania's NEM entry' 14 November 2009 p15 http://www.accc.gov.au/content/trimFile.phtml?trimFileName=D03+38178.pdf&trimFileTitle=D03+38178.pdf&trimFileFromVersionId=756492

restrictions[82]. The BSA is therefore an example of a generator having some control over the operation of a transmission business. However, while this provides an example, the BSA is intended to be explicitly excluded from any restrictions that could be enforced as an outcome of this RIS process.

Tasmanian Energy Panel Report

The Tasmanian Government considers that a key point in the ongoing energy reform process has been reached and that it is therefore important that an independent assessment of the industry now be undertaken to assess its current status, energy mix, the assumptions that underpin it, and to provide guidance for ongoing development. In 2010, the Government established an Expert Panel to undertake this assessment under the provisions of the *Electricity Supply Industry Expert Panel Act 2010.*

The terms of reference for the Expert Panel state that it shall investigate and report on:

1. The current efficiency and effectiveness of the Tasmanian energy industry with particular reference to the existing regulatory framework and the cost and operation of the energy industry elsewhere in Australia.
2. The primary factors that have driven recent increases in non-contestable electricity prices in Tasmania including the impact of major infrastructure development decisions.
3. The competitiveness of non-contestable electricity prices in Tasmania compared with those in other states.
4. The financial position of the state-owned energy businesses: Transend Networks, Hydro Tasmania and Aurora Energy.
5. The impact of interaction between the three state-owned businesses on the effective operation of the Tasmanian energy industry and Tasmanian energy prices.
6. Having regards to trends in electricity prices and market developments at the national level and Tasmanian-specific circumstances, the implications of Tasmania's market and regulatory arrangement for electricity tariffs over the coming years.
7. Actions that would guide and inform the development of a Tasmanian Energy Strategy particularly in relation to the Government's primary objectives of minimising the impact on the cost of living in Tasmania and ensuring Tasmania's long term energy sustainability and security.
8. The advice that was provided to the State Government by the senior management or Directors of Aurora Energy from 1 October 2009 to 16 June 2010 inclusive.
9. Any other matters that the Expert Panel considers are relevant to the above matters.

[82] The BSA requires that Hydro Tasmania must bid Basslink at a zero price unless Hydro Tasmania directs Basslink to bid a positive price, or Hydro Tasmania and Basslink agree that Basslink will be bid at a negative price – see [82] ACCC 'Applications for authorisation Tasmanian Derogations and Vesting Contract Tasmania's NEM entry' 14 November 2009 p22 http://www.accc.gov.au/content/trimFile.phtml?trimFileName=D03+38178.pdf&trimFileTitle=D03+38178.pdf&trimFileFromVersionId=756492

The Expert Panel is expected to prepare and publish its final report by 31 December 2011.

Operation of the NEM

The NEM operates as a wholesale energy-only market for the supply of electricity to retailers and end users. While the NEM operates across the six southern and eastern jurisdictions, it is technically divided into five regions along the state boundaries. ACT is incorporated into the NSW region. WA and NT are not a part of the NEM and have separate market arrangements.

The exchange of electricity between producers and consumers is facilitated through the Australian Energy Market Operator (AEMO). AEMO is responsible for matching demand and supply across the NEM. Because electricity cannot be commercially stored, AEMO is responsible for ensuring that supply is sufficient to meet prevailing demand in real time. It does this through the application of sophisticated information technology systems.

There are three main classifications of registered generators in the NEM. Each is treated differently in AEMO's dispatch process. The generator classifications are:[83]

- *Scheduled generator* – a generator with a capacity of 30MW or more that must be dispatched through the central dispatch process under authorisation by AEMO only.
- *Semi-scheduled generator* – a generator with a capacity of 30MW or more where the output of generation is intermittent. Here, the level of production is not readily predictable and is subject to environmental conditions, such as wind, solar and wave. These generators must also be centrally dispatched (*NB: semi-scheduled generators are typically dispatched before scheduled generation*).
- *Non-scheduled generator* – a generator connected to the NEM with a capacity of less than 30MW (or as approved by AEMO) which is not dispatched through the central dispatch process. A non-scheduled generator can operate at any time without AEMO's authorisation.
    - AEMO records the electricity supplied by non-scheduled generators as a reduction in demand rather than an increase in supply. Non-scheduled generators do not bid their capacity and instead are paid the spot price (described below). The conditions for being non-scheduled are that the:
        - primary purpose of the generator is for local use and electricity supplied rarely, if ever, exceeds 30MW; or
        - physical and technical attributes of the generator mean it is not practicable to participate in central dispatch.

Generators make offers to AEMO to supply specific volumes of electricity at particular prices. The offers of all generators are ranked in order of rising price. AEMO then dispatches the generators needed to meet current demand and to minimise the total cost to the market, subject to generation capacity and network transfer limits.

[83] National Electricity Rules Version 36, Chapter 2

- A dispatch price is calculated for each region at their respective regional reference nodes. This is typically a nominated major load or generation centre in each region (such as Melbourne). The dispatch price is valid for five minutes and is the price of the highest bid by a dispatched generator that was required to meet demand.
- A spot price is calculated for each NEM region, which is the average of six dispatch prices. The spot price is valid for 30 minutes and is the price which generators receive (regardless of their original offer) and large customers/retailers pay for the amount of electricity traded.

Interconnectors are present which enable electricity to flow between the connected regions. Therefore, the spot prices of all NEM regions are generally quite closely related. Prices can, however, separate between the regions due to factors such as limits on interconnector capacity and reliance on differing fuel sources for local supply in different NEM regions. For example, gas-fired power stations are more expensive to run than coal-fired generators.[84]

Transmission, Interconnectors and Congestion Transmission

The transmission system fulfils three key roles. It:

- provides a transportation service from generation source to load centre;
- facilitates competition between generators; and
- ensures secure and reliable supply.[85]

Transmission networks and their availability also have a significant role in the dispatch process. They can enable or restrict the ability of a generator to supply the market. The availability of transmission lines and the amount of electrical energy 'lost' in transporting electricity from a particular generator to the regional reference node are incorporated into AEMO's dispatch engine. The purpose of this is to minimise the combined costs of dispatch, incorporating both the generators' bids and the transmission factors.

Interconnectors

Interconnecting networks offer benefits of:

- increased reliability (due to the availability of alternative supply);
- facilitating inter-regional trade; and
- more efficient sharing of generation resources.[86]

Transmission limits with respect to interconnectors are also considered in the dispatch process. This is because congestion or other technical restraints on an interconnector will affect whether generators can supply or receive electricity to or from other regions. So the availability of interconnectors will affect the relative spot price for each NEM region.

Interconnectors can be either:

[84] AEMO *An Introduction to Australia's National Electricity Market*, December 2009 p 12.
[85] AEMO *Education Material Overview of the NEM*, Ch 3-3.
[86] AEMO *Education Material Overview of the NEM*, Ch 3-3

- regulated, whereby the AER regulates the revenue that can be earned by the interconnector; or
- un-regulated (also called a Market Network Service Provider or MNSP).

MNSPs do not receive a regulated revenue. Instead, an MNSP typically earns income from the difference in wholesale prices in each of the regions it connects, or by another market arrangement.

Congestion

A transmission line's availability is often dependent on whether or not it is congested. As the *Congestion Management Review* explains:

> Congestion is what happens when a particular element on the network (e.g. a line or transformer) reaches its technical limit and cannot carry any more electricity than it is carrying already. The flow of power across the network means that when a limit is reached on one part of the network, adjustments have to be made in generation and consumption across the network to ensure that the limit is not exceeded. In technical terms, congestion places network constraints on dispatch. It interferes with the market's dispatch objective of meeting demand at the lowest possible cost. (In the absence of congestion, electricity to meet demand is supplied by the lowest cost generators; when congestion arises, this may not be feasible so higher-cost generators may have to be dispatched instead.) This situation introduces risks for the market which consequently affects bidding, dispatch, pricing, contracts, and risk management, as well as long-term investment decisions.[87]

While congestion imposes a cost on the efficient dispatch and operation of the NEM, it is also costly to be built out. This can require the purchase and installation of new transmission assets in order to reduce the reliance on the congested part of the network. It would never be cost-effective or efficient to build out all network congestion, as there would be over-investment in transmission capacity. There is therefore an 'efficient' level of congestion in the NEM.[88]

Spot and financial markets

Spot prices

The National Electricity Rules limit spot prices to a range of -$1,000 as the market price floor and $12,500 per megawatt hour (MWh) as the market price cap. The market price cap can be reached during high demand days. An example would be during summer heatwaves, particularly when supply is constrained or there are transmission network issues such as congestion or outages. Meanwhile, negative prices can be reached at times of low demand when some generators must continue to operate for technical reasons.[89]

[87] AEMC *Congestion Management Review*, June 20008 p7
[88] AEMC *Congestion Management Review*, June 2008 p 10. Also, AEMC *Transmission Frameworks Review Issues paper*, 18 August 2010, pii.
[89] A generator may be willing to operate at negative prices where it has a slow ramp rate. This means that it would be too costly to shut down due to extensive re-start times, such as coal fired plants. Wind or other renewable generators may also offer capacity at negative prices, as they receive Renewable

Financial market

Generators and retailers typically enter financial contracts to lock in a price for a specified volume of electricity that will be supplied in the future. This is to manage risks associated with spot price volatility, Retailers hedge against high spot prices while generators hedge against low spot prices.[90] The degree of exposure to the spot price for a generator or a retailer is a commercial decision and is also dependent upon the liquidity of the financial market.[91]

Electricity financial instruments in Australia are traded through:

- over-the-counter (OTC) transactions between two market participants; or
- purchasing derivates such as swaps through the Sydney Futures Exchange (SFE).

OTC transactions generally involve two NEM participants (typically a generator and retailer or two generators) bilaterally entering into a contract which they can tailor to their own requirements. Variations can include the period of the contract, MW transacted and the value of a strike price. OTC trades are not regulated and the volumes of such trades are not closely observed.[92] By comparison, derivatives traded through the SFE are standardised and are publicly reported.

Electricity financial contracts do not result in the physical delivery of electricity. Instead, these are settled in cash and offset the financial obligations incurred through physical market transactions.

Market framework – organisation of the NEM and transmission framework features

Organisation

There are a number of key features in the NEM framework which dictate how participants in the NEM interact. These are:

- The National Electricity Law (NEL) and National Electricity Rules (NER). The main role of the NEL is to set out the powers of the market institutions with respect to their roles in the NEM. The NER is an evolving suite of instruments (as endorsed by the NEL) which set out the obligations of all market participants (including market institutions) with regards to their market roles and

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Energy Certificate (REC) payments for the energy they produce. REC is a system that operates separately to the NEM.

[90] Retail customers' contracts have fixed unit prices for the amount of electricity consumed. This means high wholesale prices may not be able to be passed on by the retailer to its customers. Generators typically have significant debt and require a wholesale price level to service their debt and pay other costs for operation

[91] Prudent retailers establish a raft of financial contracts to allow them to manage the wholesale price risks. Most generators maintain some degree of exposure to the spot price and often hedge their capacity to N-1 generation units. This means that for a generator with 4 units, they will enter financial contracts for the capacity of three of those units. Generators may not enter financial contracts for their entire generation capacity because there is a chance that they will not have all generation units in service at a particular point in time. Therefore, they do not want to have financial obligations over a generation unit they may not make money from in the spot market.

[92] Note that there are other types of financial contracts which manage regional price differences. These take effect when a generator supplying electricity to an adjoining region receives a different price in its own region compared with the spot price of the adjoining region. These contracts are called settlement residue auctions.

responsibilities. All Rules must meet the National Electricity Objective (as stated in the National Electricity Law), which is:

- to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
  - price, quality, safety, reliability and security of supply of electricity; and
  - the reliability, safety and security of the national electricity system.

- Market institutions with various roles including:
  - *Australian Energy Market Operator (AEMO)* – responsible for operating the wholesale market, national transmission planning; and gas market operations
  - *Australian Energy Regulator (AER)* – responsible for monitoring and enforcing the NER and reporting on market compliance. AER also makes regulatory determinations with respect to the revenue that can be earned by network service providers (transmission and distribution)
  - *Australian Energy Market Commission (AEMC)* – responsible for developing the NER (as framed by the NEO) and conducting market reviews.

Specific transmission framework aspects

- Transmission operators have specific obligations to the market. They must meet operating requirements, reliability, access and regulatory obligations. Most of the obligations on TNSPs are contained in Chapter 4 (Power System Security); Chapter 5 (Network Connection); and Chapter 6A (Economic Regulation of Transmission Services) of the NER.
  - Regulatory Investment Test for Transmission (RIT-T) – purpose is to identify the transmission investment option which maximises net economic benefits and, where applicable, meets the relevant jurisdictional or Electricity Rule-based reliability standards. The RIT-T provides a single framework for all transmission investments and combines both the reliability and market benefit limbs of the previous regulatory test.
    - Operating standards – TNSPs are required to meet both security and reliability standards. ‘Security’ refers to the transport of electricity in such a way that the technical components of the power system are protected from damage arising from voltage and current changes or other sudden faults. ‘Reliability’ refers to the ability of the network to meet the level of demand, given that network assets are of a finite capacity. These standards are derived from the NER and jurisdictional requirements, transmission licences and regulations.
    - As part of meeting security and reliability obligations, TNSPs also need to enlist grid support (network support and control services). AEMO and TNSPs share responsibilities for planning and procuring Network Support and Control Services. These can include procuring the ‘services’ of a

generator contracted to supply electricity for the purposes of stabilising the system with respect to voltage and frequency[93].

- Regulation of TNSP revenues – The AER is responsible for making regulatory determinations setting the amount of revenue that can be earned by the TNSP over a regulatory period (typically 5 years). 'NSPs are entitled to recover efficient operating costs and earn a risk-adjusted commercial rate of return on the capital required to provide the services.'[94]

AER enforcement options under the National Electricity Law and National Electricity Rules

The AER is responsible for monitoring and enforcing the National Electricity Law (NEL) and National Electricity Rules (NER). AER also performs these roles for the gas market. The AER has two enforcement alternatives if it believes that a breach of the NEL or NER requires redressing, being administrative action or statutory action.

Administrative action

If a breach of the NER or NEL is relatively minor, the AER may approach the market participant directly. Resolutions may include the participant entering into a voluntary agreement to implement a compliance program or to improve internal operating procedures or training. The AER may also advise the market participant that its behaviour was inconsistent with obligations under the NER or NEL and will be scrutinised in future.

Statutory action

Statutory enforcement action may be undertaken by the AER as per Part 6 of the NEL. The AER may institute court proceedings for a breach of a civil penalty provisions. Here, the penalties as ordered by the Court may be:

- up to $20,000 plus up to $2,000 per day for every day the breach continues (for a natural person); or
- up to $100,000 plus up to $10,000 for every day the breach continues (for a company).

If the breach is a rebidding civil penalty provision, the fine is up to $1,000,000 plus up to $50,000 for every day the breach continues. A court can also issue orders to enforce the payment of fines or require the market participant to take action to rectify a breach. Additional orders such as injunctions are available too.

Under Division 5 of Part 6 of the NEL, the AER can issue infringement notices without commencing a court process. The penalties available under this option are, however, significantly lower (up to $4,000 for a natural person or up to $20,000 for a company). Once the AER has issued an infringement notice, it cannot initiate formal proceedings unless the participant fails to comply with the notice.[95]

[93] AEMO Review of network support and control services – final determination report, 18 December 2009, p 40.
[94] AEMO Education Material *Overview of the NEM*, Ch 3-12.
[95] http://www.aer.gov.au/content/item.phtml?itemId=729230&nodeId=6ba5e838f7915f826f764ee3c60a72b7&fn=AER%20compliance%20and%20enforcement%E2%80%94statement%20of%20approach%20(June%202009).pdf

Note that only a small proportion of the Rules are civil penalty provisions which attract financial penalties. The payment of an infringement penalty is not to be taken as an admission of liability or a breach of a civil penalty provision.

Enforcement of access determinations

Under Part 6 Division 3B, access determinations are enforceable by a court where one party to the determination has engaged or is proposing to engage in conduct that constitutes a contravention of the determination, according to the beliefs of the other party. Access determinations can be either mutually agreed between the two parties or developed by a commercial arbitrator and agreed by both parties.

Appendix B – Reference List

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Appendix C – Options from previous RIS process

On 15 October 2007 the MCE Standing Committee of Officials (SCO) released a consultation RIS outlining options for the form of the generation/transmission separation provisions and presented SCO's preferred option for proceeding with the COAG commitment. The five options presented in the consultation RIS included the following:

- Option 1: Retain the status quo and rely on existing mechanisms to deal with market power issues stemming from cross-ownership.
- Option 2: Amend Section 50 of the TPA to reflect a presumption that ownership of both generation and transmission assets represent a substantial lessening of competition.
- Option 3: Amend the NEL by inserting a provision that presumes the prohibition of ownership of both generation and transmission activities.
- Option 4: Insert a generation/transmission provision in the NEL which limits a person from having an entitlement to generating capacity within the meaning of the separation of generation, transmission and distribution sector provisions of more than 200 MW.
- Option 5: Insert a generation/transmission provision in the NEL containing an exemption test that would consider both a percentage and MW level of ownership and control.

A brief summary of each option is provided below.

Option 1 – status quo

Continue to rely on existing mechanisms as outlined above.

Option 2 – amend section 50 of the Trade Practices Act

This option supports amendment to section 50 of the TPA so that there is a presumption that the ownership of both generation and transmission assets represents a substantial lessening of competition. Under this option, proposed integrated entities could apply to the Regulator for an exemption to the presumption and would be responsible for providing an evidence-based case in support of the exemption. That case would face an exemption test in the following form:

> The Regulator may exempt a transmission network or generator where the relevant party has shown that there are no possible anti-competitive effects or lessening of competition from the Regulator granting the exemption.

The test should provide that an entity exercises control if that entity:

- has ‘company interests’ in the Registered Participant who owns a generation asset;
- has ‘company interests’ in the Registered participant who owns a transmission system (company interests should include beneficial entitlements to shares or an interest in shares, control of votes, beneficial entitlement to a dividend of the company or an entitlement on winding up or other circumstances. It should not be limited to companies incorporated under the Corporations Act, and should

extend to any form of incorporated or unincorporated body, to trusts, partnerships and to joint ventures);

- has a chain of such interests, or multiple chains which amount to such interests, in companies which end with the Registered participant;
- is in a position to appoint, or secure the appointment of, or veto the appointment of, at least half the directors of the Registered participant;
- is in a position to exercise control over the operations of a Registered participant; and
- this prohibition should extend to control by an entity together with their associates. An associate of a company is a director or secretary of such a company, or a holding company of such a company, a subsidiary of such a company, or another subsidiary of the same holding company of such a company. Associates should also catch other partners of a partnership, other unit holders/beneficiaries/trustees of a trust, other joint venturers in a joint venture, and other such persons, employers and employees, and for natural persons a spouse, parent, child or sibling. It should catch agents of principals (and vice versa), and generally a person who acts or is accustomed to act in accordance with directions of the person.

The test will also need to contain exceptions for:

- passive institutional investments, and for the Regulator to determine compliance with this. This exception should only operate for as long as the investment continues to be passive and institutional;
- current direct Crown ownership; and
- arrangements by regulations, in particular to exclude particular types of shareholding and other company interests.

Option 3 – amend the National Electricity Law – general presumption

In this case, a provision would be inserted in the NEL that presumes the prohibition of ownership of both generation and transmission activities. As with option 2, the proposed integrated entity could apply to the Regulator for an exemption and would be responsible for providing an evidence-based case in support of the exemption. Provisions regarding exercising control and exceptions to the provision would also apply under this option, as outlined under option 2.

This arrangement is comparable with New Zealand's *Electricity Industry Reform Act 1998* (NZ Act). Section 81 of the NZ Act has a general exemption power conferred on the New Zealand Commerce Commission in relation to generation/transmission merger activity. In considering an exemption application, the New Zealand Commerce Commission is to consider whether the exemption would:

- create incentives or opportunities to inhibit competition in the electricity industry;
- create incentives or opportunities to cross-subsidise generation activities from electricity lines businesses; and/or

- permit a relationship between an electricity lines business and an electricity supply business which is not at arm's length.

However, whilst this option is similar to the provision that is currently applied in New Zealand, it may not necessarily suitable for the NEM. This is due to the fact that New Zealand has a different regulatory approach in comparison to Australia, as discussed by ERIG:

> In the New Zealand market, vertical integration has led to the concentration of the market into five integrated entities. The nodal pricing design of the New Zealand market, together with vertical integration, has given rise to regionally dominant 'gentailers' (ie, resulting in major horizontal aggregation within regions). Here, the problem appears to be horizontal aggregation within regions, with which vertical integration is associated.[96]

Option 4 – generation/transmission mechanism with a 'bright line' MW exemption

This option would involve inserting a generation/transmission provision in the NEL and contain an exemption test that largely replicates the Victorian cross-ownership provision contained in the *Electricity Industry Act 2000* (Vic Act). This limits an entity from having an entitlement to generating capacity within the meaning of the separation of generation, transmission and distribution sector provisions of more than 200 MW.

The exemption test could take the form of a simple "bright line" test, where an entity is limited from having generating capacity of more than 200 MW. The test would need to ensure that, where a MW exemption provision is adopted, the MW threshold applies on a total generating capacity basis rather than a unit basis. Adopting a unit basis would allow a transmission business to build or own a number of generating facilities (as long as generation capacity does not exceed 200 MW) across the NEM.

The test should provide that an entity exercises control according to the same principles provided under option 2 (except that control does not include entities having 'company interests' in a Registered Participant that owns a generation asset of less than 200 MW). As outlined under option 2, exceptions to the provision would apply under this option.

In addition to the exemptions listed under option 2, an exception is required granting a discretionary decision to the Regulator where integration involves 'intermittent' generation exceeding 200 MW. As part of its discretionary decision, the Regulator will need to consider that:

- intermittent generation is less flexible than scheduled generation and less likely to be a useful tool for anti-competitive conduct;
- it is unlikely that intermittent generation will be a market power issue in the short term - it may become a market power issue in the longer term, subject to growth in intermittent generation technologies (notably wind generation); and

[96] COAG, *Energy Reform – The Way Forward for Australia, A Report by the COAG by the Energy Reform Implementation Group*, January 2007, p126.

- the MCE has developed a number of measures to remove the unpredictability of intermittent generation and to provide intermittent generation in the NEM on a more scheduled basis.

Option 5 – generation/transmission mechanism with a percentage exemption plus MW exemption

This option would insert a generation/transmission provision in the NEL containing an exemption test that would consider both a percentage and MW level of ownership and control. The test should provide that an entity exercises control according to the same principles provided under option 2, excepting that the entity has control if it has:

- 'company interests' in a Registered participant that owns a transmission system exceeds 20 percent of the total share; and
- 'company interests' in a Registered Participant that owns a generating system exceeding 5 percent of the total share, unless that ownership relates to total generating capacity of less than 30 MW (greater than 5 percent ownership will be allowed if that ownership relates to total generating capacity of between 30 MW and 150 MW with the approval of the Regulator if they are predominantly for the purpose of providing network or grid support).

As outlined under option 2, exceptions to the provision would apply under this option. The exemption test will also need to include a discretionary arrangement for the Regulator concerning intermittent generation, as proposed under option 4.