Australian Competition & Consumer Commission

Determination

Applications for authorisation

lodged by

Macquarie Generation, Delta Electricity and Eraring Energy

in respect of

a co-insurance arrangement between the electricity Generators and Gentraders in NSW

Date: **20 May 2010**

Commissioners

Samuel
Kell
Schaper
Court
Dimasi
Walker
Willett

Authorisation no.: A91198 - A91199

Public Register no.: C2009/1944

Summary

The ACCC denies authorisation to Macquarie Generation, Delta Electricity, Eraring Energy and the future acquirers of the Gentrader bundles to make and give effect to the proposed co-insurance arrangement.

The co-insurance arrangement that is the subject of these applications for authorisation has been developed pursuant to the New South Wales Government's Energy Reform Strategy.

The NSW Energy Reform Strategy

One aspect of the Energy Reform Strategy is the disaggregation of the NSW Government's three electricity generation portfolios into five Gentrader bundles which will be sold to private interests through a competitive bidding process. The essential feature of the Gentrader model is that it creates a functional separation between the ownership of the generation asset, still to be held by the NSW Government, and the ownership of the contractual rights to trade the capacity of the generation asset, to be held by the privately owned Gentraders.

The Gentrader contracts will be physical contracts under which the Gentrader has control over all decisions regarding the dispatch of electricity produced by the Generators into the wholesale market. The Gentrader will be responsible for decisions regarding the quantities and prices at which the electricity produced by the Generator is bid into the market and will receive the revenues from the dispatch. Gentraders will also be responsible for decisions regarding hedging contracts backed by the power station.

Gentraders will pay Generators for the fixed and variable costs of production as provided for under the Gentrader contracts. Generators will not be responsible for any decisions regarding the sale of electricity or the sale of hedging contracts.

The NSW Government has indicated that it intends to sell one of the five Gentrader bundles to a 'new entrant' to the National Electricity Market. Further, in this authorisation process the NSW Government has submitted that it is its intention to limit bidders for the Gentrader bundles to acquiring one bundle each.

The make up of each of the Gentrader bundles the NSW Government is proposing to sell is summarised at paragraphs 2.20 to 2.24 of this determination.

The co-insurance arrangement

The NSW Government owned generation portfolios, Macquarie Generation, Delta Electricity and Eraring Energy (the Applicants) have applied for authorisation for a co-insurance arrangement that has been developed as a part of the Gentrader model and will be implemented by the Applicants and the, yet to be determined, Gentraders.

The Applicants state that the co-insurance arrangement is intended to allow Gentraders to offer a higher level of firm capacity than they would otherwise have under the Gentrader contracts alone. In the event that a Gentrader is unable to meet its firm capacity requirements the relevant Gentrader will have the option of calling on the co-insurance, which is then required to be supplied by one of the other Gentraders.

The co-insurance arrangement is financial rather than physical. That is, the arrangement involves financial payments between parties but does not place any obligation on parties with respect to the physical dispatch of electricity. In the event of an outage, as determined by the Generator, the Gentrader affected by the outage has the option to call on co-insurance up to a pre-determined level of firm capacity. However, providing co-insurance does not require the Gentrader called on to physically dispatch additional electricity. Rather, the compensation provided is a financial transfer.

If co-insurance is called on, the Gentrader receives a difference payment calculated by reference to the shortfall between their available capacity and their pre-determined firm capacity and the pool price (less operating costs that the Gentrader would have paid its Generator for dispatch of the shortfall in capacity absent the outage). Broadly speaking, when co-insurance is called on, the responding Gentrader forgoes a proportion of their non-firm pool operating profit to compensate the Gentrader calling on co-insurance for the lost pool operating profit on their firm capacity as a result of the outage.

Allocation rules are applied to determine which Gentrader supplies co-insurance. The allocation method used is called the surplus/deficit order. Under this system Gentraders accrue deficits when calling on co-insurance and surpluses when supplying co-insurance. In the event that co-insurance is called on, the non-calling Gentrader with the highest deficit is the first to supply, and so on down the order.

While the net effect of the Gentrader payments is a financial transfer from the supplying Gentrader to the receiving Gentrader, the actual payments are made to and from each Gentrader's relevant Generator rather than directly between Gentraders. That is, the Gentrader supplying co-insurance makes a financial payment to its Generator and the Gentrader calling on co-insurance receives a financial payment from its Generator (i.e. from the Generator experiencing the outage).

The Applicants state that this means that the potential Gentrader bidders do not need to consider the potential identities of other Gentraders in so far as it relates to the counter-party credit risk associated with co-insurance.

The Applicants also state that this is expected to result in lower risk exposure for the State of NSW (which continues to own the Generators) as each penalty payment by a Generator to its Gentrader for an outage is off set by a payment to the Generator of the Gentrader supplying co-insurance. The Applicants state that this lower level of risk exposure for the NSW Government is achieved while maintaining incentives for Generators to improve their availability as Generators attached to Gentraders calling on co-insurance due to an outage will have to pay for the services of reliable Generators that meet their shortfall in firm capacity.

Because the co-insurance contract is a financial contract, it does not interfere with the Gentraders' freedom to dispatch their power stations. Gentraders affected by an outage will still be able to dispatch the remaining available capacity of their power station into the market as they choose and Gentraders supplying co-insurance will still be able to dispatch the available capacity of their power station (both firm and non-firm). Generators will continue to operate in accordance with the dispatch decisions of their Gentrader.

The Applicants consider that the co-insurance arrangement is necessary due to the loss of the portfolio benefits that will occur when the three generation portfolios are split into the five Gentrader bundles. In particular, the Applicants argue that without co-insurance the individual Gentraders will be less able to manage the risk associated with disruptions or outages, exposing them to an increased risk of not meeting their contractual commitments to provide a certain level of electricity into the wholesale market, known as firmness risk. Previously, the NSW generation portfolios managed firmness risk by utilising the different generation characteristics of the separate assets in their portfolios.

The Applicants argue that the co-insurance arrangement will assist the Gentraders manage their risk more effectively. They argue that this will result in a greater level of firm electricity contracts being offered into the wholesale market with resulting benefits for competition and the retail electricity market in NSW. Further, the Applicants are of the view that the co-insurance arrangement is central to assisting a new entrant acquire one of the Gentrader bundles as new entrants will otherwise be in a worse position to self-insure than existing market participants.

In particular, in response to the ACCC's draft determination proposing to deny authorisation the Applicants argue that if the co-insurance arrangement is not authorised it may consider reducing the number of Gentrader portfolios offered to better allow Gentraders to self insure. The Applicants state that while a final decision has not yet been made, consideration would be given to grouping together the Liddell and Bayswater Gentrader portfolios.

TRUenergy, Snowy Hydro, Loy Yang Marketing Management Company, Major Energy Users Inc and Seed Advisory/Taylor Fry provided submissions to the ACCC. These interested parties are broadly opposed to the co-insurance arrangement. They argue that there exist a number of viable options separate from co-insurance available to Gentraders to manage risk. Further, they do not accept that the co-insurance arrangement is necessary to enable a new entrant to acquire one of the Gentrader bundles.

ERM Power provided a submission supporting the arrangements. ERM Power considers that the co-insurance arrangement is necessary for smaller generators and new entrants to manage firmness risk.

ACCC assessment

The ACCC is of the view that the NSW Government's Energy Reform Strategy as it is currently devised will result in significant competitive benefits. In particular, the disaggregation of the three generation portfolios into five separate Gentrader bundles, including one to a new entrant, should increase competition on price and terms of contracts offered to electricity retailers in NSW.

However, while the ACCC recognises that there are benefits associated with the Energy Reform Strategy proceeding, it does not consider that these benefits are dependant on the mandated co-insurance arrangement proposed by the Applicants. Gentraders have a number of alternatives available to them to manage risk other than the co-insurance arrangement which, the ACCC considers, means that the co-insurance arrangement is not integral or necessary to enable the Energy Reform Strategy to proceed in its current form.

Gentraders may use physical plant included in the Gentrader bundle to hedge against plant outage. Further, at least some potential bidders will have the option of managing risk through combining their Gentrader rights with other portfolio assets.

Additionally, the Gentraders have the option of utilising financially based risk mitigation products such as arrangements with fast start peaking generators, traded derivatives or where available, insurance products. Further, risk mitigation measures may be built into contracts with electricity purchasers. Gentraders may also enter voluntary bi-lateral or multi-lateral co-insurance arrangements.[1] In the long run, building more standby generation will be an option for some Gentraders.

Therefore, the ACCC is satisfied that the co-insurance arrangement is not integral or necessary to the proposed Energy Reform Strategy. Accordingly, the relevant question for the ACCC in considering the current applications is the balance of public benefits and detriments that the Energy Reform Strategy with the co-insurance arrangement is likely to generate compared with the situation where the Energy Reform Strategy proceeded in its current form without co-insurance.[2]

In this respect, the ACCC considers that including the co-insurance arrangement in the Gentrader model will result in at best, some marginal public benefit. Based on the information available to the ACCC, the ACCC is not satisfied that this benefit will be more than negligible.

The co-insurance arrangement provides certainty around managing the risk of having to make contract payments that are not offset by pool earnings (unfunded difference payments) in most, but not all, circumstances. However, the ACCC considers that, given the range of other options available to manage risk, this certainty is only likely to be of very limited, if any, value.

Further, the ACCC does not consider that the co-insurance arrangement is a more efficient means of managing firmness risk than other available options. The disaggregation of the three generation portfolios into five Gentrader bundles may result in some change in contract arrangements at the wholesale level as the new parties align the contracting of their generation assets to their individual preferences. This may be more pronounced for parties that do not currently have generation assets in NSW acquiring, at least one, of the bundles, as proposed under the Energy Reform Strategy, as it seeks to put in place appropriate risk mitigation techniques and became familiar with the generation assets. As a consequence, for a short period after these reforms occur, it is possible that the co-insurance arrangement may provide some marginal benefit through offering an alternative means of managing risk which has a high degree of certainty attached to it, or at least provides fallback in addition to other means of managing risk. However, based on the information before it, the ACCC is not satisfied that any such benefit would be more than at best a short term, negligible, benefit.

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1 The ACCC notes that depending on the nature of such arrangements, these types of arrangements could potentially raise concerns under the *Trade Practice Act 1974*. It would be open to the parties proposing to enter into these types of agreements to seek authorisation from the ACCC for such arrangements. The ACCC also notes that, in contrast with the arrangements the subject of the current application, any such application for authorisation would be in the context of the Gentraders themselves, voluntarily having decided to develop such arrangements.

2 The ACCC also considered the position where the proposed Energy Reform Strategy proceeds without co-insurance but with four Gentraders instead of five. While the assessment of public benefits and detriments may differ somewhat compared to the Energy Reform Strategy proceeding in its current form, the ACCC is satisfied that the restructure of the Energy Reform Strategy whereby two Gentrader bundles are re-aggregated if the co-insurance arrangement is not authorised is not necessitated by or connected with the co-insurance arrangement.

More generally, given the other available options, the ACCC does not consider that the co-insurance arrangement is a more effective or efficient means of managing firmness risk. The ACCC considers that such risk can be adequately managed using the range of other options available.

The Applicants argue that none of these alternatives manage firmness risk as effectively as the proposed co-insurance arrangement would.

The ACCC recognises that each of the alternative strategies identified by it and industry participants has its limitations. The ACCC agrees that any of these strategies, if adopted in isolation, would be unlikely to deliver the same level of firm capacity as the proposed co-insurance arrangement, particularly given the revised, higher, level of 80 per cent at which the Applicants advised that firm capacity will now be set under the co-insurance arrangement. The Applicants advised that firm capacity would be set at this revised, higher, level, after the ACCC released its draft determination proposing to deny authorisation to the arrangement.

However, absent co-insurance, none of the alternative options identified by the ACCC and industry participants would be adopted in isolation. Rather, Gentraders would manage risk using a mix of the range of available options that best suits their needs. The ACCC is satisfied that co-insurance would not be more effective and efficient in managing risk than Gentraders employing a range of the other available options that best suits their individual needs.

The Applicants also argue, with respect to some of the alternative means of managing risk identified by the ACCC and industry participants, that the availability of such options in NSW is limited. However, the ACCC considers that this is primarily a reflection of the current structure of generation assets in NSW whereby NSW's three largest generators are able to effectively manage risk by limiting contracting to safe levels over their entire portfolios. Given this, alternative products for managing risk, such as those identified by the ACCC and industry participants, are currently not extensively required in NSW.

Accordingly, the limited availability of some of these options at the current time is not indicative of whether they would be available if the Gentrader model, or some other form of disaggregation of NSW generation assets that created a demand for these alternative risk mitigation options, was implemented.

Given the ACCC's conclusion that absent the co-insurance arrangement there would be a range of other options available to Gentraders to effectively and efficiently manage risk, the ACCC considers that the public benefits generated by the proposed co-insurance arrangement are marginal.

The ACCC considers that the co-insurance arrangement will generate some public detriment.

In some circumstance Gentraders can, and likely will, be called on to supply co-insurance notwithstanding that they may have no need to call on co-insurance in return. To the extent that this does occur, Gentraders with a portfolio of assets capable of acting as a natural hedge, or who choose to engage in other strategies to mitigate risk, will be forced to forgo a proportion of their non-firm pool operating profit to compensate Gentraders who do not.

The risk of being called on to supply co-insurance, whether as a result of previously having called on co-insurance or otherwise, is also likely to impact on Gentraders behaviour in contracting their capacity above the 80 per cent level of firm capacity at which co-insurance is set. While the level of physical dispatch for Gentraders will be the same, Gentraders are more likely to bid this capacity into the spot market, rather than enter into financial contracts over this capacity.

In addition, while the co-insurance arrangement includes incentives to maintain reliability of generation assets, these incentives would be as strong, if not stronger, if Generators and Gentraders negotiated contractual arrangements to encourage reliability without co-insurance in place.

The co-insurance arrangement also potentially foreclose some opportunities for other providers of risk mitigation products to supply the Gentraders in some circumstances. However, the ACCC considers that the effect of the co-insurance arrangement on other providers of risk mitigation options and on the liquidity of markets for these options for other customers, are limited by a number of factors.

The physical characteristics of some Gentrader bundles means that they may not, even absent the co-insurance arrangement, need to source risk mitigation products from the market, at least to cover the level of capacity covered by the co-insurance arrangement. In addition, all Gentraders will still need to adopt other strategies to manage risk associated with outages not covered by the co-insurance arrangement.

In conclusion, the ACCC considers that the public benefit of the proposed arrangement is marginal at best. In particular, the ACCC does not consider that the co-insurance arrangement provides a more efficient or effective means of managing risk than other available options. The ACCC is not satisfied that the marginal public benefits of the proposed co-insurance arrangement would outweigh the public detriment.

Accordingly the ACCC denies authorisation for the proposed co-insurance arrangement.

Contents

List of abbreviations

AER	Australian Energy Regulator
AEMO	Australian Energy Market Operator
CPRS	Carbon Pollution Reduction Scheme
Generator	A statutory NSW Government owned corporation with responsibility for operating electricity generation assets
Gentrader	A successful bidder for one of the five Gentrader bundles offered by the NSW Government under the Energy Reform Strategy
Gentrader bundle	A power station or group of power stations that the Gentrader will have certain rights over
ERS	Energy Reform Strategy
ETEF	Electricity Tariff Equalisation Fund
Firmness Risk	The risk that the generation asset(s) will not meet its firm capacity and therefore may incur unfunded difference payments
LYMMCo	Loy Yang Marketing Management Company
MEU	Major Energy Users Inc
MW	Megawatt
MWhs	Megawatt hours
NEM	National Electricity Market
New entrant	The NSW Government proposes to sell at least one Gentrader bundle to a bidder that does not currently have a significant presence in the NEM. For the purposes of doing so it defines new entrant as – a bidder for a Gentrader bundle that does not have bidding control over more than 520 MW of scheduled NEM generation capacity.
Unfunded difference payments	Contract payments that are not offset by pool earnings
VCR Scheme	Value of Lost Load Contract Re-packaging Scheme

1. The applications for authorisation

1.1. On 27 November 2009 the NSW Treasurer, the Hon. Eric Roozendaal MLC, lodged applications for authorisation with the ACCC for and on behalf of Macquarie Generation, Delta Electricity and Eraring Energy (the Applicants).

1.2. Authorisation is a transparent process where the ACCC may grant immunity from legal action for conduct that might otherwise breach the *Trade Practices Act 1974* (the Act). The ACCC may 'authorise' businesses to engage in anti-competitive conduct where it is satisfied that the public benefit from the conduct outweighs any public detriment. The ACCC conducts a public consultation process when it receives an application for authorisation, inviting interested parties to lodge submissions outlining whether they support the application or not. Further information about the authorisation process is contained in Attachment A. A chronology of the significant dates in the ACCC's consideration of these applications is provided at Attachment B.

1.3. Applications A91198-9 were made under sections 88(1) and 88(1A) of the Act:

- to make and give effect to a contract, arrangement or understanding, a provision of which is or may be an exclusionary provision within the meaning of section 45 of the Act
- to make and give effect to a contract or arrangement, or arrive at an understanding, a provision of which would have the purpose, or would have or might have the effect, of substantially lessening competition within the meaning of section 45 of the Act
- to make and give effect to a provision of a contract, arrangement or understanding, a provision of which is, or may be, a cartel provision and which is also, or may also be, an exclusionary provision within the meaning of section 45 of that Act and
- to make and give effect to a contract or arrangement, or arrive at an understanding a provision of which would be, or might be, a cartel provision (other than a provision which would also be, or might also be, an exclusionary provision within the meaning of section 45 of that Act).

1.4. The NSW Government proposes to disaggregate its three existing electricity generation portfolios into five Gentrader contract bundles. The essential feature of the Gentrader model is that it creates a functional separation between the ownership of the generation asset, still to be held by the NSW Government, and the ownership of the contractual rights to trade the capacity of the generation asset, to be held by the privately owned Gentrader.

1.5. Authorisation is sought for a co-insurance arrangement to support the disaggregation of the generation portfolios. It is proposed that the co-insurance arrangement be implemented though a multiparty agreement between the Generators and the Gentraders who successfully bid for the electricity trading rights of the Generators.

1.6. Co-insurance will provide each Gentrader with financial compensation designed to cover the risk involved in having to make contract payments that are not offset by pool earnings because of an outage, up to a pre-defined limit. If the declared availability of a generation asset that is subject to co-insurance is less that its firm capacity, then that Gentrader will have a right to call for co-insurance payments. The arrangement is designed such that another Gentrader party to the arrangement may be called upon to supply the co-insurance.

1.7. Authorisation is specifically sought for the following features of the co-insurance arrangement:

- the payment provisions of the Compensation Deed, which specify the price payable (the Compensation Price) for the compensation which a Gentrader is able to call on when the Generator is unable to meet its firm capacity requirements
- the firm capacity provisions of the Compensation Deed, which specify the quantity of firm capacity to be made available by each Generator to its Gentrader counterparty for the purpose of the co-insurance arrangement
- the allocation procedures and rules of the Compensation Deed, which specify which Gentrader will be required to pay compensation and the amount of that compensation and
- the supply and acquisition of the co-insurance provided pursuant to the Compensation Deed arrangement is limited to the parties to the agreement.

1.8. Authorisation is sought for a term of 10 years from the commencement date of the Compensation Deed, being the date on which all the Gentrader Contracts subject to the Compensation Deed are in force.

1.9. Further information on the background to these applications and the co-insurance arrangement is provided in Chapter 2 of this determination.

Other parties

1.10. Under section 88(6) of the Act, any authorisation granted by the ACCC is automatically extended to cover any person named in the authorisation as being a party or proposed party to the conduct. The Applicants have requested that the benefit of any authorisation granted be extended to the Gentraders.

1.11. Under section 88(10) of the Act, an authorisation may be expressed so as to apply to or in relation to another person who becomes a party to the contract, arrangement or understanding after authorisation is granted. The Applicants request that authorisation be expressed so as to apply to or in relation to another person who becomes a party to the Compensation Deed by reason of a Gentrader novating their rights to another person.

1.12. A copy of the applications for authorisation and the supporting submissions may be obtained from the authorisations register on the ACCC's website (www.accc.gov.au/AuthorisationsRegister) and by following the links to this matter (Macquarie Generation & Ors).

Draft determination

1.13. Section 90A(1) of the Act requires that before determining an application for authorisation the ACCC shall prepare a draft determination.

1.14. On 25 March 2010 the ACCC issued a draft determination proposing to deny authorisation to the proposed co-insurance arrangement.

1.15. A conference was not requested in relation to the draft determination.

2. Background to the applications

NSW electricity sector

2.1. The electricity generation capacity in NSW is approximately 16 400 Megawatts (MW). Of this capacity approximately 90 per cent is attributed to NSW Government owned generators (the Applicants) and Snowy Hydro, of which the NSW Government owns 58 per cent. The remaining 10 per cent of capacity is attributed to the private sector entities such as TRUenergy and Origin Energy.[3] Approximately 70 per cent of the generation capacity in NSW is fuelled by black coal with hydro and gas fuelled generation assets making up most of the remaining capacity.[4]

2.2. NSW is a participating jurisdiction in the National Electricity Market (NEM) along with Victoria, South Australia, Tasmania, Queensland and the ACT. The NEM is a physically connected wholesale market through which generators and retailers trade electricity in eastern and southern Australia. The Australian Energy Market Operator (AEMO) has managed the operation of the NEM since 1 July 2009 while the Australian Energy Market Commission (AEMC) is responsible for the rule making in regard to electricity wholesale, distribution and transmission in the NEM. The Australian Energy Regulator (AER) monitors the market to ensure participants comply with the National Electricity Law and Rules.

2.3. The NEM promotes efficient generator use by allowing trade among the regions (NSW, VIC, SA, Tas, QLD), which are linked by transmission interconnectors. This trade enhances the reliability of the power system and provides economic benefits by allowing high cost generating regions to import electricity from low cost regions. The AER's 2009 *State of the Energy Market* report, which is intended to provide a high level overview of energy market activity in Australia, notes that NSW is a net importer of electricity and considers that:

> It relies on local baseload generation, but has limited peaking capacity at times of high demand. This puts upward pressure on prices in peak periods, making imports a competitive alternative. New South Wales was importing over 10 per cent of its electricity requirements from 2002-03 to 2006-07, but this rate fell to around 7 per cent in 2007-08 and 2008-09.[5]

2.4. Congestion at the interconnectors that link the NEM regions may restrict the ability of imports/exports to flow between the respective regions and leads to significant price separation. For example, when congestion at an interconnector restricts a high demand region's ability to import electricity, prices in that region may spike above other regions in the NEM. In 2008-09 the NEM regions operated as an integrated market (price alignment across the regions) for 70 per cent of the time.[6] The AER in the State of the Energy Market 2009 report notes that during 2008-09, the interconnectors across Queensland and NSW and across Victoria and NSW experienced congestion.[7]

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3 Australian Energy Regulator, *State of the Energy Market 2009*, December 2009, page 57.
4 Ibid, page 56.
5 Ibid, page 77.
6 Ibid, page 80.
7 Ibid, page 145.

2.5. The electricity transmission assets in NSW are owned by TransGrid and Energy Australia, which are both NSW Government entities. The National Electricity Rules set out the timelines and processes for the regulation of transmission businesses in the NEM. Regulated transmission businesses must apply to the AER to assess their revenue proposals, typically every five years. In April 2009 the AER released its revenue determinations for TransGrid and Energy Australia for the period 2009/10 to 2013/14. The revenue determinations provide for $3.6 billion of capital expenditure for the NSW transmission networks during the period.

2.6. An electricity distribution network moves electricity from transmission networks to residential and business customers through infrastructure such as substations, transformers, underground channels and poles. In NSW the three electricity distributors are Energy Australia, Integral Energy and Country Energy, that are all owned by the NSW Government. Similar to the transmission revenue determination process, in April 2009 the AER made revenue determinations for the three NSW distributors.

2.7. The retail supply of electricity in NSW is fully contestable, that is, customers are permitted to enter a supply contract with a retailer of their choice.[8] Retail market share on a State aggregate basis still heavily favours the NSW Government owned entities (Country Energy, Integral Energy and Energy Australia) with a combined share of just under 80 per cent. However, since 2002/03 the share of the retail market held by new entrant retailers such as AGL Energy and Origin Energy has climbed from a combined total of 2-3 per cent to just over 20 per cent.[9]

2.8. In March 2010, the Independent Pricing and Regulatory Tribunal (IPART) released a final price determination on regulated tariffs for the 1 July 2010 to 30 June 2013 period. These regulated tariffs will apply to small retail customers who are supplied by standard retail suppliers (Country Energy, Integral Energy and Energy Australia) on standard contracts. In total these customers represent approximately 25 per cent of NSW electricity demand. The IPART determination increases prices for these customers between 20 and 42 per cent over the three year period if the Carbon Pollution Reduction Scheme (CPRS) is not introduced during the determination period. If the CPRS is introduced during the determination period the respective price increases will be between 46 and 64 per cent.[10]

2.9. The Electricity Tariff Equalisation Fund (ETEF) is designed to provide a buffer against price spikes in the NEM for the NSW Government owned retailers that are required to sell electricity to end users at IPART regulated prices. When spot prices are higher than the energy component of regulated prices, ETEF pays retailers from the fund. Conversely, retailers pay into ETEF when spot prices are below the regulated tariff. The NSW Government has announced it will phase out ETEF over 2010 – 11.[11]

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8 Australian Energy Regulator, *State of the Energy Market 2009*, December 2009, page 193.

9 Independent Pricing and Regulatory Tribunal, *Review of regulated retail tariffs and charges for electricity 2010 – 2013*, December 2009, page 31.

10 Independent Pricing and Regulatory Tribunal, *Media Release: Electricity Prices to Rise*, .18 March 2010.

11 Australian Energy Regulator, *State of the Energy Market 2009*, December 2009, page 105.

2.10. The NSW Government has stated that as a component of its Energy Reform Strategy it proposes to sell the retail arms of Country Energy, Integral Energy and Energy Australia.[12] The Government recently announced that it would run the sales process for the retailers in conjunction with the Gentrader sales process, with the aim of completing both by the end 2010.[13]

Energy Reform Strategy

2.11. The NSW Government announced its Energy Reform Strategy (the Strategy) on 1 November 2008. The broad objective of the Strategy is to ensure there is a timely investment in the electricity sector, thereby delivering affordable and reliable power to NSW businesses and households. Specifically, the NSW Government considers that the Strategy is designed to:[14]

- deliver a competitive retail and wholesale electricity market in NSW
- create a commercial framework to encourage private investment in the NSW electricity sector and reduce the need for future public sector investment in retail and generation
- ensure NSW homes and businesses continue to be supplied with reliable electricity and
- place NSW in a stronger financial position by optimising the sales value of public assets and reducing the Government's exposure to the electricity market risk and reducing the State's public sector debt.

2.12. To achieve the above objectives, the NSW Government has announced that the Strategy will comprise the following elements:[15]

- continued Government ownership and operation of existing power stations and all electricity networks in NSW
- contracting the electricity trading rights of the State owned power stations to the private sector, commonly referred to as the 'Gentrader' model
- selling key power station development sites in NSW and
- selling the retail arms of EnergyAustralia, Integral Energy and Country Energy, including the retail brands.

2.13. The NSW Government has stated that the need for reform has come about due to the future requirements for new electricity generation in NSW. The Government notes in the publication *New South Wales Energy Reform Strategy – Delivering the Strategy* that:

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12 NSW Government, *New South Wales Energy Reform Strategy – Delivering the Strategy*, September 2009, page 1.
13 NSW Government Media Statement, *Energy reform update,* 18 February 2010.
14 NSW Government, *New South Wales Energy Reform Strategy – Delivering the Strategy*, September 2009.
15 Ibid.

> If the Government invests in new power stations its financial resources will be diverted from other uses. The Owen Inquiry found that private sector investment in new power stations would be the most efficient way to ensure the Government's scarce financial resources were not diverted from other essential public services, while ensuring an ongoing secure energy supply for NSW.
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> However, the Owen Inquiry also found that the private sector would be unwilling to invest in new generation in NSW unless the Government removed itself from the competitive retail and generation sectors of the NSW electricity industry.[16]

2.14. The NSW Government has the objective that at least one Gentrader bundle will be acquired by a new entrant to the NEM. The NSW Government will consider a bidder to be a new entrant if it does not have bidding control over more than 520 MW of scheduled NEM generation capacity.[17] The NSW Government considers that this threshold ensures that the bidding entities that hold a small or passive interest in NEM generation assets are not disqualified as new entrants.[18]

2.15. In response to a query from the ACCC on whether bidders for the Gentrader bundles will be limited to acquiring one bundle each, the Applicants noted:

> It remains the Government's intention under the Energy Reform Strategy that bidders be limited to acquiring one Gentrader bundle.[19]

The Applicants

2.16. The Generators are statutory State Owned Corporations under the *State Owned Corporations Act 1989* (NSW) and the *Energy Services Corporations Act 1995* (NSW). Each Generator has two shareholders, one being the Treasurer and the other a Minister nominated by the Premier.

Delta Electricity

2.17. Delta Electricity is one of the largest generators in the NEM with capacity of approximately 5 000 MW. This capacity equates to approximately 9.2 per cent of the total NEM capacity or 30 per cent of the NSW region capacity. The majority of Delta's generation is from four black coal power stations. Delta is in the process of constructing the Colongra natural gas peaking plant.

Eraring Energy

2.18. Eraring Energy manages a portfolio of coal, hydro and wind generating assets in NSW. Eraring has a combined capacity of approximately 3 000 MW which represents about 5.8 per cent of NEM capacity or 18 per cent of the NSW region capacity.

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16 Ibid.
17 Applicants' supporting submission, 27 November 2009, page 3.
18 Ibid, page 4.
19 Applicants' further submission, 5 February 2010, page 2.

Macquarie Generation

2.19. Macquarie Generation operates the Liddell and Bayswater power stations that have a combined capacity of 4 640 MW representing 8.9 per cent of NEM capacity or 28 per cent of the NSW region capacity.

The Gentrader arrangements

Gentraders

2.20. The NSW Government proposes to disaggregate its three existing electricity generation portfolios into five Gentrader contract bundles. The essential feature of the Gentrader model is that it creates a functional separation between the ownership of the generation asset, still to be held by the NSW Government, and the ownership of the contractual rights to trade the capacity of the generation asset, to be held by the privately owned Gentrader. The table below lists the five Gentrader bundles and the generation assets that will be attached to each bundle.

Delta Coastal Gentrader bundle

Power Station	Capacity	Fuel
Munmorah	2 x 300 MW	Black Coal
Vales Point	2 x 660 MW	Black Coal
Colongra	4 x 167 MW	Gas

Delta West Gentrader bundle

Power Station	Capacity	Fuel
Wallerawang	2 x 500 MW	Black Coal
Mt Piper	2 x 700 MW	Black Coal

Eraring Gentrader bundle

Power Station	Capacity	Fuel
Eraring	4 x 720 MW	Black Coal
Shoalhaven	2 x 80 MW 2 x 40 MW	Hydro

Liddell Gentrader bundle

Power Station	Capacity	Fuel
Liddell	4 x 500 MW	Black Coal

Bayswater Gentrader bundle

Power Station	Capacity	Fuel
Bayswater	4 x 660 MW	Black Coal

2.21. The Gentraders will be the successful bidders for the five Gentrader bundles, as such the identities of the Gentraders are currently not known. The NSW Government announced in February 2010 that due diligence on the Gentrader transactions will commence in the middle of 2010 with the sales process expected to be completed by the end of 2010.[20]

2.22. The Gentrader contracts will be physical rather than financial and will be written at the individual power station level. Under the physical contract, the Gentrader will have control over all decisions regarding the dispatch of the Generator into the wholesale market. Broadly this means that the Gentrader will be responsible for decisions regarding the quantities and the prices at which the Generator is to be bid into the market and will receive the revenue from dispatch into the market. The Gentrader will also be responsible for decisions regarding hedging contracts backed by the power station.

2.23. The arrangements provide the Gentrader with exclusive rights over the capacity of the power station during the contract terms. Consequently the Generator will be unable to offer rights over capacity from the power station to any person other than the Gentrader.

2.24. The term of the Gentrader contracts will be equal to the remaining technical life of the power stations. For the majority of power stations included in the Gentrader arrangements this implies a contract term of between 20 and 30 years.[21]

Availability regime

2.25. The contract capacity dedicated to the Gentrader is not firm on the half-hour. The Gentraders right to dispatch the contract capacity will be subject to an availability regime that will attempt to account for both scheduled or planned outages and unscheduled or forced outages.

2.26. The Gentrader contracts set out an availability target, which will be calculated by measuring the equivalent availability delivered from the contract capacity of the power station over a defined period. The target will be further defined for like periods such as working weekday peak periods or non-working weekdays.

2.27. The Gentrader contracts set out an actual availability, which will be calculated for the same like period as availability targets are defined (e.g. working weekday peak periods and non-working weekdays). Actual availability will be calculated each month, for each like period, over a rolling number of months and will then be compared to the target availability. The calculation of actual availability will not reflect the loss of availability stemming from unscheduled outages, permitted scheduled outages, force majeure events and network failures.

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[20] NSW Government Media Statement, *Energy reform update,* 18 February 2010.
[21] Applicants' supporting submission, 27 November 2009, page 33.

2.28. Scheduled outages will be planned in advance of the contract year. The Generator will provide the Gentrader with a proposed outage schedule for the following contract year and an indicative outage schedule for a number of contract years after that. The proposed outage schedule for the following contract year will include a maximum period of time for the completion of all scheduled outages. Additionally there will exist a dispute resolution mechanism if the Gentrader and Generator cannot agree on the proposed outage schedule. Scheduled outages undertaken in accordance with the binding schedule are not counted as a loss of availability under the Gentrader contract.

2.29. When the actual availability of a power station for a period is higher than the target availability, the contract provides for an availability bonus to be paid by the Gentrader to the Generator. Alternatively, when the actual availability is lower than the target availability, the contract provides for availability liquidated damages to be paid by the Generator to the Gentrader.

The co-insurance arrangement

2.30. Co-insurance will be a financial arrangement where in the event of a plant outage the Gentrader affected by the outage has the option to call on co-insurance up to a pre-determined level of firm capacity. If co-insurance is called, the affected Gentrader receives difference payments in respect of the called quantity.

2.31. The Gentrader called on to provide co-insurance forgoes some, or all, of their pool revenues above their costs for their non-firm capacity (being total capacity less firm capacity) to fund the difference payment to the Gentrader affected by the outage. In short, the operating profit that the Gentrader called on would have earned on their non-firm capacity is used to compensate the Gentrader calling on the co-insurance for the operating profit on their firm capacity that they would have earned if the outage had not occurred.

2.32. The Gentrader called on to supply co-insurance is decided under an allocation rule whereby the Gentrader that has called on co-insurance the most is the first called to supply co-insurance to any other Gentrader.

2.33. Because the co-insurance contract is a financial contract it does not interfere with the freedom of the Gentrader supplying co-insurance or the Gentrader calling on it to dispatch their power stations under their Gentrader contracts. Similarly, Generators will continue to operate in accordance with the dispatch decisions of their Gentraders.

2.34. The co-insurance arrangement will be administered by a NSW Government entity. The principal activity of the administrator will be to allocate the supply of co-insurance in the event of a call on the contract and to monitor the supply and demand of co-insurance over the duration of the contract.

2.35. These arrangements are described in greater detail below.

Participating power stations

2.36. The co-insurance arrangement will only apply to the following State-owned baseload power stations:

- Vales Point (Delta Coastal Gentrader bundle)
- Wallerawang (Delta West Gentrader bundle)
- Mt Piper (Delta West Gentrader bundle)
- Eraring (Eraring Gentrader bundle)
- Liddell (Liddell Gentrader bundle)
- Bayswater (Bayswater Gentrader bundle)

2.37. The other power stations that form the remainder of the Gentrader bundles will be excluded for the following reasons:

- Munmorah (Delta Coastal Gentrader bundle): estimated technical life only extends to 2013/14.
- Colongra (Delta Coastal Gentrader bundle): is a peaking power station and as such has a higher marginal cost than the baseload power stations. Including it would mean the co-insurance arrangement would cover Gentraders at a significantly higher strike price, as the co-insurance price must exceed the marginal cost of all plant covered.
- Shoalhaven (Eraring Gentrader bundle): is an energy constrained plant and its inclusion will complicate the co-insurance arrangement for little gain given the small amount of energy produced by this station.

Term of the co-insurance arrangement

2.38. The Compensation Deed, of which the co-insurance arrangement is a component, will be for a fixed term of 10 years. The Applicants consider that this term will provide sufficient time for new entrant Gentraders, or Gentraders with limited access to existing capacity to pursue alternative strategies to manage the risk of unfunded difference payments such as building additional capacity.

2.39. The co-insurance arrangement may be terminated sooner than the 10 year period in two cases:

- The Gentraders party to the Compensation Deed decide under a super majority vote to end the arrangement prematurely.
- Some unforseen event leads to a significant number of generating units failing such that there is not enough capacity to support co-insurance.

2.40. The Applicants state that the intention in requiring a super majority vote is to provide bidders, particularly new entrant bidders, with some confidence that the co-insurance arrangement can not be terminated by block voting of larger incumbents. The Applicants further state that it is also undesirable for a single Gentrader to be able to deny all other Gentraders the opportunity to terminate the arrangement. In an additional submission on 5 May 2010 the Applicants advised that this balance is best achieved by requiring at most four of the five Gentraders to vote in favour of discontinuation to reach the super majority.

Availability and firmness

2.41. The co-insurance arrangement is designed to provide each Gentrader with a defined level of firm capacity. Gentraders are able to call on the co-insurance if the availability they receive through the Gentrader contract at any point does not meet this defined level of capacity. A consequence of the Gentraders being provided with a defined level of firm capacity is that the remaining non firm capacity may be required to support co-insurance payments from time to time.

2.42. Non-firm capacity is considered to be the difference between the defined level of firm capacity under the Compensation Deed and the total contract capacity under the Gentrader contract.

2.43. When Gentraders call on co-insurance, the called amount is counted as availability under their Gentrader contract. This reduces the likelihood that the Generators will be liable to pay penalties for breaching the defined level of availability under the Gentrader contracts. Consequently the NSW Government through ownership of the Generators is less exposed to electricity market risk.

Setting the firm capacity

2.44. Firm capacity is set at a level that the power stations party to the co-insurance arrangement can supply on a firm basis. Further, the level is set such that there is a low risk that power station outages will prevent the firm capacity being available across the power stations party to the co-insurance arrangement.

2.45. The co-insurance arrangement will not differentiate between forced and planned outages due to the difficulties in differentiating between the two outage causes. Firm capacity will therefore be set to reflect the probability of both types of outages. Further, this means that firm capacity can be set at a constant level for each power station for each year of the contract as opposed to having seasonal variations. Consequently, the need for the co-insurance arrangement to be prescriptive about when scheduled maintenance should occur is removed.

2.46. The timing of scheduled maintenance is provided for under the Gentrader contract with both the Generator and Gentrader having incentives to conduct scheduled maintenance during low demand times. In particular, the Gentrader has access to its non-firm capacity during high demand times and the Generator minimises its risk of making co-insurance payments.

2.47. The calculations that will determine the firm capacity under the co-insurance arrangement are outlined in more detail in Attachment D.

Calling rules, payments and allocation

2.48. Under the terms of the Gentrader contract, the Generators declare their available capacity to the respective Gentrader, these declarations are also made available to the administrator of the co-insurance arrangement. If a Generator's availability declaration is lower than the firm capacity defined under the Compensation Deed, then the associated Gentrader can choose to call co-insurance for the difference between firm capacity and available capacity.

2.49. If a call is made on co-insurance, then allocation rules are applied to determine which Gentrader(s) supplies the co-insurance. Co-insurance payments become active two full trading intervals from the time the call is made. For example, if a call is made by the affected Gentrader at 12.15pm then co-insurance payments would become active from the interval ending at 2pm and continue until the affected Gentrader rescinds the call or its Generator's availability declaration is again the excess of the Gentrader's firm capacity.[22] The affected Gentrader is not covered by co-insurance for the two interim intervals and therefore incurs the cost of the outage with no financial compensation under the co-insurance arrangement. The decision on whether to call on co-insurance is voluntary and is completely at the discretion of the respective Gentraders.

2.50. The payment of co-insurance occurs when the allocated Gentrader responds to the outage event and supports these payments by surrendering its operating profits on some or all of its non-firm output. The net effect is that the payments compensate the Gentrader suffering the loss of firm capacity. While the payments are a transfer from supplying Gentraders to receiving Gentraders, the actual payments are made to and from each Gentrader's relevant Generator rather than directly between Gentraders.

2.51. In the case of multiple simultaneous outages, it is possible that demand for co-insurance may exceed available supply. In this case financial payments do not apply for the unmet demand for co-insurance and the affected Gentraders bear the risk.

2.52. The method by which the Gentrader that will supply co-insurance will be chosen is called the surplus deficit order. It is designed such that the Gentrader who has called on co-insurance the most is the first to supply co-insurance to any other Gentrader. Under this method, Gentraders accrue deficit MWhs when calling on co-insurance and surplus MWhs when supplying co-insurance. In the event that a call is made, the Gentrader with the highest deficit is the first to supply and so on down the order.

2.53. While a Gentrader is able to choose whether or not to call on co-insurance they are obliged to supply co-insurance in the event they are called on. Under the co-insurance arrangement, Gentraders that are called on to supply co-insurance are required to make the co-insurance payments if they have available capacity above their own co-insured firm capacity.

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[22] In this example co-insurance payments would not be active for the trading interval in which co-insurance is called on (12:00pm to 12:30pm) or the subsequent two trading intervals (1:00pm to 1:30pm and 1:30pm to 2:00pm).

2.54. In the initial period following the commencement of the co-insurance arrangement the allocation of co-insurance will depend on the initial ordering of the Gentraders under the surplus deficit order. The Applicants advise that the initial value or place of each Gentrader in the surplus deficit order is likely to be based on the expected availability of the power stations. A Gentrader that is considered more likely to call on co-insurance due to the lower reliability of its power station will be ranked higher in the surplus deficit order and therefore in this initial period is more likely to be called on.

2.55. Further information on the calling of co-insurance, the allocation of co-insurance and the cash flows between Generators under the co-insurance arrangement is provided at Attachment D.

Other jurisdictions

Gentrader arrangements

2.56. The NSW Government publication *New South Wales Energy Reform Strategy: Defining an Industry Framework* notes the following examples in Australia of Gentrader style arrangements:[23]

- The trade of capacity from Power Purchase Agreements by Enertrade, a Queensland Government entity, with a number of private sector companies. While the majority of these agreements have concluded, the Gladstone Power Station continues to be traded by Stanwell, a Queensland Government owned generator.
- In 2007 AGL Energy Ltd purchased the output and dispatch rights of Queensland's 282 MW gas and diesel fired Oakey Power Station until 2014 in a seven year agreement.
- In 2007 AGL signed an agreement with Queensland Gas Company to secure 66 per cent of the output from the 130MW Condamine gas power station in Queensland in a three year agreement commencing in the first quarter of 2007.

2.57. The NSW Government further notes that Gentrader style arrangements have been used in a number of overseas jurisdictions. In the case of Alberta, Canada, where the arrangements are similar to that proposed in NSW, the Gentrader model was designed to increase competition in the generation sector and to promote new investment. The publication adds that the model has been used overseas to increase access for new entrants, with small allocations of trading rights offered or financial products being made available that are designed to attract a larger number of smaller players to the respective market.[24]

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[23] NSW Government, *New South Wales Energy Reform Strategy – Defining an Industry Framework*, March 2009, page 13.

[24] NSW Government, *New South Wales Energy Reform Strategy – Defining an Industry Framework*, March 2009, page 13.

Victorian co-insurance arrangement

2.58. The Victorian Government established a generator co-insurance scheme following the privatisation of State Electricity Commission of Victoria. The scheme ran from 1 July 1995 to 30 September 1996 with the intention of providing a mechanism for the Generators to manage unavailability risk. All privatised Victorian generators were required to participate in the scheme in accordance with their Generation Licences under the *Electricity Industry Act* (VIC).

2.59. Under the scheme, retailers were able to obtain firm hedging cover in respect of periods in which the system marginal price for electricity was very high. To obtain this hedging the retailer would enter into a bilateral contract with a Generator, which in turn participated in the co-insurance scheme. Under the agreement, the retailer agreed to pay a premium of $9 300 per MW per year of firm hedging cover that it received.

VCR Scheme

2.60. In December 1996 the ACCC granted authorisations A90593-4 to United Energy for the Value of Lost Load Contract Re-packaging Scheme (VCR Scheme). These arrangements remained in place, subject to some changes, until the end of 2001. The VCR Scheme was proposed by United Energy following the conclusion of the Victorian generator co-insurance scheme. Authorisation was sought by United Energy, the administrator and all current and future members of the VCR Scheme. Authorisation was granted until 8 January 2000.

2.61. The VCR Scheme was designed to provide hedging cover to Victorian based electricity retailers and generators during periods in which the spot price for electricity was high. The VCR Scheme operated through the establishment of a pool of non-firm contracts, where purchasers bid for the right to a percentage share of difference payments from the pool.

2.62. Generators would make difference payments to the VCR pool according to their supply of electricity when pool prices were high and the capacity they had offered to the pool. Buyers would receive difference payments from the VCR pool in accordance with their purchased share of the scheme.

2.63. Generators would receive a payment from the VCR Scheme according to their availability at times of highest pool prices during the contract period, which typically was one financial year. Additionally, participants in the VCR Scheme were able to offer their share of the VCR pool at any time through the secondary market. This feature enabled participants to adjust their hedging cover according to their needs.

2.64. In August 1998 United Energy lodged additional authorisation applications A90665, A90666 and A90670 to cover an amended copy of the VCR Scheme rules. They did not request the revocation of A90593-4 at the time of lodging the additional applications. Broadly the amended Scheme rules were designed to enable the Scheme to operate in the context of the NEM.

2.65. In considering both applications the ACCC concluded that they may substantially reduce competition. In particular, through the impact of control of secondary trading and the commitment of generation capacity to the VCR Scheme. However, the ACCC also considered that the VCR Scheme would result in public benefit through its provision of a risk management tool, which both generators and retailers could access. In particular, the Scheme would result in lower risk management costs.

2.66. The Applicants sought a term of authorisation of six years when lodging the additional authorisation applications. The ACCC did not consider it necessary to grant for that period and on 25 November 1998 granted authorisation until 31 December 2001. United Energy did not reapply for authorisation following the expiration of the additional authorisations at the end of 2001.

South Australian vesting contracts

2.67. On 22 December 1999 the ACCC granted conditional authorisation to applications for authorisation A90693 – A90697 lodged by the South Australian Government for and on behalf of Optima Energy, Flinders Power, Synergen and ETSA Power to enter into and give effect to vesting contracts. These arrangements remained in place for three years until the end of 2002.

2.68. The ACCC also authorised electricity vesting arrangements in NSW and Queensland in the mid to late 1990s. Vesting contracts were broadly designed to act as a transitional measure as State owned generators and retailers disaggregated and faced competition and the market set spot prices for the first time. In particular, vesting contracts covered the portion of the electricity load still governed by regulated tariffs, as opposed to competitive tariffs. They aimed to provide a range of outcomes, including progressive exposure to competition, hedging protection for retailers against volatile spot prices and revenue stability for generators and retailers.

2.69. In the South Australian arrangement, the insurance component of the vesting contracts was broadly categorised as a co-insurance arrangement. They were designed such that Flinders Power and/or Optima Power could call on the capacity of another SA generator to meet its vesting contract obligations in a situation where its own capacity had been reduced. In effect, the arrangement enabled a generator to call on another generator to provide capacity in order to minimise unfunded difference payments during high spot price events. The trigger for the call on co-insurance was a forced outage, not high spot prices.

2.70. In considering this co-insurance arrangement, the ACCC was of the view that in respect of risk management it replicated the self-insurance available to generators elsewhere in the NEM due to their size and excess capacity. Without co-insurance, the ACCC was of the view that generators would be exposed in a tight supply and demand market that prevailed in South Australia, to a higher level of risk than borne by other generators elsewhere in the NEM. Further, the ACCC concluded that it was unwilling to cancel the co-insurance arrangement as it had made available additional contract capacity to contestable customers.

2.71. These authorisations expired on 31 December 2002 and re-authorisation was not sought.

3. Submissions received by the ACCC

3.1. The ACCC tests the claims made by the applicant in support of an application for authorisation through an open and transparent public consultation process. To this end the ACCC aims to consult extensively with interested parties that may be affected by the proposed conduct to provide them with the opportunity to comment on the application.

Prior to the draft determination

3.2. Following receipt of the applications, the ACCC sought submissions from 47 interested parties potentially affected by the applications, including other Generators in NSW and the NEM, electricity transmitters/distributors, electricity retailers, industry associations and government departments.

3.3. The following interested parties provided submissions:

- Seed Advisory Pty Ltd & Taylor Fry Pty Ltd
- Snowy Hydro Ltd and
- TRUenergy Pty Ltd.

3.4. One interested party provided a submission that was excluded from the public register at the request of the party making the submission.

3.5. All interested party submissions that commented on whether the ACCC should grant authorisation were opposed to the ACCC authorising the proposed co-insurance arrangement.

3.6. In addition to the applications for authorisation, the Applicants provided additional submissions on 5 February 2010 and 19 March 2010. These submissions responded to the issues raised by interested parties and provided extra information on the proposed co-insurance arrangement.

Following the draft determination

3.7. On 25 March 2010 the ACCC issued a draft determination in relation to the applications for authorisation. The draft determination proposed to deny authorisation. A conference was not requested in relation to the draft determination.

3.8. The ACCC received public submissions in response to the draft determination from:

- ERM Power Pty Ltd
- Loy Yang Marketing Management Company (LYMMCo)
- Major Energy Users Inc
- TRUenergy Pty Ltd and
- Victoria Electricity Pty Ltd on behalf of Infratil Energy.

3.9. One interested party provided a submission that was excluded from the public register at the request of the party making the submission.

3.10. TRUenergy, LYMMCo and Major Energy Users broadly support the ACCC's analysis in the draft determination and consider that authorisation should be denied. Infratil Energy raises concerns with the structure of the Gentrader model more generally. ERM Power considers that the co-insurance arrangement is necessary for smaller generators and new entrants to manage firmness risk and consider that the co-insurance arrangement should be authorised.

3.11. The Applicants provided a submission in response to the draft determination on 19 April 2010 and a submission commenting on the views of interested parties on 29 April 2010. In addition, the Applicants provided a submission on 5 May 2010 that sought to clarify a number of the issues raised in their submission responding to the draft determination.

3.12. The views of Applicants and interested parties are outlined in the ACCC's evaluation of the proposed conduct in Chapter 4 of this determination. Copies of public submissions are available from the authorisations register on the ACCC's website (**www.accc.gov.au/AuthorisationsRegister**) and by following the links to this matter.

4. ACCC evaluation

4.1. The ACCC's evaluation of the proposed conduct is in accordance with tests found in:

- section 90(8) of the Act which states that the ACCC shall not authorise a proposed exclusionary provision of a contract, arrangement or understanding, unless it is satisfied in all the circumstances that the proposed provision would result or be likely to result in such a benefit to the public that the proposed contract, arrangement or understanding should be authorised.

- sections 90(6) and 90(7) of the Act which state that the ACCC shall not authorise a provision of a proposed contract, arrangement or understanding, other than an exclusionary provision, unless it is satisfied in all the circumstances that:

    - the provision of the proposed contract, arrangement or understanding would result, or be likely to result, in a benefit to the public and

    - this benefit would outweigh the detriment to the public constituted by any lessening of competition that would result, or be likely to result, if the proposed contract or arrangement was made and the provision concerned was given effect to.

- sections 90(5A) and 90(5B) of the Act which state that the ACCC shall not authorise a provision of a proposed contract, arrangement or understanding that is or may be a cartel provision, unless it is satisfied in all the circumstances that:

    - the provision, in the case of section 90(5A) would result, or be likely to result, or in the case of section 90(5B) has resulted or is likely to result, in a benefit to the public and

    - that benefit, in the case of section 90(5A) would outweigh the detriment to the public constituted by any lessening of competition that would result, or be likely to result, if the proposed contract or arrangement were made or given effect to, or in the case of section 90(5B) outweighs or would outweigh the detriment to the public constituted by any lessening of competition that has resulted or is likely to result from giving effect to the provision.

4.2. For more information about the tests for authorisation and relevant provisions of the Act, please see Attachment C.

The markets

4.3. The first step in assessing the effect of the conduct for which authorisation is sought is to consider the relevant market(s) affected by that conduct.

Submissions prior to the publication of the draft determination

4.4. The Applicants considered that the relevant markets were:

- the NEM wide wholesale market for the supply of electricity and
- the retail market for the supply of electricity, being either an inter-regional market or a NSW wide market.

4.5. The Applicants noted the decision by the Federal Court in *Australian Gas Light Company v Australian Competition and Consumer Commission* (AGL case) in 2003 and consequently considered that for the wholesale market, the product dimension is the supply of electricity and that there is not a separate market for the supply of electricity derivatives contracts.[25]The Applicants also cited the AGL case in considering the geographic dimension of the wholesale market is the NEM wide wholesale market rather than NSW.

4.6. Snowy Hydro broadly considered that the relevant market is that for insurance products that mitigate against unfunded difference payments for Generators in NSW.

4.7. Snowy Hydro agreed that there is not a separate market for the supply of derivatives contracts. However, it argued that a co-insurance arrangement is not an electricity derivative contract but rather a product to indemnify against unfunded contract for difference payments. Snowy Hydro noted that the terms 'indemnity' and 'indemnity insurance' refer to a traditional insurance product whereby the insured/buyer is compensated for actual losses linked to a physical event rather than derivative contracts which are triggered by a market variable.

4.8. Snowy Hydro further noted on the difference between derivatives and co-insurance:

> ...although the proposed co-insurance arrangement and standards derivatives have some commonality, they are fundamentally different products with different uses. The co-insurance arrangement provides an indemnity against losses. Derivatives, on the other hand, are typically settled by reference to the spot price of electricity and any generator which attempts to use them as a form of insurance will expose itself to significant basis risk.[26]

4.9. Snowy Hydro considered that there are a number of demand side and supply side substitutes for the product of co-insurance. For example, charging a premium for contracts over the safe level, selling non-firm contracts above the safe level or spending more on maintenance or upgrading plant to reduce the risk of unforced outages.

4.10. Snowy Hydro further considered that there are supply side substitutes to co-insurance such as insurance products and derivative products, in the form of callable caps and swaptions. Snowy Hydro submitted that these derivatives products/services are offered by other generators that have fast start peaking capacity, such as open cycle gas turbine generation. Such plants typically have a level of uncontracted capacity to take advantage of high spot prices.

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[25] *Australian Gas Light Company v Australian Competition and Consumer Commission* (no 3) [2003] FCA 1525 19 December 2003.

[26] Snowy Hydro Ltd submission on substantive applications, 8 January 2010, page 6.

4.11. Snowy Hydro further noted that on the supply side, a provider of a conventional insurance product mitigating unfunded difference payment risk could operate across the entire NEM. However, suppliers of indemnity and derivatives products backed partially by physical generation can only offer within a region. Snowy Hydro went on to submit that the price and willingness to pay for an indemnity product will differ between regions due to local price separation. For this reason Snowy Hydro considered that the geographic wholesale market for products mitigating against unfunded difference payments is geographically bound to NSW.

4.12. In a further submission, the Applicants disagreed with Snowy Hydro's submission that the relevant market is that for insurance products that mitigate against unfunded difference payments for NSW Generators. The Applicants argued that the substance and purpose of the co-insurance arrangement is its intention to work as an electricity derivative contract. The Applicants went on to note that market participants in the NEM have the option of purchasing derivatives such as swaps, caps and options to manage unfunded difference payments and consider that co-insurance has been established to achieve this objective.

4.13. The Applicants considered that co-insurance and standard electricity derivatives are not fundamentally different products as claimed by Snowy Hydro. They both serve the same objective of managing the risk associated with volatile spot price and are both settled by reference to the spot price.

The ACCC's draft determination

4.14. The ACCC noted that there exists a range of options both physical and financial in Australia for electricity generators to manage the risk of unfunded difference payments. The most common method for generators to manage this risk is through a physical or portfolio approach. This may be in the form of withholding a certain level of generating capacity or a particular generating asset (n – 1 model) as non-firm capacity. This non-firm capacity in effect acts as a buffer against the risk of an outage event that could give rise to unfunded difference payments. Further, the ACCC noted that the respective generator may hold assets in its portfolio, such as a fast start peaking generator, that could step in at short notice to make up for a shortfall were one of the generator's baseload assets to experience an unforseen outage.

4.15. The ACCC noted the AER's 2009 State of the Energy Market Report that there is a trend by participants in the NEM to have a degree of vertical integration between electricity generation and retail. One advantage of this is that it increases internal options to manage firmness risk. For example, in recent years the three largest energy retailers (Origin Energy, AGL Energy and TRUenergy) have been moving towards portfolios more balanced between generation and retail assets.[27]

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[27] Australian Energy Regulator, *State of the Energy Market 2009*, December 2009, page 102.

4.16. The ACCC also considered that Generators may seek to manage this risk through obtaining or entering into a financial arrangement. This may occur either through bilateral agreements negotiated through brokers or over an exchange such as Sydney Futures Exchange, which offers a number of electricity derivatives. The derivatives derive their value from the underlying asset, the electricity, and give rise to cash flows from the differences between the contract price of the derivative and the spot price of electricity. The price of the derivatives reflects the expected spot price, plus premiums to cover credit default risk and market risk.[28] In some cases traded derivatives may be able to be used to manage firmness risk. Finally, a generator in some cases may be able to obtain a straight insurance product from a financial institution.

4.17. The ACCC noted Snowy Hydro's submission that generators also have the option of entering into contracts with fast start peaking generators as a means of mitigating risk. These contracts have components of both a physical and financial product. While the generator who calls on the contract receives a level of financial compensation as a result of the outage, the fast start generator is utilising its physical characteristics or excess capacity to be able to provide the compensation.

4.18. The ACCC noted that in its consideration of TRUenergy and AGL Energy's swap of South Australian generation assets in 2007 it was of the view that there was a market for the supply of financial (hedge) contracts to South Australian electricity retailers. In particular, the ACCC considered that retailers were not able to substitute the hedge contracts for physical electricity, nor is a hedge contract a means of paying for the acquisition of physical electricity.[29]

4.19. The ACCC further noted the consideration of Justice French in *Australian Gas Light Company v Australian Competition and Consumer Commission (No.3)* [2003] FCA 1525 (Loy Yang) at [382] that:

> ...derivative contracts ought to be regarded as an integral part of the pricing and payment arrangements between generators and retailers in relation to the underlying product, which is electrical energy, and which they deal with 'as if' it had been sold from supplier to retailer.

4.20. In the context of the current application, the ACCC did not consider that the co-insurance product that is proposed by the Applicants is fundamentally different from the derivatives products that are utilised by generators in the NEM to manage risk. As noted by the Applicants, derivatives and co-insurance both serve the same objective of managing the risk associated with volatile spot price and are both settled by reference to the spot price. In this respect, co-insurance derives its value from the traded electricity in the form of the difference between the Generator's declared availability and the target firm capacity provided for under the Compensation Deed. Additionally, the payments between the parties under co-insurance are referenced to the spot price in a manner similar to a derivative.

4.21. That said, for the purposes of considering these applications for authorisation, the ACCC considered that it was not necessary to reach a conclusion on whether there is a separate market for insurance products that mitigate against the risk of unfunded difference payments for generators in NSW.

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[28] Ibid, page 93.

[29] ACCC Public Competition Assessment, *AGL Energy Ltd and TRUenergy Pty Ltd – proposed swap of South Australian electricity generation assets*, 20 April 2007.

4.22. With respect to the geographic scope of the relevant markets, the ACCC noted that physical constraints at the interconnectors between the regions (e.g. between Queensland and NSW) can result in congestion that may lead to significant price separation across the regions. The congestion often restricts a high demand region's ability to import electricity from a low demand region. As a consequence, prices in the high demand regions may spike or be set independently from the rest of the NEM. In 2008 – 09 there was price separation 30 per cent of the time in the NEM.[30]

4.23. The ACCC further noted that the interconnections between NSW and the Victorian and Queensland regions may experience congestion when import or export requirements exceed the respective interconnector's design limits. The ACCC considered that this indicated that a NEM wide geographic approach to the wholesale market may not be appropriate in considering the impact of the proposed co-insurance arrangement.

4.24. In its draft determination the ACCC concluded that the relevant markets for the purpose of assessing the co-insurance arrangement were:

- the wholesale market for the supply of electricity in the NSW NEM region and the supply of products to mitigate against the risk of unfunded difference payments and
- the retail market for the supply of electricity being either inter regional or NSW wide.

Submissions in response to the draft determination

4.25. The Applicants in their submission following the draft determination disagreed with the ACCC that the wholesale market was bound geographically to the NSW NEM region. The Applicants accepted that there are incidences of price separation between regions. However, the Applicants argue that these incidences are confined to low differentials and that absolute price levels in NEM regions are consistent with average pool prices.

4.26. While the Applicants agreed with the ACCC's view that products that mitigate against the risk of unfunded difference payments are a component of the wholesale market they argue that different assets or products within this market are not necessarily substitutes for one another in any given circumstance. In particular, the Applicants note that most generators use a mix of strategies in the form of physical generation and contractual mechanisms to manage various types of risk. The Applicants argue that this demonstrates that different products in the wholesale market can be complements as well as substitutes, with the degree of complementarity varying according to the characteristics of the market participants and the circumstances of the market.

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[30] Australian Energy Regulator, *State of the Energy Market 2009*, December 2009, page 81.

4.27. The Major Energy Users (MEU) submits that it is not possible for a customer to contract for firm capacity with a generator in a neighbouring NEM region as the generator would not be able to guarantee supply due to the risk of interconnector congestion. Accordingly, the MEU submits that constraints on interconnectors between regions in the NEM indicate that a wider geographic approach to the wholesale market is not appropriate in considering the impact of the proposed co-insurance arrangement.

4.28. The MEU also submits that it agrees with the conclusion in the ACCC's draft determination that the proposed co-insurance arrangement is not fundamentally different from the derivative products that are used by Generators in the NEM to manage risk.

ACCC view of the further issues raised

4.29. The ACCC agrees with the Applicants' submission that generators will use a mix of strategies, both physical and contractual, to manage various types of risk, including firmness risk.[31]

4.30. With respect to the geographic scope of the relevant market the ACCC notes that in the context of considering the co-insurance arrangement and its impact on contracting behaviour, the potential for interconnector congestion restricts the ability of generators to contract firm capacity across regions. The availability of inter-regional settlement residues can assist to alleviate this problem, but inter-regional settlement residues are a non-firm hedge.

4.31. For example, a Gentrader that has a generating asset in Victoria would need to purchase inter-regional settlement residues to hedge between the Victorian and NSW region prices, as cover when an outage actually occurs in NSW. However, the hedge is non-firm because interconnector constraints may reduce the settlement residues below the level required to cover the differential between the Victorian and NSW region prices.

4.32. Another issue with using inter-regional settlement residues to manage the risk of unfunded difference payments for the Gentrader's assets in NSW is that the Gentrader will not know in advance whether interconnector constraints will cause price-separation and limit inter-regional settlement residues to below assumed levels.

4.33. In particular, the risk of unfunded difference payments is largest at times of high spot prices, which are also the times when the interconnector is often congested and opportunities to import or export across regions are limited to below assumed levels. This is reflected in the fact that traded derivatives, such as forward contracts, are almost always priced based on the spot price in the respective region where the generator is located. Limited imports into NSW during high spot prices was clearly evident during the recent summer period.

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[31] NSW Government submission 29 April 2010, *Response to third party submission on ACCC draft determination in relation the co-insurance arrangements for the Energy Reform Strategy*, pg 20.

4.34. The proposed co-insurance arrangement, and other strategies for managing the risk of being exposed to unfunded difference payments, whether considered as complements and/or substitutes, are by there nature, strategies that are adopted in advance to provide cover if and when outages do occur. As submitted by the MEU, the risk of interconnector congestion means that the availability of generation capacity in another region of the NEM to act as cover would not be known with any certainty until the outage actually occurs.

4.35. Given the uncertainty about the availability of this generation capacity it can not be used to manage firmness risk, even when combined with an inter-regional hedge, in the same way that co-insurance, or the other risk mitigation strategies identified by the ACCC and industry participants can be.

4.36. Accordingly, in the context of considering the current application for authorisation, the ACCC considers that the scope of the market for the supply of products to mitigate against the risk of unfunded difference payments for NSW Gentraders is geographically bound by the NSW region of the NEM.

ACCC conclusion on the relevant markets

4.37. For the purpose of assessing the co-insurance arrangements, the ACCC considers the relevant markets affected by the proposed conduct are:

- the wholesale market for the supply of electricity in the NSW NEM region and the supply of products to mitigate against the risk of unfunded difference payments and

- the retail market for the supply of electricity being either inter regional or NSW wide.

The counterfactual

4.38. The ACCC applies the 'future with-and-without test' established by the Tribunal to identify and weigh the public benefit and public detriment generated by conduct for which authorisation has been sought.[32]

4.39. Under this test, the ACCC compares the public benefit and anti-competitive detriment generated by arrangements in the future if the authorisation is granted with those generated if the authorisation is not granted. This requires the ACCC to predict how the relevant markets will react if authorisation is not granted. This prediction is referred to as the 'counterfactual'.

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[32] *Australian Performing Rights Association* (1999) ATPR 41-701 at 42,936. See also for example: *Australian Association of Pathology Practices Incorporated* (2004) ATPR 41-985 at 48,556; Re *Media Council of Australia* (No.2) (1987) ATPR 40-774 at 48,419.

Submissions prior to the publication of the draft determination

4.40. The Applicants considered that the co-insurance arrangement is a key element of the NSW Government's Energy Reform Strategy as it underpins the proposed transaction where the Generators' current trading rights will be disaggregated into five Gentrader bundles. Consequently, the Applicants were of the view that the appropriate counterfactual would be one where the Energy Reform Strategy is not implemented or, at the very least, not implemented as currently envisaged.

4.41. The Applicants argued that without the co-insurance arrangement the disaggregation of the Generators' trading rights into the five Gentrader bundles is likely to increase the risk of unfunded difference payments. The Applicants argued that this would decrease the value of the generation assets being offered as a part of the Energy Reform Strategy sale process. Further, the Applicants submitted that the likely result is a lower level of firm contracts being available in the NEM with consequential adverse impacts on the wholesale and retail electricity markets.

4.42. Additionally, the Applicants considered that without co-insurance there will be an increased risk to the state owned generators of making availability damages payments under the Gentrader contracts. The Applicants further considered that this potential impact may result in a lower level of target availability under the Gentrader contracts, which may have implications for wholesale market outcomes and the ability of the Government to meet its target values for the Gentrader bundles.

4.43. The Applicants submitted that there are limited alternatives to co-insurance available to the Gentraders to manage firmness risk. Firstly, they submitted that there are restricted opportunities in the NSW region for Gentraders to combine their bundles with other generation assets as a means of self insuring. However, the Applicants noted that TRUenergy and Origin Energy, through the ownership of the Tallawarra and Uranquinty power stations, have the potential to manage firmness risk through a portfolio approach. However, the Applicants considered that this option will not be available to any new entrant Gentrader.

4.44. The Applicants noted that it will be a number of years before the generation sites that are being sold as part of the Energy Reform Strategy will be able to be utilised for electricity generation. Therefore the development of new generation capacity is unlikely to be able to provide Gentraders that have no existing plant with an effective self insurance mechanism in the medium term.

4.45. The Applicants considered that there may be opportunities to combine Gentrader bundles with other assets in the broader NEM wide wholesale market. However, the Applicants noted that there are periods of significant price separation between the NEM regions. The Applicants were of the view that risk management during these periods would be important to counter parties and that this suggests that a co-insurance arrangement occurs most naturally within a single region.

4.46. The Applicants conceded that there are likely to be opportunities for the successful Gentrader bidders to enter another form of insurance or co-insurance arrangement once the sale process has completed. Although the Applicants submitted that reaching such an agreement between the Gentraders is likely to be difficult. In particular, different Gentraders will have different bargaining positions based on their access to other plants or knowledge of their risk mitigation techniques with new entrants consequently in a weaker position.

4.47. Several of the interested parties prior to the publication of the draft determination considered that the co-insurance arrangement was not necessary for the Energy Reform Strategy to proceed. Further, they were of the view that there exist a number of alternative risk mitigation techniques or products that will produce more efficient outcomes for the individual Gentraders.

4.48. Snowy Hydro disputed the Applicants' submitted counterfactual and broadly considered that co-insurance was not necessary for the implementation of the Energy Reform Strategy. In particular, it was of the view that it is possible to offer the five Gentrader bundles without co-insurance.

4.49. Snowy Hydro noted that a number of generators of a similar size to the Gentrader bundles operate in the NEM without a co-insurance arrangement in place. In particular, the generators that were offered as part of the Victorian privatisation process were sold on a single station basis, generally with four units of generating capacity. Additionally, Snowy Hydro noted that at least two of the Gentrader bundles proposed in NSW have physical plant suitable to hedge against the risk of forced outages, namely Shoalhaven in the Eraring bundle and Colongra in the Delta Coastal bundle.

4.50. TRUenergy also considered that the Energy Reform Strategy can be implemented without the co-insurance arrangement. TRUenergy noted that following the Victorian generator privatisation there existed for a short time a centralised co-insurance scheme. It further noted that following the withdrawal of the scheme, market participants were able to successfully manage firmness risk through a variety of methods.[33]

4.51. TRUenergy broadly concluded that in the absence of an authorised co-insurance arrangement:

> ...all Gentraders would resolve any firm capacity shortages by uncovering alternate and more efficient ways of increasing firm capacity available. These methods would be tailored to the risk profile of individual generators, unlike the co-insurance arrangement, which assumes that all generators have the same probability of outages and all Gentraders have the same appetite for risk.[34]

4.52. Specifically, Snowy Hydro was of the view that both existing and new entrants to NSW will have access to equivalents to co-insurance such as existing plant, new plant or financially firm contracts with generation counter parties or in the general insurance market.

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[33] TRUenergy Pty Ltd submission on substantive applications, 13 January 2010, page 3.
[34] Ibid, pages 5-6.

4.53. Snowy Hydro also noted that there exist a number of alternatives to co-insurance including:

- limiting contracting to a safe level (N – 1 approach where, for example, a generator with four turbines will offer three of the turbines as firm capacity with the last, usually largest, turbine used as physical hedge against outage events)
- charging a premium for contracts over the safe level
- building low cost standby generation
- obtaining insurance and
- utilising fast start peaking generators.

4.54. TRUenergy also submitted that experience in the NEM indicates that there are a number of options for Gentraders to manage firmness risk and that centralised co-insurance is not required. TRUenergy considered that the following are options for the Gentraders to manage the risk of unfunded difference payments:

- Portfolio of generation assets: It is likely that most of the Gentrader bundles will be acquired by incumbent participants in the NEM. This would enable the acquirer to integrate the Gentrader assets as part of a portfolio and therefore being able to offer firm capacity in excess of the levels predicated by the 'N-1' model.
- Insurance products: A wide range of products exist to counter the risk of unfunded difference payments. These products include plant outage insurance, price cap contracts and customised derivatives such as weather based derivatives that act as a proxy for high demand periods.
- Trading strategies: Gentraders may achieve efficiencies within the market through trading strategies or contractual arrangements to better meet the needs of purchasers.

4.55. Seed Advisory/Taylor Fry also considered that there exist the following alternatives to the proposed co-insurance arrangement:

- for existing market participants that have generation portfolios there exists the option of self insurance
- there may be more opportunities for self insurance as the NSW Government sells generation development sites. This process would enable new entrants to create portfolio benefits or existing participants to expand the self insurance option and the
- use of market based swaptions.

The ACCC's draft determination

4.56. In the draft determination, the ACCC accepted that there exist a number of options separate from the proposed co-insurance arrangement available to the prospective Gentraders to manage their risk of unfunded difference payments. Further, the ACCC had been provided with no information to suggest that the experience of other generators in the NEM that operate without a co-insurance arrangement find these alternative methods of managing risk somehow lacking or are unable to fulfil their risk mitigation requirements.

4.57. The ACCC noted that in addition to straight derivative products there exist a number of physical alternatives to managing firmness risk. For example, a Gentrader may wish to reach an agreement with a peaking generator that in the event of an outage at one of the Gentrader's assets the peaking generator would be able to provide financial compensation due to ability to utilise excess capacity. In addition, the ACCC further noted that two of the Gentrader bundles, Delta Coastal and Eraring, contain peaking generators that would be able to act as a natural hedge against firmness risk.

4.58. The ACCC acknowledged that the disaggregation of the three generation portfolios into five Gentrader bundles will result in the some loss of portfolio benefits that assist generators in managing risk. However, the size of the Gentrader bundles will be relatively large compared to other assets in the NEM. For example, the Bayswater power station, the only asset in the Bayswater Gentrader bundle, has a nominated capacity of 2640 MW making it one of the largest generation assets in the NEM. The ACCC noted that for generation assets such as Bayswater that have four turbines it is common for them to manage firmness risk by adopting the N-1 model.

4.59. In addition, some of the potential bidders for the Gentrader bundles are likely to already have generation assets in NSW or in the NEM. Generation assets in NSW will assist any acquirer of a Gentrader bundle with managing firmness risk while assets in the NEM will convey a level of experience and understanding of how to manage such risks. Further, Gentraders are able to utilise trading strategies to manage risk.

4.60. The ACCC also noted that in the disaggregation of State Electricity Corporation of Victoria in 1995 a state mandated co-insurance arrangement operated for 15 months. Following its conclusion, the industry developed its own solutions to manage firmness risk, including an ACCC authorised voluntary scheme. The ACCC had no information that the experience in Victoria following the conclusion of the co-insurance arrangement resulted in a lower level of firm contracts than were previously the case or that the respective generators had difficulty managing firmness risk.

4.61. However, the ACCC also noted the Applicants' submission that the NSW region of the NEM is forecast to reach supply-demand balance in around five years and that, accordingly there will not be the same level of spare capacity in the NSW region that can be used to manage risk as was available at the time of the disaggregation of Victoria's generation assets.

4.62. The ACCC accepted that initially a new entrant bidder for a Gentrader bundle may be placed at some small disadvantage compared to incumbent parties in managing firmness risk. However, the ACCC considered that the presence of a co-insurance arrangement or lack thereof was unlikely to be a decisive factor in a new entrant's bidding behaviour. In particular, many of the risk mitigation measures noted would be available to a new entrant. In addition, a new entrant was likely to be experienced in managing firmness risk in other jurisdictions/overseas or would be in a position to quickly acquire such skills.

The ACCC's conclusion on the counterfactual in the draft determination

4.63. The ACCC in the draft determination was of the view that the issue of whether the Energy Reform Strategy could proceed in its current form absent the co-insurance arrangement was a central consideration to the most likely counterfactual.

4.64. The ACCC was not satisfied that without the co-insurance arrangement Gentraders would not be able to manage the risk of unfunded difference payments. In particular, as there exist a number of options available to the Gentraders to manage this risk that appear to be efficient and have been utilised by other parties in the NEM for a number of years.

4.65. The ACCC considered that Gentraders could use physical plant included in the Gentrader bundle to hedge against plant outage. Further, as acknowledged by the Applicants, at least some potential bidders will have the option of managing risk through combining their Gentrader rights with other portfolio assets.

4.66. Additionally, the ACCC noted that the Gentraders have the option of utilising financially based risk mitigation products such as arrangements with fast start peaking generators, traded derivatives or where available, insurance products. Further, risk mitigation measures could be built into contracts with electricity purchasers. In the long run, building more standby generation will be an option for some Gentraders.

4.67. Given this, the ACCC was not satisfied that absent the co-insurance arrangement the NSW Government would not be able to implement the Energy Reform Strategy. Rather, the ACCC considered that the relevant counterfactual against which to assess the proposed arrangement was one where the proposed Energy Reform Strategy proceeded without the co-insurance arrangement.

4.68. However, while the ACCC was satisfied that the proposed Energy Reform Strategy could proceed absent the co-insurance arrangement, the relevant question for the ACCC in considering the current applications was the balance of public benefits and detriments that the co-insurance arrangement would generate compared to the situation where the Energy Reform Strategy proceeded without co-insurance.

Submissions in response to the draft determination

4.69. The Applicants submit a range of arguments about the relative merits of co-insurance compared to the alternative risk mitigation strategies identified by the ACCC in its draft determination. These further arguments are considered in the ACCC's assessment of the public benefits and public detriments of the proposed arrangement.

4.70. In addition, central to consideration of the relevant counterfactual, the Applicants also make a number of further submissions.

4.71. The Applicants reiterate their earlier arguments that the co-insurance arrangement is an essential element of the Energy Reform Strategy. The Applicants argue that it is not possible to remove the co-insurance arrangement from the Energy Reform Strategy without adjustments to other aspects of the strategy.

4.72. In particular, the Applicants state that absent co-insurance they may consider reducing the number of Gentrader portfolios offered to better allow Gentraders to self insure. The Applicants state that while a final decision has not yet been made, consideration would be given to grouping together the Liddell and Bayswater Gentrader portfolios. The Applicants argue that this is because Liddell is one of the States' less reliable power stations and, absent co-insurance, it would be inefficient and involve greater risk for Liddell to operate as a stand alone business. The Applicants did not suggest that the Energy Reform Strategy would not proceed without the co-insurance arrangement in place.

4.73. The Applicants also argue that the approach adopted by the ACCC in its draft determination in considering the counterfactual is incorrect.

4.74. The Applicants argue that the relevant counterfactual is the position that would be likely to exist without co-insurance. The Applicants also argue that the ACCC must take into account the broader public benefits that are supported by the conduct for which authorisation is sought rather than only focus on those that flow from the conduct sought to be authorised.

4.75. Accordingly, the Applicants argue that the ACCC must take into account the changes to the broader Energy Reform Strategy that the NSW Government has stated it will consider making if authorisation is denied, in weighing the benefit and detriment of the co-insurance arrangement.

4.76. The MEU submits that the benefits that may result from the Energy Reform Strategy are not dependent on the implementation of the co-insurance arrangement.

ACCC's final view on the relevant counterfactual

4.77. The relative merits of co-insurance compared to alternative risk mitigation strategies is considered in the ACCC's assessment of the public benefits and public detriments of the proposed arrangement.

4.78. The ACCC considers that the appropriate legal test with which to assess the counterfactual, is to compare the position which would or would be likely to exist in the future if authorisation were granted as against the position if authorisation was not granted. As the Tribunal stated:

> In weighing relevant public benefits and detriments, the Tribunal must compare the position which would or would be likely to exist in the future, on the one hand if authorisation were to be granted, and on the other hand if it were absent.[35]

4.79. Based on the evidence and arguments presented to the ACCC, the ACCC considers that there are two likely counterfactuals in this matter:

(i) where the proposed Energy Reform Strategy proceeds in its current form without the co-insurance arrangement;

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[35] *Australasian Performing Rights Association* (1999) ATPR 41-701 at 42,936. For further information see Australian Competition and Consumer Commission *Guide to Authorisation, March 2007*, paragraph 5.38.

(ii) where the proposed Energy Reform Strategy proceeds (with four Gentrader bundles instead of five) without the co-insurance arrangement.

First counterfactual: Energy Reform Strategy proceeds in current form without co-insurance

4.80. As discussed at paragraphs 4.55 – 4.67, the ACCC considers that Gentraders have a number of alternatives available to them to manage risk other than the co-insurance arrangement.

4.81. Given the breadth of options available to Gentraders, as identified by the ACCC and industry participants, the ACCC does not consider that the co-insurance arrangement is integral or necessary to enable the Energy Reform Strategy to proceed. Therefore, the ACCC considers that it is likely (meaning that there is a real chance[36]) that the Energy Reform Strategy as contemplated will proceed without the co-insurance arrangement.

Second counterfactual: Energy Reform Strategy is restructured to four Gentrader bundles instead of five but also without co-insurance

4.82. The Applicants suggest that absent the co-insurance arrangement, the relevant counterfactual should be based on a modified Energy Reform Strategy because the NSW Government may consider restructuring the Gentrader model or because the Energy Reform Strategy as proposed would not be feasible, desirable or possible absent the co-insurance arrangement.

4.83. In particular, the Applicants state that while a final decision has not yet been made, consideration would be given to grouping together the Liddell and Bayswater Gentrader portfolios. The Applicants argue that this is because Liddell is one of the state's less reliable power stations and, absent co-insurance, it would be inefficient and involve greater risk for Liddell to operate as a stand alone business.

4.84. The Applicants suggest that these statements, in and of themselves, are sufficient to establish the appropriate counterfactual.

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[36] The Tribunal in *Qantas Airways Limited* [2004] ACompT 9 at 154-156 applied French J's interpretation of the term "likely" in the context of s 50 of the TPA in *Australian Gas Light Company v ACCC* [2003] FCA 1525 at [348]. French J assessed "likely" as meaning a "real chance or possibility" rather than "more probable than not" or a "mere possibility":

> The meaning of 'likely' reflecting a 'real chance or possibility' does not encompass a mere possibility … The assessment of the risk or real chance of a substantial lessening of competition cannot rest upon speculation or theory. To borrow the words of the Tribunal in the Howard Smith case, the word 'likely' has to be applied at a level which is commercially relevant or meaningful."
>
> Ibid.

Even though French J's observations related to s 50, the Tribunal in *Qantas* applied the same approach to s 90 noting that French J's observations were "equally applicable". *Qantas* [2004] ACompT 9 at 155. In assessing the likely benefits and likely detriments, the Tribunal in *Qantas* noted at [156]:

> We must be satisfied that there is a real chance, and not a mere possibility, of the benefit or detriment eventuating. It is not enough that the benefit or detriment is speculative or a theoretical possibility. There must be a commercial likelihood that the applications will, following the implementation of the relevant agreements, act in a manner that delivers or brings about the public benefit or the lessening of competition giving rise to the public detriment.

4.85. As noted by the Tribunal:

> We are to be concerned with probable effects rather than with possible or speculative effects. Yet we accept the view that the probabilities with which we are concerned are commercial or economic likelihoods which may not be susceptible to formal proof. We are required to look into the future but we can be concerned only with the foreseeable future as it appears on the basis of evidence and argument relating to the particular application.[37]

4.86. Based on the evidence and argument before the ACCC, it appears that the only other likely counterfactual is one where the Energy Reform Strategy proceeds in a restructured form (i.e., four Gentrader bundles instead of five) without the coinsurance. Any other type of restructure would be speculative, which is insufficient for the purposes of establishing an appropriate counterfactual.[38]

4.87. In considering the relevant counterfactuals against which to assess the proposed arrangement, the ACCC has had regard to the Applicants' submission that, absent authorisation, they may consider grouping together the Liddell and Bayswater Gentrader bundles. The ACCC has also had regard to the impact that doing so may have on the realisation of the competitive benefits of the Energy Reform Strategy.

4.88. As currently proposed, each of the five Gentrader bundles would control trading rights for between 2000MW and 3120MW of generation capacity. If the trading rights to generating capacity produced by the Bayswater and Liddell power stations were aggregated into a single Gentrader portfolio (as proposed by the Applicants with respect to a likely counterfactual), this would mean: (i) one less Gentrader bundle would be offered for sale; and (ii) one of the Gentrader bundles would control 4640MW of generation capacity, which is significantly more than any of the other Gentraders.

4.89. As previously recognised by the ACCC, the Energy Reform Strategy, as currently proposed will result in significant competitive benefits. In particular, the disaggregation of the three generation portfolios into five separate Gentrader bundles, including one new entrant, should increase competition on price and terms of contracts offered to electricity retailers in NSW.

4.90. Re-aggregating the Bayswater and Liddell Gentrader bundles may mean that these competition benefits are not realised to the same extent as they would be if these bundles were sold separately, particularly given the generating capacity that would be controlled by the aggregated Gentrader bundle, relative to that of the other Gentraders.

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[37] *Re Queensland Independent Wholesalers Ltd* (1995) ATPR 41-438 at 40960-61 (quoting *Queensland Cooperative Milling Association* (1976) ATPR 40-012 at 17243). For further information see Australian Competition and Consumer Commission *Guide to Authorisation, March 2007*, paragraph 5.39.

[38] Ultimately, whether the NSW Government makes changes to the Energy Reform Strategy because the co-insurance arrangements are not authorised is a matter for the NSW Government to consider. The ACCC does not have additional information about what modifications are likely to be made and/or in what form they would take. Therefore any possible changes to the Energy Reform Strategy (other than that which has been proffered by the Applicants, i.e., the possible re-aggregation of the Liddell and Bayswater Gentrader portfolios) are necessarily speculative.

4.91. Accordingly, the ACCC accepts that any re-aggregation of Gentrader bundles potentially impacts on the extent to which the competition benefits of the Energy Reform Strategy would be realised. Given this, the ACCC also accepts that the extent of the public benefit and detriment generated by the co-insurance arrangement potentially differs depending on whether the counterfactual adopted is that the Energy Reform Strategy proceeds in its current form, or as modified along the lines suggested by the Applicants.

4.92. Importantly, however, the ACCC is satisfied that the restructure of the Energy Reform Strategy whereby two Gentrader bundles are re-aggregated if the co-insurance arrangement is not authorised is not necessitated by or connected with the co-insurance arrangement. As noted, the ACCC considers that Gentraders have a number of alternatives available to them to manage risk other than the co-insurance arrangement which means that the co-insurance arrangement is not integral or necessary to enable the Energy Reform Strategy to proceed.

4.93. In any event, if the ACCC is not satisfied that in all the circumstances the conduct for which authorisation is sought results in or is likely to result in a net public benefit, the ACCC must not make a determination granting an authorisation.

Conclusion regarding the relevant counterfactual

4.94. Therefore, the ACCC has assessed the public benefits and detriments likely to be generated by the co-insurance arrangement compared with the situation where the Energy Reform Strategy proceeded, in its current form, without co-insurance.

4.95. Indeed, the Applicants note in response to a submission provided by Infratil that the reservations that Infrtail raised are with the Gentrader model itself rather than co-insurance arrangement *per se*. The Applicants then go on to state that they do not propose, in their submission responding to interested party comments about their application for authorisation, to address these broader concerns about the Gentrader model in any detail because:

> the issue before the ACCC is the public benefits of co-insurance.[39]

4.96. The ACCC accepts the Applicants' argument that broader public benefits supported by co-insurance are relevant to consideration of the applications. However, in its draft determination the ACCC concluded that the benefits of the Energy Reform Strategy were not in fact supported by the co-insurance arrangement for which authorisation was sought.

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[39] NSW Government submission 29 April 2010, *Response to third party submission on ACCC draft determination in relation the co-insurance arrangements for the Energy Reform Strategy*, p. 5.

Public benefit

4.97. Public benefit is not defined in the Act. However, the Tribunal has stated that the term should be given its widest possible meaning. In particular, it includes:

> ...anything of value to the community generally, any contribution to the aims pursued by society including as one of its principle elements ... the achievement of the economic goals of efficiency and progress.[40]

4.98. Broadly, the Applicants consider that the proposed co-insurance arrangement will result in significant public benefits through improved market outcomes and benefits to the NSW Government and the NSW public. The ACCC considers that the Applicants' claimed public benefits can be broadly categorised as follows:

- encouraging new entry and thereby greater competition in the NSW generation sector
- improved wholesale level outcomes
- improved retail level outcomes and
- value enhancement and cost savings for the NSW Government.

4.99. The ACCC considers that a central consideration in assessing these public benefits is whether the co-insurance arrangement is better able to manage risk and will result in greater levels of firm capacity being available than would otherwise be the case.

4.100. The discussion directly below contrasts the proposed co-insurance arrangement with other means of managing firmness risk. The conclusions reached in this assessment are then applied in considering each of the public benefit arguments put forward by the Applicants.

Co-insurance compared to other means of managing firmness risk

The ACCC's draft determination

4.101. While the ACCC did not receive many submissions prior to the publication of the draft determination, of the submissions that commented on the co-insurance arrangement, none of the submissions supported the arrangement. The ACCC also noted that experience in other jurisdictions within the NEM suggested that market based risk mitigation measures are available that would allow Gentraders to appropriately manage the risk of unfunded difference payments. Although, the ACCC noted that the availability of some of these measures is likely to be more limited in NSW in the coming years than has been the case in other regions in the past if, as forecast, the NSW region achieves a tighter supply-demand balance in the coming years.

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[40] *Re 7-Eleven Stores* (1994) ATPR 41-357 at 42,677. See also *Queensland Co-operative Milling Association Ltd* (1976) ATPR 40-012 at 17,242.

4.102. Further, the ACCC was of the view that there is some question as to whether the co-insurance arrangement will be called on, at least by some Gentraders, even if the arrangement is authorised and implemented. The ACCC noted that participation in the co-insurance arrangement is optional in the sense that, in the case of a plant outage resulting in a Gentrader's available capacity being less than its firm capacity they have the option of calling on co-insurance. Doing so means that the Gentrader then has an obligation to supply co-insurance in the future in the event that another Gentrader calls on it.

4.103. As discussed above, the ACCC noted that at least two of the Gentrader bundles are likely to have physical plant of sufficient size to be able to hedge against unfunded difference payments without needing to call on co-insurance. Further, bidders for other bundles that already have portfolio assets in NSW will also be able to use this plant as a hedge. Additionally, risk associated with unfunded difference payments could be further reduced by, in the case of some potential bidders, using other portfolio assets as a hedge or some of the other risk mitigation measures noted above.

4.104. In addition, the ACCC noted that, even if adopted, the co-insurance arrangement does not eliminate the need for Gentraders to seek out alternative products or strategies to mitigate the risk of unfunded difference payments. In particular, the co-insurance arrangement is not able to be called on for the first two trading intervals after a Gentrader calls on co-insurance. Accordingly, Gentraders will still need to adopt other measures to mitigate against the risk of unfunded difference payments during the first two trading intervals after a plant outage that reduces their available capacity to below firm capacity.

4.105. Further, the co-insurance arrangement does not apply when the level of co-insurance called on is greater than the non-firm capacity of other Gentraders party to the arrangement. Therefore, Gentraders will have to develop alternative insurance arrangements to manage the risk of this level of outages. Further, Gentraders may choose to take out insurance to 'firm up' their non firm capacity.

4.106. Accordingly, the ACCC considered that, in many cases there are market mechanisms available to manage firmness risk that will be equally and potentially in some cases, more effective and efficient than the co-insurance arrangement. Given this, the ACCC was of the view there was also some question as to how widely the co-insurance arrangement would be adopted.

Submissions in response to the draft determination

4.107. The Applicants argue that the ACCC's analysis in its draft determination focused too narrowly on whether the co-insurance arrangement is a more efficient and effective means of managing risk for Gentraders compared to alternative mechanisms. The Applicants argue that the ACCC should have adopted a broader focus on public benefits as a whole, rather than just those that would accrue to Gentraders.

4.108. The main focus of the Applicants' submission in response to the draft determination is the benefits, both to Gentraders and the broader public, the Applicants consider that managing the risk of unfunded difference payments through the co-insurance arrangement generates.

4.109. The Applicants submit that the co-insurance arrangement will provide considerable public benefit by resulting in greater levels of firm capacity being available and therefore greater levels of firm contracts being, or being able to be offered, by the market. The Applicants argue that this will provide greater competition in the price and terms of firm contracts offered to electricity retailers in NSW, and ease entry conditions for retailers.

4.110. The Applicants state that while they accept that other risk mitigation alternatives can help manage outage risk they do not consider that they are viable substitutes for the proposed mandated co-insurance arrangement.

4.111. The Applicants argue, based on modelling undertaken by them, that co-insurance will deliver an additional 1500MW of firm capacity compared to a situation where no other mechanism for managing outage risk is available. In doing so the Applicants assume that co-insurance will provide for a level of firm capacity of 80 per cent of total capacity. This same modelling also concludes that co-insurance will be called on during 35 per cent of trading intervals.

4.112. The Applicants note that in the past NSW Generators have been able to manage portfolio outage risk by limiting contracting to a safe level over their entire portfolios. However, the Applicants contend, this has been in the context of there being considerable excess capacity in NSW. The Applicants argue that there has been a significant tightening of the supply/demand balance in NSW and that additional capacity is expected to be needed by 2014/15.

4.113. The Applicants argue that the five Gentrader bundles adopting an n-1 strategy, whereby they contract the quantity of capacity of their generation units minus the capacity of the single largest unit in their portfolio, will result in a reduction of firm capacity compared to such a strategy being adopted by the three existing generation portfolios.

4.114. The Applicants also argue that such a strategy is unlikely to be a viable option, unless they offer very low levels of firm capacity, particularly for older stand-alone Generators such as Liddell which, the Applicants argue, as one of the states oldest power stations, has a low level of reliability.

4.115. The Applicants argue that Liddell's average annual availability in 2008/09 was around 72 per cent and that Liddell experienced an outage at one to two units for around 83 per cent of 2008/09, with an outage defined as the available capacity on a given unit falling below 480MW.

4.116. The Applicants argue that this suggests that if Liddell were operated as a stand alone plant it would expose itself to significant risk of unfunded difference payments if it offered a high level of firm contracts. The Applicants state that for Liddell to manage this risk on a stand alone basis by using the physical plant approach would require them to offer a low level of firm contracts to the market (equivalent to an n-2 or n-3 approach). The Applicants argue that this risk is currently managed by Macquarie Generation limiting contracting to a safe level over its entire portfolio (including the Liddell and Bayswater plants).

4.117. The Applicants argue that in the absence of co-insurance it would be inefficient and involve greater risk to operate Liddell as a stand alone business, particularly as the balance of supply and demand continues to tighten.

4.118. The Applicants further argue that even for larger bundles including those with peaking assets, self managing these risks entirely is unlikely to be effective. The Applicants state that under the Gentrader model the capacity of these bundles to self manage risk will be less than at present with three large portfolios. In addition, the Applicants argue that patterns of outage for baseload power stations is fundamentally different from the pattern of operation of a peaking facility and that managing baseload outage risk through a combination of baseload and peaking stations is sub optimal because:

- peaking plant may not be available due to their own outage or because pool prices do not justify turning on the plant, or
- using peaking plant to firm up baseload plant degrades the firmness of the peaking facility.

4.119. The Applicants conclude that using physical plant is not an effective and economic means of managing outage risk in NSW, particularly for Liddell.

4.120. The Applicants also argue that there will only be limited opportunities for Gentraders to combine their bundles with other generation assets as a means of self insuring. In particular, the Applicants argue that new entrants will not have an existing generation portfolio which can be used to assist in managing risk.

4.121. The Applicants also question the conclusions in the draft determination that Gentraders would have the option of using financially based risk mitigation products. The Applicants state that financial arrangements, such as over the counter contracts which involve direct transactions between counterparties, exchange traded derivatives such as price cap contracts or weather and insurance based derivatives are important mechanisms for managing risk. However, the Applicants argue that these arrangements would not result in as great a level of firm capacity being available as under co-insurance.

4.122. The Applicants model risk reduction under co-insurance and conclude that the percentage risk reduction across the five Gentrader bundles is in the range of seven per cent to 24 per cent.

4.123. In addition, the Applicants contend that uncertainty around the Carbon Pollution Reduction Scheme (CPRS) will make financially based risk mitigation products more difficult to source in the future.

4.124. The Applicants also argue that voluntary co-insurance arrangements between Generators as an alternative to the mandated arrangement proposed by it are unlikely to effectively manage risk because two generation portfolios, even two large generation portfolios, can never provide a level of co-insurance equivalent to the entire stock of NSW baseload generating units.

4.125. The Applicants argue that only one voluntary bi-lateral arrangement has been developed in NSW, between Macquarie Generation and Delta Electricity, two equally sized state owned generators. The Applicants state that this arrangement does not provide the same level of firm cover as co-insurance and is not a lower cost option.

4.126. The Applicants also contend that new entrants are unlikely to be in a sound position, relative to incumbent generators, in any bi-lateral negotiation, to develop financial arrangements following completion of the Gentrader sale process. The Applicants argue that incumbent generators are unlikely to have an interest in providing new entrants with financial arrangements that would allow them to manage outage risk at a cost that would allow them to compete effectively in the wholesale market.

4.127. The Applicants also argue that voluntary multi-lateral arrangements between generators that deliver similar outcomes to mandated co-insurance are unlikely to arise because any one party could secure the benefits of the arrangements if it were to defect from the arrangements and the other parties went ahead. The Applicants state that the benefits the party defecting would secure stem from the greater liquidity of the contract market that occurs when other parties have entered into co-insurance arrangements.

4.128. Finally, the Applicants argue that while investing in physical plant may be a viable option for some Gentraders, particularly Gentraders with a sizeable retail customer base, it is unlikely to be a more efficient means of managing outage risk than co-insurance because:

- investing in physical plant is an extremely costly option
- even if a privately viable option it would be a socially wasteful allocation of resources to respond to a problem that could be solved by other means, and
- new generation plant is not a short to medium term solution.

4.129. ERM Power submits that existing market based insurance products are only available for a limited range of circumstances and only on a short term basis. ERM Power argues that given the age of assets assigned to the Gentrader contracts trading risk will be a threshold issue for smaller players and new entrants unable to rely on the benefits of using a portfolio of assets to manage risk. ERM Power states that the suggestion that the market over time would develop the necessary products to manage risk is not evident to it.

4.130. ERM Power also submits that it is rare for smaller players and new entrants to be able to independently arrange for equivalent insurance with incumbent generators. ERM Power further submits that it is simplistic to assume that new entrants and smaller players could establish peaking plant to mitigate risk.

4.131. ERM Power argues that without co-insurance the quantity of firm capacity that will be able to be offered by Gentraders will be reduced.

4.132. LYMMCo does not believe that co-insurance is necessary to manage plant outages. Rather LYMMCo argues, this risk is best managed through well developed maintenance plans, outage schedules and prudent trading positions governed by a robust risk management regime. In addition, LYMMCo argues that there are a range of existing risk management products available to manage the risk of unfunded difference payments which mean that co-insurance is unnecessary. Further LYMMCO argues that even if the Gentrader model resulted in reduced contracting capacity, market participants and Gentraders would be responsive to those opportunities to ensure that demand for contracts would be satisfied.

4.133. LYMMCo argue that credible transmission risk failure is manageable by the market and that any reductions in contracted availability will be offset by the market overall.

4.134. Similarly, TRUenergy submits that the NEM has matured to the point where there are a range of options available for Gentraders to manage firmness risk that are likely to be more efficient than the proposed co-insurance arrangement.

4.135. The MEU submits that there are existing products available to mitigate risk which, it argues, is evident by the fact that co-insurance arrangements of the type proposed by the Applicants do not exist in other states.

ACCC view on the further issues

4.136. The ACCC agrees with the Applicants' submission that greater levels of firm capacity being available to Gentraders and therefore greater levels of firm contracts being, or being able to be offered, by the market would result in a public benefit. As submitted by the Applicants this would provide greater competition in the price and terms of firm contracts offered to electricity retailers in NSW, and ease entry conditions for retailers.

4.137. The ACCC also agrees with the Applicants that any assessment of the public benefits that may result from the co-insurance arrangement should focus on the broader public benefits as a whole rather than just those that would accrue to Gentraders. The ACCC considers that the assessment in its draft determination did take account of these broader potential public benefits.

4.138. The broader public benefits of the co-insurance arrangement are linked to whether the arrangement is a more efficient and effective means of managing risk for Gentraders compared to alternative mechanisms. Broadly speaking, the ACCC concluded in its draft determination that it is not. Accordingly, the ACCC did not consider that the co-insurance arrangement would result in a significant public benefit, either to Gentraders or the community more broadly.

4.139. Whether or not the co-insurance arrangement is a more effective and efficient means of managing risk than other available alternatives is important for the ACCC in assessing the arrangement. The Applicants have raised a number of additional points in arguing that it is. However, before addressing whether co-insurance is a more effective and efficient means of managing risk than other available alternatives the ACCC has some observations about the approach taken, and some of the methodology adopted, by the Applicants to argue that it is, as discussed directly below.

4.140. In seeking to establish that the co-insurance arrangement is a more effective and efficient means of managing risk than other alternatives the Applicants compare co-insurance to each of the individual alternatives identified by the ACCC in its draft determination. However, as concluded by the ACCC in its draft determination, absent co-insurance Gentraders would be likely to manage risk using a range of the available options that best suits their needs. Indeed, the Applicants themselves argue in their submission in response to the draft determination that most Generators currently use a mix of strategies based on physical generation assets and contractual mechanisms to manage risk.[41] The same could be expected to be true of the Gentraders.

4.141. Accordingly, the ACCC considered whether co-insurance more effectively and efficiently manages risk than Gentraders employing a range of the other available options that best suits their individual needs. The Applicants' submission in response to the draft determination, while seeking to argue that co-insurance is superior to each individual alternative, does not address this question.

4.142. As noted, the ACCC also has concerns with some of the assumptions made, and methodology adopted by the Applicants in relation to specific arguments made in their submission in response to the draft determination.

4.143. The Applicants argue, based on modelling undertaken by them, that co-insurance will deliver an additional 1500MW firm capacity compared to a situation where no other mechanism for managing outage risk is available.[42] However, the underlying assumption on which this conclusion is based is incorrect. The ACCC does not accept the assumption that absent co-insurance Gentraders would not employ any mechanism for managing risk.

4.144. The Applicants also argue that using physical plant in Gentrader bundles to manage risk, for example by adopting an n-1 strategy, will result in a reduction in firm capacity compared to the strategy being adopted by the existing three generation portfolios. While the ACCC agrees with this assertion, particularly assuming an n-1 strategy was adopted in isolation from any other risk mitigation measures, it is not relevant to the issue being considered.

4.145. That is to say, comparisons with what Generators would do if the Gentrader arrangement was not in place are not relevant to consideration of whether, when the Gentrader arrangement is implemented, the co-insurance arrangement would better manage risk than other available options.

4.146. Additionally, in relation to using physical plant to manage risk the Applicants argue that this is unlikely to be a viable option, particularly for older, less reliable Generators such as Liddell. The Applicants conclusion on the reliability of Liddell was informed by their analysis of publically available data on the commercially offered availability of the plant. However, the ACCC notes that availability and reliability are quite different. In the NEM generators are not obliged to offer the technical capability of the plant. Capacity is offered into the market on a commercial basis.

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41 NSW Government submission 29 April 2010, *Response to third party submission on ACCC draft determination in relation the co-insurance arrangements for the Energy Reform Strategy*, pg 20.

42 NSW Government submission 29 April 2010, *Response to third party submission on ACCC draft determination in relation the co-insurance arrangements for the Energy Reform Strategy*, pg 24.

4.147. In particular, the Applicants argue that Liddell's average annual availability in 2008/09 was around 72 per cent. However, the Applicants own analysis shows that more than 90 per cent of the plant capability is usually offered during the summer and winter (peak) periods, when demand (and as a result price) is higher. During the lower demand periods less of the plant is offered. Therefore, the 72 per cent figure appears to significantly understate Liddell's actual capability.

4.148. The ACCC discussed with the applicants the appropriateness of the use of this approach to examine reliability and expressed the view to the Applicants that the best indicator of reliability is plant forced outage rates. In response the Applicant indicated that the Liddell plant was far less reliable than other NSW plant and that they had used forced outage rates in modelling the reliability of Liddell.

4.149. Information about forced outage rates is commercially sensitive and confidential but is provided to AEMO in order for AEMO to determine reserve plant margins (to meet the NEM reliability standards). The ACCC requested that the Applicant supply the plant outage data for the Liddell, Bayswater, Vales Point, Mount Piper, Wallerawang and Eraring plants. However the Applicants advised that they were unable to provide this data in the short timeframe in which the ACCC requested it.

4.150. The Applicants also argue that Liddell experienced an outage at one to two units for around 83 per cent of 2008/09, again based on the commercial availability offered.

4.151. The Applicants argue that this suggests that if Liddell were operated as a stand alone plant using the physical plant approach this would require them to offer a low level of firm contracts to the market (equivalent to an n-2 or n-3 approach).

4.152. However, in arguing that Liddell has reliability issues that cause it to suffer frequent outages the Applicants have defined an outage as available capacity of a given unit falling below 480MW.[43]

4.153. Liddell has four generating units, each with total capacity of 500MW (2000MW in total). By arguing that whenever capacity of any unit falls below 480MW this constitutes an outage, the Applicants are contending that any instance where available capacity falls below 99 per cent of total capacity (i.e 20MW out of 2000MW) constitutes an outage. Adopting this definition it is not surprising that the conclusion has been reached that Liddell suffers from outages 83 per cent of the time. However, the ACCC does not consider that this conclusion is instructive as an indicator of the actual reliability of Liddell's units.

4.154. More generally, the Applicants argue that in the absence of co-insurance it would be inefficient and involve greater risk to operate Liddell as a stand alone business, particularly as the balance of supply and demand continues to tighten. The implication is that, through the co-insurance arrangement the financial risk that this unreliability creates will be able to be managed.

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[43] NSW Government submission 29 April 2010, *Response to third party submission on ACCC draft determination in relation the co-insurance arrangements for the Energy Reform Strategy*, pg 27.

4.155. As discussed below, the ACCC does not necessarily accept that this risk will be able to be better managed through the co-insurance arrangement than would otherwise be the case. In any event, the ACCC notes that such risk would be much more effectively managed through addressing the underlying reliability issues directly rather than through constructing a system whereby owners of other Gentrader bundles must provide financial compensation when outages occur. While co-insurance may address the financial risk that the unreliability at Liddell creates, it does nothing to address the underlying issues that cause such risk.

4.156. Notwithstanding the above comments, in the discussion below the ACCC considers whether co-insurance more effectively and efficiently manages risk than Gentraders employing a range of other available options that they consider best meets their individual needs.

The level of firm capacity under co-insurance

4.157. In its draft determination the ACCC assessed the alternatives to co-insurance on the assumption that co-insurance would be able to provide firm capacity at a level that the Applicants had confidentially advised the ACCC they expected co-insurance to achieve. Assessed against this level of firm capacity the ACCC concluded that co-insurance was not a more effective and efficient means of managing risk.

4.158. After the release of the draft determination the Applicants revised the level at which they expected firm capacity would be set at under the co-insurance arrangement to 80 per cent.

4.159. In doing so the Applicants noted that setting the level of firm capacity under co-insurance involves a trade off between:

- setting it too low, in which case there is a high probability any party calling on co-insurance will be able to be supplied but with only a low level of capacity firmed up, and

- setting it too high in which case there would be a lower probability any party calling on co-insurance would be able to supply it and the arrangements would not necessarily assist in firming up capacity.

4.160. The Applicants stated that in setting the level of co-insurance consideration needs to be given to the probability of a shortfall in co-insurance, including the availability of accurate information about outage rates, and the correlation of these outages. The Applicants state that after the release of the draft determination further analysis was undertaken about these issues which lead to the conclusion that co-insurance could be set at 80 per cent of firm capacity while still having an acceptable low probability of a co-insurance shortfall occurring.

Co-insurance compared to other means of managing firmness risk

4.161. The ACCC notes that the Applicants now expect that the level of firm capacity under the co-insurance arrangement will be set at a higher level than that which the Applicants originally indicated, and against which the ACCC assessed alternatives to co-insurance in the draft determination.

4.162. In its draft determination the ACCC stated that some Gentrader bundles were likely to have physical plant of sufficient size to be able to hedge against unfunded difference payments without needing to call on co-insurance. In respect of other Gentrader bundles the ACCC considered that self insuring, along with adopting a mix of other available alternatives to mitigate risk would be equally, and in some cases, more effective and efficient than co-insurance in managing risk. This assessment was based on a firm capacity level under co-insurance being set at a lower level that the Applicants now expect it to be set at.

4.163. With an assumed level of firm capacity under co-insurance set at 80 per cent, the co-insurance arrangement would provide a higher level of firm capacity than could be achieved by each Gentrader bundle self insuring by adopting an n-1 strategy, if this was the only strategy they adopted to manage risk.

4.164. In particular, an n-1 strategy, adopted in isolation from any other risk mitigation measures, would provide firm capacity for the five Gentrader Bundles as follows:

- Eraring 77 per cent
- Liddell 75 per cent
- Bayswater 75 per cent
- Delta Costal 74.5 per cent
- Delta West 71 per cent

4.165. The ACCC notes the concerns the Applicants have expressed over the reliability of the Liddell power station such that if it were to self insure it would need to adopt an n-2 or n-3 strategy. However, as discussed above, the ACCC considers that these concerns have been overstated.

4.166. In any event, the ACCC is not suggesting that absent co-insurance Gentraders self insuring using plant within their Gentrader bundles would be the only strategy they would adopt to manage risk.

4.167. As noted in the ACCC's draft determination, at least some potential bidders will have the option of managing risk through combining their Gentrader rights with other portfolio assets. Additionally, Gentraders have the option of utilising financially based risk mitigation products such as arrangements with fast start peaking generators, traded derivatives or where available, insurance products. Further, risk mitigation measures could be built into contracts with electricity purchasers. In the long run, building more standby generation will be an option for some Gentraders.

4.168. Further, Gentraders could enter into voluntary bi-lateral, or voluntary multi-lateral co-insurance arrangements if they though such arrangements were necessary to manage risk.[44]

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[44] See footnote 1.

4.169. The Applicants have raised concerns with some of these potential strategies for managing risk. The ACCC agrees that each of these strategies has its limitations. Recognising the limitations of these strategies as a means of managing risk, it is relevant to note that none of these strategies would be likely to be adopted in isolation. Notwithstanding this, the ACCC considers that the concerns raised by the Applicants with some of these strategies are overstated.

4.170. The Applicants argue that only one bi-lateral co-insurance arrangement has developed in NSW to date, between Macquarie Generation and Delta Electricity. However, the ACCC does not consider that this is instructive in considering the risk mitigation strategies that Gentraders would adopt if the NSW Government's Energy Reform Strategy was implemented.

4.171. As noted by the Applicants, in the past NSW's three Generators have been able to manage outage risk by limiting contracting to a safe level over their entire portfolios. Given this, the ACCC considers that it is unsurprising that alternative risk mitigation strategies, such as bi-lateral co-insurance arrangements, are not currently prevalent in NSW. In short, such alternative strategies are not as necessary given the current structure of generation assets in NSW. However, the Macquarie Generation and Delta Electricity example demonstrates that such arrangements can be developed when needed.

4.172. The Applicants also express concerns that new entrants are unlikely to be in a sound position, relative to incumbent generators, in any bi-lateral negotiation. The Applicants argue that incumbent generators are unlikely to have an interest in providing new entrants with financial arrangements that would allow them to manage outage risk at a cost that would allow them to compete effectively in the wholesale market.

4.173. The ACCC agrees that for a Gentrader with a spread of generation assets in their Gentrader bundle that can more effectively be used to self insure, and/or a Gentrader with other portfolio assets outside the Gentrader bundle that can also be used as cover, there will be less incentive to enter into bi-lateral arrangements with other Gentraders. However, any Gentrader that would otherwise be at risk of having to make unfunded difference payments, or otherwise wished to firm up more capacity in order to offer more firm contracting, would have an incentive to enter into such arrangements.

4.174. With respect to the Applicants specific argument relating to new entrants, the ACCC notes that the NSW Government's objective is to sell at least one Gentrader bundle to a new entrant, defined by the Applicants as an entity not having bidding control over more than 520MW of scheduled NEM generation capacity. However, the ACCC notes that it is likely that a number of Gentrader bundles will be sold to entities that do not have much, if any, generation capacity in NSW. As noted at paragraphs 4.31 to 4.35, with respect to additional generation capacity that an entity holds that can be used as cover to firm up capacity within the Gentrader bundles, it is capacity within NSW, rather than the NEM more broadly, that is relevant.

4.175. Accordingly, it is likely that a number of acquirers of Gentrader bundles will not have generation capacity outside their Gentrader bundle that can be used as firm cover in NSW. This being the case, the ACCC does not consider that the incentives for Gentraders to enter into bi-lateral arrangements to provide cover for each other will be as limited as argued by the Applicants.

ACCC conclusion on co-insurance versus other means of managing outage risk

4.176. The Applicants argue that none of the alternatives identified by the ACCC and industry participants manage firmness risk as effectively and efficiently as the proposed co-insurance arrangement. As discussed, the ACCC has concerns with some of the methodologies used, and assumptions made, by the Applicants in reaching this conclusion. In particular, the ACCC considers that, in arguing the case for co-insurance, the Applicants appear to have overstated both the benefits of co-insurance and the limitations of using alternative risk mitigation strategies.

4.177. Therefore, the ACCC disagrees with the Applicants' arguments regarding the magnitude of the difference between the level of firm capacity that could be offered under the co-insurance arrangement compared to each of the individual alternative risk mitigation strategies. However, the ACCC does consider that, with firm capacity set at the revised higher level of 80 per cent under co-insurance, as proposed by the Applicants in response to the ACCC's draft determination, co-insurance could deliver a level of firm capacity greater than that which any of the alternative risk mitigation strategies identified by the ACCCC and industry participants, if adopted in isolation, could achieve.

4.178. In particular, the most common risk mitigation strategy employed by Generators is an n-1 strategy whereby Generators will contract the quantity of capacity of their power station minus the single largest unit in their portfolio.

4.179. In its draft determination the ACCC concluded, based on the level of firm capacity the Applicants had advised confidentially at that time that they expected to be set under co-insurance, that at least some Gentrader bundles would be of sufficient size to be able to hedge against unfunded difference payments using an n-1 strategy without having to call on co-insurance.

4.180. With firm capacity under the co-insurance arrangement set at 80 per cent, as now proposed, Gentraders would achieve a higher level of firm capacity through co-insurance than they would through adopting an n-1 strategy alone, unless they had other generation assets in NSW they could combine with the generation assets in the Gentrader bundle in adopting an n-1 strategy.

4.181. However, the relevant question for the ACCC in considering the proposed arrangement is not the merits of co-insurance compared to adopting each of the other available options for mitigating risk in isolation, as this is not a strategy any Gentrader would be likely to adopt. Absent co-insurance Gentraders would be likely to manage risk using a range of the available options that best meets their needs.

4.182. Accordingly, the ACCC assessed the merits of co-insurance as against Gentraders likely managing risk using a range of methods absent co-insurance, and not against any one risk management method in isolation.

4.183. These risk management methods include, for some potential bidders, managing risk through combining their Gentrader rights with other portfolio assets, utilising financially based risk mitigation products such as arrangements with fast start peaking generators, traded derivatives or where available, insurance products. Further, risk mitigation measures could be built into contracts with electricity purchasers, Gentraders could enter into voluntary bi-lateral or multi-lateral co-insurance arrangements and, in the long run, building more standby generation will be an option for some Gentraders.[45]

4.184. For the reasons set out above, the ACCC is satisfied that firmness risk can be equally, and in some cases more effectively and efficiently, managed utilising this range of available risk mitigation options identified by the ACCC and industry participants that would be available absent co-insurance.

Encouraging new entry and greater competition

Submissions prior to the publication of the draft determination

4.185. The Applicants noted that the Gentrader sales process under the Energy Reform Strategy has been designed to ensure at least one new generation entrant acquires one of the bundles. The NSW Government will consider a bidder to be a new entrant if it does not have bidding control over more than 520 MW of scheduled NEM generation capacity. The NSW Government considers that this threshold ensures that the bidding entities that hold a small or passive interest in NEM generation assets are not disqualified as new entrants.

4.186. The Applicants considered that the co-insurance arrangement is important in encouraging new entrants as in its absence they will be in a worse position to self insure against the risk of unfunded difference payments than existing market participants. The Applicants were of the view that new entrants will be in a worse position due to the following reasons:

- they will not have existing generation assets in the NEM or will only have limited interests in such assets and therefore will not be able to manage firmness risk across a larger portfolio of assets
- they will be in a poor bargaining position, relative to incumbent generators, in any negotiation to develop a unilateral co-insurance arrangement following the completion of the transaction process and
- they will be less informed than incumbent generators and therefore less able to assess the performance of particular Gentrader bundles.

4.187. The Applicants argued that this new entry will promote competitive outcomes in both the generation and retail sectors to the benefit of end users of electricity.

4.188. Interested parties considered that there exists a number of options for purchasers of the Gentrader bundles to manage firmness risk. Broadly, interested parties were of the view that there is no reason why a new entrant will not have the knowledge and expertise or be able to acquire the knowledge to manage the firmness risk without necessitating co-insurance.

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[45] See footnote 1 in relation to voluntary co-insurance arrangements.

4.189. Snowy Hydro dismissed the Applicants' submission that there are no alternative risk mitigation techniques apart from co-insurance for new entrants. It considered that both existing participants and new entrants are likely to have access to the equivalent of the proposed co-insurance arrangement. This may be in the form of existing plant, new plant, the general insurance market or financially firm contracts with generation counterparties.

4.190. TRUenergy also disputed the Applicants' assumption that in the absence of the co-insurance arrangement, a new entrant would be in a worse position to self-insure against the risk of unfunded difference payments than existing market participants. TRUenergy considered that any party that expresses an interest in acquiring a Gentrader bundle would have the necessary experience or expertise to manage this risk. TRUenergy further submitted that it cannot be assumed that a new entrant would prefer the proposed co-insurance arrangement over individually managing risk.

The ACCC's draft determination

4.191. The ACCC considered in the draft determination that the implementation of the Energy Reform Strategy and the sale of the five Gentrader bundles, including one to a new entrant, should result in significant competitive benefits to the NSW region. In particular, the disaggregation of three generation portfolios into five Gentrader bundles, with at least one new entrant, may produce greater competition on the price and conditions of contracts offered to NSW based retailers.

4.192. However, noting its conclusion in the counterfactual section, the ACCC did not consider that the co-insurance arrangement is necessary for the implementation of the Strategy and the disaggregation of the portfolios into the Gentrader bundles. In particular, there exist a number of options separate from co-insurance available to the Gentraders to manage firmness risk.

4.193. With specific regard to new entrants, the ACCC acknowledged that they are unlikely to have specific experience, or at least as much experience as an incumbent, in managing such risk within the NEM. However, the ACCC considered that any new entrant is likely to have considerable experience with similar issues in other jurisdictions and/or be able to avail themselves of expertise to quickly gain this knowledge. No potential new entrant would be likely to undertake such a significant investment without ensuring that such knowledge and expertise is available to it.

4.194. More generally, the ACCC was of the view that acquirers of Gentrader bundles who do not already have generation assets in NSW, be they a potential new entrant to the NEM as defined by the Applicants, or otherwise, might however be in a poorer position to otherwise manage risk than the owner of some other Gentraders bundle in some circumstances.

4.195. The ACCC accepted that a Gentrader with a larger portfolio of generation assets in NSW, and therefore greater outside options for managing risk, may be at an advantage in this regard compared to a Gentrader who did not have assets outside of the bundle. Similarly, the portfolio mix of the Gentrader bundles indicates that some can be more adequately used to self manage risk than others. Although, the ACCC noted there is nothing to suggest that those that are more readily able to be used to self manage risk would be more or less likely to be acquired by new entrants.

4.196. The ACCC further accepted in the draft determination that the proposed co-insurance arrangement provides certainty around managing the risk of having to make unfunded difference payments in most, but not all, circumstances.[46]The ACCC considered that notwithstanding the other options available for managing such risk, this certainty is likely to be of some value and assistance in managing risk for those Gentrader bundles that are not large enough to effectively self insure or are not purchased by bidders with other portfolio assets in NSW which can be used as cover. The ACCC noted that this could potentially include, depending which Gentrader bundle they purchase, new entrants.

4.197. However, the ACCC was of the view that given the other available options for managing risk, this certainty is likely to be of at best, limited value. Further, the ACCC considered that any benefit that did result would only be likely to be realised for a short period while those Gentrader bundles that are not large enough to effectively self insure or are not purchased by bidders with other portfolio assets in NSW developed other risk mitigation strategies. Accordingly, the ACCC considered that any benefit in this respect is likely to be marginal at best.

Submissions in response to the draft determination

4.198. The Applicants submit that in the absence of co-insurance new entrants will have limited and more costly options to manage outage and firmness risk. The Applicants argue that co-insurance is necessary to encourage new entrants to acquire Gentrader bundles and in turn new entry would facilitate greater competition, which is a public benefit.

4.199. LYMMCo questions the Applicants' argument that a new entrant would be unable to acquire one of the Gentrader bundles without the co-insurance arrangement in place. LYMMCo argues that the risks posed to competent new entrants would be similar to the risk exposure of a range of existing market participants and therefore does not warrant special treatment in the form of co-insurance.

4.200. LYMMCo further states that the Applicants fail to consider that new entrants may prefer alternative risk management options to co-insurance and that locking them into arrangements that they may not desire, or be able to end independently, is ill-conceived. Accordingly, LYMMCo argues that rather than encouraging new entry, co-insurance limits future flexibility for new entrants.

4.201. The MEU argues that there may be some value in a new entrant receiving the certainty of a co-insurance arrangement, but it is likely to be limited and of short duration in light of existing risk mitigation options.

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[46] The co-insurance arrangements do not apply in the first two intervals after an outage or where the level co-insurance called on is greater than the non-firm capacity of other Gentraders party to the arrangements.

4.202. ERM Power, on the other hand, supports the proposed co-insurance arrangement and considers that it is necessary to facilitate new entrant and smaller generator participation in the Gentrader bidding process. As noted previously, it considers that market based insurance products are only available in a limited range of circumstances for short periods and submits:

> Given the age of the assets assigned to the NSW Gentrader contracts, trading risk will be a threshold issue for smaller players and new entrant electricity companies unable to rely on the benefits of a portfolio of electricity assets to mitigate their risk and the suggestion that the market would in time develop the necessary products is not evident to ERM and will be of no comfort to these potential bidders.[47]

ACCC view of the further issues raised

4.203. The ACCC remains of the view as expressed in the draft determination that a new entrant would be able to avail itself of a mix of available options to manage the risk that co-insurance seeks to address. While this will not include utilising an existing portfolio of assets, a new entrant will be able to harness a combination of the physical approach (e.g. 'n – 1' model) in combination with financially based risk mitigation products such as arrangements with fast start peaking generators, traded derivatives or where available, insurance products. Further, risk mitigation measures could be built into contracts with electricity purchasers, Gentraders could enter into voluntary bi-lateral or multi-lateral co-insurance arrangements and, in the long run, building more standby generation will be an option for some Gentraders.[48]

4.204. The ACCC accepts that some of these options are not currently prevalent in NSW. However, the ACCC considers that this is primarily because they are not currently needed given the existing market structure, with three large generation portfolios that are able to effectively self insure.

4.205. The ACCC acknowledges that the incumbent privately owned generators in NSW, TRUenergy and Origin Energy, will be able to adopt a portfolio approach were they to acquire a Gentrader bundle in managing firmness risk that will not be available to other acquirers of the Gentrader bundles. These other acquirers could be a new entrant as defined by the Applicants or an existing participant in the NEM that does not have a portfolio in NSW that may be used as cover against firmness risk. Further, acquirers of any Gentrader bundles who are a current privately owned electricity retailers in NSW (Origin, TRUenergy and AGL) or are acquirers of one of the NSW Government owned electricity retailers, in some cases will be able to utilise their vertically integrated position to manage firmness risk.

4.206. However, the ACCC remains of the view that a new entrant that acquires one of the Gentrader bundles will be able to utilise a combination of risk management options to effectively and efficiently manage firmness risk. Indeed, consistent with the ACCC's conclusion in considering the relevant markets in which to assess the proposed arrangement, any acquirer of a Gentrader bundle that does not have generation or retail assets in NSW is likely to be in a similar position with respect to managing firmness risk.

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47 ERM Power submission following draft determination, 14 April 2010.

48 See footnote 1 in relation to voluntary co-insurance arrangements.

Improved wholesale market outcomes

Submissions prior to the draft determination

4.207. In addition to the competition benefits provided by the new entrant Gentrader, the Applicants considered that the wholesale electricity market will benefit from increased liquidity in firm contracts and more efficient generation investment. As noted previously, the Applicants considered that without co-insurance the result will be fewer firm contracts being available from the existing NSW generation assets.

4.208. The Applicants argued that the co-insurance arrangement, by encouraging a higher level of contracting, will not only promote competitive market outcomes but will help avoid inefficient generation investment caused by a shortage of firm contracts. In effect, the Applicants argued that without the higher level of firm contracting provided by co-insurance there would be incentives for premature investment in generation capacity to meet the market's contracting requirements. The Applicants further stated that:

> The efficiency costs of investment occurring earlier than is socially optimal will ultimately be borne by consumers through higher average retail prices for electricity in the long term. A better outcome is to make more efficient use of existing capacity so that such unnecessary costs are avoided.[49]

4.209. Snowy Hydro, however, submitted that the co-insurance arrangement is an unnecessary imposition on a mature and well functioning competitive market. It considered that the applications for authorisation make no case that some market failure is evident that necessitates an anti-competitive intervention in the form of the proposed arrangement.

4.210. TRUenergy accepted that the co-insurance arrangement may firm up capacity compared to a situation where the Gentraders take raw exposure to the power plants. However, TRUenergy also considered that there exist a number of market options available to manage firmness risk that will achieve a better result in firming up capacity than under co-insurance. Further, TRUenergy was of the view that the co-insurance arrangement may reduce the amount of firm capacity available to the market by restricting it to the level specified in the co-insurance arrangement. This may occur where the Gentraders have other options available to them to offer firm capacity in excess of the level specified by the system Administrator.

4.211. TRUenergy further considered that co-insurance will not take account of the physical characteristics of the electricity network whereas independent risk management decisions would. TRUenergy's view was that the proposed arrangement assumes a common risk appetite and policy across all Gentraders and this one size fits all approach would reduce the likelihood and incentive for innovative risk management options to develop.

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[49] Applicants' supporting submission, 27 November 2009, page 36.

4.212. The Applicants, in their additional submission, argued that the interested parties fail to appreciate the nature of generator availability were no co-insurance arrangement in place. The Applicants considered that without co-insurance the Government would need to review the availability targets under the Gentrader contracts with the possibility of reducing them.

4.213. The Applicants in this further submission noted that the co-insurance arrangement will take into account differences between the underlying generation assets to be held in the Gentrader bundles in setting the level of firm capacity applying to each Gentrader. The Applicants added that the co-insurance arrangement is not exclusive as it does not prevent the Gentraders from seeking additional risk management options above that offered under co-insurance. In particular, this may enable the Gentraders to sell contracts above the co-insurance firm capacity level.

The ACCC's draft determination

4.214. As noted previously, the ACCC in the draft determination considered that there exist a number of effective market based options separate from the co-insurance arrangement available to the Gentraders to manage firmness risk. The ACCC was of the view that the proposed co-insurance arrangement will increase the level of firm capacity available compared to a situation where the Gentraders were fully exposed to plant outages, that is, they had no risk management system or policies in place. However, the ACCC was not satisfied that co-insurance will, in general, increase the level of firm capacity available at the wholesale level above the level that would be available were the Gentraders to utilise one or a combination of the other risk mitigation techniques that exist.

4.215. While the ACCC did not consider that the co-insurance arrangement is the most efficient means of managing firmness risk it recognised that it may provide some, limited, benefit in the short term. In particular, as the three generation portfolios are disaggregated into the five Gentrader bundles there may be some change in contract arrangements at the wholesale level as the new parties align the contracting of the generation assets to their individual preferences. This may be more pronounced with a new entrant acquiring one of the bundles and seeking to put in place appropriate risk mitigation techniques and becoming familiar with the generation assets.

4.216. Further, the ACCC noted that it is questionable whether the co-insurance arrangement would eliminate a Gentrader's risk exposure across its entire capacity in any event. In the event of such an extreme outage co-insurance that is able to be called on may not be sufficient to cover the Gentraders entire firm capacity.

4.217. The ACCC accepted the Applicants' submission that the arrangement has been structured to take into account the different profiles of the various generation assets. Further, the ACCC accepted that these differences will result in differing levels of firm capacity for the separate Gentrader bundles preventing the 'one size fits all' concern that some interested parties had.

Submissions in response to the draft determination

4.218. The Applicants reiterate their view that through enabling Gentraders to offer a greater quantity of firm contracts and encouraging new entry co-insurance will result in improved wholesale market outcomes.

4.219. TRUenergy, in their submission following the draft determination also reiterates its initial view that the NEM has matured to the extent that there are a range of options available to Gentraders to manage firmness risk that are likely to be more efficient than the proposed co-insurance arrangement.

4.220. ERM Power, however, is supportive of the proposed co-insurance arrangement and submits:

> ...we would expect that additional firm capacity will create a more liquid firm capacity market and benefit electricity consumers through lower electricity prices.[50]

4.221. As noted previously, LYMMCo does not consider that co-insurance is the most appropriate mechanism to manage firmness risk. With regard to wholesale market outcomes, LYMMCo supports the ACCC's analysis in the draft determination and submits that co-insurance may have a distortionary impact on the market. As with TRUenergy, LYMMCo is of the view that the wholesale market is mature and functioning and therefore is able to manage firmness risk effectively. Finally, LYMMCo submits in relation to the impact of co-insurance on the wholesale market:

> While we believe the absence of co-insurance would not have a negligible impact on wholesale markets, even were reduced contract capacity to eventuate, existing market participants and Gentraders would be responsive to those opportunities to ensure demand for contracts would be satisfied.

4.222. The MEU also supports the analysis in the ACCC's draft determination. In particular, that the co-insurance arrangement is unlikely to increase the level of firm capacity at the wholesale level, above that which would be available were the Gentraders to utilise one or a combination of the other existing risk mitigation products/measures.

ACCC view of the further issues raised

4.223. The ACCC has not been presented with any additional information which would cause it to change its view as expressed in the draft determination. Namely, that given other options for mitigating firmness risk the proposed co-insurance arrangement will not significantly impact on the level of firm capacity available at the wholesale level.

Improved retail level outcomes

Submissions prior to the publication of the draft determination

4.224. As noted previously, the Applicants considered that the co-insurance arrangement will allow for more firm capacity to be offered. The Applicants argued that electricity retailers typically prefer firm contracts over non-firm contracts. Non-firm contracts can result in a retailer being exposed to higher spot prices in the event of high consumer demand therefore increasing the possibility that energy purchase costs will exceed the revenue earned from customers.

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[50] ERM Power submission following draft determination, 14 April 2010.

4.225. Without co-insurance the Applicants were of the view that retailers would manage this risk through increasing the price they charge customers or alternatively investing in peaking generation capacity to provide a physical hedge against firmness risk. The Applicants were of the view that this is inefficient investment in additional capacity that will ultimately be borne by customers through higher prices. Alternatively, the Applicants argued that retailers may choose to directly charge higher prices to manage this risk. The Applicants contended that co-insurance on the other hand will more efficiently utilise existing capacity by reducing firmness risk and encouraging a greater level of firm contracting.

4.226. The Applicants further considered that the disaggregation of ownership at the generation level will potentially result in lower spot and contract prices. The Applicants stated that the co-insurance arrangement is designed to minimise the impact of this disaggregation and in particular reduce the risk of unfunded difference payments that Gentraders would otherwise face. The Applicants argued that this will enable the benefit of the increased competition from the disaggregation to flow to the retail level and consequently customers without the associated firmness risk.

4.227. The Applicants further submitted that, to the extent that retail entry is facilitated through ownership of generation assets, the offering of the five Gentrader bundles increases the threat of future entry at the retail level potentially resulting in a more dynamic and competitive retail market.

4.228. Prior to the draft determination, interested parties broadly considered that the risk of unfunded difference payments can be managed in a more efficient and less costly manner through market mechanisms than that provided by the co-insurance arrangement. Consequently, interested parties considered that the benefits stemming from the Energy Reform Strategy to the retail level, such as greater competition, can be achieved without the co-insurance

The ACCC's draft determination

4.229. In its draft determination, the ACCC accepted that in addition to the sale of the NSW Government's electricity retailers, the offering of the five Gentrader bundles under the Energy Reform Strategy will result in competitive benefits at the retail level. With a larger and more diverse number of parties offering contracts the ACCC noted that the result should be a greater level of competitive options for retailers. In particular, five separate and distinct organisations with differing portfolio mixes and different risk and return profiles will in theory offer a more diverse range of contract options to retailers than three NSW Government owned generation entities.

4.230. The ACCC also accepted the Applicants' submission that the sale of the Gentrader bundles will increase the threat of future retail level entry. As noted in the Background chapter of this determination a recent trend is for companies in the electricity industry to attempt to vertically integrate as a means to increase the internal capacity to offset risk.

4.231. However, the ACCC was of the view that the competitive benefits that will occur at the retail level as a result of the Strategy are not directly attributable to the co-insurance arrangement.

4.232. More generally, the ACCC did not consider that beyond providing for marginally more firm capacity for a short period the co-insurance arrangement will allow the Gentrader bundles to offer a higher level of firm capacity than would otherwise be the case.

Submissions in response to the draft determination

4.233. The Applicants reiterate their initial submission that the co-insurance arrangement is needed to safeguard against a drop in contracts levels that will occur under disaggregation and the effects such a drop will have on competition in the retail market.

4.234. The MEU supports the ACCC's consideration in the draft determination that at the retail level the co-insurance arrangement is likely to result in only marginal benefit.

4.235. Infratil Energy expresses concern that the proposed Gentrader model, including co-insurance, may impact negatively on retail competition, not only in NSW but also in other markets. In particular, that the model and co-insurance:

> ...will severely depress liquidity in futures and OTC markets because the model is designed to avoid the need for generators to trade contracts and to actively manage outage risks and spot market exposures. This is the opposite of what is required by non-incumbent energy retailers for whom liquid futures and OTC markets provide a far more "natural" hedge than direct ownership of lumpy generation (or large Gentrader contracts).[51]

ACCC view of the further issues raised

4.236. As in respect of its consideration of wholesale level outcomes, the ACCC has not been presented with information that would cause it to change its view, as expressed in the draft determination, that given other options to mitigate firmness risk, the proposed co-insurance arrangement will not improve retail level outcomes.

Value enhancement for the NSW Government

Submissions prior to the publication of the draft determination

4.237. The Applicants argued that the proposed co-insurance arrangement will result in a number of benefits to the NSW Government. The Applicants considered that these benefits can be considered as public benefits for the purpose of the authorisation test.

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[51] Victoria Electricity, on behalf of Inratil Energy Australia, submission following draft determination, 16 April 2010.

4.238. The Applicants further considered that the co-insurance arrangement will assist the NSW Government to achieve their target values for the Gentrader bundles under the Energy Reform Strategy. Broadly, the Applicants were of the view that the Gentrader bundles will be valued more highly by potential bidders with the co-insurance arrangement than without it. In particular, the Applicants argued that the co-insurance arrangement will be considered an important feature of the bundles by new entrant bidders. As noted previously, the Applicants submitted that new entrants have fewer options to manage the risk of unfunded difference payments and are likely to be less familiar with the NSW generation assets than incumbent participants. The Applicants' concluded that encouraging new entrant bidders will create a more competitive outcome in the Gentrader sales process that should result in the NSW Government being able to capture greater value for the assets.

4.239. TRUenergy did not consider that optimisation of the sale value of the Gentrader bundles constitutes a public benefit for the purposes of the ACCC's assessment under section 88(1A) of the Act

4.240. While TRUenergy accepted that the Gentrader market returns will be determined by competition it argued that Gentraders who have paid more for their contracts are more likely to face an incentive to increase pool revenues. TRUenergy's concluded that increased values for the Gentrader bundles obtained through the sales process will ultimately be recouped from the market.

4.241. TRUenergy went on to argue that it is possible that the co-insurance arrangement may increase the value of the bundles that are expected to have more frequent outages but that the arrangement may also reduce the value of the more reliable bundles that may be expected to provide co-insurance.

4.242. Snowy Hydro submitted that the cost and complexity of the proposed co-insurance arrangement is such that they may lead to a reduction of the value of the Gentrader bundles:

> ...bidders in a transaction will tend to undervalue arrangements such as co-insurance with which they are not familiar, have no commercial precedent and complicate an already complex Gentrader contract.[52]

4.243. Snowy Hydro noted that the Eraring and Delta Coastal bundles hold physical plant that are capable of acting as a hedge against forced outages. Snowy Hydro argued that potential bidders of these bundles will not pay any premium for this risk mitigation aspect of holding this plant as they will be forced to participate in the co-insurance arrangement.

4.244. The Applicants in a further submission before the draft determination argued that for the purposes of assessing the applications for authorisation the benefits attributed to the NSW Government are public benefits under the authorisation test.

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[52] Snowy Hydro Ltd submission on substantive applications, 8 January 2010, pages 11 - 12.

4.245. The Applicants disputed the interested party submissions that question the impact of co-insurance on the value of the Gentrader bundles. The Applicants reiterated their view that co-insurance increases the value of the Gentrader bundles by reducing the risk of Gentrader being exposed to unfunded difference payments thereby enabling Gentraders to offer more firm contracts. As a consequence, the Applicants considered that the co-insurance arrangement will increase the sales value of the assets by attracting a broader field of bidders, particularly new entrants.

The ACCC's draft determination

4.246. In its draft determination the ACCC noted that the Tribunal has stated that the concept of public benefit should be given its widest possible meaning and, in particular, includes:

> ...anything of value to the community generally, any contribution to the aims pursued by society including as one of its principle elements ... the achievement of the economic goals of efficiency and progress.[53]

4.247. The Tribunal has also stated that:

> Particular emphasis is placed on positive consequences for the achievement of the goal of maximising economic efficiency (including dynamic efficiency leading to economic progress).[54]

4.248. In this respect, the ACCC concluded that in considering the public benefits of the proposed co-insurance arrangement a key consideration was whether the arrangement is an effective and efficient means of managing risk. To the extent that the co-insurance arrangement is an effective and efficient means of managing risk, one would expect this to be reflected in the value of the Gentrader bundles. That is, parties will be willing to pay more for each of the bundles if there is an inbuilt mechanism to effectively and efficiently manage this risk. However, the ACCC was of the view that to claim both the efficiency benefits of the co-insurance arrangement and the consequential increase in value of the Gentrader bundles as public benefits would necessarily involve double counting.

4.249. In any event, as noted the ACCC did not consider that the co-insurance arrangement is in fact a more effective and efficient way of managing risk compared to other available alternatives.

4.250. The ACCC was of the view that in effect, by inclusion of the co-insurance arrangement in Gentrader contracts a firmness risk mitigation product has been bundled with the sale of the contracts. Bidders will value this additional product offered with the Gentrader bundles based on their individual circumstances and preferences. The ACCC considered the co-insurance arrangement is likely to be of some very limited benefit to those Gentrader bundles that are not large enough to effectively self-insure or are not purchased by bidders with other portfolio assets in NSW, in the short term. Accordingly, the ACCC concluded that some bidders may place some limited additional value on the Gentrader bundles as a result of the co-insurance arrangement.

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[53] *Re 7-Eleven Stores* (1994) ATPR 41-357 at 42,677. See also *Queensland Co-operative Milling Association Ltd* (1976) ATPR 40-012 at 17,242.

[54] *Re VFF Chicken Meat Growers' Boycott Authorisation* (2006), AcompT 9 at [75]

4.251. However, the ACCC noted that some bidders may not need, or even want, to participate in the co-insurance arrangement. In particular, the physical characteristics of some of the Gentrader bundles mean that they can be used to act as a natural hedge. Further, some bidders will have other generation assets that are also capable of performing this function. Such bidders are likely to place little if any additional value on the Gentrader contracts because of co-insurance arrangement.

4.252. Further, the ACCC expressed the view that given that Gentraders can be required to supply co-insurance even when they have no need to call on it themselves, the co-insurance arrangement may reduce the value of the Gentrader bundles for some potential bidders.[55]

Submissions in response to the draft determination

4.253. The Applicants agree with the ACCC's conclusion in the draft determination that the relative effectiveness and efficiency of co-insurance in managing firmness risk compared to other available options will be reflected in the value placed on the Gentrader bundles. However, the Applicants dispute the ACCC's view that to claim both the efficiency benefits of the co-insurance arrangement and the consequential increase in value of the Gentrader bundles as public benefits would involve double counting. Rather, the Applicants consider that the issue is one of the appropriation of any value created between the NSW Government and private entities.

4.254. The Applicants go on to submit that the issue of value derived from the Gentrader process is a threshold point. That is, the progression of the Gentrader process and the broader Energy Reform Strategy is predicated on the NSW Government achieving is value objectives. To this extent, the Applicants argue that obtaining the required value is assisted in having a greater level of competition for the bundles, in particular, through attracting a new entrant to bid for one of the bundles.

4.255. LYMMCo submits that it agrees with the conclusions in the ACCC draft determination about value enhancement for the NSW Government.

4.256. The MEU submits that:

> As for the issue of value enhancement for the NSW Government, this is likely to be a short term measure. The implementation of the Energy Reform Strategy without any intervention and/or distortion in the risk mitigation market surely overrides the value enhancement claim.[56]

ACCC view of the further issues raised

4.257. As noted in the draft determination, the ACCC considers that any additional value bidders place on the Gentrader bundles as a result of the co-insurance arrangement would be limited. Indeed, some bidders may place less value on the Gentrader bundles with the co-insurance arrangement attached to them.

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[55] The co-insurance arrangements operate under a surplus/deficit allocation system whereby the Gentrader who has called on co-insurance the most is the first to supply co-insurance to another Gentrader. However, during the initial period after the arrangements commence, where no Gentrader has a sufficient 'deficit' to be the first called on, Gentraders that have not called on co-insurance may be required to supply it. Similarly, where co-insurance is called on and Gentraders with a deficit are not able to supply all the co-insurance that is called on, Gentraders that are not in deficit will be obliged to supply co-insurance.

[56] Major Energy Users Inc submission following draft determination, 14 April 2010.

4.258. More generally, it remains the ACCC's view that any increase in Gentrader bundle values would reflect the relative effectiveness and efficiency of the co-insurance arrangement compared to other risk management alternatives. Any issues around apportioning this value or the NSW Government achieving its value objectives does not change the magnitude of this value. It is this magnitude that is relevant to the ACCC's consideration of the arrangement. Accordingly, the ACCC remains of the view that to accept both the efficiency benefits of the arrangement, assuming there were any, and the achievement of the NSW Government's value objectives as a separate additional benefit, would constitute double counting. Accordingly, the ACCC does not give any weight to increases in Gentrader bundle values as a public benefit given that the public benefit from any increase in value has already been considered in evaluating the benefits of the co-insurance arrangements more generally.

Public detriment

4.259. Public detriment is also not defined in the Act but the Tribunal has given the concept a wide ambit, including:

> ...any impairment to the community generally, any harm or damage to the aims pursued by the society including as one of its principal elements the achievement of the goal of economic efficiency.[57]

4.260. The exchange of certain information among competitors, particularly in relation to prices, fees and costs, may facilitate collusion or otherwise reduce competition, resulting in increased prices or reduced quality and availability of goods or services. Outcomes of this nature are associated with significant public detriment.

4.261. Additionally, agreements between competitors which impose restrictions on their decisions as to what they deal in, or with whom they deal, can result in allocative inefficiencies. Such agreements distort market signals and can suppress competitive dynamics that would exist in a competitive market.

4.262. Such agreements also have the potential to increase barriers to market entry or expansion, which reduces the competitive restraint applying to market participants. Both can lead to increased prices and reduced choice for consumers and significant inefficiencies.

4.263. In this case, the Applicants argue that there are negligible anti-competitive detriments associated with the co-insurance arrangement and in fact it will lead to increased levels of contract liquidity and more competitive outcomes than otherwise would be the case. The majority of interested parties on the other hand consider that the co-insurance arrangement will result in anti-competitive detriment and will not promote efficiency.

4.264. The potential pubic detriments generated by the co-insurance arrangement identified by the Applicants and interested parties are discussed below.

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[57] *Re 7-Eleven Stores* (1994) ATPR 41-357 at 42,683.

Supply of risk management products and investment signals

Interested party submissions

4.265. The Applicants note that some parties may argue that the co-insurance arrangement will distort investment signals with the effect of delaying new generation capacity. The Applicants consider that the arrangement through encouraging a higher level of contracting will help to avoid premature generation investment that could be caused by a shortage of firm contracts. They go on to argue that the cost of this inefficient investment will ultimately be borne by customers through higher electricity prices.

4.266. Snowy Hydro argues that the co-insurance arrangement will lessen competition for the supply of products used to mitigate against the risk of unfunded difference payments.

4.267. Snowy Hydro also argues that incentives to maintain or increase the existing level of power station reliability will be muted. Snowy Hydro provides the example of an old and relatively unreliable generator and a newer more reliable one. Snowy Hydro contends that it is likely that the net flow under co-insurance would be from the newer generator to the older generator which reduces the incentive for the Gentrader with the newer generation assets to maintain their reliability as some of the benefits will be captured by the Gentrader with the less reliable generation assets. Snowy Hydro considers that this is a form of moral hazard as co-insurance is likely to lead to power station reliability deteriorating to the lowest common denominator.

4.268. TRUenergy submits that the co-insurance arrangement may have a broader detrimental impact on the NEM. In particular, it may reduce the liquidity of contracts in the NEM as the Gentraders alter their contracting behaviour from what would be the case were no co-insurance arrangement in place. TRUenergy argues that any reduction in efficiency as a result of the co-insurance arrangement may lead to higher wholesale electricity prices within the NEM.

4.269. The Applicants in a further submission disagree with Snowy Hydro's contention that the benefits of reliability from newer power stations will be captured by less reliable stations. The Applicants state that in setting the firm capacity under the co-insurance arrangement, the reliability of the respective stations will be taken into account.

4.270. With respect to the impact of the arrangement on other providers of services that could be used to manage risk, the Applicants note that the arrangement does not limit the Gentraders from entering into other risk management arrangements with alternative market participants. For example, a Gentrader could enter into a risk management arrangement with a fast start peaking generator if they wished to sell contracts above the level provided by co-insurance.

4.271. Infratil Energy provided a submission following the draft determination that expresses concern that the proposed Gentrader model, including co-insurance, may impact negatively on retail competition, not only in NSW but also in other markets. In particular, that the model and co-insurance:

> ...will severely depress liquidity in futures and OTC markets because the model is designed to avoid the need for generators to trade contracts and to actively manage outage risks and spot market exposures. This is the opposite of what is required by non-incumbent energy retailers for whom liquid futures and OTC markets provide a far more "natural" hedge than direct ownership of lumpy generation (or large Gentrader contracts). [58]

ACCC view

4.272. By seeking to reduce the need for Gentraders to individually source risk mitigation products directly, or otherwise employ strategies to manage risk, the proposed co-insurance arrangement, in effect, forecloses some opportunities for other providers of these services. In particular, fast start peaking plants that are able to offer a financial hedge against firmness risk through products such as callable caps and swaptions are likely to have a reduced pool of potential customers as the Gentraders utilise the proposed co-insurance arrangement. As well as foreclosing access to some potential customers in some cases this has the potential to impact the liquidity of supply of these services for other customers.

4.273. However, the effect of the co-insurance arrangement on other providers of risk mitigation options, and on the liquidity of markets for these options for other customers, is limited by a number of factors. In particular, the physical characteristics of some Gentrader bundles means that they may not, even absent the co-insurance arrangement, need to source risk mitigation products from the market, at least to cover the level of capacity covered by the co-insurance arrangement.

4.274. Gentraders will still need to adopt other strategies to manage risk associated with outages in the first two trading intervals after an outage, when the co-insurance arrangement does not apply. Similarly, Gentraders will need to adopt other means of managing risk to cover instances where the level of co-insurance called on is greater than the non-firm capacity of other Gentraders party to the arrangement.

4.275. Further, as noted by the Applicants, Gentraders may enter into other risk management arrangements where they sell contracts above the level provided by co-insurance.

4.276. In addition, as discussed above, absent the co-insurance arrangement some of the Gentrader bundles, whether considered as a stand alone portfolio or, depending on the buyer, combined with other portfolio assets, are likely to be of sufficient size so as to be able to hedge against unfunded difference payments, at around the same level as provided for under the co-insurance arrangement, without needing to call on other risk management options. Accordingly, these Gentraders would be unlikely to source risk management products from other suppliers for this level of firm capacity, even absent the co-insurance arrangement.

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[58] Victoria Electricity, on behalf of Inratil Energy Australia, submission following draft determination, 16 April 2010.

4.277. With respect to the Applicants' argument that the co-insurance arrangement will, through encouraging a higher level of contracting, help to avoid premature generation investment that could be caused by a shortage of firm contracts, as discussed previously the ACCC does not consider that the co-insurance arrangement will result in a higher level of firm capacity being made available than would otherwise be the case.

4.278. Nor does the ACCC consider that is has been established that absent co-insurance, the alternative mechanisms for managing risk would not provide appropriate signals about the need for additional investment in generating capacity.

4.279. With respect to Snowy Hydro's argument that incentives to maintain or increase the existing level of power station reliability will be muted, as noted by the Applicants, in setting the firm capacity under the co-insurance arrangement, the reliability of the respective stations will be taken into account. Consequently, the ACCC is satisfied that the co-insurance arrangement would not result in any increased reliability from modern or better maintained generation assets being captured by less reliable assets.

Impact on participating Gentraders, other generators and potential new entrants

Submissions prior to the publication of the draft determination

4.280. The Applicants noted that it could be argued that the co-insurance arrangement will provide incumbent Gentraders with an advantage over any new entrant considering investing in NSW generation capacity. However, the Applicants stated that it will not only be new entrant investment that will not have access to co-insurance but also new investment by the Gentraders that are parties to the arrangement. The Applicants were of the view that this reflects that the co-insurance arrangement will not discriminate between different potential investors in new generation capacity.

4.281. Snowy Hydro argued that the arrangement will give the participants an advantage not available to other market participants:

> Effectively the participants will be party to a revenue sharing arrangement in regard to the co-insurance product and will not compete, despite the power stations having different costs and different levels of reliability and thus both different needs for the co-insurance product and different abilities to supply such a product.[59]

4.282. In response the Applicants further contended that the co-insurance arrangement would be less effective were they to include fast start peaking generators such as Snowy Hydro as the co-insurance strike price would need to be higher enough to cover the marginal cost of those generators.

The ACCC's draft determination

4.283. The ACCC noted the co-insurance arrangement will not apply to any new investment, regardless of source. Accordingly, the Applicants argued, the co-insurance arrangement does not discriminate between different potential investors in new generation capacity.

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[59] Snowy Hydro Ltd submission on substantive applications, 8 January 2010, pages 11 - 12.

4.284. However, the ACCC expressed the view while it may be the case that the co-insurance arrangement does not discriminate between different potential investors in new generation capacity, it is the case that the co-insurance arrangement provides incumbent Gentraders with a means of managing risk that would not be available to any potential new generation capacity.

4.285. Therefore, the ACCC considered that while the arrangement does not discriminate between different potential new investment, it does to the extent that the arrangement is a more effective means of mitigating risk than other available options, potentially place incumbent Gentraders at a competitive advantage over all potential new investment. Similarly, the arrangement could provide Gentraders with a competitive advantage over other incumbent generation assets.

4.286. However, the ACCC considered that the extent of this competitive advantage is limited by the fact that, in most cases, the co-insurance arrangement does not provide a more effective means of managing risk than would otherwise be available to Gentraders absent the arrangement.

4.287. With respect to participating Gentraders themselves, the ACCC noted that calling on co-insurance is optional such that, all else being equal, it would be expected that a Gentrader would only use the co-insurance arrangement if they considered them a more effective means of managing risk than other available options. As discussed previously, the ACCC considered that, in at least some cases, Gentraders may not need, or even want, to use the co-insurance arrangement, particularly where the physical characteristic of their portfolio can be used as a natural hedge.

4.288. However, the ACCC noted that the arrangement is not entirely voluntary for Gentraders. The co-insurance arrangement operates under a surplus/deficit allocation system whereby the Gentrader who has called on co-insurance the most is the first to supply co-insurance to another Gentrader. In particular, during the initial period after the arrangement commences, where no Gentrader has a sufficient 'deficit' to be the first called on, Gentraders that have not called on co-insurance will be required to supply it. Similarly, where co-insurance is called on and Gentraders with a deficit are not able to supply all the co-insurance that is called on, Gentraders that are not in deficit may be obliged to supply co-insurance.

4.289. Therefore, the ACCC concluded, in some circumstance Gentraders can, and likely will, be called on to supply co-insurance notwithstanding that they may have no need to call on co-insurance in return. To the extent that this does occur, Gentraders with a portfolio of assets capable of acting as a natural hedge, or who chose to engage in other strategies to mitigate risk, will be forced to forgo a proportion of their non-firm pool operating profit to compensate Gentraders who do not.

4.290. In this respect the ACCC noted that the arrangement cannot be dissolved without a super majority vote. The Applicants stated prior to the draft determination that the super-majority vote would attempt to balance preventing a block of larger incumbent Gentraders denying a new entrant the benefits of the co-insurance arrangement with not wishing to provide a single Gentrader the ability to deny the rest of the Gentraders the opportunity of terminating the arrangement. However, the Applicants provided no information about how such a balance would be struck.

4.291. The ACCC concluded in the draft determination that without further information on how the super majority will operate or be defined the ACCC was concerned that it may force a majority of Gentraders to participate in the co-insurance arrangement, at least to the extent of having to supply co-insurance when called on, despite them having no wish or need to participate in the arrangements.

Submissions in response to the draft determination

4.292. The Applicants argue that there would be a number of difficulties in adding new generation capacity into the co-insurance scheme once it is operating. The Applicants also argue that new generation capacity is likely to be more reliable than older base-load plants and therefore may have less incentive to be part of the co-insurance arrangement.

4.293. Therefore, the Applicants argue, excluding new generation capacity from the co-insurance scheme does not have any material public detriment.

4.294. The Applicants also argue that the potential operating profit lost by Gentraders called on to supply co-insurance notwithstanding that they may have no need to call on co-insurance in return will be immaterial because instances where Gentraders will be required to supply co-insurance when they have no need to call on it in return will be limited to:

- the initial period after the arrangement commences, when no Gentrader has a sufficient 'deficit' to be called on, or
- when co-insurance is called on and Gentraders with a deficit are not able to supply all the co-insurance that is called on.

4.295. LYMMCo expresses concern about the application of the co-insurance arrangement to a select group of participants. In particular, LYMMCo submits that should co-insurance been seen as a beneficial risk management arrangement then it should be open to all market participants so as not to advantage a select group and disadvantage the wider market. LYMMCo remains of the view that even if the co-insurance arrangement was widely available it would still not be economically efficient.

4.296. TRUenergy submits that the information asymmetry created by the co-insurance arrangement will leave market participants that are outside the arrangement at an information disadvantage compared to the co-insurance parties with a resulting detrimental impact on NEM efficiency.

4.297. The MEU supports the ACCC's conclusion in the draft determination about the problem of a majority of Gentraders potentially being forced to participate in the arrangement.

4.298. The Applicants provided a further submission on 5 May 2010, in which further details were provided about how the super majority vote necessary to terminate the co-insurance arrangement will operate. The Applicants noted that the super majority vote needs to balance the interests of providing certainty to new entrant investors that the arrangement will be in place with preventing a single Gentrader from having the ability to deny the other Gentraders with the opportunity of terminating the arrangement.

4.299. The Applicants state that they consider that this balance is best achieved by requiring, at most, four of the five Gentraders to vote in favour of discontinuing the arrangement for a super majority to be reached.

ACCC view of the further issues raised

4.300. The ACCC accepts that new generation capacity may have less incentive to be part of the co-insurance arrangement. The ACCC also accepts that as a practical matter, it would be very difficult to include new generation capacity in the co-insurance arrangement once they are operational. However, it does not follow, as the Applicants appear to argue, that because it may not be practical to include new generation capacity in the arrangement the arrangement limiting participation in the arrangement to the five Gentraders does not generate any detriment in this respect.

4.301. It remains the case that the co-insurance arrangement provides incumbent Gentraders with a means of managing risk that would not be available to any potential new generation capacity, which could potentially place incumbent Gentraders at a competitive advantage over all potential new investment.

4.302. However, as discussed in the draft determination, the ACCC considers that the competitive advantage conferred by the co-insurance arrangement is minimal because the co-insurance arrangement does not provide a more effective means of managing risk than would otherwise be available to Gentraders absent the arrangement.

4.303. With respect to the Applicants' submission that the operating profit lost by Gentraders forced to supply co-insurance notwithstanding that they may not need to call on it in return will be minimal, the ACCC notes that the extent of these potential losses is entirely dependant on how co-insurance is called on and by whom. The ACCC also notes that how co-insurance will be called on and by whom is very difficult to establish with any degree of specificity prior to the arrangement being implemented.

4.304. For the reasons submitted by the Applicants the ACCC considers that losses in operating profit in this respect are unlikely to be enormous. However, such losses could, potentially, be significant, and absent specifics about how co-insurance will be called on and by whom the ACCC does not consider that they can be dismissed as being immaterial.

4.305. The ACCC notes the clarification provided by the Applicants about how the super majority vote by Gentraders to terminate the arrangement will operate. The ability to terminate the arrangement if, for example, four of the five Gentraders want to do so, lessens the concerns expressed by the ACCC in its draft determination about a majority of Gentraders potentially being forced to participate in the co-insurance arrangement despite having no wish to do so. However, it remains the case that Gentraders can be forced to participate despite having no wish to do so unless or until, most likely four, Gentraders all decide that they want to terminate the arrangement.

Information exchange and Gentrader bidding strategies

Submissions prior to the publication of the draft determination

4.306. The Applicants noted that the co-insurance arrangement has been designed such that it requires no communication of cost information between participants. Additionally, the co-insurance arrangement places no obligation on the participants to bid in a particular manner. Finally, all of the information that is required to operate the arrangement is required to flow through the NSW Government appointed Administrator. The Applicants considered that these features will ensure that the arrangement does not facilitate coordinated behaviour.

4.307. Snowy Hydro argued that the arrangement will create incentives for co-ordinated bidding behaviour and promote anti-competitive and inefficient outcomes in the spot market. Snowy Hydro contended that Gentraders will be incentivised to bid their generation at the short run marginal cost to avoid themselves being liable for unfunded difference payments stemming from the co-insurance.

4.308. TRUenergy also disputed the Applicants' argument that the co-insurance arrangement will result in negligible anti-competitive detriments. TRUenergy submitted that co-insurance will result in Gentraders withholding non-firm capacity in expectation that they may be called on to supply co-insurance.

4.309. TRUenergy noted that without the co-insurance scheme Gentraders would be incentivised to forward sell non-firm capacity. Further, each Gentrader would compete in the contract market to maximise revenue when there is no certainty about how other generators will behave in the spot market. However, TRUenergy argued that under co-insurance the Gentraders have an incentive to maximise pool revenues when market conditions call for dispatch greater than firm contracted levels and therefore may lead to higher pool prices during these periods.

4.310. TRUenergy also considered that a Gentrader experiencing an outage who expects prices to be higher later in the day may call for co-insurance immediately.

4.311. In response to submissions from interested parties the Applicants reiterated their initial submission that the co-insurance arrangement has been designed to limit information flows between parties to the arrangement, which the Applicants argued should prevent co-ordinated bidding behaviour between the parties.

4.312. The Applicants also argued that the Gentrader contracts are designed so that Gentraders will face variable payments that reflect the variable costs of operating their respective power stations. Consequently, the Gentraders arrangements will not result in the Gentraders having a uniform short run marginal cost for their respective generation assets.

The ACCC's draft determination

4.313. The ACCC considered that the co-insurance arrangement has the necessary features to prevent co-ordinated bidding behaviour between the Gentrader participants. In particular, information flows are managed through a NSW Government appointed Administrator and no commercially sensitive information should be able to be shared between the Gentraders.

4.314. However, the ACCC did consider that the co-insurance arrangement has the potential to impact on Gentraders' bidding behaviour.

4.315. In short, the ACCC noted that when co-insurance is called on the Gentrader supplying co-insurance forgoes non-firm operating profit to compensate the Gentrader calling on co-insurance for the firm capacity operating profit that Gentrader would have earned absent the outage.

4.316. The non-pool operating profit the Gentrader called on is required to pay is calculated by reference to the Gentraders available non-firm capacity and the pool price. Accordingly, if the Gentrader has forward sold non-firm capacity at a price below the pool price at the time co-insurance is called on the Gentrader could be liable to fund the difference between the price they are receiving for their available non-firm capacity and the pool price.

4.317. The ACCC considered that such potential exposure is likely to impact on Gentrader behaviour in contracting their non-firm capacity with the likely result that more non-firm capacity could be held back and bid into the spot market rather than made available through forward contracts.

Submissions in response to the draft determination

4.318. The Applicants state that they agree with the ACCC's conclusion that the co-insurance arrangement has the necessary features to prevent co-ordinated bidding behaviour between Gentraders. However, the Applicants argue that the arrangement will not impact on Gentrader behaviour in contracting their non-firm capacity because non-firm contracts are not an effective risk management instrument and are therefore unlikely to be of value to Gentraders and retailers.

4.319. The Applicants state that the NSW Generators currently do not have any non-firm contracts and are unlikely to offer any over the coming years.

ACCC view of the further issues raised

4.320. In their initial submission in support of the application for authorisation the Applicants defined non-firm capacity as the difference between the defined level of firm capacity under the Compensation Deed and the total contract capacity under the Gentrader contract.

4.321. In discussing the impact of the co-insurance arrangement on Gentrader bidding behaviour in its draft determination the ACCC adopted this definition of non-firm capacity. However, the ACCC was not suggesting that Gentraders would be likely to contract capacity that was not firm. Not all capacity that fits within the definition of non-firm capacity provided by the Applicants will in fact be non-firm. Gentraders are able to engage in other risk mitigation strategies to 'firm up' capacity above the level of firm capacity provided under co-insurance and offer contracts for this capacity. It is this capacity that the ACCC considered that Gentraders would be more likely to bid into the spot market and not make it available through forward contracts because of co-insurance.

4.322. The ACCC remains of the view that the co-insurance arrangement is likely to impact on Gentraders behaviour in contracting this capacity. Absent co-insurance Gentraders could utilise other risk mitigation strategies to manage outage risk including strategies to manage outage risk for capacity above the 80 per cent level of firm capacity provided for under co-insurance. Where Gentraders are able to adopt strategies that manage risk over a higher level of capacity than provided under the co-insurance arrangement then Gentraders could, absent co-insurance, offer contracts for this, higher, level of capacity.

4.323. Under the co-insurance arrangement Gentraders are still able to adopt other risk management strategies in relation to their capacity above the 80 per cent level of firm capacity covered by the co-insurance arrangement. However, because of the risk of being called on to provide compensation to another Gentrader, at the pool price, in the event of an outage, Gentraders are potentially exposed if the pool price at the time they are called on to provide co-insurance is higher than the price at which they have contracted this capacity.

4.324. In effect, offering contracts over this capacity would, because of the co-insurance arrangement, increase rather than decrease Gentraders risk exposure. The likely consequence of this is that Gentraders could bid more of this capacity into the spot market rather than make it available through forward contracts.

4.325. Indeed, the Applicants themselves, in their original submission in support of their applications acknowledge that because Gentraders may be required to use this capacity to support co-insurance payments they may be reluctant to otherwise contract this capacity in the market.[60]

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[60] NSW Government submission 27 November 2009, *Submission in support of application for authorisation*, pg 35.

Generator incentives to maintain reliability

Submissions prior to the publication of the draft determination

4.326. The Applicants considered that the co-insurance arrangement will assist the NSW Government to reduce its exposure to plant outages and market risk. In particular, reduced penalty payments are likely to be incurred by the State owned Generators as the co-insurance arrangement is designed to lower the likelihood that the availability obligations under the Gentrader contracts will be breached. The Applicants argued that this will be a direct saving to the Generators that will ultimately benefit the public of NSW.

4.327. TRUenergy submitted that a Gentrader with low expectations of the technical or economic life of one of their generation assets may be far more willing to make co-insurance claims. TRUenergy argued that these signalling effects will result in a reduction in competitive behaviour and an increase in opportunistic bidding.

The ACCC's draft determination

4.328. The ACCC noted that the co-insurance arrangement appears to incentivise both the Gentraders and Generators to maintain or increase the reliability of the respective generation assets. Specifically, Generators attached to Gentraders calling on co-insurance due to an outage are required to make payments to the Gentrader to meet their shortfall in firm capacity.

4.329. However, the ACCC considered that without co-insurance the Gentraders and Generators would likely have as much, if not more, incentive to maintain or increase the reliability of the generation assets.

4.330. In particular, the ACCC noted that without co-insurance, Generators may be more exposed to the payment of liquidated damages under the availability regime in the Gentrader contracts. This is likely to provide a strong incentive for the Generators to increase reliability in order to meet the respective availability targets for the generation assets.

4.331. The ACCC argued that exposure to such risk is likely to produce positive outcomes, in terms of providing incentives for Generators to maintain or increase reliability. As such, the ACCC considered that, while the co-insurance arrangement provides incentives for Generators to maintain reliability, to the extent that the risk to Generators in the case of an outage is reduced compared to the situation if the co-insurance arrangement was not in place, this has the potential to have a negative impact on Generator reliability.

4.332. However, the ACCC did not consider that, as submitted by TRUenergy, the co-insurance arrangement will result in Gentraders with low expectations of technical or economic life on one of their generation assets being more willing to make co-insurance claims.

4.333. Each of the Generator assets included in the Gentrader bundles is estimated to have a remaining useful life of longer than the intended duration of the co-insurance arrangement. Further, each time a Gentrader calls on co-insurance they are obliged to supply co-insurance of equivalent value in return if called to do so. Accordingly, Gentraders who have Generators with low estimates of technical or economic life will be equally exposed to a future obligation to supply co-insurance if they call on co-insurance themselves.

Submission in response to the draft determination

4.334. The Applicants state that individual Generators are still exposed to market risk under the co-insurance arrangement and may also be required to pay penalty payments if they are not able to meet availability targets set out in Gentrader contracts. Therefore, the Applicants argue that individual Generators have the same or greater incentives to maintain reliability as they would absent co-insurance.

ACCC view

4.335. For the reasons outlined in the draft determination the ACCC does not agree that individual Generators have the same or greater incentives to maintain reliability under the co-insurance arrangement as they otherwise would.

4.336. While Gentraders are still exposed to market risk under the co-insurance arrangement the market risk they are exposed to is dictated by the co-insurance arrangement. As noted, Generators attached to Gentraders calling on co-insurance due to an outage are required to make payments to the Gentrader to meet their shortfall in firm capacity.

4.337. Absent co-insurance, Gentraders and Generators would negotiate their own contractual arrangements to encourage reliability. Such direct negotiation is in the ACCC's view more likely to result in the development of commercial arrangements which best address issues of reliability as they specifically relate to each portfolio of generation assets and each Gentrader.

Balance of public benefit and detriment

4.338. In general, the ACCC may only grant authorisation if it is satisfied that, in all the circumstances, the proposed co-insurance arrangement is likely to result in a public benefit, and that public benefit will outweigh any likely public detriment.

4.339. In the context of applying the net public benefit test in section 90(8)[61] of the Act, the Tribunal commented that:

> ... something more than a negligible benefit is required before the power to grant authorisation can be exercised.[62]

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[61] The test at 90(8) of the Act is in essence that conduct is likely to result in such a benefit to the public that it should be allowed to take place.

[62] *Re Application by Michael Jools, President of the NSW Taxi Drivers Association* [2006] ACompT 5 at paragraph 22.

4.340. While the ACCC recognises that there are benefits associated with the Energy Reform Strategy proceeding, it does not consider that these benefits are dependent on the mandated co-insurance arrangements proposed by the Applicants. Specifically, the ACCC considers that Gentraders have a number of alternatives available to them to manage risk other than the co-insurance arrangement which, the ACCC considers, means that the co-insurance arrangement is not integral or necessary to enable the Energy Reform Strategy to proceed in its current form.

4.341. The ACCC considers that including the mandated co-insurance arrangement proposed by the Applicants in the Gentrader model will result in at best, some marginal public benefit. Based on the information available to the ACCC, the ACCC is not satisfied that this benefit will be more than negligible.

4.342. The co-insurance arrangement provides certainty around managing the risk of having to make unfunded difference payments in most, but not all, circumstances. However, the ACCC considers that, given the range of other options available to manage risk, this certainty is only likely to be of very limited, if any, value.

4.343. Further, the ACCC does not consider that the co-insurance arrangement is a more efficient means of managing firmness risk than other available options. The disaggregation of the three generation portfolios into five Gentrader bundles may result in some change in contract arrangements at the wholesale level as the new parties align the contracting of the generation assets to their individual preferences. This may be more pronounced for parties that do not currently have generation assets in NSW acquiring, at least, one of the bundles, as proposed under the Energy Reform Strategy, and it seeks to put in place appropriate risk mitigation techniques and became familiar with the generation assets. As a consequence, for a short period after these reforms occur, it is possible that the co-insurance arrangement may provide some marginal benefit through offering an alternative means of managing risk which has a high degree of certainty attached to it, or at least provides fallback in addition to other means of managing risk. However, based on the information before it, the ACCC is not satisfied that any such benefit would be more than at best a short term, negligible, benefit.

4.344. More generally, given the other available options, the ACCC does not consider that the co-insurance arrangement is a more effective or efficient means of managing firmness risk. The ACCC considers that such risk can be adequately managed using the range of other available options.

4.345. In particular, Gentraders could use physical plant included in the Gentrader bundle to hedge against plant outage. Further, as acknowledged by the Applicants, at least some potential bidders will have the option of managing risk through combining their Gentrader rights with other portfolio assets.

4.346. Additionally, the Gentraders have the option of utilising financially based risk mitigation products such as arrangements with fast start peaking generators, traded derivatives or where available, insurance products. Further, risk mitigation measures could be built into contracts with electricity purchasers. Gentraders could enter into voluntary bi-lateral or multi-lateral co-insurance arrangements and, in the long run, building more standby generation will be an option of some Gentraders.[63]

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[63] See footnote 1 in relation to voluntary co-insurance arrangements.

4.347. The Applicants argue that none of these alternatives manage firmness risk as effectively as the proposed co-insurance arrangement would.

4.348. The ACCC recognises that each of the alternative strategies identified by it and industry participants has its limitations. The ACCC agrees that any of these strategies, if adopted in isolation, would be unlikely to deliver the same level of firm capacity as the proposed co-insurance arrangement, particularly given the revised, higher, level of 80 per cent at which the Applicants have now advised that firm capacity will be set under the co-insurance arrangement.

4.349. However, absent co-insurance, none of the alternative options identified by the ACCC and industry participants would be adopted in isolation. Rather, Gentraders would manage risk using a mix of the range of available options that best suits their needs. The ACCC is satisfied that co-insurance would not be more effective and efficient in managing risk than Gentraders employing a range of the other available options that best suits there individual needs.

4.350. The Applicants also argue, with respect to some of the alternative means of managing risk identified by the ACCC and industry participants, that the availability of such options in NSW is limited. However, the ACCC considers that this is primarily a reflection of the current structure of generation assets in NSW whereby NSW's three large generators are able to effectively manage risk by limiting contracting to safe levels over their entire portfolios. Given this, alternative products for managing risk, such as those identified by the ACCC and industry participants, are currently not extensively required in NSW.

4.351. Accordingly, the limited availability of some of these options at the current time is not indicative of whether they would be available if the Gentrader model, or some other form of disaggregation of NSW generation assets that created a demand for these alternative risk mitigation options, was implemented.

4.352. Given the ACCC's conclusion that absent co-insurance arrangement there would be a range of other options available to Gentraders to effectively and efficiently manage risk, the ACCC considers that the public benefits generated by the proposed co-insurance arrangement are marginal.

4.353. The ACCC considers that, while limited, the co-insurance arrangement will generate some public detriment.

4.354. In some circumstance Gentraders can, and likely will, be called on to supply co-insurance notwithstanding that they may have no need to call on co-insurance in return. To the extent that this does occur, Gentraders with a portfolio of assets capable of acting as a natural hedge, or who chose to engage in other strategies to mitigate risk, will be forced to forgo a proportion of their non-firm pool operating profit to compensate Gentraders who do not.

4.355. The risk of being called on to supply co-insurance, whether as a result of previously having called on co-insurance or otherwise, is also likely to impact on Gentraders behaviour in contracting their capacity above the level of firm capacity at which co-insurance is set. While the level of physical dispatch for Gentraders will be the same, Gentraders are more likely to bid their capacity above the level of firm capacity at which co-insurance is set into the spot market, rather than enter into financial contracts over this capacity.

4.356. In addition, while the co-insurance arrangement includes incentives to maintain reliability of generation assets, these incentives are not as strong as those that would be established if Generators and Gentraders negotiated contractual arrangements to encourage reliability without co-insurance in place.

4.357. The co-insurance arrangement also potentially forecloses some opportunities for other providers of risk mitigation products to supply the Gentraders in some circumstances. However, the ACCC considers that the effect of the co-insurance arrangement on other providers of risk mitigation options, and on the liquidity of these options for other customers, is limited by a number of factors.

4.358. The physical characteristics of some Gentrader bundles means that they may not, even absent the co-insurance arrangement, need to source risk mitigation products from the market, at least to cover the level of capacity covered by the co-insurance arrangement. In addition, all Gentraders will still need to adopt other strategies to manage risk associated with outages not covered by the co-insurance arrangement.

4.359. In conclusion, the ACCC considers that the public benefits of the proposed arrangement are marginal at best. In particular, the ACCC does not consider that the co-insurance arrangement provides a more efficient or effective means of managing risk that other available options.

4.360. While the ACCC considers that the public detriment generated by the proposed arrangement is limited, the ACCC considers that the marginal public benefits of the arrangement would not outweigh this public detriment.

4.361. The ACCC is therefore not satisfied that the tests in section 90(6), 90(7), 90(8), 90(5A) and 90(5B) are met.

4.362. Accordingly the ACCC denies authorisation for the proposed co-insurance arrangement.

Victorian VCR authorisations

4.363. As discussed in Chapter 2 of this determination, the Victorian Government established a co-insurance arrangement which ran for 15 months following the privatisation of the State Electricity Commission of Victoria. Following this, in 1996 and 1998 the ACCC granted authorisation to a Value of Lost Load Contract Repackaging Scheme (VCR Scheme) until the end of 2001.

4.364. The VCR Scheme was designed to provide hedging cover to Victorian based electricity retailers and generators during periods in which the spot price for electricity was high. The VCR Scheme operated through the establishment of a pool of non-firm contracts, where purchasers bid for the right to a percentage share of difference payments from the pool.

4.365. While the ACCC concluded that the VCR Scheme may substantially reduce competition, the ACCC also considered that the VCR Scheme would result in public benefit through its provision of a risk management tool, which both generators and retailers could access, at a lower cost.

4.366. The ACCC considers that the VCR Scheme arrangement differs from the Applicants' proposed co-insurance arrangement in a number of important ways. In particular, the VRC Scheme was developed in the context of an immature and still evolving NEM. Further, as distinct from the current arrangements, the VRC Scheme was an industry developed scheme, in which participation was completely voluntary.

South Australian vesting contracts

4.367. As also discussed in Chapter 2 of this determination, the South Australia Government through vesting contracts in effect established a co-insurance arrangement that was broadly designed to minimise generators unfunded difference payments during high spot price events. The vesting contracts arrangements were authorised by the ACCC in December 1999 for three years until the end of 2002.

4.368. The South Australian Government submitted that the vesting contracts were designed to facilitate an orderly transition from a regulated electricity market dominated by State owned monopolies to a competitive environment where disaggregated publicly owned entities and private corporations compete in a deregulated environment. In particular, a primary purpose of the vesting contracts was to reduce the market risk borne by the incumbent retailer with respect to the supply of the franchise load at fixed tariffs to non-contestable customers.

4.369. The ACCC notes that there are a number of differences between the vesting contract arrangements and the environment they were set in and the Applicants' proposed co-insurance arrangement. The vesting contracts were designed initially to be between the South Australian government owned generators and retailer so as to assist these entities transition to a deregulated competitive market and ultimate sale to private interests. In particular, they attempted to manage the environment where the only State owned retailer was to supply customers who were on tariffs that were regulated, meaning that changes in spot prices were not able to be passed on to end consumers.

4.370. The co-insurance arrangement that is the subject of the current application does not include electricity retailers. Rather, the proposed co-insurance arrangement is focused on managing privately owned Gentraders' risk of unfunded difference payments. Further, the South Australian vesting contracts were in effect voluntary, in the sense that the parties participating in the arrangement were the ones who chose to lodge the application for authorisation. In contrast, the current application has been lodged by the NSW Government and successful bidders for the Gentrader bundles will be required to participate in some cases regardless of whether they want or need to, unless a super majority vote decides to terminate the arrangements.

4.371. The ACCC also notes that the current NSW electricity industry is at a far more developed stage than that in South Australia at the time of the vesting contracts authorisation. In particular, the NSW retail market is fully contestable with the percentage share of the retail market held by new entrant retailers such as AGL Energy and Origin Energy climbing from a total of 2-3 per cent in 2002/03 to just over 20 per cent in 2008/09. In addition, NSW has significant privately owned generation capacity such as Origin Energy's Uranquinty station and NSW Government majority owned Snowy Hydro that would not be party to the co-insurance arrangement.

4.372. Finally, the South Australian arrangements were only ever intended to be a short term transitional arrangement. The ACCC noted in its determination that there existed similar insurance arrangements in the market and that over the medium term consideration should be given to replacing the authorised arrangement with market mechanisms. The ACCC authorised the arrangements for three years and re-authorisation was not sought.

4.373. As such, the South Australian arrangements, as with the Victorian arrangements noted above, were considered in a fundamentally different context to the current applications which seek to impose, for 10 years, a mandated co-insurance arrangement as an alternative to market based mechanisms for managing the risk of unfunded difference payments.

5. Determination

The applications

5.1. On 27 November 2009 the NSW Treasurer for and on behalf of Macquarie Generation, Delta Electricity and Eraring Energy lodged applications for authorisation A91198 & A91199 with the Australian Competition and Consumer Commission (the ACCC).

5.2. Applications A91198 & A91199 were made using Forms A & B of the Trade Practices Regulations 1974. The applications were made under subsections 88(1) and 88(1A) of the Act to make and give effect to the following features of the co-insurance arrangement implemented through the Compensation Deed:

- the payment provisions, which specify the price payable (the Compensation Price) for the compensation which a Gentrader is able to call on when the Generator is unable to meet its firm capacity requirements
- the firm capacity provisions, which specify the quantity of firm capacity to be made available by each Generator to its Gentrader counterparty for the purpose of the co-insurance arrangement
- the allocation procedures and rules, which specify which Gentrader will be required to pay compensation and the amount of that compensation and
- the supply and acquisition of the co-insurance is limited to the parties to the agreement.

The net public benefit test

5.3. For the reasons outlined in Chapter 4 of this determination, the ACCC is not satisfied that the conduct for which authorisation is sought is likely to result in a public benefit that would outweigh the detriment to the public constituted by any lessening of competition arising from the conduct.

5.4. The ACCC is not satisfied that the conduct for which authorisation is sought is likely to result in such a benefit to the public that the conduct should be allowed to take place.

5.5. The ACCC therefore **denies** authorisation to applications A91198 & A91199.

5.6. This determination is made on 20 May 2010.

5.7. Section 90(4) requires that the Commission state in writing its reasons for a determination. The attachments form part of the written reasons for this determination.

Application for review

5.8. Pursuant to section 101 of the *Trade Practices Act 1974*, a person dissatisfied with this determination may apply to the Australian Competition Tribunal for its review. An application for review must be made within 21 days of the date of this determination; that is, on or before 10 June 2010.

Attachment A — the authorisation process

The Australian Competition and Consumer Commission (the ACCC) is the independent Australian Government agency responsible for administering the *Trade Practices Act 1974* (the Act). A key objective of the Act is to prevent anti-competitive conduct, thereby encouraging competition and efficiency in business, resulting in a greater choice for consumers in price, quality and service.

The Act, however, allows the ACCC to grant immunity from legal action in certain circumstances for conduct that might otherwise raise concerns under the competition provisions of the Act. One way in which parties may obtain immunity is to apply to the ACCC for what is known as an 'authorisation'.

The ACCC may 'authorise' businesses to engage in anti-competitive conduct where it is satisfied that the public benefit from the conduct outweighs any public detriment.

The ACCC conducts a public consultation process when it receives an application for authorisation. The ACCC invites interested parties to lodge submissions outlining whether they support the application or not, and their reasons for this.

After considering submissions, the ACCC issues a draft determination proposing to either grant the application or deny the application.

Once a draft determination is released, the applicant or any interested party may request that the ACCC hold a conference. A conference provides all parties with the opportunity to put oral submissions to the ACCC in response to the draft determination. The ACCC will also invite the applicant and interested parties to lodge written submissions commenting on the draft.

The ACCC then reconsiders the application taking into account the comments made at the conference (if one is requested) and any further submissions received and issues a final determination. Should the public benefit outweigh the public detriment, the ACCC may grant authorisation. If not, authorisation may be denied. However, in some cases it may still be possible to grant authorisation where conditions can be imposed which sufficiently increase the benefit to the public or reduce the public detriment.

Attachment B — chronology of ACCC assessment for applications A91198-9

The following table provides a chronology of significant dates in the consideration of these applications.

DATE	ACTION
27 November 2009	Application for authorisation lodged with the ACCC.
2 December	Public consultation commences.
8 January 2010	Closing date for submissions from interested parties in relation to the substantive application for authorisation.
5 February 2010	Submission received from the Applicants in response to the interested party submissions.
19 March 2010	Submission received from the Applicants providing further information on the proposed arrangement.
25 March 2010	Draft determination issued.
14 April 2010	Closing date for submissions from interested parties in relation to the draft determination.
19 April 2010	Submission received from the Applicants in response to the draft determination.
29 April 2010	Submission received from the Applicants in response to the interested party submissions.
5 May 2010	Submission received from the Applicants providing clarification on the issues raised in their submission of 19 April 2010.
20 May 2010	Final determination issued.

Attachment C — the tests for authorisation and other relevant provisions of the Act

Trade Practices Act 1974

Section 90—Determination of applications for authorisations

(1) The Commission shall, in respect of an application for an authorization:

(a) make a determination in writing granting such authorization as it considers appropriate; or

(b) make a determination in writing dismissing the application.

(2) The Commission shall take into account any submissions in relation to the application made to it by the applicant, by the Commonwealth, by a State or by any other person.

Note: Alternatively, the Commission may rely on consultations undertaken by the AEMC: see section 90B.

(4) The Commission shall state in writing its reasons for a determination made by it.

(5) Before making a determination in respect of an application for an authorization the Commission shall comply with the requirements of section 90A.

Note: Alternatively, the Commission may rely on consultations undertaken by the AEMC: see section 90B.

(5A) The Commission must not make a determination granting an authorisation under subsection 88(1A) in respect of a provision of a proposed contract, arrangement or understanding that would be, or might be, a cartel provision, unless the Commission is satisfied in all the circumstances:

(a) that the provision would result, or be likely to result, in a benefit to the public; and

(b) that the benefit would outweigh the detriment to the public constituted by any lessening of competition that would result, or be likely to result, if:

(i) the proposed contract or arrangement were made, or the proposed understanding were arrived at; and

(ii) the provision were given effect to.

(5B) The Commission must not make a determination granting an authorisation under subsection 88(1A) in respect of a provision of a contract, arrangement or understanding that is or may be a cartel provision, unless the Commission is satisfied in all the circumstances:

(a) that the provision has resulted, or is likely to result, in a benefit to the public; and

(b) that the benefit outweighs or would outweigh the detriment to the public constituted by any lessening of competition that has resulted, or is likely to result, from giving effect to the provision.

(6) The Commission shall not make a determination granting an authorization under subsection 88(1), (5) or (8) in respect of a provision (not being a provision that is or may be an exclusionary provision) of a proposed contract, arrangement or understanding, in respect of a proposed covenant, or in respect of proposed conduct (other than conduct to which subsection 47(6) or (7) applies), unless it is satisfied in all the circumstances that the provision of the proposed contract, arrangement or understanding, the proposed covenant, or the proposed conduct, as the case may be, would result, or be likely to result, in a benefit to the public and that that benefit would outweigh the detriment to the public constituted by any lessening of competition that would result, or be likely to result, if:

(a) the proposed contract or arrangement were made, or the proposed understanding were arrived at, and the provision concerned were given effect to;

(b) the proposed covenant were given, and were complied with; or

(c) the proposed conduct were engaged in;

as the case may be.

(7) The Commission shall not make a determination granting an authorization under subsection 88(1) or (5) in respect of a provision (not being a provision that is or may be an exclusionary provision) of a contract, arrangement or understanding or, in respect of a covenant, unless it is satisfied in all the circumstances that the provision of the contract, arrangement or understanding, or the covenant, as the case may be, has resulted, or is likely to result, in a benefit to the public and that that benefit outweighs or would outweigh the detriment to the public constituted by any lessening of competition that has resulted, or is likely to result, from giving effect to the provision or complying with the covenant.

(8) The Commission shall not:

(a) make a determination granting:

(i) an authorization under subsection 88(1) in respect of a provision of a proposed contract, arrangement or understanding that is or may be an exclusionary provision; or

(ii) an authorization under subsection 88(7) or (7A) in respect of proposed conduct; or

(iii) an authorization under subsection 88(8) in respect of proposed conduct to which subsection 47(6) or (7) applies; or

(iv) an authorisation under subsection 88(8A) for proposed conduct to which section 48 applies;

unless it is satisfied in all the circumstances that the proposed provision or the proposed conduct would result, or be likely to result, in such a benefit to the public that the proposed contract or arrangement should be allowed to be made, the proposed understanding should be allowed to be arrived at, or the proposed conduct should be allowed to take place, as the case may be; or

(b) make a determination granting an authorization under subsection 88(1) in respect of a provision of a contract, arrangement or understanding that is or may be an exclusionary provision unless it is satisfied in all the circumstances that the provision has resulted, or is likely to result, in such a benefit to the public that the contract, arrangement or understanding should be allowed to be given effect to.

(9) The Commission shall not make a determination granting an authorization under subsection 88(9) in respect of a proposed acquisition of shares in the capital of a body corporate or of assets of a person or in respect of the acquisition of a controlling interest in a body corporate within the meaning of section 50A unless it is satisfied in all the circumstances that the proposed acquisition would result, or be likely to result, in such a benefit to the public that the acquisition should be allowed to take place.

(9A) In determining what amounts to a benefit to the public for the purposes of subsection (9):

(a) the Commission must regard the following as benefits to the public (in addition to any other benefits to the public that may exist apart from this paragraph):

(i) a significant increase in the real value of exports;

(ii) a significant substitution of domestic products for imported goods; and

(b) without limiting the matters that may be taken into account, the Commission must take into account all other relevant matters that relate to the international competitiveness of any Australian industry.

Variation in the language of the tests

There is some variation in the language in the Act, particularly between the tests in sections 90(6) and 90(8).

The Australian Competition Tribunal (the Tribunal) has found that the tests are not precisely the same. The Tribunal has stated that the test under section 90(6) is limited to a consideration of those detriments arising from a lessening of competition but the test under section 90(8) is not so limited.[64]

However, the Tribunal has previously stated that regarding the test under section 90(6):

> [the] fact that the only public detriment to be taken into account is lessening of competition does not mean that other detriments are not to be weighed in the balance when a judgment is being made. Something relied upon as a benefit may have a beneficial, and also a detrimental, effect on society. Such detrimental effect as it has must be considered in order to determine the extent of its beneficial effect.[65]

Consequently, when applying either test, the ACCC can take most, if not all, public detriments likely to result from the relevant conduct into account either by looking at the detriment side of the equation or when assessing the extent of the benefits.

Given the similarity in wording between sections 90(6) and 90(7), the ACCC considers the approach described above in relation to section 90(6) is also applicable to section 90(7). Further, as the wording in sections 90(5A) and 90(5B) is similar, this approach will also be applied in the test for conduct that may be a cartel provision.

Conditions

The Act allows the ACCC to grant authorisation subject to conditions.[66]

Future and other parties

Applications to make or give effect to contracts, arrangements or understandings that might substantially lessen competition or constitute exclusionary provisions may be expressed to extend to:

- persons who become party to the contract, arrangement or understanding at some time in the future[67]
- persons named in the authorisation as being a party or a proposed party to the contract, arrangement or understanding.[68]

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[64] *Australian Association of Pathology Practices Incorporated* [2004] ACompT 4; 7 April 2004. This view was supported in *VFF Chicken Meat Growers' Boycott Authorisation* [2006] AcompT9 at paragraph 67.

[65] *Re Association of Consulting Engineers, Australia* (1981) ATPR 40-2-2 at 42788. See also: *Media Council case* (1978) ATPR 40-058 at 17606; and *Application of Southern Cross Beverages Pty. Ltd., Cadbury Schweppes Pty Ltd and Amatil Ltd for review* (1981) ATPR 40-200 at 42,763, 42766.

[66] Section 91(3).

[67] Section 88(10).

[68] Section 88(6).

Six- month time limit

A six-month time limit applies to the ACCC's consideration of new applications for authorisation[69]. It does not apply to applications for revocation, revocation and substitution, or minor variation. The six-month period can be extended by up to a further six months in certain circumstances.

Minor variation

A person to whom an authorisation has been granted (or a person on their behalf) may apply to the ACCC for a minor variation to the authorisation.[70] The Act limits applications for minor variation to applications for:

> ... a single variation that does not involve a material change in the effect of the authorisation.[71]

When assessing applications for minor variation, the ACCC must be satisfied that:

- the proposed variation satisfies the definition of a 'minor variation' and
- if the proposed variation is minor, the ACCC must assess whether it results in any reduction to the net benefit of the conduct.

Revocation; revocation and substitution

A person to whom an authorisation has been granted may request that the ACCC revoke the authorisation.[72] The ACCC may also review an authorisation with a view to revoking it in certain circumstances.[73]

The holder of an authorisation may apply to the ACCC to revoke the authorisation and substitute a new authorisation in its place.[74] The ACCC may also review an authorisation with a view to revoking it and substituting a new authorisation in its place in certain circumstances.[75]

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[69] Section 90(10A)
[70] Subsection 91A(1)
[71] Subsection 87ZD(1).
[72] Subsection 91B(1)
[73] Subsection 91B(3)
[74] Subsection 91C(1)
[75] Subsection 91C(3)

Attachment D — further information on the operation of the co-insurance arrangement

Source: Applicants' supporting submission, 27 November 2009, pages 37 – 53.

Appendix 1
Further details of the co-insurance arrangement

1. Payments under the co-insurance arrangement

This section sets out a stylised example of the payments between Gentraders and Generators that will occur under the co-insurance arrangement. The examples set out in this section are presented for the simple case where there are only two Gentraders and two Generators operating equally sized generating units. These examples are sufficient to highlight the principles by which firm availability will be provided and payments for firm availability will be made. Section [?] will discuss additional features of the arrangement that are necessary when more than two Generators are involved.

The co-insurance arrangement can be structured in a number of different ways, each of which achieves the objective of increasing the quantity of firm capacity available to the Gentraders. Many of the alternate formulations of co-insurance are suboptimal because they require signalling of cost information among the parties to the co-insurance arrangement, or because they create misaligned incentives between Gentraders and Generators.

The form of the co-insurance arrangement, and associated payments, presented in this section overcomes these issues. It will be shown that by ensuring that the Gentraders and their Generators always make payments of the same magnitude, but in opposite directions, incentives are correctly aligned. Also, by structuring the payments analogously to a swaption with a strike price set higher than the marginal costs of all the participants, issues regarding the revelation of sensitive cost information are avoided.

1.1 General features of the arrangement

Regardless of the specific form of the co-insurance arrangement, the following features are common in all cases:

- Gentraders:
  - deal only with the Generator that is counterparty to their Gentrader contract, and with the Administrator;
  - make/receive co-insurance payments to/from the Generator that is counterparty to their Gentrader contract;
  - retain the right to bid the Generator's capacity into the market (within the operating envelope and the limits of the Gentrader contract),
  - depending on their dispatch decisions, are able to receive pool operating profits equivalent to at least the firm capacity under co-insurance arrangement; and
  - under the Gentrader contract, make the required variable payments and fixed payments to their Generator.[26]
- Generators:
  - deal only with the Gentrader that is counterparty to their Gentrader contract, and with the Administrator;
  - make/receive co-insurance payments to/from the Gentrader that is counterparty to their Gentrader contract;

[26] Note that the payment structure under the Gentrader contract will be more refined than a simple fixed payments and variable payment. But the principle behind the payment structure will be that fixed costs are recovered through fixed payments and variables costs are recovered through variable payments. For this reason, assuming that payments under the Gentrader contract reduce to a single fixed payment and a single variable payment is sufficient for the examples in this report.

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- under the Gentrader contract, make their capacity available to be dispatched in to the market by the Gentrader (within the operating envelope and the limits of the Gentrader contract); and,
- under the Gentrader contract, recover variable costs and fixed costs from their associated Gentrader in the form of a variable payments and a fixed payments.

1.2 Assumptions

The example of the co-insurance arrangement presented in this section assumes that there are:

- Two Gentraders:
  - *Gentrader 1* and *Gentrader 2*; and
- Two Generators:
  - *Generator 1* and *Generator 2*, each with two equally sized generating units.

Notation includes the following:

- the pool price is P;
- there is a pre-determined co-insurance price P_{CI} which is greater than all the participating Generators marginal costs (including carbon);
- the fixed payments under the Gentrader contract are CC_1;
- the variable payments under the Gentrader contract and fuel contracts are MC_1;
- *Gentrader 1*:
  - under the Gentrader contract has total contract capacity C_1 for *Generator 1*;
  - under the Gentrader contract has available capacity AC_1; and,
  - under the Gentrader contract dispatches *Generator 1* for Q_1;
  - under the Compensation Deed has firm capacity F_1

The examples throughout this section occur for a single hour. This simplifies calculations as 1 MW of capacity, operating for 1 hour, produces 1 MWh of electricity.

1.3 Payments under co-insurance

Initially, the cashflows under the co-insurance arrangement for the general (algebraic) case for different numbers of outages is considered. This will be considered in Section 1.4 to Section 1.6. This will be followed by a corresponding set of numerical examples, for a given level of demand and pool price. This will be considered in Section 1.8 to Section 1.10.

Co-insurance payments occur in order to firm up capacity for Gentraders. This is achieved by a responding Gentrader foregoing a portion of their non-firm pool operating profit to the calling Gentrader. The responding Gentrader foregoes a proportion of their non-firm pool operating profit as the cost of a higher level of certainty on the firmness of its own capacity when it experiences an outage at a later date.

1.4 Cash flows when no Generator experiences an outage

When no outages occur, the co-insurance arrangement is not invoked and Gentraders earn pool revenues according to their dispatch decisions and compensate Generators for the fixed and variable

costs of production as required under the Gentrader contract. This results in the following cash flows for both Gentraders:

- receive $P*Q_i$ from the pool;
- pay MC_i*Q_i to *Generator i* (or *fuel supplier f* once the existing fuel contracts expire and the Gentraders secure their own fuel) to cover the variable costs of generation;
- pay CC_i*Q_i to *Generator i* to cover the Generators' fixed costs.

Where Generator i refers to either Generator 1 or Generator 2.

Figure 5 shows a diagrammatic representation of the associated cash flows. Generators break even on variable costs and receive the fixed payment, and Gentraders earn pool revenues less the variable payment and the fixed payment.

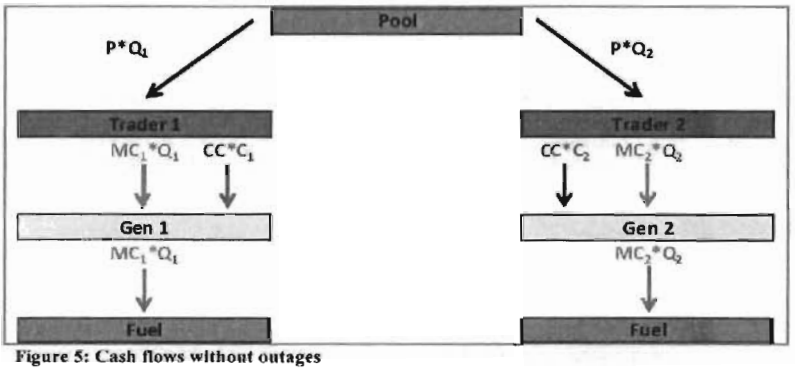

Figure 5: Cash flows without outages

1.5 Cash flows when one Generator experiences an outage

Now assume that *Generator 1* experiences an outage of one of their two generating units such that their available capacity, AC_1, is less than *Gentrader 1's* firm capacity levels under the co-insurance arrangement, F_1.

Under the co-insurance arrangement, when *Generator 1* declares its available capacity to be less than the firm capacity, *Gentrader 1* can choose to call on co-insurance for up to the difference between firm capacity and available capacity ($F_1 - AC_1$, where $AC_1 < F_1$). *Gentrader 1* will then receive compensation payments for the difference between available capacity and the firm capacity under the co-insurance arrangement. These payments, arising from *Generator 1's* outage, are effectively or notionally met by the other Gentraders who are party to the co-insurance arrangement, in this case *Gentrader 2*. This is achieved by *Gentrader 2* foregoing pool revenue on the dispatch of its non-firm capacity.

In this example *Gentrader 1* is assumed to call on the maximum amount of co-insurance possible, which is firm capacity less available capacity. The co-insurance arrangement works by notionally requiring *Gentrader 2* to pay *Gentrader 1* pool price less the co-insurance price on this quantity. This amount is given algebraically as:

$$(F_1 - AC_1).(P \quad P_{CI})$$

At the same time as payments are notionally required between Gentraders, payments are notionally required between Generators. *Generator 1*, as the party requiring co-insurance, notionally pays *Generator 2* for supplying co-insurance. This payment is the same magnitude as the payment between the Gentraders but in the opposite direction. This is a pure transfer between the Generators and ensures that Generators are incentivised to avoid requiring co-insurance (which they have to pay for) and to supply co-insurance (which they are paid to supply).

These payments are shown diagrammatically in Figure 6.

The payments between Generators are required to ensure that the co-insurance arrangement provides appropriate incentives. By structuring the payments in this way, incentives are such that Generators will endeavour to make their plant as reliable as possible. Being more available will result in a low level of outgoing payments during outage events and also increase the likelihood that their plant will supply co-insurance and receive payments.

By setting the Gentrader payments equal and opposite to the Generator payments the co-insurance arrangement also ensures that no pairing of Gentraders and Generators has an incentive to claim false outages and thereby claim co-insurance payments. In effect, the payment structure ensures that each pairing of Gentraders and Generators is neutral to a co-insurance event. Even though Gentraders could conceivably overwhelm the incentive that Generators have to be available (and avoid making co-insurance payments) by offering a financial payment to the Generator, this would always need to be greater than the payment the Gentrader receives under co-insurance, thereby leaving the Gentrader out of pocket.

There is one exception to this and that is when two or more Generators are owned and operated by a single entity. In this case incentives are not completely aligned between the Gentraders and the Generator. This is discussed in more detail in Section 2.5, after the allocation rules have been explained.

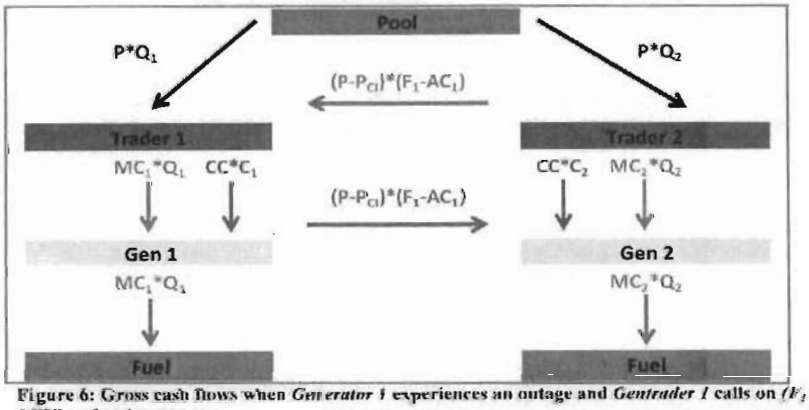

Figure 6: Gross cash flows when *Generator 1* experiences an outage and *Gentrader 1* calls on $(F_1 - AC_1)$ MWhs of co-insurance

The notional payment structure shown in Figure 6 involves a payment between the Gentraders and a payment between Generators. The incentives created by this structure of ***notional*** payments can be achieved by a simpler structure of ***actual*** payments. In particular, it is desirable to have each Gentrader dealing only with its own Generator. This allows payments and credit support arrangements for the co-

insurance arrangement to be rolled into the Gentrader contract and removes the need for bidders to evaluate the credit risk of unknown counter-parties when bidding.

For this reason, actual co-insurance payments flow solely between Gentraders and their counterparty Generators. Figure 7 shows the case where the Gentrader to Gentrader payment is effected via the Generators. Note that in this case the payments between the Generators (brown) are exactly cancelled out by the payments between the Gentraders (red). Figure 8 shows the net effect of cancelling these payments out. Hence the only actual payments required are those shown in Figure 8. Note that this structure also holds in the case of three or more Gentrader/Generator pairs.

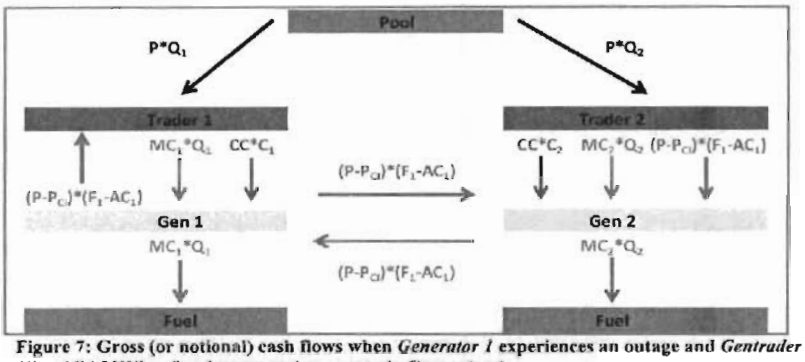

Figure 7: Gross (or notional) cash flows when *Generator 1* experiences an outage and *Gentrader 1* calls on $(F_1 - AC_1)$ MWhs of co-insurance (payment via Generators)

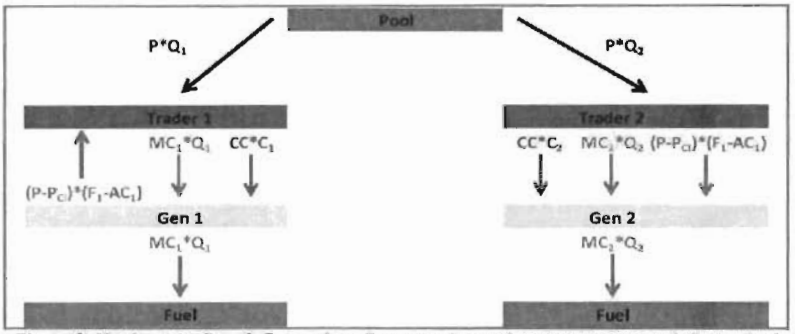

Figure 8: Net (or actual) cash flows when *Generator 1* experiences an outage and *Gentrader 1* calls on $(F_1 - AC_1)$ MWhs of co-insurance (Generator payments cancel)

In its implemented form, the co-insurance arrangement involves payments only between Gentrader/Generator pairs. This means that these payments are just another settlement amount under the Gentrader contract and can be rolled into the credit support offered under the Gentrader contract.

1.6 Cash flows when two Generators experiences an outage

Now assume that both Generators experience an outage. Then, in this stylized example with only two Generators, both Generators' available capacity is less than their firm capacity, each has demand for co-insurance and neither Generator can supply co-insurance.

In this case the Gentraders wear the risk of unfunded difference payments. Put another way, the co-insurance arrangement is only pseudo-firm: firm in the event that there is sufficient supply of co-insurance and non-firm in the event of a shortfall of supply of co-insurance. The co-insurance firm capacity will be set such that there is a very low probability of a shortfall of co-insurance supply.

While Gentraders may prefer the arrangement to be firm at all times, so that they are not exposed to the risk of unfunded difference payments, there are reasons that this may not be to the long-term benefit of Gentraders. To see why, it is useful to think about how generators would normally manage their exposure to spot prices. In the absence of any Gentrader contract, generators would normally:

- reduce their firm contract cover; and/or
- alter their bidding strategy to reduce pool exposure; and/or
- build a new generator to operate to meet the firm capacity shortfall; and/or
- buy hedges against the possibility of being exposed to high pool prices.

None of these market based responses will be available to the Generators under the Gentrader arrangements because:

- the Government will set the firm capacity levels required under the co-insurance arrangement;
- the Generators will not have bidding control over any generating plant; and
- the State-owned Generators will not be able to build new plant.

In other words, if the co-insurance arrangement was completely firm, the Government is likely to have an incentive to manage the associated risk by operating generation capacity outside the Gentrader contracts. In effect, making the co-insurance arrangement pseudo-firm, as described above, should provide confidence to potential bidders that the incentive for future Governments to invest in new plant, or re-assume some dispatch control over generation plant, is reduced.

1.7 Assumptions for numeric examples

The general (algebraic) case for different numbers of outages that are set out in Section 1.4 to Section 1.6 are now set out using numeric examples.

For the purposes of these numeric examples, we will assume that the two Generators and two Gentraders have capacities, firm capacities and costs as presented in Table 1.

Generator	No units	Unit size	Firm capacity	Variable cost/payment	Fixed cost/payment
Generator 1	2	50 MW	75 MW	$10 /MWh	$5/MW/h
Generator 2	2	50 MW	75 MW	$10 /MWh	$5/MW/h

Table 1: Generator assumptions for numeric example

Assume also that the pool price, co-insurance price and demand are given as in Table 2.

Pool price	40 ($/MWh)
Co-insurance price	15 ($/MWh)
Demand	200 (MW)

Table 2: Market and arrangement assumptions

Note that the co-insurance price is greater than the marginal cost of both Generators. This ensures that co-insurance will only be called when the responding Gentrader is able to cover co-insurance payments by selling energy into the pool above its costs.

1.8 Cash flows and output without outages

We will assume that each plant is fully dispatched at 100 MW (with a corresponding pool price of $40/MWh). Cash flows are summarised in Figure 9.

Each of the Gentraders receives $4,000 and makes variable payments of $1,000 and fixed payments of $500, resulting in a net position for each Gentrader of $2,500.

Each of the Generators receives $500 of fixed payments (and simply passes through variable payments of $1,000) resulting in an overall position for the Generators of $1,000.

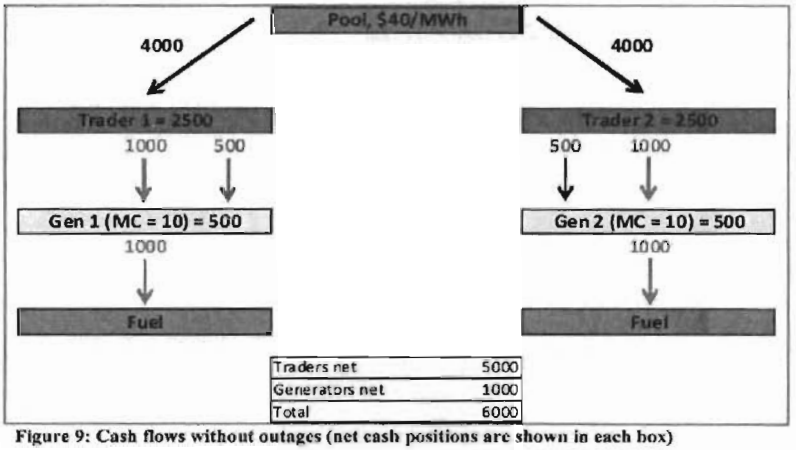

Figure 9: Cash flows without outages (net cash positions are shown in each box)

1.9 Cashflows and output when one Generator experiences an outage

Consider the case where *Generator 1* experiences an outage of one unit, reducing its available capacity to 50 MW. For simplicity, we will assume that this outage has no effect of the pool price. Output for *Generator 1* will be 50 MW and output for *Generator 2* will be 100 MW. Residual demand will be met by some other supply source at $40/MWh.

Figure 10 summarises the cashflows with the co-insurance arrangement for this case. It can be seen that both Gentraders are worse off with the co-insurance arrangement compared to when no outage occurs. However, *Gentrader 1* is better off than it would be in the absence of the co-insurance arrangement (in which case *Gentrader 1* would have a net position of $1,000). This additional income can be used to fund difference payments up to the firm quantity. For *Gentrader 2*, although revenues have reduced, its capacity also remains firm up to the firm quantity and *Gentrader 2* can contract accordingly.

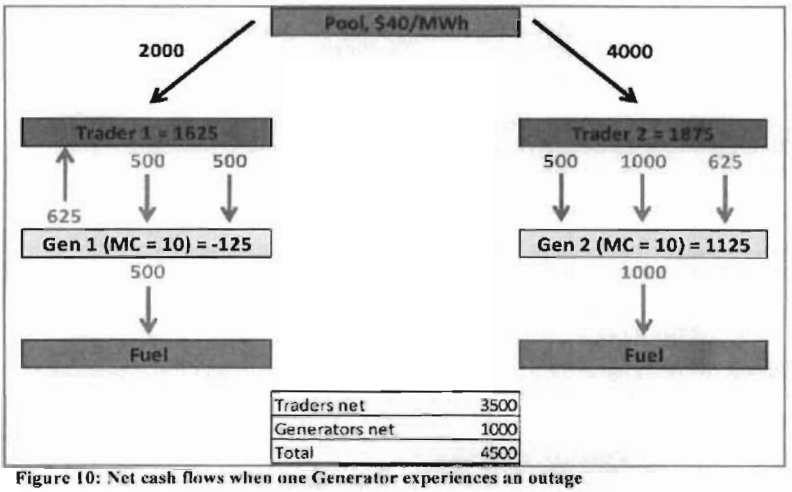

Figure 10: Net cash flows when one Generator experiences an outage

Gentrader 2 is made worse off as a result of the co-insurance arrangement during this event since *Gentrader 2* is required to forego the pool revenue it would otherwise have earned on the production from its non-firm capacity. It is important to note, however, that the level of firm capacity achieved by the Gentraders is higher with the co-insurance than without it, so both Gentraders benefit in this regard. In effect, the foregone pool revenue during co-insurance events is the cost of this increase in the quantity of firm capacity available to the Gentraders under the co-insurance arrangement. Over time, *Gentrader 2* is likely to require co-insurance payments when *Generator 2* experiences an outage, and so also benefits from the co-insurance agreement via the reduction in exposure to the risk of unfunded difference payments.

Importantly, the loss of non-firm revenues resulting from the co-insurance event provides Gentraders with an incentive to invest in operations and maintenance (since they potentially forego non-firm revenues when they have an outage or supply co-insurance), and provides individual Generators with an incentive to take actions which minimise the likelihood of outages (since they suffer a penalty if they call on coinsurance and/or cannot meet their firm capacity obligations).

This incentive for Generators to be reliable is further sharpened by the way in which responsibility for meeting co-insurance requirements is allocated (discussed in more detail in Section 0). Simply, the Gentraders who call on the most co-insurance will also supply the most co-insurance, and forgo non-firm pool revenues more frequently.

1.10 Cashflows and output when two Generators experience an outage

Consider the case in which each Generator has a one unit outage. In this case neither Generator can continue to run at full capacity, and output will be 50 MW for each Generator. We will assume that the remaining demand will be met from another generator in the system and that pool prices will remain at $40/MWh.

If the firm capacity requirements are not met, as is the case here, then the demand for co-insurance cannot be met. That is, both Generators require 25 MW of co-insurance and neither is in a position to supply any co-insurance.

In this case the Gentraders wear the risk of unfunded difference payments and the cashflows are the same as they would be in the absence of co-insurance.

These cashflows are shown in Figure 11.

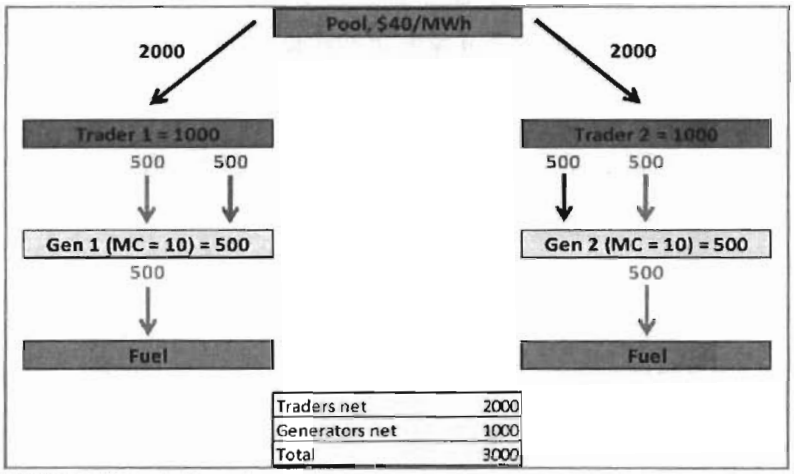

Figure 11: Net cash flows when two Generators experience outages

2. Calling and allocating co-insurance

In the two Gentrader case discussed in Section 1, it is always clear which Gentrader will be required to supply co-insurance. However, when there are three or more Gentraders, there needs to be an allocation rule to define which Gentrader(s) supply co-insurance during an outage. This section introduces the calling and allocation rules which will decide which Gentraders (and, hence, Generators) will be liable to make financial payments when a call on co-insurance is made.

Section 2.1 discusses the rules around calling co-insurance, particularly the inter-temporal issues around when payments become active. Section 2.2 sets out the allocation rules when there is an adequate supply of co-insurance and Section 2.4 discusses the allocation in the event of a shortfall. Finally, Section 2.5 discusses issues that arise when a single entity owns and operates more than one generator.

2.1 Calling co-insurance

Co-insurance is available to Gentraders whenever the available capacity from their Generator drops below the co-insurance firm capacity. In this case the Gentrader can call on co-insurance up to the difference between firm capacity and available capacity. For example, if a Gentrader's firm capacity is 1000 MW and their Generator declared available capacity is 800 MW then the Gentrader can call on up to 200 MW of co-insurance.

Gentraders are obligated to supply co-insurance when called upon. The amount available for supply is the difference between available capacity and firm capacity. For example, if a Gentrader's firm capacity is 1000 MW and available capacity is 1200 MW then it could be called upon to supply up to 200 MW of co-insurance. Gentraders can only ever supply co-insurance above their firm capacity.

The morphology of a basic co-insurance event is as follows:

1. *Generator A* declares available capacity to be less than firm capacity; then,
2. *Gentrader A* decides whether or not to call on co-insurance. Assuming that co-insurance is called on in full (firm less available capacity); then,
3. The scheme administrator determines the allocation of co-insurance supply. Assuming the total supply is met by *Gentrader B*; then,
4. *Gentrader B* is notified of the quantity they must supply (*Gentrader A*'s firm less available capacity) for each trading interval of the co-insurance event. Co-insurance payments do not become active until two full trading intervals have passed. The parties are liable to make payments as discussed in Section 1 for each trading interval that co-insurance is active; finally,
5. The co-insurance event ends when either:
    a. *Generator A* declares available capacity to be equal to or greater than *Gentrader A*'s firm capacity; or,
    b. *Gentrader A* ends the call on co-insurance (for example overnight, if spot prices are unlikely to exceed the co-insurance price).

It should be noted that responding Gentraders (in this example *Gentrader B*) are liable to make payments regardless of the level of output of their plant. If the responding Gentrader is already operating at or near full capacity then this is not a problem. However, if the responding Gentrader is operating at low levels for some reason they could potentially be liable for co-insurance payments that they are not able to recover via pool sales. For this reason co-insurance payments are not active until two full trading intervals after the call. This gives the responding Gentrader(s) time to ramp plant production up (if they wish to) in order to recover co-insurance payments via pool sales.

For example, if a Gentrader called on co-insurance at 12:15 then payments would not be active until the trading interval ending at 14:00 and would remain active until the co-insurance event ended. This means that the calling Gentrader is not covered by co-insurance for at least the first hour of any outage event. Two trading intervals was chosen as the appropriate period because this provides any of the power stations that is party to co-insurance with the opportunity to ramp up production by an amount equal to non-firm capacity before the co-insurance payments kicked in.

It is possible that a Gentrader who is supplying co-insurance could themselves have an outage. In this case co-insurance would need to be reallocated. There are two possible cases, as a results of the outage:

- available capacity remains above or equal to firm capacity; or
- available capcity drops below firm capacity.

In the former case co-insurance would be re-allocated such that this Gentrader supplied less (potentially no) co-insurance. In the latter case this Gentrader may wish to call on co-insurance. In this case the reallocation would involve this Gentrader now receiving co-insurance rather than supplying. In both cases the re-allocation would not take effect until two full trading intervals had passed. This means that this Gentrader would still be liable to supply co-insurance and make payments for the intervening two periods.

2.2 The surplus/deficit order

The method of allocating co-insurance is such that the Gentraders which call most regularly on co-insurance should be the first to supply co-insurance at a later date. Conversely, Gentraders who rarely call on co-insurance will be less likely to supply. This rule is typified by the surplus/deficit order. The surplus/deficit order will be a continuously updated tally of the supply and demand of co-insurance. For every hour that a Gentrader calls on 1 MW of co-insurance it will accrue 1 MWh of deficit. Similarly, a Gentrader who supplies 1 MW of co-insurance for an hour accrues 1 MWh of surplus. The surplus/deficit order is a cumulative tally of the supply and demand for co-insurance. At any point in time it implies an order from the Gentrader with the highest deficit to the Gentrader with the highest surplus.

In the event of a Gentrader calling on co-insurance, then the Gentrader with available capacity greater than firm capacity and the highest deficit is the first to supply. If this Gentrader is unable to meet the entire demand for co-insurance then the Gentrader with available capacity greater than firm capacity and the next highest deficit is the next to supply, and so on.

Using this allocation rule means that Gentraders have an incentive to maintain their plant and increase reliability via capital expenditure. When a Gentrader is called on to supply co-insurance they effectively forego pool operating profits to the calling Gentrader. As such, Gentraders wish to avoid being called on to supply co-insurance. The only way they can do this is if their power station is relatively more reliable than other power stations that are party to the co-insurance arrangement, such that they are further up the surplus/deficit order. In this manner, the co-insurance arrangement does not interfere with incentives to invest in the power stations in order to increase reliability.

The surplus/deficit order will not be published to the parties in real time but will be made available on a daily basis.

2.3 Example allocation using the surplus/deficit order

The following examples of the surplus/deficit order will consider a system of four Gentrader contracts over four power stations of equal size and firm capacity, each with two 500 MW units. Initially there is no outage and we have also assumed a pre-existing surplus/deficit order. These details are summarized in Table 3. No outages are occurring and all Gentraders have 200 MW of potential co-insurance

supply. The surplus/deficit order indicates that Gentraders will supply in the following order (lowest to highest): 2, 1, 3 then 4.

Gentrader	Available capacity (MW)	Firm capacity (MW)	Capacity available to supply co-insurance (MW)	Demand for co-insurance (MW)	Surplus/ deficit order (MWh)	Co-insurance received (MW)	Co-insurance supplied (MW)
1	1000	800	200	0	-200	0	0
2	1000	800	200	0	-400	0	0
3	1000	800	200	0	200	0	0
4	1000	800	200	0	400	0	0

Table 3: Initial data for allocation example (no outage)

Assume that *Generator 3* experiences a single unit outage at 12:15 on this example day and immediately informs *Gentrader 3* and the Administrator that available capacity has dropped to 500 MW. At this time *Gentrader 3* decides to call on co-insurance in full. This equates to calling for 300 MW, the difference between firm capacity and available capacity. The Administrator determines the allocation based on the surplus/deficit order. Gentrader 2 is the Gentrader with the lowest surplus/deficit and is first to supply, however Gentrader 2 is only ever called to supply up to 200 MW of co-insurance. The balance of demand for co-insurance (100 MW) is met by Gentrader 1. This allocation does not become active until two full trading intervals have passed. This equates to the interval ending 14:00. The Administrator notifies Gentraders 1, 2 and 3 of the allocation of co-insurance and the time that it becomes active as soon as possible after the call has been made by Gentrader 3. Gentrader 4 is not informed in real time. The supply and demand of co-insurance is summarised in Table 4.

Gentrader	Available capacity (MW)	Firm capacity (MW)	Capacity available to supply co-insurance (MW)	Demand for co-insurance (MW)	Surplus/defi cit order (MWh)	Co-insurance received (MW)	Co-insurance supplied (MW)
1	1000	800	200	0	-200	0	100
2	1000	800	200	0	-400	0	200
3	500	800	0	300	200	300	0
4	1000	800	200	0	400	0	0

Table 4: Gentrader 3 calls on co-insurance at 12:15, allocation is determined to start from interval ending 14:00

Throughout the co-insurance event the surplus/deficit order changes to reflect co-insurance supplied and received in MWh's. This is shown in Table 5. As of the interval ending 13:30 there is no change as co-insurance is not yet active. From the interval ending 14:00, both *Gentrader 1* and *Gentrader 2* accrue surplus MWh's to reflect their supply while *Gentrader 3* accrues deficit MWh's to reflect co-insurance received.

Gentrader	Allocation (MW)		Surplus/deficit order (interval ending, MWh)				
	Co-insurance received	Co-insurance supplied	13:30	14:00	14:30	15:00	15:30
1	0	100	-200	-150	-100	-50	0
2	0	200	-400	-300	-200	-100	0
3	300	0	200	50	-100	-250	-400
4	0	0	400	400	400	400	400

Table 5: Changes to the surplus/deficit order during the co-insurance event (allocation active as of interval ending 14:00)

From the interval ending 14:00 onwards payments are being made between the three involved Gentraders and their respective Generators as per the description in Section 1. These payments are in general of the form:

$(P - P_{CI}).Q_{CI}$, where Q_{CI} is the relevant quantity in MWh's

In summary, for each half hour that co-insurance is active, payments are made as follows:

- Gentrader 2 pays Generator 2 an amount $(P - P_{CI}).200/2$;
- Gentrader 1 pays Generator 1 an amount $(P - P_{CI}).100/2$; and,
- Generator 3 pays Gentrader 3 an amount $(P - P_{CI}).300/2$.

Note that division by two has been included to make it explicit that the allocation is in MW's whilst the payments (and surplus/deficit order) involve MWh's.

In the final interval shown in Table 5 we see that the surplus/deficit order for both *Gentrader 1* and *Gentrader 2* is equal at value 0 MWh's. When this occurs a reallocation of co-insurance is required such that the supplying Gentraders remain equalised in the surplus/deficit order. Table 6 shows the new allocation, which is active from the interval ending 16:00, and further changes to the surplus/deficit order over time. Payments between the parties change in accordance with the new allocation. The Administrator would notify *Gentrader 1* and *Gentrader 2* of the new allocation at 14:30, two full periods before it came into effect at 15:30 (for the interval ending 16:00). *Gentrader 3* would not be given any new information as its allocated supply of 300 MW has not changed. *Gentrader 4* would also not be informed of any changes.

If the co-insurance event continued then *Gentrader 4* would eventually be allocated to supply also. At that stage each supplying Gentrader would be allocated to supply 100 MW's of co-insurance and that would continue until the end of the event or an additional outage cause a further re-allocation.

Gentrader	Allocation (MW)		Surplus/deficit order (interval ending, MWh)				
	Co-insurance received	Co-insurance supplied	15:30	16:00	16:30	17:00	17:30
1	0	150	0	75	150	225	300
2	0	150	0	75	150	225	300
3	300	0	-400	-550	-700	-850	-1000
4	0	0	400	400	400	400	400

Table 6: Changes to the surplus/deficit order during the co-insurance event (allocation active as of interval ending 14:00)

2.4 Example where demand for co-insurance exceeds available supply

Now assume that *Generator 4* has a single unit outage at 16:45. *Gentrader 4* then chooses to call on co-insurance in full for 300 MW. Demand for co-insurance from *Gentraders 3* and *4* (600 MW) now exceeds available supply from *Gentraders 1* and *2* (400 MW). In this case, as is always the case, co-insurance is allocated according to the surplus/deficit order. *Gentrader 4* has a greater surplus than *Gentrader 3*, as such *Gentrader 4* receives the full 300 MW it demands. *Gentrader 3* receives the residual supply of 100 MW. All parties are notified of the new allocation by 17:00 and it becomes active for the interval ending 18:30. This is shown in Table 7. If the co-insurance event continues then eventually *Gentraders 3* and *4* will equalise on the surplus/deficit order. In this case co-insurance will be re-allocated between them equally in analogy to the supply side example given previously.

Gentrader	New Allocation (MW, active interval ending 18:30)	Surplus/deficit order (interval ending, MWh)

	Co-insurance received	Co-insurance supplied	18:00	18:30	19:00	19:30	20:00
1	0	200	375	**475**	575	675	775
2	0	200	375	**475**	575	675	775
3	100	0	-1150	**-1200**	-1250	-1300	-1350
4	300	0	400	**250**	100	-50	-200

Table 7: Changes to the surplus/deficit order during the revised co-insurance event (new allocation active as of interval ending 18:30, shown in bold)

2.5 Common ownership of power stations

Under the allocation rule discussed above, a potential issue arises where a single entity owns and operates more than a single generator, for example Macquarie Generation with Bayswater and Liddell. If a single entity is supplying co-insurance with one power station and receiving co-insurance on another power station then the Generator, as a single entity, is essentially indifferent to whether co-insurance is called or not. That is, the incentives promoted by the inter-generator payments cease to exist. However, for the reasons set out below, this is unlikely to be a real issue.

In this case one of the Gentraders could offer a financial incentive to the Generator to falsely declare an outage. This would allow that Gentrader to call on co-insurance which would be supplied by the other Gentrader associated with the Generator. This can only work if the Generator is certain that it will be their plant that both receives and supplies co-insurance such that the payments balance.

For example, using Macquarie Generation, assume that the Gentrader for Liddell is the next in line under the surplus/deficit order and all parties are aware of this. In this case the Gentrader for Bayswater could offer Macquarie Generation a payment to declare a false outage.[37] The Gentrader for Bayswater could then call on co-insurance, this would result in:

- The Liddell Gentrader making payments to Macquarie Generation; and,
- Macquarie Generation making payments to the Bayswater Gentrader.

Note that the payments cancel out for Macquarie Generation, so it is indifferent to the co-insurance event. However, the Bayswater Gentrader suffers reduced dispatch, potentially benefits from an increase in pool prices and also receives co-insurance payments. The Liddell Gentrader also potentially benefits from an increase in pool prices but has to forego non-firm pool operating profits to the Bayswater Gentrader. In this manner, the co-insurance arrangement could be used to defraud the Liddell Gentrader, who is ultimately out of pocket.

Ultimately, the NSW Government considers that this will not be an issue. Making false availability declarations will constitute a breach of the Gentrader contract and the co-insurance contract. Under the Gentrader contract, Gentraders will have an audit right to ensure that availability declarations are true.

Similar arrangements will be available under the co-insurance contract: any party to the agreement (Gentrader or Generator) will have the right to request that the Administrator undertake an audit of a Generator's availability declaration. If this audit finds that an availability declaration is false, then all payments that were made as part of the co-insurance event(s) would be reversed, including changes to the surplus/deficit order, and an additional penalty would be applied to the offending Gentrader and Generator, which would include the cost of the audit. In the event that the audit found the declaration to be valid, then the requesting party would be liable to pay for the audit.

[37] Presumably this would result in an increase in pool prices due to capacity being withdrawn from the market.

3. Determining the co-insurance firm quantity and allocation

This section sets out the methodology used to determine the quantity of firm capacity to be provided to Gentraders under the co-insurance arrangement. The allocation amongst the Gentraders is also discussed.

There is a trade off in setting the firm capacity levels. Gentraders will always value higher levels of firmness, with maximum value being associated with 100% firm capacity. In practice however, generators cannot be 100% firm at their nameplate capacity. For example, a system of eight 500 MW units (for a total of 4,000 MW) would be able to offer 100 MW of capacity with near enough to 100% firmness, but would not be able to offer 3,900 MW with 100% firmness as there is a non-zero probability of outages over any significant timescale at 3,900 MW of supply. As such, the level of firm capacity is proportional to the probability that there is insufficient supply. Put another way, setting a high firm capacity increases the likelihood that the plant stock will not be able to meet that level at all times. This effect is discussed and quantified in Section 3.2.

The main consideration in determining the likelihood of a shortfall in supply below the firm level is the number of units involved in the arrangement and data for each unit regarding its expected outages (both forced and planned).[28] Using this data it is possible to consider every combination of possible full outages amongst the participating units. For each of these combinations a probability can be assigned, as discussed in Section 3.1. By assuming some allocation of co-insurance, for example a flat percentage firm capacity across all the Gentraders, it is also possible to determine the supply and demand of co-insurance for each of these outage combinations including any instances of supply shortfalls. By repeating this calculation for different assumed co-insurance levels it is possible to determine a relationship between the assumed co-insurance level and the probability of a shortfall in the supply of co-insurance.

3.1 Probability of outages

This section presents the generalised mathematical approach for determining the probability that an assumed level of co-insurance can be provided over a given period of time (e.g. a year).
The probability of simultaneous unit outages can be determined using the binomial theorem. In simple terms the probability of k simultaneous unit outages, in a portfolio of n units, where each unit has probability of outage p is given by the binomial theorem:

$$P_n(k) = \binom{n}{k} p^k (1-p)^{n-k}$$

where:

$$\binom{n}{k} = \frac{n!}{k!(n-k)!}$$

Further, the probability that there are no more than j simultaneous unit outages is given by:

$$P_n(\leq j) = \sum_{k=0}^{j} \binom{n}{k} p^k (1-p)^{n-k}$$

The above equations assume that each unit experiences a full outage (as opposed to a partial outage), each unit experiences an outage with equal probability, and that each unit is equal in size.

To determine the amount of firm capacity across the entire 18 unit system[29] under consideration, a generalisation of the above approach is employed. In this model each unit u has 2 possible states

[28] Equivalently, since we are not differentiating between different types of outages or full versus partial outages, we can take the overall expected outage rate to be one less the expected availability factor.
[29] The firm co-insurance quantity is determined for the system of State-owned baseload generators, excluding the two Munmorah units

(available or unavailable) with a probability of an outage given by p_u. Given this, there are 2^{18} possible combinations, C, of outages, each with a probability:

$$P(C) = \prod_u P(c_u)$$

where c_u is the state of unit u in combination C.

That is, the probability that combination C occurs (for instance, that Bayswater experiences a single unit outage, but all other units are available) is the product of the probabilities of each individual state c_u (the probability that unit one of Bayswater is unavailable multiplied by the probability that every other unit is on).

If c_u is assigned a value of 0 when the unit is unavailable and 1 when the unit is available then the probability that unit u is in state c_u reduces to a simple form of a binomial distribution given by:

$$P(c_u) = p_u^{c_u} (1 - p_u)^{1-c_u}$$
$$c_u = 0,1$$

For example, the probability that only the first unit has an outage and all others are available is the product of the probability that the first unit experiences an outage multiplied by the probability that the second unit is available multiplied by the probability that the third unit is available, etc.

Using the methodology above, for each unique combination of full unit outages across the 18 unit system we can determine a probability that this given state will occur.

3.2 Firm capacity availability curve

The model described above can be used to calculate the probability of each individual combination of outages. In order to reduce the required calculations from 2^{18} – the total number of combinations of outages – it is assumed that each unit in a given station has the same outage rate (this assumption can be relaxed, and indeed will be relaxed for the final calculation). This reduces the problem to a more manageable $5^3*3^3 = 3,375$ combinations[30].

For an assumed level and allocation of co-insurance it is also possible to determine the supply and demand of co-insurance, including any supply shortfalls. Figure 12 shows how the probability of shortfalls increases as the firm capacity level is increased. This figure assumes that co-insurance is set as a percentage of total installed capacity and allocated amongst the Gentraders by capacity.

[30] The 5^3 term comes from the three 4-unit stations, which each have five possible states – 0, 1, 2, 3 or 4 outages. The 3^3 comes from the three 2-unit stations, which each have three possible states – 0, 1 or 2 outages. Munmorah has been excluded.

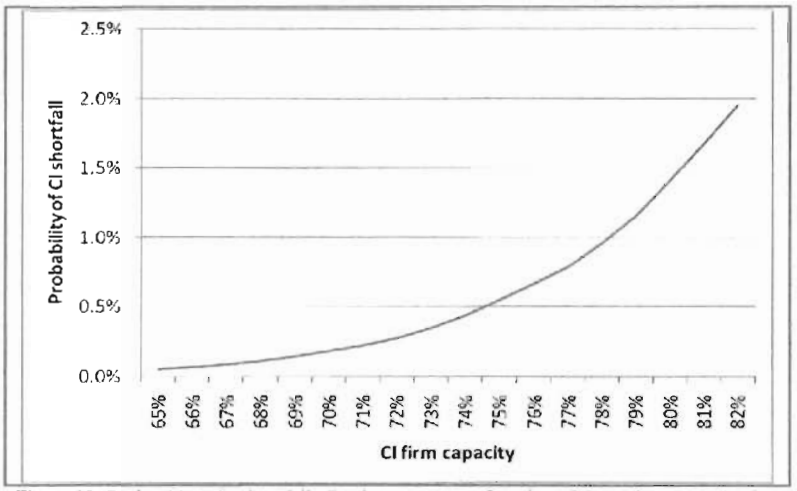

Figure 12: Probability of a shortfall of co-insurance as a function of the co-insurance level (assumes co-insurance is allocated by capacity).

Intuitively, Figure 12 shows how the likelihood of a shortfall of capacity increases with the assumed co-insurance level. For example, if the co-insurance level was set at 75% of participating plants' capacity then there would be approximately a 0.5% chance that this co-insurance quantity could not be met for a given half hour. Put another way, you would expect co-insurance to be pseudo-firm for 0.5% of any given year.

Note that this firm co-insurance level protects the Gentrader against both forced and planned outages. As such a co-insurance level of 75% across the whole year is significantly better than a Gentrader with four units self-insuring against both forced and planned outages.[51]

3.3 Allocation of firm availability to Gentraders

The calculations above have been carried out assuming that the available co-insurance is allocated to Gentraders on a capacity basis. If all the plant were equally reliable then this allocation would not result in a transfer of value between the plant and the associated Gentrader contracts.

In practice this is not the case – some plant are more reliable than others. As such, an allocation by capacity would represent a transfer of value from more reliable plant to less reliable plant. This may not be desirable as bidders for the Gentrader contracts would need to discount/inflate their offers for the period of the co-insurance contract (as part of their overall Gentrader contract bid). As such, it is likely to be preferable to allocate the co-insurance according to expected reliability.

[51] While the Gentrader could be expected to consider 75% of capacity firm (N-1) for at least part of the year this would not be the case during planned maintenance events.