PACIFIC POWER

HH 12th December 1997

Industry Commission
Level 28 Collins Tower
35 Collins Street
Melbourne VIC 3000

Attn: Midge McGlade

Dear Midge
RE: SUBMISSION TO BLACK COAL INDUSTRY REVIEW

Please find enclosed a brief commentary on Pacific Power's view of the status of domestic coal-fired generation and the role and challenges for the NSW Coal Industry.

Most attention of the review will of course be focused on the 'issues' of the export coal industry, namely competitiveness and productivity. These issues are also relevant to the NSW domestic electricity/coal supply chain, which represents some 25% of saleable coal.

The following comments are not prescriptive but indicate that structural and cost reform of the NSW black coal industry is necessary as it now competes not only in the global export market but significantly with Victorian brown coal.

As coal is the most significant operating cost in NSW power generation, the immediate and future emphasis will be to ensure that coal remains as a competitive and flexible fuel source in the evolving deregulated National Electricity Market (NEM), an environment which has already established electricity as a 'commodity to be risk managed' by the competing generating participants.

The cost, structure, duration and administration of coal contracts, timing of future tendering/contracting and focus on 'spot' purchases has meant a significant reconsideration of the fuel management strategy to meet the demands of the dynamic power market.

Since May 1997, NEM's average pool price has trended at 1/3 to 1/2 of the prices of the vested electricity contracts. Whilst these prices are not considered sustainable post 2000, a revision in the number and physical operation of the existing generators is possible.

It is conceivable that in the interim, challenged by commercial imperatives, the 'marginal' generators may elect to operate on a seasonal, as required basis, following the example of some US-based utilities. This will require flexible staffing of power stations and 'part-time/just in time' coal supply, achievable only with the co-operation of the entire coal industry.

Whilst NSW black coal has traditionally dominated the preferred fuel for NSW generation, in the order of 23 Million tonne per annum, from three coalfields, the following "Challenge for Coal" scenario to 2005 needs to be considered:

a) The current under-utilised installed coal-fired capacity of ~ 11,500 MW, is capable of consuming a further 5 Mtpa from existing predominantly Long term contracts, ONLY if the incremental cost is competitive with BOTH Victoria and Queensland (post 2001).

b) The 3 NSW Generators are serviced by some 20 coal contracts, mainly terminating between 2000-2005, a significant period of increased competition from Victoria and new participant Queensland in NEM.

Renewal of contracts (on a significantly different contractual basis) will be dependent on the potential NSW suppliers ability to compete against **other** state's geology, mining practices and costs.

c)Current expectations of loss of annualised market share to Victorian Generators is estimated at 10%, equivalent to 2 Mtpa of black coal not required in NSW. This coal is not readily transferrable to, or commercially viable to export, ultimately impacts on the productivity and profitability of some mines.

d) Whilst it is reasonable to suggest that most NSW contracted coal suppliers have and are realising some profit from existing arrangements, for those mines also active in the oversupplied export thermal coal market, the challenge’s continue.

Both power utility markets (the buyers) are expecting and requiring further cost reductions and supply flexibility to sustain viability in their respective increasingly deregulated markets.

e) As you are aware, Pacific Power continues to promote the future vision of leadership in the transition towards a sustainable future. This endeavour is supported by identifying some 600 MW of largely gas (combined cycle), hydro and renewable (wind and solar) new generation plant operational by 2001.

Other Generators are proposing to modify plant and operational procedures to further optimise thermal efficiency and minimise Greenhouse gases.

Nothwithstanding other recent announcements of smaller scale (washery reject) and other new generation plant for NSW, 'growth' for the NSW Coal Industry will predominantly stem from the export market.

f) Contemporary power industry reference material highlights a mainly US-based trend towards risk sharing by linking coal prices to electricity prices.

In the present NEM model, this risk management strategy obviously benefits Victorian generators owning and operating both mine and generation assets.

It is possible that this type of financial arrangement will evolve and benefit NSW Generators but not until the transitional physical and financial integration of the Queensland market into NEM is known.

In summary, the future for NSW domestic black coal consumption for power generation is considered limited till at least 2000/01. For existing suppliers, greater supply flexibility and lower costs will be required, and for potential suppliers the prospect of increased competition across State boundaries and alternative fuel sources, primarily renewable, is imminent.

I trust these comments are of relevance to the review.

Yours faithfully

CHRISTOPHER BARTO
FUEL MANAGER/DEVELOPMENT

Electricity Industry Changes & Role of Coal

1. In the context of the developing National Electricity Market and the genesis of NSW's 3 Generator model (in March 1996) a significant number of grandfathered Long term coal contracts (LTCC) plus a series of vested electricity contracts were transferred to the new Generators.

Some LTCC's extend by some 10 years past the expiration of the vested electricity contracts !

2. NEM has pitched 'traditional installed plant overcapacity' in both Victoria & NSW, resulting in direct COST COMPFTITlON of Brown Coal vs Black Coal

3. From mid 1970's, NSW Export (North Asian) Coal Industry developed / springboarded off Dometic (underground) industry based on 'long term contracts for large tonnage / low quality coal.

Those Asian Utility Markets still rely on Bulk Supply Tariff revenue arrangements.

However, Fuel Sourcing philosophy of BOTH Utility Markets now has 'high expectation of cost
reduction'.
Issue of dichotomy in 'rate of change' in both markets, as both pursue as priority Low cost suppliers - prim. Opencuts or 'efficient / productive' longwall mines, not necessarily under LTCC's.

Electricity Industry Changes & Role of Coal

The challenge for NSW Generators, with low electricity growth demand & existing LTCC supply arrangements trading in a cross-border, non tariff/open access market is to regularly access/buy existing & local coal supply market.

Choice of:

1. Spot purchase (if resource available) from existing or alternate supplier

2. Use existing 'increments' up from predominantly low contract base (-20% nominal tonnage)

Reconsider status & flexibility of extant contracts - logistic/practical, technical & commercial terms.

Not actively compete (with export market) for equivalent coal quality BUT same low cost producers.

Domestic market NOT Price setter. Only One generator- Pacific Power (Powercoal) own/operate Coal Mine's in NSW.

Asian Utilities with the advantage of expanding market and multisourcing (NSW/QLD/Indonesia, etc) constantly in marketplace - tendering/ spot, create market price & determine dynamic's.

Why Coal for NSW Power Industry - brief Historical perspective

NSW Power industry developed by UK expertise and technology based on readily available fuel
resource - coal, similarly pioneered by UK personnel, practice, etc.
Coal for power industry developed 'unhindered from alternative fuels', as no economic and accessible GAS or OIL resources discovered in NSW.
Other than Snowy, limited HYDRO resources.
Interstate GAS used for domestic/residential consumption, (via AGL pipeline), limited commercial & industrial market share (now developing) - old commercial terms (high $/GJ rate) not competitive against established coal.
Other than small scale Ashford (north NSW), all power industry development based within Sydney Basin geological entity.

Initially City based small power stations - Pyrmont, Balmain, White Bay, etc reliant on distant coal (Lithgow/Newcastle) railed, then local transmission to limited urban demand. (Conversely, in Victoria, brown coal fired power plant PLUS small HYDRO but significantly GAS fired plant (as resource immediately available) - fuel switching & competition / peaking plant access - no impact on coal mine staffing, etc.)

Coal Sourcing Philosophy - development

Power stations need for access to COAL & LAND & WATER (cooling), relocated from City to 'established coalfields - Western & Newcastle' in early 1 960's. Large scale transmission to demand / urban - not longer need for rail delivery to City (convenient environmental 'win'). Hence development of ‘Mine-Mouth’ with Mining dominated by Underground, (cf. Swanbank, Qld).

Later development in Hunter Coalfield - multiple source opencut (Liddell, Bayswater, cf. Tarong, Stanwell, Qld equiv.)
Currently NSW 3 Generators - Macquarie Generation, Delta Electricity & Pacific Power represent significant market share (20%) of NSW saleable coal production, restricted to

. *Hunter Valley (100% opencut supplies)*
. *Newcastle and Western Coalfields - primarily Underground,*
Not reliant on Rail transport/delivery - now intrafield supply (Ulan to Eraring PS as exception).

Proximity, Resource - Coal quality creating an "either / or" domestic focus by mines.

New South Wales export growth since the mid 1 980's has been dominated by the Hunter Coalfield opencut mines, with limited growth in both Newcastle and Western, due to quality/cost.

Coal Sourcing Philosophy - development

Due to less Developed & limited number of mines (i.e restricted SUPPLY OPTIONS), an established mining technique (underground)(TECHNOLOGY) - the initial ECNSW fuel sourcing philosophy was:

, 'Security of (dedicated) supply', assisted by Dept Mines allocation of determined low quality resources:

- direct mine ownership (Elcom & Newcom, now Powercoal), all underground mines
- access to mainly Opencut resources for contract mining (Ravensworth, Narama, Swamp Creek, & formerly Mt
Arthur North)
- exploration areas for proposed/new Power station sites -a) Kariwara for Mt Piper, now Springvale, b) Gunnedah &
Rylstone c) Mardi/Tuggerah Lakes, now Wyong (100% Ingwe)

, Long term contracts with 'cost plus' commercial arrangement (which underpinned an annually negotiated bulk supply electricity tariff, nominally a version of CPI),

, Periodicity of Contract timing was 'as & when required'

A maturing more developed NSW coal industry (1 980's) meant a 2nd phase fuel sourcing philosophy of "multi sourcing to single power station" - incumbent on access to and cost effective transport infrastructure.
3rd phase (early 1 990's) of "Competitive sourcing", via open tendering - Powercoal vs. private's,
geographic station cluster vs. other regions, ie Western vs. Central Coast.
A developed Physical multi & competitive sourcing **but commercially identical -** cost plus, medium to lona term contracts based on broadly similar coal quality (Sydney Basin bituminous)

Coal Sourcing Philosophy - Competitive? Mine - Mouth

Located on the Central Coast - 6 Powercoal Mines supply 3 power stations, Eraring (Pacific Power), Vales Point & Munmorah (Delta Electricity), developed as Mine-Mouth, now required to compete with other coalfield suppliers. Limited infrastructure allows some Hunter Valley coal to be trucked or railed.
Increased cost pressure of transport ensures level of competition for local Powercoal mines Not economic for some Powercoal mines to wash for export, so 'need' contract with power stations to continue.

Delta Electricity with 2 Central Coast and 2 Western Coalfield power stations able to sustain competition by parallel and concurrent Open tendering, essentially cost of Powercoal underground mines vs. Private underground mines (also Powercoal - Angus Place) Established Powercoal underground mines supplying Eraring in competition with predominantly railed Hunter Valley mainly opencut suppliers, eg no contract awarded to neighbouring Awaba mine (ultimately downsized for export) in 1990/91 with Ulan mine contracted for 1 Mtpa via rail.

Typical NSW Generator Coal Contract - The Cost's ($ / t)

. **Cost Plus commercial terms, i.e Base Price, as tendered, then escalation of a series of 'nominated indices', mainly:** . *Labour, including Workers Compensation, Long Service Leave, Insurance , Materials*

Transport, either Road or Rail
Government Charges, primarily NSW Royalty

. **Each potential supplier 'competes' initially on lowest tendered price, then if selected, ranking of the escalated coal price over time & price of incremental tonnage considered.**

. **Labour costs (index) 'generally' the dynamic escalator, with regular increases in award base rates of most mining classifications & allowances, notably transfer to Open Cut Work Model, with costs increasing at greater rate than productivity.**

. **Aspects of Labour costs - LSL & Insurance, details & pricing methodology not transparent, not necessarily 'price competitive', eg JCB as Insurer, others available?**

. In comparison, Victorian generators pay insignificant Mining Royalty of $0.05/t cf. **NSW at between $1.70 to $2.20 per tonne, payable irrespective of coal quality & market use - requires review.**

Future Coal Supply Scenario's - NSW Generators - Immediate Constraints in a Mature Supply Market

Immediate "Market - related" Constraints:

"Stable" 23 - 25 Mtpa forecast consumption for NSW Generators till yr 2000 based on 'overcontracted supply', as most coal contracts running at Minimal levels.

. Since May 1997 evidence of Victorian Generators 'exporting' equivalent to ~ 10% pa, further lowering NSW consumption requirements, necessitating maintaining 'negative option' for existing NSWcoal contracts - limited growth.

. Contrast with Victorian Generators (single mine- power station mouth supply matrix), who have geared up to constant base load, increasing just in time 'brown coal consumption.

. Within existing NSW domestic contracts, realising flexibility may result in broadening of delivered quality (lowering of $/GJ), delivery tonnage & timing - may need to be configured with existing or proposed export contracts - requiring mines to manage labour force flexibility.

To minimise 'growth of generator stockpile levels - cost/environmental/practical constraints a lessening of already minimised contractual tonnage (whilst awaiting some contract

expiration/termination) till yr 2000 is necessary - potentially exacerbating late 1997 forecast export market rationalisation.

Future Coal Supply Scenario's - NSW Generators - Immediate Constraints in a Mature Supply Market

. **Future Constraints:**
*Limited **underground** coal resources & saleable reserves in Western & Newcastle Coalfields, (5 PS's) with both Urban & National Park surface restrictions*
Rural & environmental conflicts in Hunter, (formerly livestock, now wine / tourism) affecting 2 PS's.

No existing rail unloading facilities at Macquarie & Delta power stations - restricted intrafield supply

. Remaining open cut resources in the Hunter Coalfield are getting deeper - > stripping ratio's, with greater number of seams (washing?) and resultant higher ex-mine costs

Expected Termination of 40 - 50 % of (grandfathered) Long term contracts with NSW Generators in post 2000 - NEM timing - dovetail with export market expectations

Role & Cost of rail freight, to sustain vaibility of existing NSW coalfelds with lesser economic deposits, Generators will require 'cost competitive' rail freight, still disadvantaged against 'non-railed' Victorian power plant.

. A "level playing field " cf. NSW vs. Victoria/Qld ? - future greater use of contractors - Government regulations, royalties and timing approval processes, _ cost & scale of infrastructure

Future Coal Supply Scenario's - NSW Generators -
Immediate & Future Constraints in a Mature Supply Market

- Irrespective, result required is lowered DELIVERED COST to All NSW POWER STATIONS

-To compete against cheaper average Victorian & Qld coal (most significant Power station operating cost)

In a market environment of increasing emphasise on Alternative fuel supply:

- 1. Gas - combined cycle

- 2. Political attraction towards >% of Alternative/Renewable generation (Greenhouse agenda)

- 3. Mix of established coal quality & very cheap broader 'lower quality coal - marginal middlings, etc'

- Future coal contracts for any NSW Generator, not likely to be 'Cost Plus' or Long Term, > # of tenders, > % of spot purchases

- Future Generation 'mix', irrespective whether private or Government will < % of coal-fired, will include gas/renewable - smaller generation units, more flexible as required as intermediate to peak plant.

- Qld Coalfields most likely growth for coal-fired generation plant (see

following table's for comparison of NSW & QLD)

Austa Electric (Queensland) power stations

	Tarong (1400 MW)	Callide (700 MW)	Swanbank (840 MW)	Stanweli (700 MW)
Coal source	l large open cut	l large open cut	2 large open cuts	l large open cut
Mine Ownership	Private	Private	Private	Private
	Dedicated mine	Dedicated mine	Export/domestic	Export/domestic
Transport to Power Station	Conveyor	Conveyor	Rail/Truck	Rail
Contract Tonnage/Term	Large/Long	Large/Long	Small/Short	Medium/Medium
Ext. Average Coal Price	<$24/t	<$24/t	<$24/t	<$24/t
Future Prospects:				
Coal Source/Reserve	Large -open cut	Large -open cut	New coal mines	New coal mines
Coal Prices	Constant in real terms	Constant in real terms	Constant/Lower in real term terms	Constant/Lower in real term terms
Future Limitations to Coal Sourcing	None	None	Urban Development	Rail Freight costs

Comparison of the mines supplying New South Wales and Queensland Power Utilities

. Those mines supplying Austa Electric are low cost, productive open cut mines, whereas a substantial proportion (50%) of NSW Generator's coal is sourced from higher cost single seam underground mines, commonly constrained by urban development

	Queensland	**New South Wales**
Mines Open Cut	50% Open Cut	
Type of Open Cut	Dragline	Dragline, Truck and Shovel
Scale of Operation	Large	Medium
Productivity	High	Low to Medium
Coal Seams	Single thick seam > 6M	Underground - Single Seam (<3.5 m) Open Cut - Multiple number of thinner seams
Reserves	Large	Limited to Large
Overburden to Coal Ratio	Low <4:1	Between 3 and 10
Mining Costs	Low	Medium to High