Supplementary Submission No 45a

INQUIRY INTO GENTRADER TRANSACTIONS

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Supplementary Submission to the Inquiry into the Gentrader Transactions

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Scope of this supplementary submission

This submission supplements my primary submission to the Inquiry into Gentrader Transactions (Submission 45, 17/1/11) in the following ways:

- It responds to the following question from Dr John Kaye, which was taken on notice: *Given that the Treasurer continues to rely on the Owen inquiry report, can you point to any other issues with the Owen inquiry report that we should be aware of or cautious about?* (Uncorrected Transcript for 18 January, p 29)
- It addresses some points raised in evidence and submissions to the Inquiry with respect to:
    - Estimating future outage risk
    - Calculating residual value and availability liquidated damages
    - Public versus private ownership in the electricity and gas industries
- It discusses recommendations that the Committee may wish to consider for the Inquiry report.

Issues arising from the Owen Inquiry Report

Background

In her evidence of 17 January, the Premier stated with respect to the Owen Inquiry:

> *His unambiguous findings were that the Government had to exit the competitive aspects of the electricity market, that is, the retailing and trading of wholesale electricity in the national market. Doing so would create an environment where the private sector has the confidence to invest in new power stations and to vigorously compete for customers. They were our objectives from the beginning, and I am pleased to say that we have achieved those objectives significantly. The Government is now out of the retail sector and we continue to negotiate with the bidders for the last two gentrader contracts. (Uncorrected Transcript for 17 January, p 3)*
>
> *The Owen report makes it very clear that if the Government were to exit that sector we would increase competition and that would put downward pressure on prices. (Uncorrected Transcript for 17 January, p 36)*

In his evidence on 18 January, Mr Cosgriffe stated:

[1] The author of this submission is solely responsible for its contents.

The purpose of the transaction as originally set out in the Owen report was to execute [presumably exit] the retail and generation [presumably sectors] in order to give the private sector the incentive to invest in new generation (Uncorrected Transcript for 17 January, p 17)

The document, New South Wales Energy Reform Strategy: Delivering the Strategy (September 2009) states on page 7:

The Inquiry into Electricity Supply in NSW led by Professor Anthony Owen (the Owen Inquiry) in 2007 and the 2008 Statement of Opportunities from the National Electricity Market Management Company (NEMMCO, since subsumed within the Australian Energy Market Operator or AEMO) confirmed that new generation is required in NSW within the next decade. The 2009 Electricity Statement of Opportunities (ESOO), released on 27 August 2009, is in alignment with these findings.

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.

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. If no action is taken to facilitate private investment in large scale new generation projects, the Government will be required to fund the next tranche of large scale generation investments. This would be contrary to the Government's long held and firmly stated position that future power station investment should come from the private sector, and would divert the Government's scarce financial resources from other uses.

Specifically, the private sector was concerned about public investment in generation and the commercial behaviour of the State Owned Corporations (SOCs). In response to these concerns the Owen Inquiry recommended that the Government exit the competitive aspects of the power industry. That is the Government exits from the retail and generation sectors. This strategy achieves this in a way that is consistent with the Government's key objectives.

Extracts from the Owen Inquiry Report

The terms of reference for the Owen Inquiry were[2]:

1. Review the need and timing for new baseload generation that maintains both security of supply and competitively priced electricity;
2. Examine the baseload options available to efficiently meet any emerging generation needs;

[2] Owen Inquiry Update 1, June 2007. Available: www.dpc.nsw.gov.au/__data/assets/pdf_file/0020/12890/OwenInquiryUpdateNo1.pdf

3. Review the timing and feasibility of technologies and/or measures available both nationally and internationally that reduce greenhouse gas emissions; and
4. Determine the conditions needed to ensure investment in any emerging generation, consistent with maintaining the NSW AAA Credit Rating.

The preface to the Owen Inquiry Report defined "baseload generation" in the following manner:

> *A **baseload** power plant is one that provides a steady flow of power regardless of total power demand by the grid (p i)*

It also noted that:

> *Peaks in electricity demand have been accentuated, particularly in summer, and this trend is expected to continue. Thus there has been a requirement for additional "peaking" capacity, largely to provide for changing commercial and residential usage patterns in New South Wales, rather than baseload. In addition, electricity produced from some "renewable" technologies enters and leaves the system in significant quantities, but intermittently, essentially substituting for baseload. To overcome the intermittency, therefore, flexible back-up plant is required. This is likely to become more of an issue for New South Wales as additional renewable energy enters the system, driven by Government programs and policies designed to encourage investment in renewable technologies. (p i)*

The preface also discusses the implications of the National Electricity Market as follows:

> *The NEM permits electricity to be traded over State borders, subject to physical transmission constraints. Queensland transmits considerable quantities of baseload power to the NSW market. New South Wales and Victoria draw power from the Snowy Mountains Hydro-electric Scheme. Whilst it would be possible for any future increase in NSW baseload requirements to be met with additional imports, the ongoing transportation of electrical energy over long distances results in significant energy losses, and development of interstate generation in support of NSW load is only financially sensible where there are substantial differences in fuel costs. (p ii)*

Thus, in the above extracts Owen recognised that:

- NSW already imports "considerable quantities of baseload power"
- "any future increase in NSW baseload requirements" could "be met with additional imports" subject to competitiveness criteria.

The key recommendation of the Owen report was expressed in the following manner in the preface to the Owen Inquiry Report:

> *The terms of reference provided a logical sequence for the Inquiry to assess the future baseload electricity generation requirements of New South Wales, and the most efficient means for ensuring that the required investment funds would be forthcoming at the appropriate time. On the basis of submissions made to the Inquiry, together with expert consultant reports, I have determined that there is a need to be prepared for additional investment in baseload from 2013-14. Further, the most efficient means of providing for baseload is to improve the commercial and policy signals used by the*

> *private sector when investing in generation capacity in New South Wales. My key recommendation, therefore, is that the Government of New South Wales divests itself of all State ownership in both retail and generation. (p i)*

We can identify the following key phrases in the above quotation:

- *I have determined that there is a need to be prepared for additional investment in baseload from 2013-14*
- *the most efficient means of providing for baseload is to improve the commercial and policy signals used by the private sector when investing in generation capacity in New South Wales*
- *My key recommendation, therefore, is that the Government of New South Wales divests itself of all State ownership in both retail and generation*

Thus, notwithstanding the earlier apparent understanding of the role of interstate trade in the NEM or the need for a mix of peak, intermediate and baseload generation, the key recommendation is focused on baseload generation in NSW and a need for the State to exit all generation and retail activities.

Owen also sees vertical integration as a positive for the new private owners despite it reducing competitive pressures and creating a barrier to entry – he provides no arguments that explain why the new owners would pass on such benefits to consumers:

> *Privatisation of both the electricity retail and generation sectors would offer the opportunity for companies to become vertically integrated (i.e. own both a retail and a generation business) thus allowing them to adopt more cost-efficient outcomes (p xiii)*

With respect to price outcomes, Owen states:

> *It is impossible to anticipate the future direction of electricity prices, particularly as the imposition of a carbon trading regime in Australia is imminent. However, provided a competitive environment exists, then I would anticipate that prices would be lower than they would in a market dominated by Government owned companies (p ix)*

Thus he highlights the need for competitive pressures to force generators and retailers to pass on any economic efficiency gains they make to consumers.

It is important to note that Owen did not recommend or even discuss the Gentrader model in his report. Instead, he stated:

> *In the event that the Government does not wish to sell generation, then appropriately structured long-term leasing of current generation assets should be considered as a viable alternative. The State would retain ownership of the assets, with operational and commercial control by the private sector. A sufficiently long lease would provide an incentive to maintain the commercial life of the asset, and to invest in emission reduction technologies such as CCS. This option would be consistent with the Premier's statement in Parliament on 9 May 2007 that 'there will be no sale of electricity generation, transmission or distribution'. (p xiii)*

With respect to coal supplies for electricity generation, Owen does not mention the Cobbora mine project. Instead he states:

> *New South Wales has ample resources of coal to supply new baseload coal-fired generation, with estimated recoverable reserves of around 10 billion tonnes. In 2004-05, the NSW coal industry produced 156 million tonnes of raw coal. Existing NSW power stations consume around 30 million tonnes of coal per annum. (p 1-9)*

With respect to the National Electricity Market, Owen states[3]:

> *The National Electricity Market (NEM) provides a market that is efficient and protects consumers regarding price, quality, reliability and security of electricity supply (p 1-12*
>
> *Government ownership of electricity businesses operating in the competitive sectors of the industry neither increases nor decreases the State's ability to ensure that price, social and environmental outcomes are achieved from the electricity industry (p 1-12)*
>
> *The private sector has demonstrated it will invest in new generation in the NEM under the right conditions (including access to a stable revenue stream, to generation development sites and to fuel sources) (p 1-12)*
>
> *The private sector can manage the commercial risks in developing a power station but has less capacity to handle policy and regulatory risks. Submissions to the Inquiry highlighted carbon uncertainty and Government ownership as impediments to investment. (p 1-13)*
>
> *The Inquiry agrees that the NEM is well designed to ensure adequate investment, and appreciates that the governments of all NEM jurisdictions have put in place a number of mechanisms, such as through the Reliability Panel of the Australian Energy Market Commission (AEMC) and through NEMMCO's forward looking reserve forecasting to ensure that adequate generation is available. (p 2-2 & 2-3)*

In considering the need for new generating capacity in New South Wales, Owen makes the following constraining assumptions on output from existing power stations and imports:

> *For the purpose of this analysis, the Inquiry has taken the view that in the long term, net electrical energy imports from Queensland are likely to be no higher than about 6,000 GWh, and could be markedly reduced over the next ten years. (p 2-19)*
> *If additional energy was required to the south of Snowy Hydro, then the energy available to New South Wales could drop over time from around 3,000 GWh per annum to zero or even negative. (p 2-19)*

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[3] Note that the points that follow this footnote are inconsistent to the extent that there has been considerable private generation investment in the NEM to date, despite public ownership of generation in Queensland, New South Wales, Tasmania and the Snowy Scheme. Thus the evidence to date does not suggest that "Government" ownership has been an impediment to private investment. Much more important to private investors would be a clear and consistent policy position by governments not to invest in *new* generation. Interestingly, the NSW energy reform strategy does not make such a commitment. Instead it focuses on sale of existing assets.

As outlined, the range of annual scheduled energy available to New South Wales could be as follows (p 2-21):

NSW existing generation:	*less than 85,000GWh*
From Queensland:	*0 to 6,000GWh*
From Snowy/Victoria:	*0 to 3,000GWh (p 2-21)*

With respect to the demand side of the electricity industry, Owen states:

> *The NSW Government should continue to explore options to enhance the role of energy efficiency and consider extra measures to tackle ongoing barriers to the uptake of cost-effective investment in energy efficiency (p 4-1)*

However, there is no discussion of the composition of electricity demand in NSW and in particular the role of energy intensive industry and the sensitivity of its profitability to electricity price. Nor is there any discussion of the attitude that private retailers might take to energy efficiency measures that might reduce their electricity sales.

With respect to climate change, Owen states:

> *In June 2005, New South Wales was the first jurisdiction in Australia to announce economy-wide greenhouse gas emission targets. The targets are included in the State Plan (Priority E3).*
> *The NSW targets are:*
> - *a 60 per cent reduction on 2000 greenhouse gas emission levels by 2050*
> - *a return to 2000 greenhouse gas emission levels by 2025. (p 5-3)*

Owen discusses the climate change emissions from NSW power stations and considers the role of combined cycle gas turbines (CCGT) and carbon capture and storage (CCS) in containing emissions. He states:

> *Submissions to the Inquiry have divergent views on the policy framework that NSW Government should apply to future generation. Many submissions believe that the Government should remain silent on the preferred technology and let the private sector decide. However others see a legitimate role for Government in setting emissions standards that would at a minimum prevent investment in coal-fired generation, claiming without this action State emission targets will not be achieved. (p 5-16)*

Owen does not offer a way to resolve this divergence of views. Instead he states:

> *Climate change should be regulated at the national level via a national emissions trading scheme. However, in the absence of action from the Commonwealth Government, New South Wales has implemented effective and world leading greenhouse regulation on the energy industry (p 6-11).*

In comparing public and private investment in the electricity industry, Owen states:

> *Should the NSW Government choose to continue to own most of the State's electricity industry, the State will almost certainly have to both fund the next tranche of baseload generation in New South Wales and invest further in the State-owned energy corporations. (p 6-1)*
>
> *The Government's core policy role is to ensure a robust policy and regulatory framework that will deliver an effective and efficient market and appropriate conditions for consumer and environmental protection. Regardless of whether the energy businesses are owned by the Government or the private sector, the regulations and policies imposed by the Government apply equally to both State Owned corporations and private sector organisations. (p 6-6)*
>
> *The Inquiry concludes that ownership in and of itself does not affect prices in the competitive market segments (generation and contestable retail) or other regulated market segments (transmission, distribution and regulated retail). But to the extent that transferring the State's retail and generation interests to the private sector increases the potential dynamics in the generation and contestable retail sectors there would be a beneficial impact on the price of electricity. (p 6-12)*
>
> *In summary, the Inquiry concurs with the Morgan Stanley's conclusion that the NEM has worked well since its inception in meeting the market objective to 'promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system' (p 6-14)*
>
> *Parties likely to invest in generation in New South Wales generally expressed a high degree of confidence that the NEM can provide appropriate signals for required new investment, and is superior to a more centrally planned approach to delivering generation investment (p 6-15)*

In Chapter 7, Securing Private Sector Investment, Owen states:

> *Submissions to the Inquiry from those parties likely to invest in generation, are confident that the private sector will invest in generation capacity when a demonstrable market need reflected in wholesale electricity prices is predicted, and an investment case can be made for commercially viable operation and financing. (p 7-3)*
>
> *A number of submissions touched on the market uncertainty created by government ownership. For instance, uncertainty around the capability of the State's existing power stations and the investment intentions of the SOCs was noted as a cause of concern when considering investing in new generation. Of the policy and regulatory risks almost all submissions mentioned the importance of more certainty on greenhouse gas emissions policy. (p 7-5)*

Compared to other greenfield baseload generation sites, the sites owned by the energy State Owned Corporations (SOCs) are:

- *favourable in terms of access to fuel, water supply and transmission infrastructure. The coal-fired sites also are able to share infrastructure already provided for the existing power stations and integrate operations. This has the benefit of reducing construction cost and the long run marginal cost of the plant*
- *considerably progressed in the project feasibility and development approval stages. Project feasibility and development approval for baseload plants can take up to 3 to 4 years and the private sector are unlikely to commit capital to a baseload power station at a greenfield site that is behind a potentially competing project.*

The Inquiry notes that without access to these sites the private sector is not likely to invest in competing sites that are commercially less favourable. (p 7-9)

The Inquiry considers that Governments should, therefore, not seek to prohibit, or unduly favour, certain fuel sources for power generation, but should manage any externality costs of fuel (e.g. carbon emissions) via market-based instruments, which would allow environmental outcomes to be achieved while not comprising fuel-on-fuel competition. (p 7-10)

Discussion of the Owen Inquiry Report and the Governments interpretation of its implications

The Owen Inquiry report has the following weaknesses with respect to the energy reform strategy that the Government is now pursuing:

- The Owen Inquiry report does not make that private generators or retailers will only pass on efficiency gains they make to consumers if they are subject to adequate competitive pressures through a sufficient number of competing companies and low barriers to entry:
  - The ensuing government strategy fails to ensure adequate competitive pressures on retailers in that it establishes a small number of dominant privately owned retailers[4] and then shields them from important risks through gentrader contracts and privileged coal sourcing arrangements.
- The Owen report fails to clarify what benefits might arise from greater retail competition. Table 4.2 in the 2010 State of the Energy Market Report by the Australian Energy Regulator[5] gives the following "indicative composition" of residential electricity bills in NSW, which suggests that competition between retailers would only place competitive pressure on about 11% of the typical residential bill:
  - Wholesale energy: 37%
  - Network costs: 51%
  - Retail operation: 6%

[4] EnergyAustralia, Integral Energy and Country Energy retailers "jointly supply over 80 percent of small customers" in NSW (AER, State of the Energy Market 2010, p 94.

[5] Available at www.aer.gov.au

- Retail margin: 5%

- In considering future baseload requirements, the Owen Inquiry report constrains imports from other NEM States:
  - The 2010 National Transmission Development Plan published by the Australian Energy Market Operator provides a more coherent and comprehensive discussion of future generation types and locations and interstate transmission development options in the National Electricity Market (NEM)[6]. It reaches the following overall conclusions:
    - Large-scale interconnection could deliver significant operating benefits to the NEM
    - Extensive investment in renewable energy technologies is driven by climate change policy, and occurs at sites where the renewable resources are located closer to the transmission network.
    - The Large-scale Renewable Energy Target (LRET) is materially achieved in all scenarios except those with no carbon price.
    - There is a strong move to both peaking and base load gas-powered generation. The peaking capacity can potentially occur at various locations around the NEM without major transmission network augmentation. However, in some scenarios, base load gas-powered generation is clustered in areas with plentiful gas, and necessitates significant augmentation.
  - Figure 1.6 in the 2010 State of the Energy Market Report by the Australian Energy Regulator (AER-SOM 2010) shows the history of interregional trade in the NEM since inception. This Figure shows that New South Wales has been an importer of energy in each year of the NEM, with imports averaging about 10% of NSW electricity consumption. In 2009-10, NSW consumption was 78 TWh (Table 1.2 AER-SOM 2010) and imports were around 8 TWh.
  - The NEMMCO submission to Owen Inquiry (28/6/07) made the following comments with respect to NEMMCO's 2007 Statement of Opportunities (SOO):

    This assessment identified that an additional capacity of 327MW would be required in NSW by the 2010/11 summer to ensure sufficient capacity to maintain reliability[7]. The following factors should be considered when interpreting this result:

    - *It may be uneconomic to meet this additional capacity requirement using baseload plant. By its nature, baseload plant is expected to run with a high capacity factor in order to be commercially viable. If the additional capacity is only required under peak demand conditions in summer it may be more economic to meet this requirement using peaking or intermediate plant;*

[6] Available at www.aemo.com.au

[7] AEMO's 2010 Electricity Statement of Opportunities states that the NSW region of the NEM will not currently reach a Low Research Condition point until 2013/14 for medium or high economic growth scenarios or 2015/6 for the low economic growth scenario. Again, it is important to stress that these conclusions do not imply a need for new baseload plant in NSW in those years.

- *Because of the interconnected nature of the NEM, the additional capacity may be delivered through a combination of generation located in other regions and strengthened interconnection between adjacent regions; and*
- *The additional capacity could be delivered by reduced demand in the form of demand side participation as described in Chapter **3** of the SOO.*

- The Owen Inquiry Report identifies State ownership of existing generation as a key barrier to new private generation projects in NSW. However, that is not consistent with the history of private investment in generation in the NEM to date. More important risks that potential private generation investors face include:
    - Competition from NSW State Owned Corporations for *future* generation projects, which could be eliminated by capping SOC capacity as in Western Australia.
    - Competition with new generation projects in other states, which is a legitimate form of competition that should not be restricted.
    - Access to (or cost of) essential inputs – land, fuel, water, grid connection, etc.
    - Competition from embedded generation & demand-side options (enhanced efficiency and flexibility), which is a legitimate form of competition that should not be restricted.
- The Owen Inquiry Report does not recommend that the NSW government develop a coherent climate change strategy to achieve the government's emission reduction targets. Instead it relies on existing NSW policies and the now-defunct Carbon Pollution Reduction Scheme. This limitation will be addressed later in this submission.

Estimating future outage risk

In March 1981, one of the four 500 MW generating units at Liddell power station failed and a further two failed in November that year. They were only restored to service months later during 1982. At that time, Liddell power station supplied about 30% of electricity generation in NSW and the loss of base load generating capacity was supplied partly by other generators in NSW, partly by importing energy from Victoria, partly by load reduction.

The Commission of Inquiry into Electricity Generation Planning in New South Wales in 1986 described the situation as follows:

> *The failure of three Liddell generators [in 1981] – one unit in March and another two in November– was the subject of an internal inquiry within the Commission. Further investigations were carried out by the New South Wales Ombudsman in 1982 and there were a number of other external investigations by consultants; these inquiries identified weaknesses in the design of the machines and in materials forming part of the end winding support structure. The generating plant failures and industrial*

problems gave rises to periods of restricted supply in June 1981 and for a total of 42 days in December 1981 and April 1982.[8]

The Hon. Diedre Grusovin discussed the results of the 1982 investigations of the New South Wales Ombudsman in the New South Wales Legislative Council on 29 October 1987 in response to a question from the Hon. J.H. Jobling:

> *The honourable member further asked whether there was an extensive inquiry and report into the running of the power station and its cleanliness affecting its generating capacity? I am advised that there was an extensive inquiry conducted by the New South Wales Ombudsman into the generator failures that embraced the operation of the power station. The Ombudsman made a number of principal findings and several recommendations concerning the commission's maintenance practices. Those findings and recommendations were concerned essentially with whether certain administrative and technical procedures at Liddell satisfied reasonable standards, or whether on the other hand a failure to observe reasonable standards constituted wrong conduct under the Ombudsman Act. In five of the six principal findings the Ombudsman concluded that there were no grounds for adverse findings.*
>
> *The only finding by the Ombudsman of wrong conduct concerns an administrative procedure adopted by the Electricity Commission in 1973 when the operating and maintenance manual for the 500 megawatt generators at Liddell was first delivered. In that manual the manufacturer advised that the rotor should be withdrawn from the generators annually. This recommendation was not adopted by the Electricity Commission because withdrawal of the rotor involved a shutdown of the generator for a period of approximately fourteen weeks. Hence, if each of the four 500-megawatt generators at Liddell had the rotor withdrawn on an annual basis, the station would have suffered a permanent reduction of 25 per cent of its production capacity. The Ombudsman found that the Electricity Commission was correct in its refusal to follow the recommendation of the manufacturer. The Ombudsman's criticism was that, having properly rejected the recommendation, the Electricity Commission did not then carry out an investigation with a view to ascertaining whether a system of maintenance better than the commission's normal procedures could be developed and documented. In so finding, however, the Ombudsman noted that there was no affirmative evidence that alternative procedures would have predicted or prevented the failures.*

The Liddell failures provide the following lessons:

- Electricity generating units, like other complex engineering systems, can be subject to design and/or manufacturing weaknesses that lead to a higher than expected risk of "type failures".
- Given a design or manufacturing weakness, the actual incidence of type failures depends on how the engineering systems are operated and maintained. Thus past

[8] Commission of Inquiry into Electricity Generation Planning in New South Wales, Report 1, January 1986, page 4/8.

experience may not be a reliable guide to future performance if significant changes are made to operation and/or maintenance regimes[9].

- Management decisions about operating and maintenance procedures are made subject to a range of criteria and constraints that may not result in the "optimum" outcome with respect to the management of system reliability[10].

These lessons are relevant to the current situation for the following reasons:

- The ten large generating units (660-700 MW in Bayswater, Eraring and Mount Piper are sufficiently alike in design to raise the possibility of "type failures".
- Transferring control of bidding for a generator to a Gentrader while leaving the State Owned Corporation as owner responsible for generator reliability within a predetermined maintenance budget may result in poor reliability outcomes. In particular, the Gentrader is likely to operate the generator to maximise its commercial outcomes taking into account the Availability Liquidated Damages it will receive if the generator does not perform to a pre-specified reliability target. [11]

On 28 January 1986, the Space Shuttle Challenger failed soon after launch and all seven crew on board lost their lives. In Appendix F of the Rogers Commission Report into the disaster, Commission Member Professor Richard Feynman wrote:

> *It appears that there are enormous differences of opinion as to the probability of a [Space Shuttle] failure with loss of vehicle and of human life. The estimates range from roughly 1 in 100 to 1 in 100,000. The higher figures come from the working engineers, and the very low figures from management. What are the causes and consequences of this lack of agreement? Since 1 part in 100,000 would imply that one could put a Shuttle up each day for 300 years expecting to lose only one, we could properly ask "What is the cause of management's fantastic faith in the machinery? ... It would appear that, for whatever purpose, be it for internal or external consumption, the management of NASA exaggerates the reliability of its product, to the point of fantasy.*[12]

The differences of opinion that Feynman identified may be at least partly due to:

- Differences in the level of understanding of the engineering system of concern

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[9] In evidence to the Inquiry, Mr Timbs stated that the generator outage risk assessment "was based on a detailed review of the previous operating history of the businesses and detailed and expert technical advice from relevant advisers", to which Mr Cosgriff added that it "reflects the historic pattern and the change in that pattern through time of availability of the New South Wales generation plant that is specific to the individual generation plant and different from each other, reflecting their underlying engineering, their track record and how they are expected to perform over time" and Mr Schur added: "The risk associated with unplanned outages is an existing risk; it is a risk that the businesses currently face". (Uncorrected transcript, 18/1/11, p 13 & 14).

[10] The Airbus A380 engine problems provide a contemporary example of this type, where design, manufacture, operation and maintenance practices have all contributed to actual outcomes.

[11] In his evidence, Mr Schur stated "As I said earlier, in the gentrader construct you cannot get rid of all the risks, but we think we have got rid of the risks that are most difficult to manage in relation to electricity trading and by identifying explicit provisions. Having gone through a robust exercise to determine what those provisions should be, we believe we have mitigated the risks to the greatest extent possible" (Uncorrected transcript, 18/1/11, p 17).

[12] http://science.ksc.nasa.gov/shuttle/missions/51-l/docs/rogers-commission/Appendix-F.txt

- Different roles that people played within organisations, including their level of managerial responsibility and their degree of reliance on subordinates to provide advice on engineering matters.

In the present context, the committee may be entitled to form the view that experienced Directors of the Eraring and Delta West State Owned Corporations would be more likely than Treasury officials or their consultants to have informed opinions on the expected future reliability of the power stations under the Gentrader contractual arrangements, and thus an informed opinion on future liability for availability liquidated damages.

Calculating residual value and availability liquidated damages

In his evidence to the Inquiry, Mr Timbs stated (Uncorrected transcript, 18/1/11, p 18):

> *What we needed to do to preserve the integrity of this process was to say, "We must come up with a single set of consistent energy market assumptions to be applied to this valuation", otherwise it falls down. You cannot apply different assumptions to different businesses on the market. In fact, and this is the comment I was making earlier, we drew back to the report of the Auditor-General in August 2008 in which he recommended, and I quote again, "calculating a retention value for each generator and retailer using consistent assumptions prior to commencing each transaction". The key thing was that we had to make sure that we had integrity and consistency through the process*
> *...*
> *The methodology for calculating retention value is to value the free cashflows to the Government as shareholder of these businesses over the forecast life of the business. That means the dividends we expect to get, tax equivalent payments we expect to get, and government guarantee fees that we get for providing the debt to those businesses. We then look at the best judgement of what those cashflows are expected to be for the life of the business, we discount it back at an appropriate rate to reflect the risk of those cashflows and come up with a present value.*

These quotations suggest that the retention value of the generators was calculated using a single scenario and a single discount rate. If that was the case, there was no attempt to explore the sensitivity of the retention value to different assumptions. Furthermore, it appears that the Cobbora mine project was not included in the retention value assessment. Rather, it was treated as a separate "stand-alone commercial entity" (Mr Schur, Uncorrected transcript, 18/1/11, p 22). By contrast, the purchasers could directly accrue a benefit from the Cobbora mine project (guaranteed purchase price for coal) while avoiding its financial, environmental and social costs.

By contrast to the NPV assessment of retention value, the government apparently treats the sale price for the assets as an up-front lump sum asset: "So the day we receive the proceeds from Origin and TRU the State's balance sheet is improved by about $5 billion" (Mr Schur, Uncorrected transcript, 18/1/11, p 6).

From the above discussion, we can identify the following potential weaknesses in the retention value calculation (we would need access to the actual calculations to be certain):

- There is an apparent asymmetry in the treatment of the proceeds of the sale (up front lump sum despite being placed in a security deposit) compared to discounted cash flow assessment of retention value and Availability Liquidated Damages. This asymmetry means that the choice of discount rate is a particularly important issue.
- The use of a single scenario precludes a sensitivity analysis of the effects of key assumptions. That again, makes choice of discount rate a critical issue.
- Submission 2 to the Inquiry discusses the importance of discount rate to retention value assessment (p 26 et seq) and suggests that the NSW Treasury may use a discount rate that is biased towards a low assessed retention value. On page 28, Submission 2 suggests that "any Treasury submissions analyzing sale versus retention value should be published in full, and open to public scrutiny", which seems an entirely reasonable suggestion.

Public versus private ownership in electricity and gas industries

In 1991, the Industry Commission prepared a report for the Federal Government on Energy Generation and Distribution[13]. Chapter 8 of that report canvases the question of public versus private ownership, commencing with the following summary (p 147):

> *Internationally, around 50 per cent of generation assets is privately owned. Private ownership brings with it the disciplines of the share and capital markets, the sanctions provided by the possibility of take- over and the risk of insolvency. It also significantly reduces the scope for interference by governments. Key segments of the electricity and gas supply industries in Australia could and should be owned and operated by the private sector. An examination of the opportunities for effective competition in these industries indicates that electricity generating stations and their fuel suppliers clearly fall into this category, while both gas and electricity distribution could be transferred to private hands. It is only in the transmission segment that the advantages of private ownership are uncertain. This arises because of its strong natural monopoly status and difficulties in devising effective regulatory regimes to deal with concerns about abuse of market power.*

On page 151, the Industry Commission report states:

> *The Commission concludes that with one possible exception - where market disciplines applying to single suppliers in parts of the electricity and natural gas industries are weak - there is nothing special about these industries which necessitates continuing public ownership.*

On page 152, the Industry Commission report states:

> *Even after corporatisation, public enterprises would remain untouched by a number of market disciplines which automatically apply to incorporated private enterprises.*

[13] Industry Commission (1991), *Energy Generation and Distribution*, Vol 11: Report, 17 May.

On page 153, the Industry Commission report states:

> *The second source of difficulty for public enterprises arises from their relationship with government, which limits the commercial freedom of managers. Problems arise from the specification of commercial as well as non-commercial objectives by governments, government interference in operating decisions and pressures (eg from suppliers, employees and customers) to pursue short term political goals.*

On page 155, the Industry Commission report concludes:

> *Thus, while the ownership status of an enterprise clearly has important effects on the incentives and disciplines for enterprises to minimise costs, make appropriate investment decisions and price efficiently, these effects interact with those of competition and regulation. Thus, getting the competitive and regulatory environment 'right' is vital if the potential gains from the transfer of ownership are to be realised. This assessment is supported by a number of studies covering these issues (De Alessi 1974; Joskow and Schmalensee 1983; Yarrow 1986; and Kay, Mayer and Thompson 1989).*
>
> *The implications of these considerations for the choice of ownership form in the electricity and natural gas industries are two fold. First, where there is the potential for effective competition (eg fuel sourcing and generation) there is no case for retaining government ownership. Second, in circumstances characterised by market power (eg the natural monopoly segments of these industries, particularly transmission) the question of whether or not to retain government ownership hinges on the strength of this market power and the cost effectiveness of regulating a public compared with a private monopoly.*

However, on page 156, the Industry Commission report notes:

> *Gains to the community from asset transfers depend primarily on the realisation of efficiency improvements from privatisation. If this is the case, the present value of expected future income from the privatised enterprise would exceed that expected under continuing public ownership. Sale prices should reflect such expectations and give rise to an improvement in the net worth of the public sector.*
>
> *A potential conflict may arise because the revenue from the sale of a public enterprise is likely to be greater if the enterprise is transferred to the private sector with restrictions on competition still intact and/or inadequate regulatory controls over the abuse of market power. However, potential efficiency gains from such a transfer (which should be the main motivation for considering such transfers) would be placed at risk in such cases.*

Thus the Industry Commission report notes the following important caveats with respect to its preference for private ownership:

- Achieving the benefits of private ownership in electricity and gas industries requires the private companies to be placed under strong competitive pressures

- Adequate competitive pressures are difficult to achieve in transmission and distribution
- A potential conflict of interest may arise in the privatisation process itself "because the revenue from the sale of a public enterprise is likely to be greater if the enterprise is transferred to the private sector with restrictions on competition still intact and/or inadequate regulatory controls over the abuse of market power".

Recalling the quotation on page 10 of my primary submission from Ofgem, the UK electricity and gas industry regulator with respect to the difficulty in achieving adequate competition in the UK wholesale electricity market, we should not underestimate the challenges involved in implementing an effective privatization process and in initially achieving and then maintaining adequate competitive pressures in wholesale and retail electricity markets.

Recommendations that the Committee may wish to consider for the Inquiry report

Continuation of the present strategy

In my view, this is the worst of the available options:

- Concentration of joint private ownership in generation and retailing will restrict downward pressure on retail electricity prices and will exacerbate barriers to entry. It will also hinder demand-side innovation in response to rising electricity prices and climate change impacts.
- Permitting retailers to continue to use the names of prior state-owned retailers may mislead the public and reduce the effectiveness of competition, particularly in rural areas where competition is least likely to be effective.
- The gentrader model exposes the generator State Owned Corporations to on-going financial risks with respect to the operational performance of the generators while eliminating their ability to manage those risks through control over operational and maintenance strategies.
- The gentrader model requires the State to continue to operate the coal-fired power stations for their remainder of their technical lives, eliminating future options for early retirement due to concerns about growing climate change impacts.
- Development and operation of the Cobbora coal mine to provide subsidised coal to the gentraders will be at a heavy cost to the State due to its financial, environmental and social impacts. The apparently discounted coal price will prevent adequate compensation to the public for these costs.
- Apart from the immediate net financial benefits from the electricity sales, future benefits will flow primarily to the purchasers of the retailers and, only to the extent forced by the weak competitive pressures resulting from this sale, to electricity consumers throughout the National Electricity Market – not only in NSW. Future costs will be born primarily by citizens of NSW and to a secondary extent by others due to climate change impacts resulting from the associated coal combustion.

Incremental improvements to the present model

Several incremental improvements could be made to the present strategy that would reduce but not eliminate its undesirable aspects:

- Withdraw the right of the purchasers of the State-owned retailers to continue to use the names of those retailers (EnergyAustralia, Integral Energy and Country Energy). This would reduce confusion in the public mind and should be accompanied by a comprehensive program to advise electricity consumers of their rights and to establish on-going independent advisory services with respect to meeting consumers' energy service objectives – for example through local government.
- Reduce the duration of the gentrader contracts (to, say, 10 years [14]) and review the provisions for Availability Liquidated Damages to ensure that these contracts adequately protect the public interests. This would also remove a serious constraint on future NSW governments with respect to their climate change mitigation options.
- Cancel the State-owned Cobbora coalmine project and leave the gentraders to make their own coal purchase arrangements. This would "level the competitive playing field" in the National Electricity Market. It would also remove State involvement in this contentious project and remove a serious constraint on the climate change response options available to future NSW governments.

A fresh start to the NSW energy reform strategy

In an article in the Sydney Morning Herald of 21 January[15], Richard Ackland suggests that after the March election, the new parliament "could pass legislation to rescind the Gentrader legislation that got through in the dead of night before Christmas – plus all the associated contracts". This course of action would provide an opportunity to achieve far better outcomes than the present strategy, which Richard Ackland suggests, "should be shredded and forgotten". Two broad strategies could then be considered:

- A high quality privatisation process, with strong protection of the public interest that ensures:
    - Adequate competition and low barriers to entry in the National Electricity (wholesale) Market
    - Adequate competition in the NSW retail electricity market where feasible and effective safeguards for electricity consumers where not (for example country NSW)
    - No constraints are placed on the climate change options available to future NSW governments
- Alternatives to electricity industry privatisation, including those set out in the research report prepared for the Public Interest Advocacy Centre by Chris Reidy and

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[14] The National Gas Law and National Gas Regulations exempt qualifying greenfield pipelines from regulation for 15 years. See "Access Arrangement Guideline", AER, March 2009 for more on this. Given the "brownfield" nature of the State-owned power stations, a shorter period (10 years or less) would be appropriate in this case.

[15] Available at *http://www.smh.com.au/opinion/politics/if-he-wins-ofarrell-can-pull-the-plug--on-his-own-terms-20110120- 19xxm.html*.

Jane Daly of the Institute for Sustainable Futures in 2007[16]. In that report, the authors consider four scenarios for the future of the NSW electricity industry *(Owen Inquiry Proposal, Revised Owen, Strong Climate Change Response (private) and Strong Climate Change Response (public)*. They conclude:

> *The scenario that strikes the best balance between environmental protection, economic well- being and consumer impacts is the Strong Climate Change Response (public) scenario. This scenario demonstrates that it is possible to achieve a reduction in greenhouse gas emissions over the next 10 years without the need for privatisation and without putting supply reliability at risk. (p viii).*

More specifically, they recommend:

> *The NSW Government should retain the State-owned generation and retail assets and invest as necessary to maintain the viability of these assets and reduce their environmental impact. This will definitely require some investment in the retail businesses to transform their business models, preferably to transform them into energy service companies focused on delivery of energy services with the lowest economic and environmental impact. The NSW Government should also invest strongly in energy efficiency and low-emission baseload technologies, and may also need to invest in carbon-reduction technologies at existing coal- fired power stations in the future. (p vii)*

Commenting that:

> *We do not accept the Owen Report's assertion that this approach would lead to the public sector funding all future investment in the NSW electricity industry. The private sector has already shown its willingness to invest in the NSW electricity industry under the current arrangements, through the Tallawarra and Uranquinty gas-fired power stations and the proposed Silverton Wind Farm. Additional private sector certainty should be provided through a clear policy statement from the NSW Government on the conditions that would cause it to intervene to ensure supply security. The NSW Government could also choose to offer suitable sites for sale to interests that wish to develop low-emission baseload power, while retaining existing generation assets. (p viii)*

[16] C Reidy and J Daly, *Electricity Supply in NSW – Alternatives to Privatisation,* December 2007. Available: http://www.isf.uts.edu.au/publications/riedydaly2007electricityprivatisation.pdf.