Submission No 45

INQUIRY INTO GENTRADER TRANSACTIONS

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Date received: 17/01/2011

Submission to the Inquiry into the Gentrader Transactions

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Inquiry Terms of Reference

That General Purpose Standing Committee No. 1 inquire into and report on the following aspects of the Government Energy Reform Strategy announced on 15 December 2010:

1. The details of the energy reform transactions completed on Tuesday 14 December 2010
2. The circumstances that led to the resignation of directors from Eraring Energy and Delta Electricity
3. The impact the transaction will have on current and future electricity prices, competition in the electricity market, and the value obtained for NSW taxpayers; and
4. Other related matters.

Scope of this submission

I have played no role in the energy reform transactions, thus this submission does not address Terms of Reference 1 and 2. Instead it first summarises the process to date and then comments on the following issues:

- The nature of an electricity industry and societal objectives for it
- Value achieved from the NSW sale process to date
- Risk allocation associated with the Gentrader contracts
- Broader implications for the National Electricity Market arising from the sale process
- Implications for climate change response – generation and demand-side

Summary of NSW Government stated objectives and strategy in restructuring the State-owned electricity industry and recent developments

The document *New South Wales Energy Reform Strategy – Defining and Industry Framework, March 2009*[2], set out the government's objective on page 1: "The primary objective of the NSW Government's energy reform process is to optimise the conditions to ensure private sector investment in generating capacity in New South Wales is adequate, economic and timely". Further, to "create this environment, the NSW Government will implement an Energy Reform Strategy that comprises the following elements:

- Contracting the electricity trading rights of Government-owned power stations to the private sector, commonly referred to as the generation trader or 'Gentrader' model;

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[1] The author of this submission is solely responsible for its contents. Revised 17/1/11.
[2] Available at www.nsw.gov.au/energy.

- Selling the retail arms of EnergyAustralia, Integral Energy and Country Energy;
- Selling power station development sites around the State;
- Maintaining public ownership of existing power stations; and
- Maintaining public ownership of electricity transmission and distribution networks (the poles and wires)."

The document *New South Wales Energy Reform Strategy – Delivering the Strategy, September 2009*[3], set out the government's revised objectives on page 1:

- "Deliver a competitive retail and wholesale electricity market in NSW to increase the potential for the sector to respond dynamically and innovatively to market forces and opportunities;
- Create an industry and commercial framework to encourage private investment into 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 State's public sector debt."

Also on page 1, the September 2009 document states that the Government proposes to achieve these objectives by implementing an Energy Reform Strategy with the following elements:

- "Continued Government ownership and operation of existing power stations and electricity networks (the poles and wires) in NSW;
- Contracting the electricity trading rights of Government-owned power stations to the private sector, commonly referred to as the "Gentrader" model (apparently for "the remaining technical life" of each power station – see pages 15-17 of the September 2009 document);
- Selling key power station development sites around the State; and
- Selling the retail arms of EnergyAustralia, Integral Energy and Country Energy, including the retail brands."

Part of the strategy involved the concept of "co-insurance" contracts between the Government-owned power stations "to manage the firmness risk of their Gentrader contract[s]". However, this concept was dropped when the ACCC refused to authorise it and a Government media release of May 26 2010 stated that, as a result, the Macquarie Generation portfolio was to be offered as a single Gentrader contract bundle instead of being split into two as previously envisaged[4].

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[3] Available at www.nsw.gov.au/energy.

[4] The size of the Macquarie Gentrader contract bundle would deter many potential purchasers, particularly given the prior Gentrader sales to large industry incumbents.

An article by Brian Robins in the Sydney Morning Herald of 8 November 2010[5] stated that: "The government is proceeding with plans to develop a new coal mine near Mudgee to sell low-priced coal to the government-run power generators. Earlier talks with the private sector to develop the Cobbora mine have fallen through... the government will supply coal from Cobbora for $1.47 a gigajoule, equal to about $32 a tonne, which is significantly less than present contract prices of about $44 a tonne... The generators will receive the coal at a fixed price for 17 years. The taxpayer will bear the estimated $1.5 billion cost of the mine, as well as any increase in the cost of producing the coal. Bidders for the coal assets have estimated this subsidy would add as much as $2 billion in value to the power assets which are being sold".

A Government media release on 10 October[3] reported on "arrangements to secure future fuel supplies for the [State-owned] generators from Cobbora" and stated that the "Government has elected to retain ownership of the Cobbora coal resource and pursue alternative development strategies in order to deliver greater certainty of long-term fuel costs for electricity generation".

A media release dated 14 December 2010[6] announced that the Government had executed the following agreements:

- $3.25 billion for the combination of Country Energy, Integral Energy and the Eraring Gentrader contract – which will be sold to Origin Energy
- $2.035 billion for the combination of EnergyAustralia, the Delta West Gentrader contract bundle and the Mt Piper extension and two Marulan development sites – which will be sold to TRUenergy. In addition, TRUenergy has also committed to provide an additional $240 million to enable capital improvements at Wallerawang Power Station.

The media release also reported that the government was involved in on-going negotiations concerning the other Gentrader contract bundles for Macquarie Generation and Delta Coastal power stations and associated development sites.

Comments on the restructuring process and its outcomes to date

The nature of the electricity industry

An electricity industry functions by means of a complex technological system that exploits primary energy resources to deliver end-use energy services in residential, commercial, industrial, transport and government sectors. The complex technological system can be subdivided into generation, transmission and distribution (poles and wires) and end-use sub-systems.

In organisational terms, an electricity industry can be subdivided into generation, transmission and distribution, end-use and system operation functions. A retailing function

[5] "Cheap coal for power 'subsidises polluters'. Available at www.smh.com.au/environment/energy-smart/cheap-coal-for-power-subsidises-polluters-20101107-17jlk.html.
[6] Available at www.nsw.gov.au/energy.

is included to provide a commercial interface between the 'supply-side' (generation, transmission and distribution) and the 'demand-side (end-use) of the industry[7].

In a monopoly supply industry structure a single "utility" undertakes generation, transmission, distribution and retailing functions. Such a utility may be State-owned or privately owned and State-regulated.

In a competitive electricity industry structure transmission and distribution functions (network businesses) remain monopolies within specified franchise territories while competition is introduced into generation and retailing functions, requiring the design and implementation of wholesale and retail electricity markets and associated rules concerning industry operation and participant behaviour. Compatible arrangements should also be established and maintained for closely related industries such as the gas industry.

Since the late 1990's New South Wales has participated in a multi-State competitive electricity industry that is governed by the National Electricity Law and associated legislation. This includes the National Electricity Market (NEM) arrangements, which include wholesale markets for electrical energy and frequency control ancillary services and associated industry rules (the National Electricity Rules). The effects of the NSW Government strategy for the State-owned components of this multi-state electricity industry must be assessed in that context, noting that costs and benefits will be spread among all participating states and territories (Queensland, New South Wales, Victoria, South Australia, Tasmania and the Australian Capital Territory).

Societal objectives for an electricity industry

The societal objective for an electricity industry can be stated as social welfare maximisation through decision-making concerning the allocation of scarce resources (physical, human) available to the industry, where the concept of "social welfare" has social, economic and environmental dimensions and a timescale that extends from the present to the long-term future. For example, the ability for the industry to innovate in a socially beneficial manner should be a key issue for consideration given the current challenges associated with rising prices and climate change emissions.

Value achieved from the NSW sale process to date

Values potentially achievable by present and future NSW citizens from the sale process might be claimed to derive from the following:

1. Reallocation of State funds to purposes that deliver higher value to NSW citizens
2. Improved electricity short- and long-term performance due to reduced government participation
3. Improved performance of government due to the removal of conflict within government between the perspective of an asset-owner and the broader governance perspective

[7] The retailing function has costs as well as benefits and could in principle be replaced by other, possibly more effective mechanisms in a competitive industry structure.

The first of these potential values is a matter of broad societal judgement and lies outside the scope of this submission except for the baseline comparison between sale price achieved and the asset retention value, which will be considered shortly.

The second potential value is again a matter of judgement – in this case about the relative performance of stated-owned and privately owned corporations – with the latter perceived by some to have better commercial performance due to a narrower commercial focus and clearer corporate objectives than publicly-owned firms. However, it should be noted that:

- The claimed benefits of private ownership will not arise unless the privately owned firms are under effective competitive pressure; and
- An equally important question for society has to do with the ability of the industry to innovate and, in particular, whether there are low barriers to entry by new firms bringing new products or services that challenge those provided by industry incumbents[8].

The third potential value is again a matter of judgement but there is little doubt that there can be significant internal conflicts within government between equity holder and broader government perspectives.

Costs potentially resulting from the sale process to date:

1. Inadequacy of sale price with respect to the retention value of assets
2. Exposure to future risks that were not adequately compensated for by the sale price:
    - Risk allocation in the gentrader contracts, particularly given the ACCC rejection of the generator "co-insurance" authorisation application
    - Reduced ability to sell the remaining State-owned Gentrader contracts (Macquarie Generation, Delta Coastal) and associated development sites at good prices, given the prior sale of key assets to large industry incumbents
3. Creation of an industry structure that has a small number of dominant privately owned firms, with associated risks of weak competition and high barriers to entry
4. Leakage of benefits from the sale to other States and Territories participating in the National Electricity Market:
    - Through retailer marketing strategies to gain market share in other states.
    - Through low competitive pressures on the resulting dominant private retailers in NSW, resulting in unnecessarily high NSW retail electricity prices.
    - Through lost opportunities to participate in new "clean energy" projects in NSW due to underwriting of the long-term role of NSW coal-fired power stations to enhance the sale value of the Gentrader contracts.
    - Through resistance by industry incumbents to enhanced end-use efficiency, fuel switching and embedded generation.

Three asset categories are involved in the sale process – generators, retailers and (in an underwriting role) the Cobbora coalmine.

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[8] See for example R Crandall and C Jackson, "Antitrust in High-Tech Industries", January 2011. Available at www.techpolicyinstitute.org/.../crandalljackson%20antitrust_in_high_tech.pdf.

Information that the Government has provided on the outcomes of the sale process to date is restricted to the "bundle price" achieved for two combined retailer plus gentrader sales. However, in a presentation for shareholders dated 15 December[9], Origin Energy valued the Eraring GenTrader contract at $313/kW to $378/kW "representing a significant discount to the new entrant cost to build" and stating that "Origin expects that electricity prices in the long run will reflect new entrant capital and operating costs which means that the GenTrader arrangements represent a competitively priced long term hedge".

The following points are relevant in considering whether the NSW government has achieved a fair price for the Eraring Gentrader contract:

- In 2010, ACIL Tasman prepared a document for the Australian Energy Market Operator and the Australian Government containing estimates of capital and operating costs of existing and new generation in the National Electricity Market for modelling purposes[10]. Table 18 of that document estimates an installed capital cost in 2015 for Supercritical Pulverised Coal plant (the modern equivalent of the technology used in the Eraring power station) as $2,676/kW (2009 AUD).
- The NSW Government's document *New South Wales Energy Reform Strategy – Delivering the Strategy, September 2009* states on page 15 that Eraring has a remaining technical life of 20 years (until 2030) and on page 17 that the Gentrader contracts "will be equivalent to the remaining life of the power station".
- Slide 17 of the Origin Energy presentation states "Eraring Power Station has proven to be a highly reliable and flexible plant, with the ability to generate efficiently at as low as one third of its rated capacity, enabling it to respond to periods of peak demand and high prices"
- Slide 17 of the Origin Energy presentation also states that the "power station is currently undergoing major capital upgrades which will improve its reliability and efficiency" and (on slide 19) that "Origin has no exposure to movements in these costs".
- Slide 21 of the Origin Energy presentation states that "[Eraring] Power station outages are managed through a planned maintenance schedule and Availability Liquidated Damages which incentivise Eraring Energy to maintain availability"
- Slide 22 of the Origin Energy presentation discusses the existing coal contracts, which will be retained and the coal on-sold to Origin Energy as well as drawing attention to the flexible coal handling facilities at Eraring. It states that Origin will have "the opportunity to source appropriate quantities of coal to meet its operational requirements".
- Slide 23 of the Origin Energy presentation states that the "Cobbora coal resource is expected to provide Eraring Power Station with an additional and substantial supply of competitively priced coal". The Cobbora mine is not located in close proximity to any existing NSW coal-fired power station but is to be the government-offered coal resource for all Gentrader purchasers. An associated subtle point is that this

[9] Available at www.originenergy.com.au

[10] Preparation of energy market modelling data for the Energy White Paper – Supply Assumptions Report, ACIL Tasman, prepared for AEMO/DRET, 13 September 2010. Available www.aemo.com.au.

improves the competitive situation for the Eraring Gentrader, as Eraring has previously faced higher coal costs than the other State-owned power stations.

- Given that slide 7 of the Origin Energy presentation states that the "Integral Energy and Country Energy customer bases have been acquired for $1,282 per customer account which is consistent with previous acquisitions" and that on slide 6 we find that "the Integral and Country Energy retail businesses deliver Origin a large scale incumbent position in NSW", it is perhaps not surprising that slide 5 of the Origin Energy presentation states that the "transaction is expected to be materially accretive to underlying earnings per share at completion". Note the implication – selling a Gentrader contract at a low price may not result in low retail electricity prices. Note also that Origin Energy has apparently acquired the right to continue to use the Integral Energy and Country Energy brands along with their 1.6 million customers. This may convey a significant marketing advantage due to residual customer expectations associated with those brands.

Apart from the value achieved for Eraring power station, we should also consider the value achieved from the sale to TRUenergy and the implications of both sales for the remaining State-owned generating assets – particularly the large Macquarie generation portfolio (Liddell and Bayswater power stations) and the associated large Bayswater development site. We should also consider the implications of the Cobbora mine arrangements.

For $2.035 billion, TRUenergy has acquired EnergyAustralia (1.5 million customers) and apparently the right to use the associated EnergyAustralia brand, the Delta West Gentrader contract bundle for the Mount Piper (1400 MW) and Wallerawang (1000 MW) power stations, a 2000MW coal or gas CCGT development site at Mt Piper and two adjacent development sites at Marulan with concept approvals for gas-fired power stations up to 800MW in total.

If we value the 2400 MW in Mount Piper and Wallerawang at $350 per kW, similar to the value put on Eraring by Origin, we find an implied value for the remaining assets purchased by TRUenergy of $(2.035– 0.84) billion = $ 1.195 billion. However, if we value EnergyAustralia's 1.5 million customers at $1,282 per customer, we find they should be worth $1.923 billion[11].

Thus, compared to Origin Energy, TRUenergy has paid either a significantly lower price per kW for its Gentrader contract or a significantly lower price per customer for the retailer. The former appears more likely, which would mean an even deeper discount compared to replacement cost for the sale of the Mount Piper and Wallerawang Gentrader contract than for the Eraring Gentrader contract.

Given the apparent outcomes to date for the Gentrader contract sales, it seems unlikely that the sale of the Macquarie Gentrader contract could achieve anything other than a deep

[11] In a Sydney Morning Herald article of 15 January, Brian Robins suggests $1.5 billion for EnergyAustralia ($1,000 per customer) and $500 million for the remainder. This would value Mount Piper and Wallerawang (2400 MW) at $200/kW or less.

discount on the replacement price. Valuing all the coal-fired power station capacity involved in the Gentrader contracts (11,600 MW) at $350 per kW ($350,000 per MW), results in an estimate of $4 billion compared to an estimated replacement value (at $2,676/kW) of $31 billion. This gives a sense of the size of the discount compared to replacement cost that may be involved.

Uncertainty about climate change response could be one reason for deep discounting of existing coal-fired power stations compared to replacement cost, a topic that will be discussed later in this submission. However, another reason may be a poor process.

In the model set out in a media release of 10 October 2010, "the NSW government has elected to retain ownership of the Cobbora coal resource and pursue alternative development strategies in order to deliver greater certainty of long-term fuel costs for electricity generation". As previously indicated, in its presentation for investors, Origin Energy states that the "Cobbora coal resource is expected to provide Eraring Power Station with an additional and substantial supply of competitively priced coal". The implication is that coal will be sold to the Gentraders at a discount from market prices. As previously quoted, an estimate of the subsidy has appeared in the media: "Bidders for the coal assets have estimated this subsidy would add as much as $2 billion in value to the power assets which are being sold". However, I am not aware of any official information on this matter. Note that the Nature Conservation Council has lodged a complaint with the ACCC claiming that the Cobbora Mine arrangements have anti-competitive features.[12]

At the very least, establishing a state-owned coalmine to support a privatisation process clearly represents an inconsistency in NSW government policy-making, particularly in the light of its implications for climate change emissions. Providing a subsidy to specific private participants in a competitive industry would add additional inconsistency.

Risk allocation associated with the GenTrader contracts

The NSW Energy Reform Strategy documents of March and September 2010 both discuss risk allocation associated with the GenTrader contracts. However, neither document provides sufficient information to fully assess the risk allocation provisions that may have been made. Two important assessment criteria should be considered for the risk allocation arrangements:

- Financial efficiency and equity – are the financial incentives and/or penalties commensurate with the impacts on the counterparty of the specified risks (on a case by case basis)
- Physical completeness and effectiveness – do the risk allocation mechanisms correctly identify and effectively manage all the important risks. Who holds accountability for unidentified risks?

Recent experience with the Qantas Airbus 380 engine failure[13] and the Gulf of Mexico Oil spill[14] illustrate how difficult it can be to establish high quality contractual arrangements

[12] See http://www.smh.com.au/action/printArticle?id=2105269 and www.nccnsw.org.au.

for managing critical risks associated with complex technological systems that involve multiple participating organisations.

Needless to say, it is much simpler to establish effective risk management arrangements if one organisation is directly subject to all risk impacts and directly responsible and accountable for all risk control options.

Broader implications for the National Electricity Market arising from the sale process

We can estimate the effect of selling the NSW State-owned retailers on NEM-wide retail market shares from the information given in the Figure on page 11 of the document *New South Wales Energy Reform Strategy – Defining and Industry Framework, March 2009,* as reproduced in row one of Table 1 below. This suggests that the sale of the retailers will result in the NEM retail market being dominated by three retailers – Origin Energy (~40%), TRU Energy (~23%) and AGL (~22%) with ~14% for the remaining retailers. Relevant quotations in the Origin Energy investor presentation of 15 December 2010 include:

- "The Integral Energy and Country Energy retail businesses deliver Origin a large scale incumbent market position in NSW, Australia's largest energy market"
- "and provides Origin with a leading retail base across eastern Australia"
- "Country Energy is the incumbent retailer in regional NSW and has a stable customer base with a large portion of customers having not chosen to switch retailer" (note earlier comment about the NSW government's permission for the purchasers of the retailers to continue to use the associated brand names)

Table 1. NEM-wide retail market shares based on 2006/7 data and following sale of EnergyAustralia, Integral Energy and Country Energy (based on *New South Wales Energy Reform Strategy – Defining and Industry Framework, March 2009, p.11)*

Company	AGL	Origin Energy	Energy Australia	Country Energy	Integral Energy	TRU Energy	Ergon Energy	Aurora	Others
Market shares, 2006/07 (%)	22	22	15	9	9	8	7	3	5
Share after sale (%)	22	40 (22+9+9)	0	0	0	23 (8+15)	7	3	5

It is hard to see how this outcome from the sale of the NSW State-owned retailers will benefit electricity consumers in NSW or in other states participating in the NEM, particularly given the importance of improved efficiency of energy use in the present context of rising electricity prices and rising climate change emissions.

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[13] See for example, *Australian Transport Safety Board (ATSB), In-flight uncontained engine failure overhead Batam Island, Indonesia 4 November 2010, Preliminary Report, December 2010.* Available at www.atsb.gov.au.
[14] See for example, *National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Final Report to the President, January 2011. Available at www.oilspillcommission.gov.*

Increasing retail market concentration in turn increases the likelihood of driving further market concentration in generation, which has already been facilitated by the sale of Gentrader contracts to Origin Energy and TRUenergy, underwritten by the Cobbora coal-sourcing arrangements. Again, it is hard to see how increased concentration in the ownership of generation would benefit electricity consumers in NSW or in other states participating in the NEM.

In recent times the UK energy market regulator, Ofgem, has become concerned about developments in the UK electricity market, where there are dominant, vertically integrated players. In a letter dated 3 December 2010, Ian Marlee, Partner, GB Markets for Ofgem[15] stated, with respect to electricity:

> *Over the last 18 months we have been monitoring and investigating the liquidity of wholesale power in Great Britain. We have concerns that the wholesale market might not be delivering the products and signals that all market participants need to operate their businesses effectively. In particular, independent suppliers and generators have expressed concerns that they find it difficult to manage risk with the wholesale products currently available. This could be having a negative impact on the outcomes for consumers in the supply market, especially if it means that there is no viable threat to existing suppliers.*

While noting that differences in electricity market design prevent direct comparison with Australia, it is clear that Australian government policy should pay careful attention to maintaining adequate competition, low barriers to entry and low barriers to improved efficiency of energy use in the electricity industry to preserve the interests of energy consumers. Unfortunately, the evidence suggests that in its Energy Reform Strategy, the NSW government has so far failed to do that.

Looking forward in the NEM, the Australian Energy Market Operator has recently released the 2010 National Transmission Development Plan (NTNDP)[16]. The NTDP "examines the future through five market development scenarios, developed in conjunction with a stakeholder reference group" (p 8). Overall findings of this study are given as (p 7):

- *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-*

[15] Available at http://www.ofgem.gov.uk/Markets/WhlMkts/CompandEff/Documents1/Open%20letter_Liquidity%20in%20the%20GB%20power%20market_update%20and%20next%20steps.pdf

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

powered generation is clustered in areas with plentiful gas, and necessitates significant augmentation.

The NTNDP does not anticipate an expanding role for coal-fired power stations except with carbon capture and storage (CCS), which is not yet commercially available, with significant retirement of existing coal-fired generation under medium to high carbon prices. The study outcomes suggest that new black coal generation with CCS would be more likely to be built in southern Queensland than NSW.

The NTNDP also recommends consideration of a new high-capacity transmission backbone (NEMLink) that "has the potential to allow a largely unconstrained and reliable interchange of energy across the entire NEM" (p11).

Implications for climate change response – generation and demand-side

Climate change mitigation should now be a high priority issue for any Australian government that is concerned about the welfare of present and future citizens.

Indeed for decades, the Australian electricity industry has understood the need to reduce climate change emissions from the industry. For example, in 1990 authors from the State Electricity Commission of Victoria and the Electricity Commission of New South Wales presented three papers at the *Greenhouse and Energy* Conference in December 1989, which are the sources for the following quotations:

- *The ESAA [Electricity Supply Association of Australia] recognises the importance of the greenhouse debate and particularly that in Australia electricity generation is responsible for proportionally more CO_2 emissions than worldwide. It is, however, concerned to ensure that inappropriate decisions are not taken because of undue haste, expediency or ignorance of their ramifications ... If the science is right and we need ultimately to achieve 50%, and if global politics and equity require the industrialised countries to achieve considerably more, emissions from the Australian electricity industry would eventually have to be cut to a small fraction of what they would otherwise be... (J A Hart, "Electricity and greenhouse in Australia – an overview", pp 247-254 in D J Swaine (ed), Greenhouse and Energy, CSIRO, 1990. ISBN 0 643 05112 0.*
- *Irrespective of the type of [climate change mitigation] strategy applied to the [Australian] electricity industry, the [Electricity] Commission [of New South Wales] recognises the importance of investigating and quantifying options for reducing greenhouse gas emissions. These are dealt with in this paper and include energy conservation, fossil fuel generation efficiencies, fuel substitution and alternative energy sources. (J A Hoore and G N Watt, "Greenhouse and the electricity supply industry", pp 255-263 in D J Swaine (ed), Greenhouse and Energy, CSIRO, 1990. ISBN 0 643 05112 0.*
- *The main approaches to achieving these emission reductions are aggressive demand management including energy conservation and cogeneration, new gas-fired plant, retirement of older brown coal plant and an extensive tree-planting program. (RD Hoy, "The State Electricity Commission of Victoria and the greenhouse effect", pp 264-273 in D J Swaine (ed), Greenhouse and Energy, CSIRO, 1990. ISBN 0 643 05112 0.*

Thus the failure to stem rising emissions from the Australian electricity industry does not result from ignorance. Two decades later a letter[17] to owners of Australian coal-fired power stations written by Professor Karoly, Melbourne University and other leading Australian climate scientists and dated 29 April 2009 stated that:

> *The unfortunate reality is that genuine action on climate change will require that existing coal-fired power stations cease to operate in the near future. We feel it is vital that you understand this and we are happy to work with you and with governments to begin planning for this transition immediately*

It is inconsistent with such fundamental and well-understood principles for the NSW government to now sell Gentrader contracts that extend for the remaining technical working life of NSW coal-fired power stations and are supported by long-term subsidised coal sourcing arrangements. By contrast, a media report of 12 January quotes a senior Chinese climate official as saying "The Chinese government will impose binding emission targets on its regions as part of its efforts to meet 2020 national carbon intensity goals"[18].

Conclusions

To maximise the social welfare of present and future NSW citizens, rather than focusing on the short-term monetary profits from the sale of Gentrader contracts, the NSW government should consider retaining a stronger State role so as to be able to better manage the timing of the retirement of the coal-fired power stations and their replacement by a combination "clean energy" resources[19]. This could involve a mix of private and State or community-based projects developed in a competitive environment. Much greater attention should also be given to efficient and provident energy use.

The social welfare accrued to NSW citizens from such a well-managed process would be likely to greatly exceed the deeply discounted valuation achieved to date for the Gentrader contracts, which may be further eroded by barriers to improved end-use efficiency and energy conservation arising from increased concentration of ownership in the retail sector.

Unfortunately, the NSW energy reform strategy appears focused on the 1990's issue of privatization rather than the 21st century challenge of a carefully managed transition to a low-carbon future. Moreover, its attempt at privatization is at best a pale shadow of the Victorian 1990's process that detracts from NSW's ability to meet the more important 21st century challenge that we now face.

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[17] Available at http://media.crikey.com.au/Media/docs/090501-Letter-on-coal-696e3279-e554-40a5-a767-7251aee0340b.pdf

[18] *China regions to have binding CO2 targets,* Reuters, 12 January 2011. Available: http://af.reuters.com/article/energyOilNews/idAFTOE70B07020110112.

[19] The staged retirement and cleaner re-build strategy is illustrated by Tallawarra power station on Lake Illawarra. After a previous ECNSW 320MW coal-fired power station was closed in 1989, TRUenergy commissioned a 435 MW gas combined cycle power station on the site in 2009. TRUenergy has recently been granted planning approval to construct a further 300-450MW of additional open or combined cycle gas turbine capacity on the site.