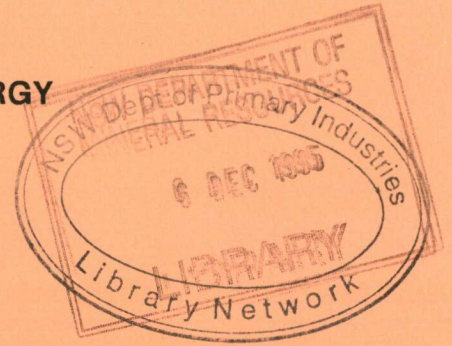


DEPARTMENT OF MINERALS AND ENERGY



TRANSPORT REFORM AFFECTING
THE NEW SOUTH WALES
MINERALS SECTOR

Ian Clarke
Minerals Policy Officer

388.044 CLA

12 February 1990

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TRANSPORT REFORM AFFECTING THE NEW SOUTH WALES MINERALS SECTOR

SUMMARY

Recent studies have identified considerable scope for reform in transport that, if implemented, would benefit the Australian economy, and in particular, the minerals industry sector. These studies include the Inter-State Commission investigation into the waterfront, the Industries Assistance Commission inquiry into coastal shipping, the Joy report on maritime administration in New South Wales and the Curran Commission of Audit of the Maritime Services Board, studies of the New South Wales rail system by Booz-Allen and Hamilton, the Railway Industry Council strategic study of the rail industry, the Inter-State Commission investigation of road user charges, the Industry Commission inquiries into rail transport and into mining and minerals processing, and a Commonwealth Standing Committee inquiry into land transport-seaport interfaces.

The Australian Minerals and Energy Council (AMEC) established a working group to investigate transport costs and their affect on competitiveness of the minerals sector. Drawing on available results of recent studies, the working group produced a report on the implications for the minerals sector of recommended reform in transport, and suggested broad directions for ongoing reform. Most recently the group produced a report on the progress of transport reform as it affects the minerals sector. The present report was compiled chiefly in association with contributing on minerals transport in New South Wales to the AMEC working group's latest report on transport reform progress.

A well developed transport infrastructure exists to service the minerals sector in New South Wales. Most coal feed for power stations is transported by conveyor. However, the main mode of transport in the Northern and Western Coalfields is rail, and road transport carries around the same amount of coal as rail in the Southern Coalfield. Coal is exported through coal loaders at Newcastle, Port Kembla and Sydney.

Base metal concentrates are railed from mines at Broken Hill, Cobar and Woodlawn to Newcastle and Port Kembla for local smelting and export, with some concentrate from Woodlawn also trucked to Port Kembla for export.

Coastal shipping is used to bring in iron ore and alumina for iron and steel making at Newcastle and Port Kembla and aluminium smelting in the Hunter Valley, respectively.

Extractive materials of low unit value are transported by road and rail, the costs for which are particularly sensitive.

New legislation for land transport and port administration has been enacted to provide a basis for transport reform in New South Wales. There have also been investigations into proposals for amendments to other legislation to assist transport reform.

Export coal is the most significant commodity hauled by State Rail, followed by base metal concentrates. State Government policy requires all coal to be transported by rail wherever possible, and this policy is implemented for new mining developments through conditions of development consent under the Environmental Planning and Assessment Act.

Substantial downsizing of its staff has led to an increase in State Rail's freight productivity, and rail freight rates for export coal have been substantially reduced in real terms in recent years. However, the mining industry has claimed that it is still being overcharged for rail freight of coal and non-fuel minerals. That is, improvements in rail freight productivity are not regarded by the minerals sector to have been fully passed on to

State Rail's clients, and there scope exists for further productivity gains and freight rate reductions.

Numerous private and Commonwealth studies have indicated that excess rail freight charges have been applied to minerals transport throughout Australia, particularly for coal, and then particularly in Queensland where an indirect or de-facto royalty is incorporated into rail freight rates. The issue is exasperated by refusal of rail authorities to divulge cost information. It has been contended in numerous forums that rail authorities which have either a natural or regulated monopoly need to be more transparent in the setting of rail freight rates. The industry and State Rail agree that rail freight rates should cover the cost of providing an "efficient" service plus a "reasonable" return on the capital investment, but they apparently have divergent interpretations of "efficient" and "reasonable". The industry further maintains that rate increases should be based on true increases in costs, and that productivity improvements should be passed on as rate reductions. State Rail's approach to rate adjustment is to include factors reflecting the price of export coal and cost of alternative freight transport. It is expected that mineral rail freight rates will be comprehensively covered in the Industry Commission inquiry into rail transport, and that greater transparency will be recommended by the Commission in its draft report which is due at the end of March 1991.

A substantial investment in rail infrastructure has been made in the last 10 years by State Rail, chiefly for the rail transport of export coal. Most recently, improvements have been completed to the rail receival system at the Port Waratah coal loader. The AMEC working group advocated that private investment in and private use of the rail system in Australia should be permitted. There are a few examples of this in New South Wales, and most recently State Rail has called for expressions of interest for electrification of the Hunter Valley line. There is no legislative or other regulatory restriction to private sector involvement in the New South Wales rail system.

Largely as a result of Government policy and the natural monopoly of rail, road is a relatively minor transport mode for minerals in New South Wales. Nonetheless, road freight of bulk minerals usually generates opposition from local communities when proposed for new mining developments.

There is evidence that in Australia, heavy vehicles do not pay for the cost of the damage that they cause to roads. That is, light vehicles pay more than their attributable road damage costs, and subsidise heavy vehicles. There are also poorly quantified but in places probably substantial external costs of road freight that are not recovered, such as the cost of road crashes (to the extent that they are not covered by insurance payments), road congestion, and noise, dust, and air pollution. This subsidisation or under-pricing contributes to some distortions in the use of heavy road transport, and between road and rail.

The issues of more equitable charging of users for roads and funding for roads by governments were given impetus by the Special Premiers' Conference in October 1990. The Conference agreed to establish a national heavy vehicle registration scheme, through "co-operative" referral of powers or complementary legislation, with nationally consistent charges and uniform technical and operating conditions. A working group was established to report to the next Special Premiers' Conference on implementation of the new scheme, and three groups were also formed to advise on road funding arrangements, road charging, and road vehicle registration, respectively.

Contributions for local road construction and maintenance required as a result of new mining operations are increasingly being sought by local government. Section 94 of the Environmental Planning and Assessment Act is the preferred mechanism for levying developer contributions as part of the Development Consent process, and guidelines for the use of Section 94 to assist local governments are being formulated by the Department of Planning. There is a need, however, to amend Section 94 to make

provision for contributions for infrastructure requirements outside the area of the consent authority, and for infrastructure normally provided by the State Government rather than local government.

Significant reform of the Maritime Services Board (MSB) has been effected. The most significant structural reform is the formation of three subsidiary and eventually financially autonomous port authorities, in conjunction with a downsizing of head office. The MSB has also withdrawn from handling coal at the two major coal loading ports of Newcastle and Port Kembla. Port charges have been restructured along user pays and cost recovery lines, and are being phased in. Increased private sector involvement in the development and ownership of port facilities and in the provision of port services is being encouraged by the MSB - leasing of the coal loader and No. 6 Jetty at Port Kembla to the minerals sector are relevant examples. The MSB has also sold its 20% interest in the Kooragang coal loader, which enabled the merger of the two coal loaders in Newcastle. Following the merger, Port Waratah Coal Services - the operator of both loaders - effected three cuts to the Newcastle coal loading charge, which is said to amount to a total annual saving of \$19.8 million to coal companies using the port.

One claimed impediment to the competitiveness of the coal industry exporting through Newcastle is the arrangement for land rental for the coal loader on Kooragang Island. The land is owned by the Minister for Public Works, who negotiated the lease in 1982 based on coal throughput. Information on the actual rental paid is unclear, but it may account for up to 20 c/t of the coal loading charge over both coal loaders in Newcastle. Several approaches have been made by the loader operator to the State Government to vary the arrangement, as well as a submission to the Industry Commission inquiry into mining and minerals processing on the "excessive" rental. Unlike the debate on excess rail freight rates, the Government has effectively admitted to exacting an indirect royalty or a resource rent from the coal loader. Negotiations are continuing between Port Waratah Coal Services and the Public Works Department, with the latter preferring to only consider alternative proposals for rental for the additional throughput resulting from expansion of the coal loader beyond its current capacity. There is scope for further consideration of this issue and possible redress in the forthcoming major national review of mineral royalty.

Consultants for the Inter-State Commission investigation into the waterfront identified a disparity between the nominal road and rail receipt capabilities of the Port Kembla coal loader and actual road and rail throughputs, which was said to contribute to handling inefficiencies at the interface between land transport and the terminal. The local community in the Illawarra area strongly disapproves of the relatively large amount of coal truck traffic (compared to elsewhere in the state or even in the Northern Coalfields), and its effect on motor vehicle accidents, congestion, and road damage.

A previous Labor Government commenced construction of the Maldon-Dombarton rail link to divert coal trains away from the Sydney system, alleviating some inefficiencies, and also allowing additional coal to be railed rather than transported to Port Kembla by road. However, the Greiner Government stopped construction in 1988, and the current Government position is that the expected increase in traffic on this link, if it was to be completed, does not presently justify the capital expenditure. The extra cost of railing coal to Port Kembla instead of to an earlier proposed coal loader at Botany Bay is government subsidised.

Although State Rail claims that there is sufficient track capacity to accommodate predicted increasing tonnage of coal railed to Port Kembla, additional stockpiling capacity and other infrastructure improvements would alleviate inefficiencies related to large variations in coal demand at the loader. Solutions for alleviating problems of road haulage of coal to the Port Kembla loader include conveyors, an inland common user stockpile facility, and new road developments.

INTRODUCTION

Background

The cost of transport in and around Australia is a significant factor in the international competitiveness of Australian industry. Recent studies have identified considerable scope for reform in transport that, if implemented, would benefit the Australian economy. The mining and minerals processing industries, referred to here as the minerals sector, being largely export oriented, would be the major benefactors of such reform.

Objectives

This investigation was initiated for the Australian Minerals and Energy Council's (AMEC) working group on transport costs and competitiveness in the minerals sector, which in August 1989 was assigned to report on progress of transport reform as it affects the minerals sector in Australia. The aims of the investigation were to outline the arrangements for transport of minerals (including secondary processed products) into, around and out of New South Wales, identify those issues which affect the cost of minerals transport, and determine the state of progress in transport reform designed to reduce that cost to the New South Wales minerals sector. Attempts were made where practical to measure the benefit of that reform to the sector, and to draw conclusions on those issues where further reform is warranted. This report provides background information to the New South Wales Minister for Minerals and Energy, who is also the Chairman of AMEC, for consideration of the AMEC transport working group's report.

The information for this report was acquired in conjunction with participation in the AMEC working group on transport costs, the Industry Commission inquiries into mining and minerals processing and into rail transport, a Commonwealth House of Representatives Standing Committee inquiry into land transport-seaport interfaces, State Development Strategy Task Forces for metallic minerals and minerals processing, and the Mineral Resources Development Committee working group on mine and quarry transport. Written and verbal information was sought from representatives from the minerals sector, transport authorities, and community groups, and numerous previous inquiries.

Outline

The report commences with an overview of numerous recent and ongoing investigations that address transport of mineral commodities in Australia with relevance to the New South Wales minerals sector. The next section outlines the established minerals transport chains in this state. Recent legislation and proposed changes to legislation by which transport is regulated are described, before detailed discussion is presented on rail transport, road transport, and ports. Inefficiencies at the land transport-seaport interface are then dealt with in a separate section. Up to this stage the report has been written with emphasis on presentation of the issues with minimal commentary. Finally, the report concludes with some remarks on the major policy issues concerning transport reform that is of relevance to the minerals sector in New South Wales.

INDEPENDENT REVIEWS

In recent years, governments in Australia have focussed attention on what has been termed "microeconomic reform", that is, improvements in efficiency of those industry sectors in which governments are heavily involved through regulation and participation. The electricity generation and distribution sector and the transport sector are the two largest areas in which government trading enterprises (GTEs) predominate, and accordingly, these areas have received most of the attention of independent reviews.

The following is a summary of the outcome or progress of recent and current independent investigations that address transport of mineral commodities in Australia, with relevance to the minerals sector in New South Wales.

General studies

AMEC established a working group on transport costs and competitiveness in the minerals sector in May 1988. The group's initial task was to report on the implications for the minerals sector of the findings of the Industry Assistance Commission's (IAC) report on Coastal Shipping and the Inter-State Commission's (ISC) Waterfront Investigation. Subsequently it was agreed by AMEC ministers that the group should include consideration of relevant land transport issues in its report.

The AMEC working group reported in July 1989 that Australia's freight transport sector is characterised by excessive costs, widespread inefficiency and unreliability. Implications of these deficiencies were particularly adverse for the minerals and energy sectors, which together are the largest user of freight transport services. It was concluded that while some significant initiatives have been instituted by the Commonwealth and some State governments, the scope for further reform remains considerable.

At its meeting in August 1989, AMEC requested that the group continue to report on the progress of transport reform as it affects the minerals sector. A final report of the working group was produced in December 1990 for consideration and release by AMEC ministers at their next meeting on 1 March 1991.

A report on "Estimating the economic gains from certain transport reforms" by the IAC commissioned by the Business Council of Australia and other industry groups attempted to quantify the individual and aggregate effects of excess transport costs on the economy generally and individual industry sectors. It was estimated that substantial reform in transport could lead to a 7.2% increase in output of the minerals and energy sectors, of which 5.6% is attributable to cheaper transport of coal through more efficient rail transport. Transport reform would result in gross domestic product rising by \$6 billion, or 2.3%. 40% of the savings would come from improvements in rail efficiency, 27% from reform of coastal shipping, the ports and waterfront, 15% from cheaper international shipping, and 18% from cheaper land transport of bulk exports.

Coastal shipping and the waterfront

In December 1986 the ISC was requested to formulate a long term integrated industry plan to enable the industry to efficiently meet requirements for the handling, storage and movement of interstate and associated cargo throughout Australian ports.

The preliminary findings of the Commission's investigations on the waterfront were presented in five volumes in August 1988. After further hearings and submissions, a final two volume report on the investigation was released in March 1989.

As part of its investigations into the waterfront, the ISC arranged for a study to be undertaken by consultants Nelson English, Loxton and Andrews Pty Ltd on coal terminals. This study was based on operations during the 12 month period to 30 June 1988. It is published as Part 9 of the ISC's Waterfront Investigation: Special Studies, Volume 2, dated August 1989.

In July 1987 the IAC was directed to inquire into the coastal shipping industry, taking into account the simultaneous development of a waterfront strategy by the ISC. The final report released in July 1988 claimed that coastal shipping in Australia was inefficient and uncompetitive relative to those maritime nations with similar standards of living. Major inefficiencies were said to manifest themselves in the form of excessive costs and delays. The IAC estimated that if international freight rates applied to coastal shipping, there could be a substantial increase in Australia's gross domestic product, as well as several other benefits. The major factors behind the problems were the effective exclusion of competition from foreign flag vessels under the Navigation Act, combined with several other regulatory and institutional factors at sea and onshore, including restrictive union practices.

On 1 June 1989, in response to the ISC's report, the Commonwealth Minister for Transport and Communications announced a three year program to reform Australia's shipping and waterfront industries. Reform in shipping focuses on manning reductions, particularly reduction in crew size, reduction in crew to berth ratio, review of the voyage permit system, and several Commonwealth funded assistance measures including a voluntary retirement scheme, training assistance, and taxation assistance. The Shipping Industry Reform Authority (SIRA) was established to oversee the process of reform in coastal shipping.

The Commonwealth accepted most of the ISC's proposals for waterfront reform, including the introduction of enterprise based employment, a special retirement and redundancy package, and establishment of the Waterfront Industry Reform Authority (WIRA).

In 1988, the New South Wales Maritime Services Board (MSB) was the subject of two independent reviews. Hyland Joy & Assocs was commissioned to review maritime administration in New South Wales, and a Commission of Audit was conducted under the chairmanship of Mr C P Curran. The findings of these reviews were published in July 1988 and October 1988, respectively. Simultaneously a report was prepared by the Newcastle Port Review Committee, recommending that the Port of Newcastle should be established as an independent statutory authority, in agreement with the recommendations of the Joy Report.

Drawing on the recommendations of the Joy and Curran reports, and consistent with the recommendations of the ISC investigation on the waterfront, the New South Wales Minister for Transport announced in April 1989 major changes to the MSB's management, organisational structure and pricing policies. The MSB is now well down the road to full implementation of that reform.

Rail

In 1988 an extensive study was undertaken of the NSW rail system by consultants Booz-Allen and Hamilton (BA&H). In the same year, a new Transport Administration Act was passed which removed the guarantee of State Rail to access to particular traffics and business. In response to recommendations of BA&H, and in accordance with the new Act, State Rail embarked on a wide ranging restructuring program which involves significant staff reductions.

The Railway Industry Council (RIC) was established by the Commonwealth and State transport ministers in 1986 to develop and recommend a medium and long term strategy to improve the viability and competitiveness of the rail industry. In May 1990 it issued a discussion paper on "Rail into the 21st century" in which several options were canvassed. Following public feedback on the paper, the RIC released its conclusions and recommendations in August 1990. The early work of the RIC has been overtaken to a large extent by the BA&H study of State Rail, and subsequent reform in New South Wales railways. The RIC acknowledges that the pace of change in State Rail has been faster than anticipated by the RIC analysis.

In September 1989 a joint study group was established to examine the organisation of national rail freight operations and related freight terminal developments, known as the National Freight Initiative. The group comprised representatives from the Commonwealth Government, the State rail authorities and Australian National, the ACTU, and major freight forwarding companies. The group estimated that an injection of \$800 million over 5 years was required for upgrading of rail infrastructure for a national rail freight system. The concept of a National Freight Initiative has received widespread support, and Booz-Allen and Hamilton and Travers Morgan reported favourably on it in March 1990. At the Special Premiers' Conference in October 1990, Commonwealth and state leaders were unanimous in their support for the creation of a National Rail Freight Corporation, despite earlier failure to reach agreement on this between Commonwealth and state transport ministers. The corporation is expected to commence operations on 1 July 1991.

Rail transport of coal and other minerals was considered in the Industry Commission inquiry into mining and minerals processing. Discussion has focussed on freight rates, with a very shallow treatment given in the draft report that was released in September 1990. A more comprehensive treatment of rail is underway in the Industry Commission inquiry into rail transport, the draft report for which is due in March 1991. There have been numerous studies of rail freight rates for minerals, and these are outlined below in the section on RAIL TRANSPORT.

Roads

The Inter-State Commission has undertaken several investigations into road transport in Australia. The latest and most significant effort has resulted in a report on "Road user charges and vehicle registration: a national scheme", which was released in March 1990. The proposed scheme involves replacing state fuel taxes and registration charges with a uniform national charging system based on Commonwealth fuel excise and weight/distance charges for heavy vehicles.

At a meeting of the Australian Transport Advisory Council (ATAC) in September 1990, a majority of the State ministers supported in principle the development of consistent and equitable road user charges based on full road cost recovery, but specific ISC proposals were rejected in relation to the detail.

The Special Premiers' Conference in October 1990 led to agreement on the establishment of a national heavy vehicle registration scheme, together with uniform technical and operating regulations and nationally consistent charges. The scheme may permit variations in standards to take into account of different regional conditions, and charges will be developed with regard to the principles established by the ISC and with a view to full and consistent levels of cost recovery.

A working group is to be established to report to the next Special Premiers' Conference in May 1991 on the implementation of these new standards and charges, and whether there should be a joint government organisation to handle heavy vehicle registration and regulation. Funds provided by the Commonwealth for local roads will also be untied. It

was recommended that ATAC further consider the principles for distribution of road funds between States and Territories.

In New South Wales, road pricing issues have been addressed by a Taskforce on Road User Charges, including industry representation, which has developed a model which will improve equity and efficiency in road user charges. This Taskforce's activities have effectively been overtaken by release of the ISC report.

While proposed user charges are expected to recover the ongoing general construction and maintenance costs for roads, they will not be adequate to cover the specific local impact on roads of new developments. A New South Wales inter-departmental working party is examining this issue by considering guidelines for developer contributions under Section 94 of the Environmental Planning and Assessment (EP&A) Act (as recommended by the recent Simpson Commission of Inquiry), as well as exploring the potential for new legislation relating to developer contributions under the State Roads Act.

Land transport-seaport interfaces

In July 1990, the Minister for Shipping and Aviation Support requested the Commonwealth House of Representatives Standing Committee on Transport, Communications and Infrastructure to report on the appropriateness, efficiency and performance of the interface between seaports and land transport.

The Chairman of the Committee said that the inquiry was likely to touch on:

- * the adequacy of road and rail systems to move freight in and out of major ports
- * the mismatch of working hours between shipping authorities, stevedoring terminals, transport and freight forwarders and consignors and consignees
- * truck queuing at ports
- * communications systems, including customs and other documentation
- * delays in collection of goods from ports.

The Cabinet Office presented a New South Wales Government submission to this inquiry on 10 January 1991, with input from the MSB, State Rail, the RTA, and the Department of Minerals and Energy.

TRANSPORT CHAINS

This section outlines those industries in the New South Wales minerals sector that are dependent on transport, and the systems in place for transporting their products and/or raw materials.

Coal

The bulk of New South Wales' coal resources are found in the Sydney and Gunnedah Basins, within which five coalfields are identified - Gunnedah, Hunter, Newcastle, Western and Southern (Figure 1). For consideration of coal transport, Gunnedah, Hunter and Newcastle, and the Ulan mine in the northern area of the Western Coalfield constitute the Northern Coalfields. Small coal resources also occur in the Oaklands, Ashford and Gloucester Basins. The total coal resources of the state are estimated to be over 80 billion tonnes (Table 1).

Figure 1

COALFIELDS OF NEW SOUTH WALES

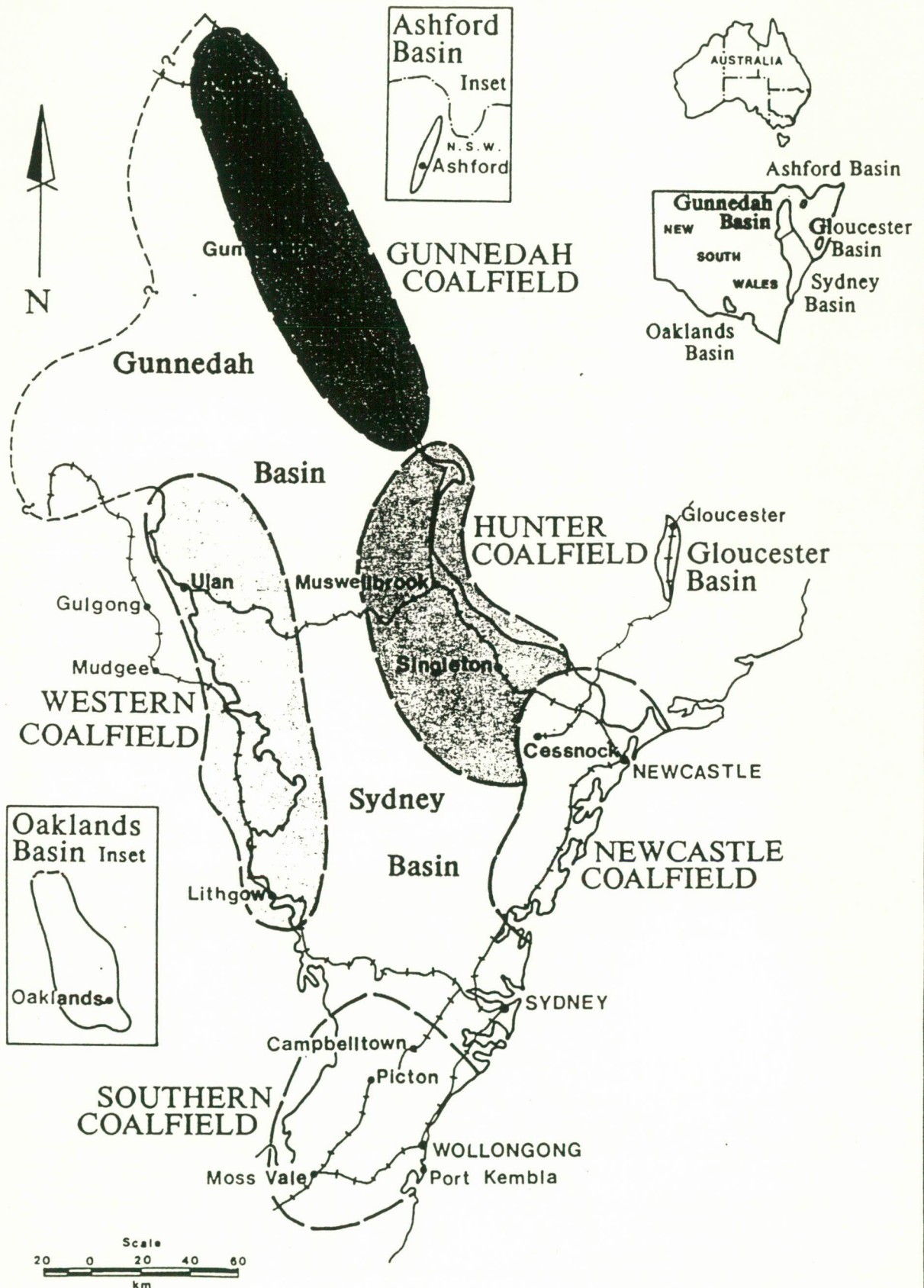


TABLE 1: COAL RESOURCES OF NEW SOUTH WALES ON A COALFIELD BASIS
BY DEPTH CATEGORY

COALFIELD/ MINING POTENTIAL	MEASURED + INDICATED RESOURCES	ASSUMED + INFERRED RESOURCES	TOTAL RESOURCES
WESTERN			
Open Cut	737	400	1,137
Underground A	1,558	1,250	2,808
Underground B	335	60	395
SUBTOTAL	2,630	1,710	4,340
HUNTER			
Open Cut	10,947	470	11,417
Underground A	5,801	2,150	7,951
Underground B	2,270	1,010	3,280
SUBTOTAL	19,018	3,630	22,648
NEWCASTLE			
Open Cut	209	160	369
Underground A	4,019	1,720	5,739
Underground B	453	1,430	1,883
SUBTOTAL	4,681	3,310	7,991
SOUTHERN			
Open Cut	-	-	-
Underground A	825	240	1,065
Underground B	2,601	4,550	7,151
SUBTOTAL	3,426	4,790	8,216
GUNNEDAH			
Open Cut	544	350	894
Underground A	1,481	14,310	15,791
Underground B	125	15,200	15,325
SUBTOTAL	2,150	29,860	32,010
GLOUCESTER			
Open Cut	104	30	134
Underground A	39	30	69
Underground B	-	-	-
SUBTOTAL	143	60	203
OAKLANDS			
Open Cut	1,388	-	1,388
Underground A	-	3,260	3,260
Underground B	-	-	-
SUBTOTAL	1,388	3,260	4,648
TOTAL	33,436	46,620	80,056

Underground A: less than 300 m cover; Underground B: 300-600 m
All figures in million tonnes

Source: Department of Minerals and Energy: New South Wales Coal Industry Profile 1989, Table 5.

In 1989/90, New South Wales produced 42.75 mt of coal for export, which represents around 40% of Australia's total coal exports. Coal is exported through the ports of Newcastle, Port Kembla, and Sydney. Domestic consumption accounted for 27.86 mt, of which power stations took 20.28 mt and the BHP steelworks at Newcastle and Port Kembla took 6.28 mt.

Conveyor transport is used for short distances (generally up to 10 km) to move coal from mines to coal preparation plants, and from mines or coal preparation plants to coal loaders or power stations. 85% of coal feed for power stations is transported by conveyor.

The only coastal shipping of coal is used between the Catherine Hill Bay coal loader and coal loaders at Newcastle and Sydney. Coal and Allied uses the "Camira" and "Conara" to ship coal to its Balls Head coal loader, where the coal is discharged by grab cranes. The "Wallarah" is a self-discharging ship used for the Catherine Hill Bay to Newcastle run. A new self-discharging vessel called the "Express" will be in service shortly.

In the Northern Coalfields, approximately 2.2 mtpa of coal are transported by public road to Newcastle for export. Large quantities are hauled short distances to rail loaders such as those at Mt Thorley and Liddell. Smaller tonnages are road hauled to power stations (0.5 mt), steelworks (0.6 mt) and local industries. Newstan and Awaba Collieries transport 2.2 mt of coal to Eraring power station along private roads. BHP also trucks approximately 385,000 t of coal from the southern coalfield to the Newcastle steelworks.

The main method of transport in the Northern Coalfields is rail, which moved 26.7 mt of coal to Newcastle Port in 1988/89. Approximately 550,000 t are delivered to the Newcastle steelworks from the Northern Coalfields, and 250,000 t from the Southern Coalfield by rail annually.

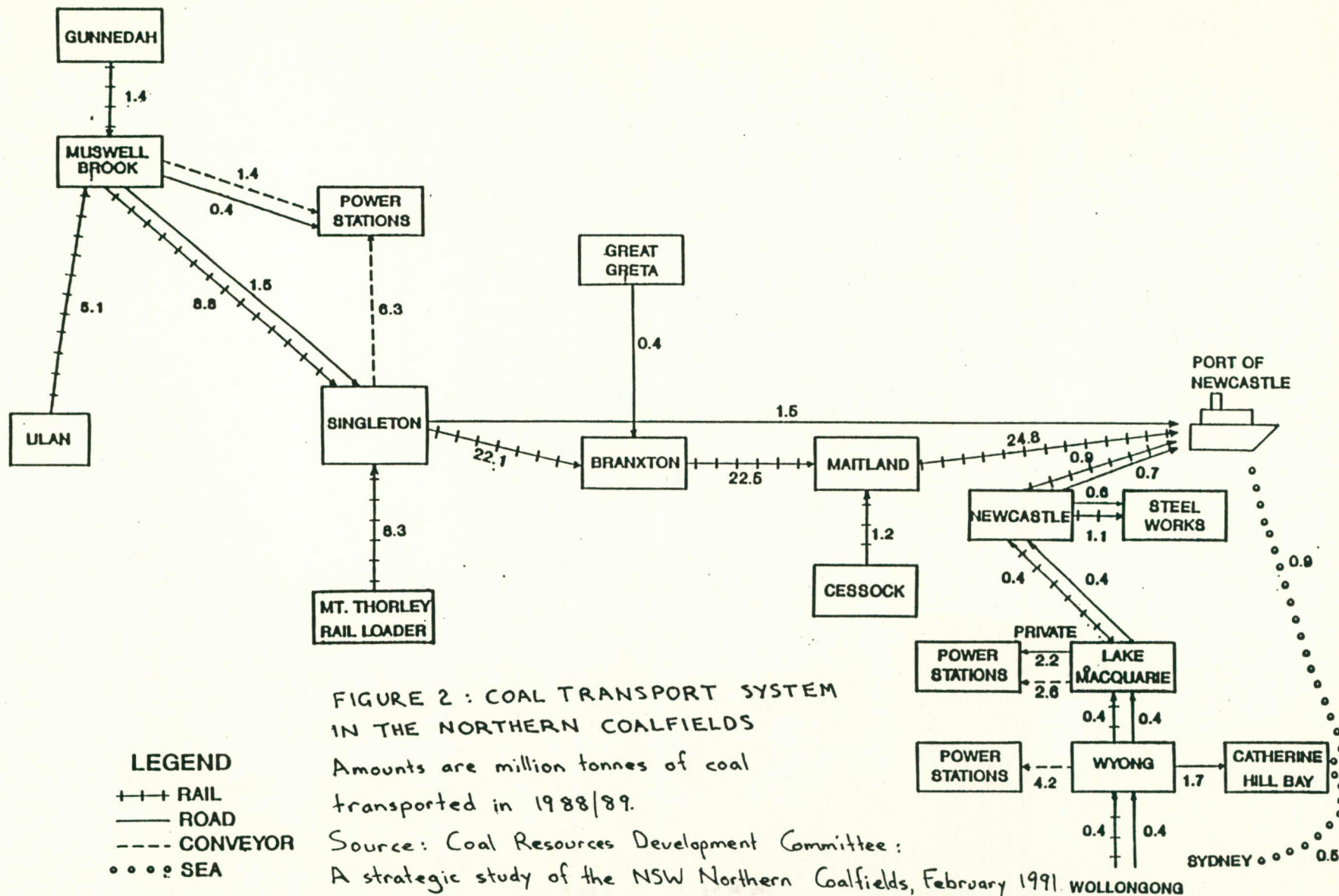
Figure 2 shows the transport system for coal in the Northern Coalfields, while Figure 3 shows the northern coal rail system in more detail. The level of road transport is expected to decrease over the next few years, with export coal from Bayswater and Muswellbrook mines moving onto rail, and the installation of a conveyor from Wallarah mine to Catherine Hill Bay.

The export coal haulage capacity of the northern rail system is assessed at some 38 mtpa. However, there is a wide variation in daily receipts at the Port of Newcastle, between zero and over 120,000 tpd, which decreases the efficiency of the total system at each loader in the port.

Ample track capacity exists for coal haulage into the Port of Newcastle from Ulan and Muswellbrook for export forecasts to 2000. However, the line between Gunnedah and Muswellbrook currently has a capacity of only about 3-4 mtpa, which indicates that a major upgrade of this line would be necessary if the Maules Creek mine comes on stream at forecast production levels.

Figure 4 shows the existing transport system for export coal in the Western and Southern Coalfields, where roughly equal amounts of coal are transported by road and rail to Port Kembla. Transport inefficiencies in the coal chain to Port Kembla, and strong local community concern over the relatively high level of road transport, are particularly contentious issues that are covered in a separate section below on ROAD AND RAIL ACCESS TO PORTS.

The Coal Resources Development Committee has produced two strategic study reports which have included detailed consideration of transport issues - one for the Southern Coalfield issued in July 1989, and the other for the Northern Coalfields issued in February 1991. A more up-to-date report on coal transport in the Illawarra Region was



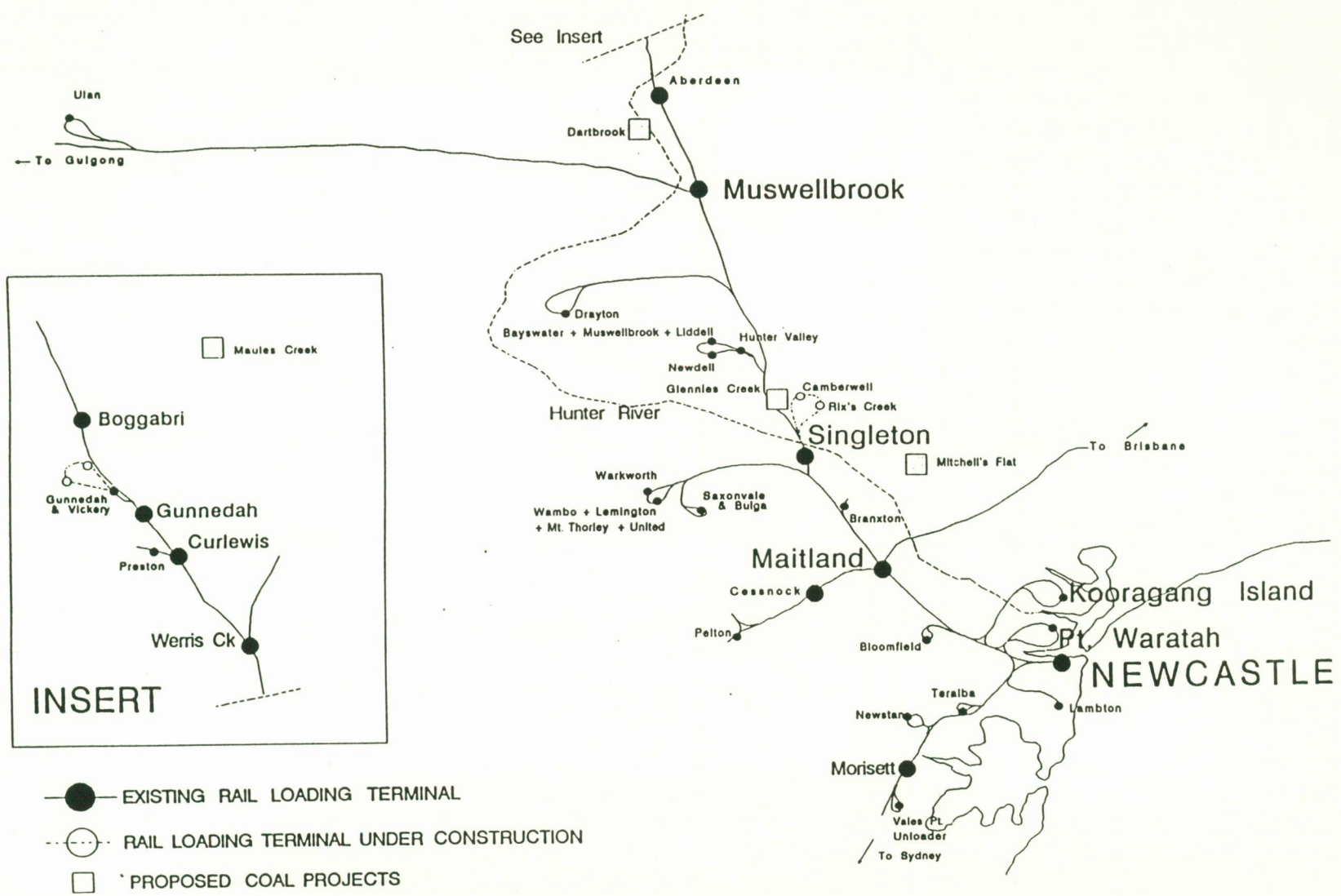


FIGURE 3 : NORTHERN COAL RAIL SYSTEM

Source : Coal Resources Development Committee: A strategic study of the NSW Northern Coalfields, February 1991.

produced in November 1990 by the Wollongong City Council Coal Transportation Task Force.

Base metals

The Broken Hill deposit is the world's largest known silver-lead-zinc deposit. The CSA and Elura mines at Cobar and the Woodlawn mine near Tarago are also significant producers of base metals. Base metal concentrates are railed from the mines at Broken Hill and Cobar to Newcastle, and from the Woodlawn mine to Port Kembla and Newcastle. A significant amount of concentrate is also trucked from Woodlawn to a storage shed adjacent to No. 6 Jetty at Port Kembla for export. No. 6 Jetty has recently been leased to a consortium which includes Denehurst Ltd, owners of the Woodlawn mine, in an effort to overcome some inefficiencies in loading and unloading minerals. A small deposit is being developed at Peelwood for ore extraction, and transport of the ore by road to the Woodlawn mine for processing.

A large gold-copper deposit at Coradgery-Goonumbla near Parkes, called the Northparkes project, is proposed for development, although delays are being caused by land access problems.

Pasminco owns the Sulphide Corporation zinc-lead smelter at Cockle Creek, near Newcastle. At Port Kembla, Southern Copper (previously Electrolytic Refining & Smelting) operates a copper smelter which is undergoing expansion. The copper smelter will annually require up to an additional quarter of a million tonnes of copper concentrate as feedstock. Some of this may need to be imported if there is insufficient available from New South Wales mines. Export of increased copper production is also likely, hence handling of copper and concentrate on the waterfront will be a critical cost component associated with the expansion.

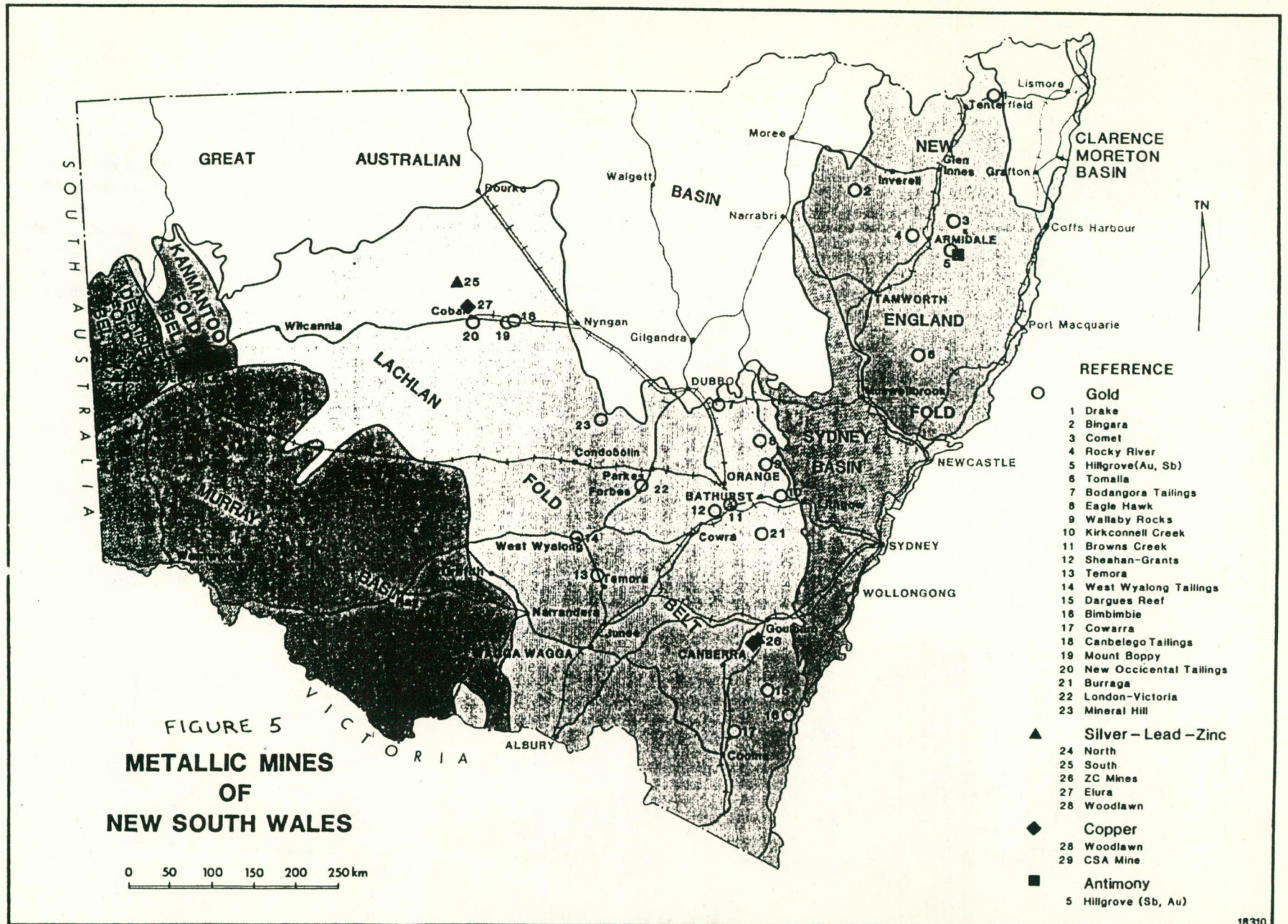
Figure 5 shows the location of the major metallic mines in New South Wales.

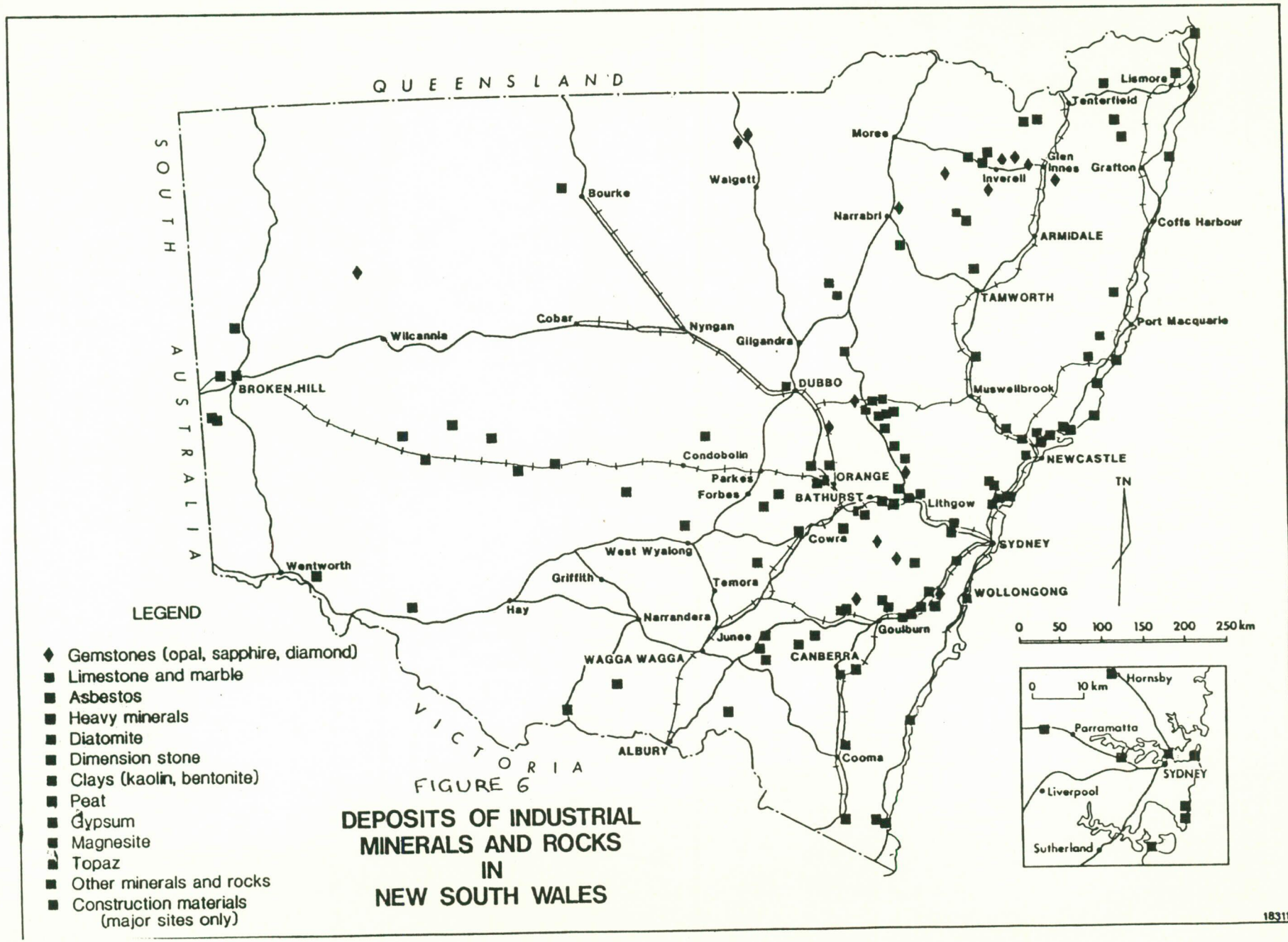
Other minerals

New South Wales is an importer of iron ore and alumina from other states for processing, taking advantage of this state's energy availability and favourable pricing.

About 80% of Australia's steelmaking capacity is in New South Wales, consisting of a 1.9 mtpa integrated steelworks at Newcastle and a 3.5 mtpa facility at Port Kembla. Both plants are owned by BHP, which ships ore from Western Australia in its own vessels. In addition, Commonwealth Steel Company Ltd (a subsidiary of BHP) has a 0.13 mtpa installed capacity for producing special alloy and stainless steels at Newcastle. BHP is also constructing a 0.25 mtpa capacity mini steelmill at Rooty Hill in Sydney's western suburbs - this will mainly use steel scrap for feed to produce commercial grade rod and bar products. In 1989/90, 2,049 mt of iron ore were received at Newcastle, and 6,034 mt at Port Kembla. Steel production has fallen recently, with 1,535 mt of iron and steel exported from Port Kembla in 1989/90.

About 40% of Australia's aluminium capacity is located in the Hunter Valley. It comprises the 240,000 tpa plant at Tomago operated by Tomago Aluminium Co. Pty Ltd, and the 150,000 tpa plant at Kurri Kurri operated by Alcan Australia. Alumina for both plants is shipped from the QAL refinery in Gladstone to Newcastle (683,000 t in 1989/90). About 90% of the Tomago smelter's production is exported, mostly to Japan and other Pacific Basin countries. A Development Application for expansion of the Tomago smelter has just received approval following a Commission of Inquiry. Under Tomago Aluminium's plans, a third potline will be built at the smelter to increase production by 75% to 420,000 tpa.



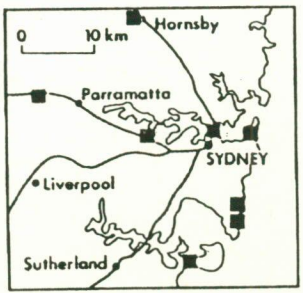


LEGEND

- ◆ Gemstones (opal, sapphire, diamond)
- Limestone and marble
- Asbestos
- Heavy minerals
- Diatomite
- Dimension stone
- Clays (kaolin, bentonite)
- Peat
- Gypsum
- Magnesite
- Topaz
- Other minerals and rocks
- Construction materials (major sites only)

FIGURE 6
**DEPOSITS OF INDUSTRIAL
 MINERALS AND ROCKS
 IN
 NEW SOUTH WALES**

0 50 100 150 200 250 km



Transport is a particularly critical cost component in low-unit value commodities such as sand, gravel, clay, and dimension stone used in the construction industry. Most construction materials are consumed by the domestic market, which means that deposits of them are generally considered economic only when they are close to large urban markets. However, there is an emerging increase in exports of dimension stone from New South Wales.

Limestone, silica, high value clay, and serpentine are also quarried and transported in New South Wales. Figure 6 shows the location of the major deposits of industrial minerals and rocks in this state.

LEGISLATIVE ENVIRONMENT

Transport Administration Act 1988

On 16 January 1989 the Transport Administration Act 1988 came into effect, replacing the earlier Transport Authorities' Act 1980. The new Act has been the main vehicle for deregulation of land transport in New South Wales. Under it, the State Rail Authority and the Roads and Traffic Authority are constituted, and provision is also made for their respective management and functions.

This Act explicitly imposes a duty on State Rail to operate its services in accordance with sound commercial practice. Rail no longer has guaranteed access to particular traffics and business, and has had to enter an era of genuine competitiveness with road.

Marine Administration Act 1989 and Marine Port Charges Act 1989

After 53 years of operation under the Maritime Services Act 1935, the MSB was reconstituted under the Marine Administration Act 1989 which came into force on 17 August 1989. This Act provides the framework for reform of the MSB.

The basis for reform stems primarily from the establishment under the Act of three subsidiary port authorities which will permit a focus upon local and regional issues:

- * Hunter Ports Authority - services Newcastle, Yamba, Trial Bay, Ballina and Lord Howe Island.
- * Illawarra Port Authority - services Port Kembla and Eden.
- * Sydney Ports Authority - services Sydney and Botany Bay.

Each subsidiary authority is controlled by a board of directors, and all subsidiary authorities and boards will initially operate under the overall control of the main MSB board of directors. The objective is that the three port authorities will eventually become financially autonomous, thus ending an era of cross-subsidisation of ports.

The other main area for reform is port charges. The Act provided for a review of port charges and development of policies for future port charges to be levied on a user pays, cost recovery basis. Following this review, all charges were specified in the Marine Port Charges Act 1989, which came into effect on 30 June 1990.

State Roads Act 1986

The State Roads Act provides for the construction and maintenance of the principal roads and related works in the state. An inter-departmental working party has been exploring potential for amendment to the State Roads Act to provide for developer

contributions for road construction and maintenance. It appears, however, that Section 94 of the Environmental Planning and Assessment Act may be more appropriate.

Environmental Planning & Assessment Act 1979

A Commission of Inquiry into operations and practices associated with contributions under Section 94 of this Act was completed by Mr W Simpson in October 1989. Following the Simpson inquiry, the Department of Planning commenced formulating guidelines for levying Section 94 contributions for infrastructure from developers. Currently, Section 94 is used by local governments to levy contributions from mines that transport minerals by road. Under this section, roads is the only infrastructure category for which recurrent funding is provided.

RAIL TRANSPORT

Most rail transport of minerals in New South Wales is carried out by the State Rail Authority of New South Wales. State Rail has been hauling coal and other minerals for over 100 years (see Table 2 and Figure 7).

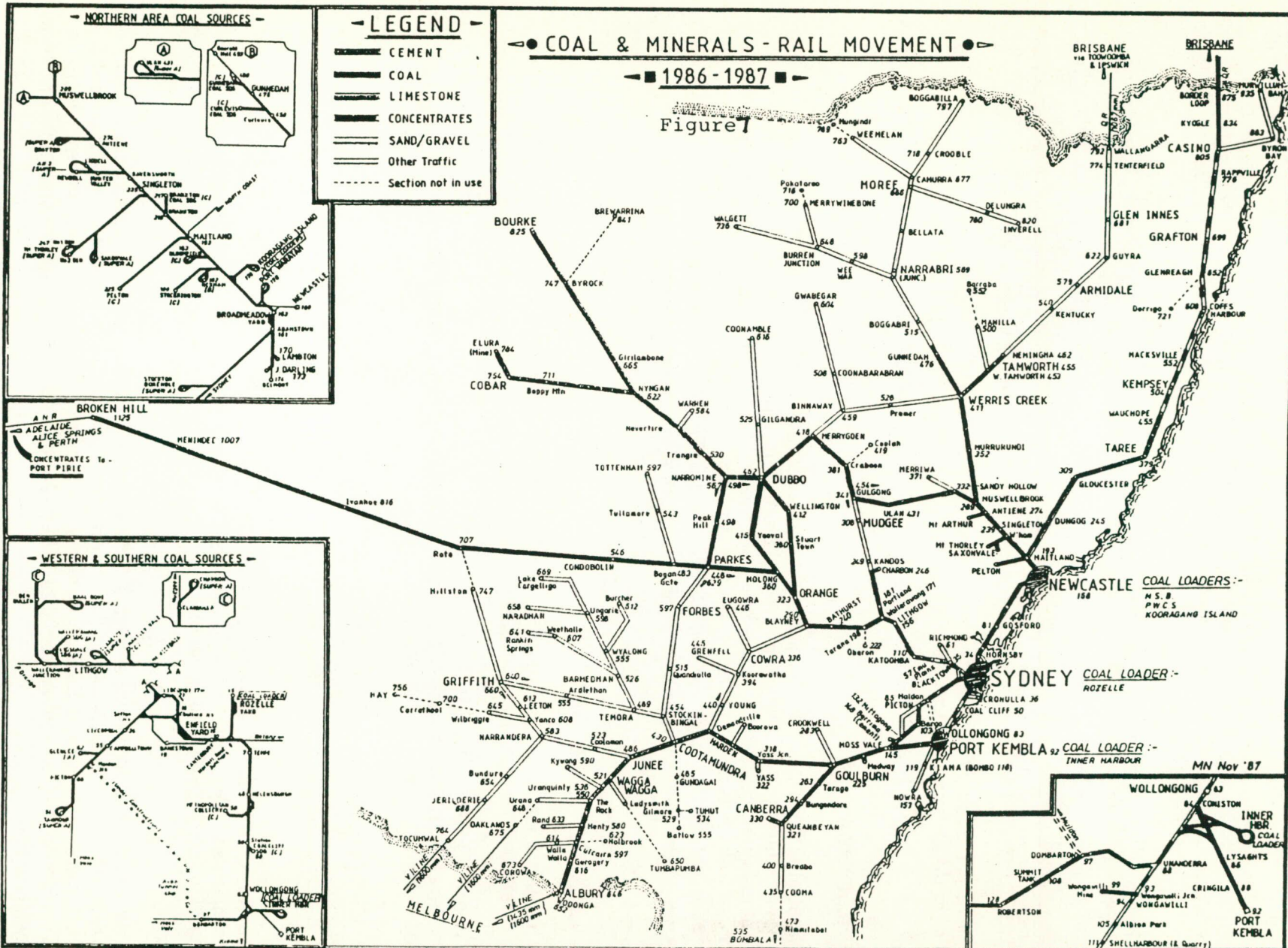
TABLE 2: MINERALS HAULED BY STATE RAIL - TONNAGE AND REVENUE

	1988/89		1989/90	
	Tonnage (mt)	Revenue (\$m)	Tonnage (mt)	Revenue (\$m)
Coal				
Export	31.5	247.3		
Domestic	1.2	9.3		
Total	32.7	256.6	35.7	
Quarry products	0.6	3.4		
Concs & coke	0.5	20.0		
Cement & clinker	1.1	17.5		
Limestone	2.3	13.1		
Total non-coal	4.6	54.2	4.6	
Total minerals	37.3	310.8	40.3	323.0

Source: State Rail Authority Annual Reports for 1988/89 and 1989/90.

Export coal is by far the most significant commodity hauled by State Rail, followed by base metal concentrates both for local smelting and export.

The New South Wales Government has a policy of requiring coal to be transported by rail wherever possible in preference to road. This policy is implemented through conditions of Development Consent for new mining developments under the Environmental Planning and Assessment Act 1979. Other state governments have restrictions on road transport of minerals to protect the business of their rail authorities. In New South Wales, the intent of this effective restriction on road transport is to protect the road system and local community from the environmental hazards of coal trucks. As road haulage is competitive with rail for short distances, it is possible that this restriction requires some mines to spend more on coal transport by rail than they would have if they were allowed to transport coal by road.



State Rail reform

In response to the recommendations of American transport consultants Booz Allen & Hamilton, and in accordance with the new Transport Administration Act, State Rail has embarked on a wide-ranging restructuring program which is resulting in major productivity improvements over a five year period. Freight and Country Passenger Group staff will be reduced by 40%, from 18,000 in 1989 to 10,000 in 1993. In 1989/90, staff in this division was reduced by 16%.

This, along with a structural efficiency program which is identifying restrictive work practices for reform, should result in improved performance and, in turn, more competitive pricing across the entire freight task. Data in State Rail's 1989/90 Annual Report show that productivity in rail freight has improved over the last four years, as indicated by increasing net tonne-kilometres of freight per employee and decreasing freight rail operating cost in cents per net tonne-kilometre (Figure 8).

Reform in State Rail has been acknowledged by the Railway Industry Council (RIC) as being faster than anticipated in its consideration of a strategy to improve the viability and competitiveness of the railway industry.

Freight rates

Most attention concerning rail freight of coal and other minerals in New South Wales in recent years has focussed on freight rates. There has been a long history of allegations that rail authorities in Australia have been overcharging mining companies for provision of rail freight for their minerals. In the Industry Commission inquiry into rail transport, Pasmenco claimed that the companies owning the base metal mines at Broken Hill and Cobar have been campaigning for what they regard as equitable freight rates since the 1960s.

Studies of rail freight rates

The existence or otherwise of "excess" rail freight charges for coal was alluded to in the Industries Assistance Commission (IAC) report on Assistance to Mining in January 1988, with reference to both New South Wales and Queensland. Without access to cost information from State Rail, the IAC estimated that excess rail freight charges in 1984/85 in New South Wales ranged from about \$1.00/t for short hauls to \$6.00/t for hauling coal from the Ulan mine in the Western Coalfield.

In June 1989, the IAC released a report on Government (Non-tax) Charges, which updated the calculation of the excess component of hauling coal by rail for short hauls in 1988. This excess was estimated to still be \$1/t.

A separate independent study of coal rail freight costs was carried out by Ern Easton of the Monash University Centre of Policy Studies, sponsored by a consortium of coal companies. This study attempted to actually estimate the cost of providing the transport service in 1985 and 1986, and led to calculation of an average excess rail freight charge of \$4.96/t.

Easton conducted further analysis of New South Wales coal rail freight costs in 1989 on selected mines and assessed that aggregate costs to State Rail for raiiling of 16.6 mtpa for 9 mines with haul distances between 84 km and 107 km was 3.43 c/t-km, which the New South Wales Coal Association (NSWCA) claims is far below rail charges imposed by State Rail.

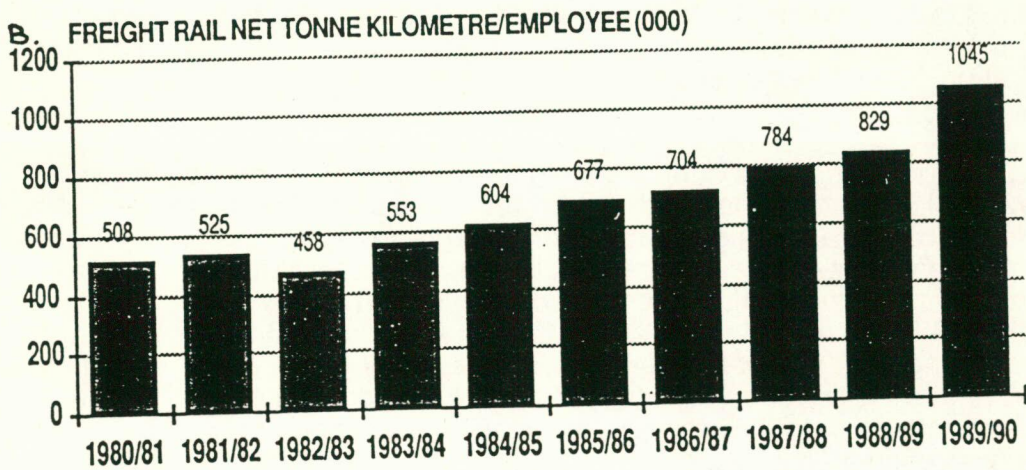
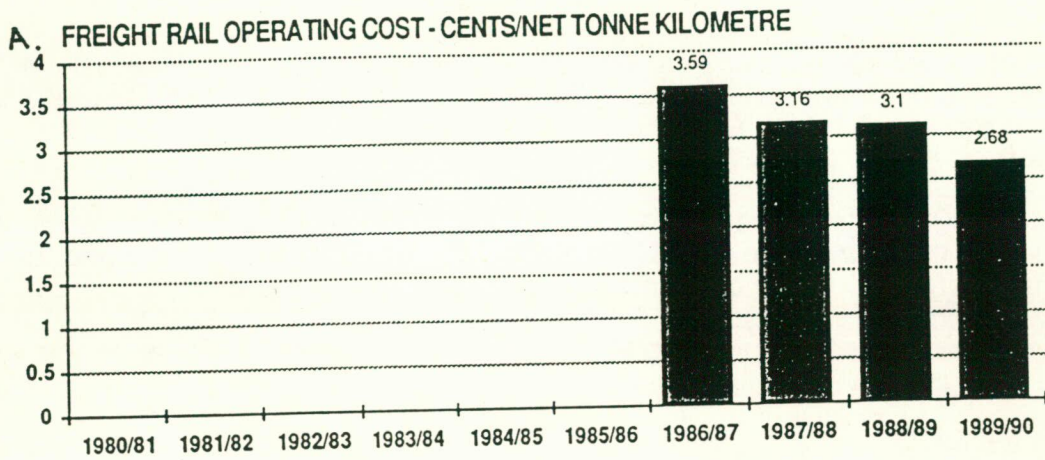


FIGURE 8: PRODUCTIVITY OF STATE RAIL IN TERMS OF (A) OPERATING COST IN CENTS PER NET TONNE-KILOMETRE, AND (B) NET TONNE-KILOMETRES PER EMPLOYEE.

Source: State Rail Authority of New South Wales Tenth Annual Report - 1989/90.

In 1990, the NSWCA contracted Easton again to analyse coal rail freight rates. Data were presented in state-wide aggregates, and in two broad groupings, namely, railings to Newcastle and railings to Balmain and/or Port Kembla. Without taking into account volume discounts, in 23 rail operations to Newcastle over an average distance of 110 km, the average price per tonne was \$7.30 in 1989 and \$7.72 in 1990. In 13 rail operations to Balmain and/or Port Kembla over an average distance of 173 km, the average price per tonne was \$8.66 in 1989 and \$9.11 in 1990. These figures indicate that rates increased by 6.3% and 5.2%, respectively, for railing coal to Newcastle and Balmain/Port Kembla in 1990.

Another study by Easton was conducted in 1986 of railing base metal concentrates produced by the Elura mine from Cobar to Newcastle. This work concluded that the State rail charges for Elura concentrates exceeded costs by over 30%. An update of this study was done in 1990, and found that apparent overcharging of rail freight on the Elura to Newcastle corridor amounted to \$3.27 million annually or \$12.58 per tonne, based on annual railings of 260,000 t.

Concerns of the industry expressed to the Industry Commission

During the Industry Commission inquiry into mining and minerals processing, the mining industry expressed concern that excess charges for rail freight of coal and minerals in New South Wales are a serious impediment to the industry. At the Sydney hearings in April-May 1990, this issue was raised by the NSWCA, by two of its member companies - Oakbridge Ltd and Exxon Coal & Minerals Aust. Ltd - and by Pasminco Ltd. The Industry Commission inquiry into rail transport has allowed further and more detailed consideration of rail freight rates for minerals.

The Coal Association: In its submission to the Industry Commission inquiry into mining, the NSWCA claimed that coal rail freight rates escalated rapidly between 1980 and 1987, both in terms of average freight rates and percentage of average FOB export value. Figures were presented to demonstrate that in eight years the rail charge as a component of the export value of coal had doubled. The NSWCA referred to the (relatively old) Monash University and IAC studies of coal rail freight rates which show that the coal industry has been paying an excessive price. It was acknowledged, however, in this inquiry and the inquiry into rail transport that rates have declined in real terms in recent years, but further reductions were necessary to correct the excess charges over estimated costs.

The NSWCA would like to see:

- * transparency of State Rail's costs;
- * freight rates comparable with overseas competitors;
- * opening up of the rail system to private enterprise - electrification of the Hunter line was mentioned as an example.

The NSWCA's submission to the mining and minerals processing inquiry points out that the Booz Allen and Hamilton report on State Rail's Freight and Country Passenger Division in July 1989 made some contradictory statements. On the one hand it was stated that "State Rail is an efficient coal transporter by any railway standard. The operation is well designed and well executed." On the other hand, the rail system was seen to be grossly overstaffed and inefficient with poor productivity due to outmoded practices, excessive overheads and obsolete plant. The consultants also identified the need to develop proper accounting and information systems as a means of ensuring that appropriate financial structures and future funding requirements are introduced for each of State Rail's business units.

The New South Wales Coal Association NSWCA is interested in the current restructuring of State Rail. Many areas have been identified for further improvements, and the coal industry will pursue implementation of these improvements. The NSWCA's major concerns are:

- * continued rationalisation within State Rail, with cost savings flowing through in real freight rate reductions;
- * improvement in State Rail management information systems so that costs can be allocated to all business segments;
- * need for a transparent basis for the setting of freight rates.

At the first Sydney hearings of the mining and minerals processing inquiry, the Commissioners attempted to ascertain whether the "excess" charges represent inefficiency and/or indirect royalty. The NSWCA acknowledged that coal freight was the only profitable section of State Rail's business (hence implying that it is efficient), and that this "would suggest there is some rental component in what is being charged on coal." Later it was pointed out that State Rail has inherited a lot of inefficiencies through "100 years of custom and practice". The NSWCA stated that it thought that the New South Wales Government did not have a policy of collecting an indirect royalty from coal rail freight. However, after all of the discussion, the meaning of the alleged "excess" charges was left far from resolved.

Oakbridge Ltd: Oakbridge is the fourth largest coal mining group in Australia, with expected sales in 1990/91 of 9.2 mt of coal. Most sales are made under long term contracts to utilities and steel mills in Japan, Korea, Europe and Taiwan, while some coal is supplied to the Electricity Commission. Mining operations of the company are confined to New South Wales, and include the Clarence, Baal Bone, Ellalong Pelton and Gretley underground mines, and the Saxonvale and Swamp Creek open cut mines.

Without substantiation, Oakbridge claimed that rail haulage costs in terms of cost per tonne-kilometre in New South Wales are much higher than in comparable systems overseas. It was pointed out that rail freight rates are particularly sensitive for producers of steaming coal, prices for which are at the lower end of the scale.

Data were presented by Oakbridge to show that rail freight rates have maintained a crude relationship with coal prices since freight rates were increased sharply in the early 1980's, and rates have decreased in real terms overall since 1983. Rail freight costs were said to contribute 10-30% of total FOBT (free-on-board-train, i.e. at the mine gate) costs in the export coal industry.

Oakbridge provided an example of the Ellalong Pelton Colliery, which rails coal 65 km to Newcastle. The colliery owns and maintains the first 9 km of track, and a further 22 km is privately owned by South Maitland Railways (SMR). State Rail's freight charge is \$6.97/t, while 87 c/t is paid to SMR for use of its section of private line. The total freight rate is therefore \$7.84/t, compared to the current road freight rate for the same route of \$6.02/t. Hence, based on the cost of equivalent road transport, rail transport is overpriced by \$1.82/t. It was acknowledged that excess freight paid by Oakbridge for its operations in 1985/86 was below the \$5/t average calculated by the Monash University study of freight rates.

By alluding to Queensland, which has an acknowledged *de-facto* royalty component in its rail freight rates partly compensating for a lower direct royalty relative to other states, Oakbridge inferred in its submission that New South Wales also imposes a *de-facto* royalty in the same way. However, this point was far from clear, and elsewhere in both the submission and the hearing presentation the company indicated that the excessive freight rates reflect inefficiency in providing the service.

When questioned in the mining and minerals processing inquiry about evidence of this inefficiency, Oakbridge referred to limitations in the size and frequency of trains caused by the design and condition of the railway line, citing Baal Bone as an example. In particular, it was stated that:

"The mine is built with an A-Grade rapid loading system, and an A-Grade rail loop that allows the trains to be filled up at least as twice to three times that rate, but the rail system will allow only six trains per day to come into the Baal Bone loop."

As pointed out by Oakbridge, Baal Bone loads out of its mine for export approximately 2 mtpa. Assuming loads of 2,500 t per train, this involves 800 train trips pa, or an average of 2.2 trains per day. State Rail can supply 6 trains per day.

If anything, the present State Rail capacity appears excessive rather than inadequate. However, the main problem appears to be the limitations of the peak capacity of the rail system when hauling coal to the port to fulfil an individual shipping consignment. It should be realised that the provision of further peak capacity will increase State Rail's costs which will, in turn, increase freight rates.

Oakbridge's presentation also referred to profits made from rail freight of coal, but the company accepts the findings of the NSWCA that there is no cross-subsidisation between State Rail's functions, although the accounting procedures of State Rail were said to leave something to be desired. As with the NSWCA, Oakbridge appears to be uncertain about what the alleged "excess" freight rates really represent.

Exxon Coal & Minerals Aust. Ltd. Exxon's interests in New South Wales include the Ulan and Lemington coal mines, and the Mt Thorley rail coal loader. 15 mtpa of coal are moved from Ulan and through the Mt Thorley coal loader, making Exxon State Rail's second largest customer.

In its submission to the mining and minerals processing inquiry, Exxon claimed that there is ample evidence from consultants' studies and comparisons with rail freight elsewhere in the world to conclude that rail freight rates for coal haulage in New South Wales and Queensland include a high proportion of excess profits (i.e. profits over and above the level of return needed to raise the capital required.) However these allegations were said to be difficult to prove in the absence of actual cost information from State Rail and Queensland Rail.

Exxon claimed that the two components of overcharging for rail freight are operational inefficiencies and hidden taxation of the coal industry which is used to cross-subsidise other sectors of the rail networks or directly boost government revenue. It was acknowledged, however, that there appears to be no cross-subsidisation within the freight group of the State Rail.

To substantiate its position, Exxon provided confidential details of rail freight costs for the Ulan and Lemington coal mines to both inquiries.

At the first round of hearings for the mining and minerals processing inquiry, Exxon claimed that 18% of cash costs in the New South Wales coal industry are rail freight compared with 26% in Queensland. New South Wales and Queensland rail freight rates were said to be 2 to 5 times those of competitor countries, and the "tax" component accounts for 20-70% of the rail charge.

Exxon advocates rail freights based entirely on costs of providing services, with no component based on coal prices. Also, efficiencies should be passed onto customers in the form of cuts in freight rates.

Pasminco Ltd: Pasminco spends \$25-30 million pa in raiing base metal concentrate from its mines at Broken Hill and Elura to ports. Most lead and zinc concentrate from Elura is railed to Newcastle and then shipped to Risdon or Asia.

Using Ern Easton's studies of rail freight, Pasminco estimated in its submission to the rail inquiry that charges for raiing lead and zinc concentrates from Cobar to Newcastle in 1989/90 will exceed cost by \$3.27 million.

State Rail's position

The overall movement in State Rail coal freight rates for the 10 years to 1990 is shown in Figure 9. This figure demonstrates that over that time, the average freight rate charged by State Rail for export coal has decreased by 23.5% in real terms. Further, the index of freight rates shows a recent trend towards increases significantly below the rate of increase of the Consumer Price Index.

There were no price increases in 1986, 1987 or 1988, and there was an actual decrease in 1988. As a result, between 1986 and 1989 rates fell in real terms by 30% and in nominal dollar rates fell over the same period by more than 10%. Rates have since been adjusted according to the specific circumstances of each customer, and in nearly all cases increases were less than the Consumer Price Index.

The trend is further demonstrated by examining freight rates over the last four years. Analysis of the 31 export coal traffics carried by State Rail, servicing 25 coal mines, reveals that 61% of these services had freight rates in 1990 which were lower than in January 1986 in *nominal* terms. All rates fell in real terms during this period, the smallest fall being 17.8%. In some cases, companies are receive even lower rates due to volume discounts for quantities above a given threshold.

The Coal Association's methodology of analysing freight rates fails to recognise that from the mid 1980's to 1988/89, significant revenue supplements from Government for coal haulage were included in State Rail's total coal revenue. In particular, performance bonus rebates of \$20 million pa during 1987/88 and 1988/89, as an extension of the former rapid loading bonus rebates, drove down the average freight rate and provided a much lower freight rate to all major producers, particularly in the Hunter Valley. When these supplements are deducted to leave only net freight paid by companies, the average rate in the past 5 years is substantially less.

Table 3 compares the Coal Association's estimates with State Rail's actual net average rates, which are also shown in Figure 9. These data show that the 1990 average export coal freight rate as a percentage of FOB value is 14.0% compared to 12.7% in 1980. The freight rate as a proportion of FOB value has changed little over the 10 year period. The average freight rates for the last four years shown in the Coal Association's figures are overstated, as they are not *net* freight rates.

In view of particular criticism of rail freight rates made to the Industry Commission inquiry by Oakbridge, State Rail has provided data to allow examination of the rates charged to Oakbridge over the last 10 years.

As can be seen from Figure 10, which is based on a typical mine operated by Oakbridge, freight rates for export coal have decreased by 38.9% in real terms over the last 10 years, which is greater than the general trend for the industry. These data show that rather than being overcharged, Oakbridge is well off by industry standards.

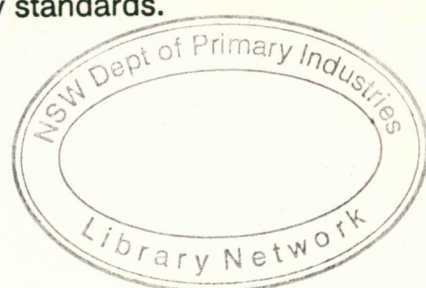


FIGURE 9: TREND IN NSW EXPORT COAL FREIGHT PRICES

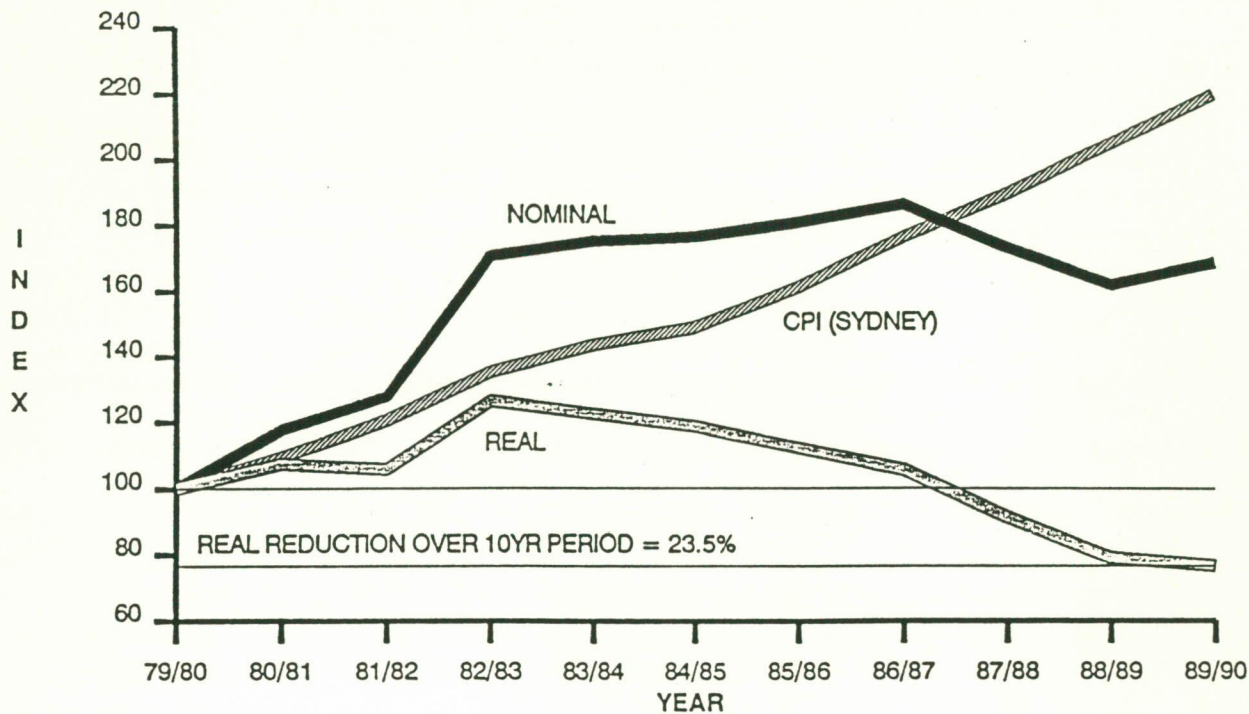
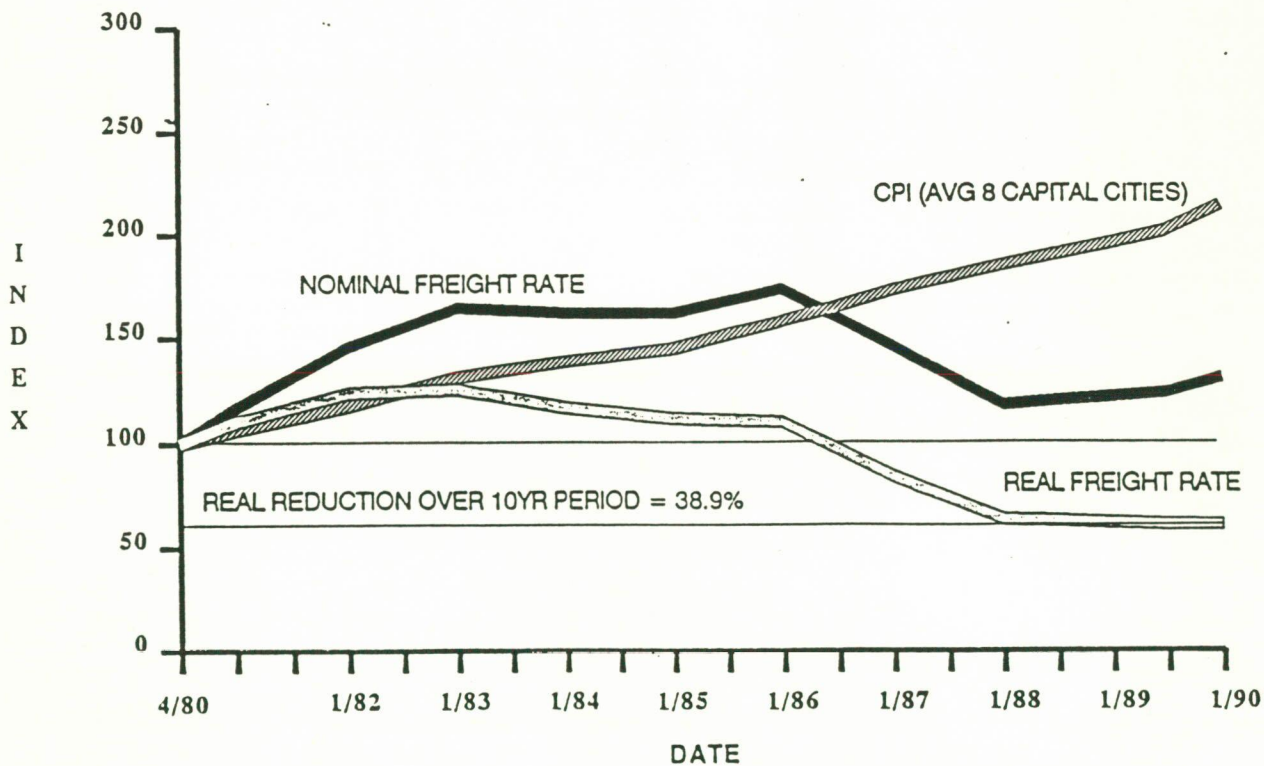


FIGURE 10: OAKBRIDGE RAIL FREIGHT RATES VERSUS CPI : TYPICAL MINE



Source: New South Wales Government: Supplementary submission to the Industry Commission inquiry into mining and minerals processing, August 1990.

TABLE 3: COMPARISON OF AVERAGE COAL RAIL FREIGHT RATES

YEAR	COAL ASSOCIATION		STATE RAIL	
	AV \$/T	% FOB VALUE	AV \$/T	% FOB VALUE
1980	4.0	11.4	4.4	12.7
1981	4.9	12.9	5.2	13.8
1982	6.2	13.0	5.7	11.8
1983	7.1	13.5	7.6	14.4
1984	7.6	16.4	7.8	16.8
1985	8.1	16.4	7.8	15.9
1986	8.6	16.1	8.0	15.0
1987	9.2	17.9	8.3	16.2
1988	10.0	23.3	7.7	17.9
1989			7.2	15.9
1990			7.5	14.0

Source: State Rail and the NSW Coal Association

The Minister for Transport acknowledged in 1988 that "in the past, coal freight rates in particular have been set well above costs" and "there is no doubt that the cost of freight operations has itself been too high because of the inefficiencies within the organisation". However, the New South Wales Government denies that coal rail freight rates contain a component of indirect royalty. Regardless of excess freight rates, Booz Allen and Hamilton (1989) showed that in terms of rail freight as a proportion of FOB costs of export coal, New South Wales ranks lowest out of a group comprising South Africa, Canada, Queensland, and the United States (Figure 11). Furthermore, costs associated with the coastal topography and urban rail networks through which coal is transported in New South Wales, have to be taken into account.

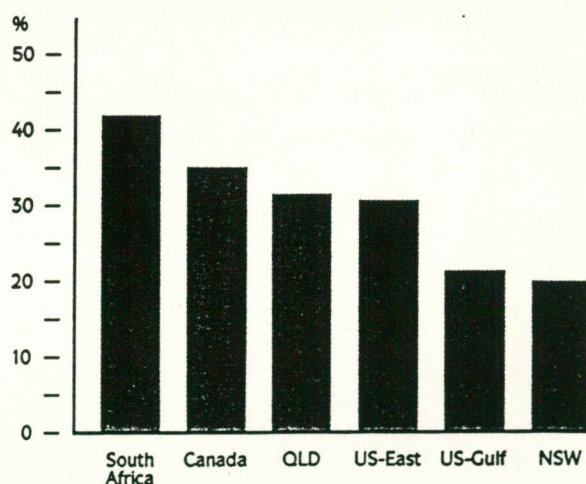


FIGURE 11: RAIL FREIGHT PERCENTAGE OF FOB COSTS

Source: State Rail Authority of New South Wales: Brochure on Rail - the competitive edge, undated

However, overall railway productivity is low, and the majority of New South Wales' railway lines simply do not carry enough freight. The best performing American railways achieve up to 5 times average Australian traffic densities. American railways thus have a far greater revenue base over which to spread fixed infrastructure costs.

In the first round of hearings for the Industry Commission inquiry into rail transport, State Rail said that in 1988/89, coal freight did not meet its fully distributed costs, although it is working towards breaking even by 1993/94. This contention contrasts with findings of the Railway Industry Council that in 1986/87, rail freight of minerals (including coal) throughout Australia made 40% profit on its costs on a fully distributed cost basis. Booz Allen & Hamilton also noted that State Rail did not make a profit on coal transport, and did not use coal revenue to support other freight traffics as has been suggested by industry representatives in other forums. The latter point was also accepted by the NSWCA in its newsletter of June 1989, although scepticism was expressed at the hearing for the Industry Commission inquiry into rail.

New developments

With the passage of the Transport Administration Act, State Rail has reviewed the established minerals freight rate system with a view to adjusting it to meet the new commercial imperatives.

This adjustment involves replacing the traditional system of scheduled distance-based rates with commercial negotiation with individual producers. Under the new arrangements, the specific circumstances of each customer, such as distance from ports, terrain crossed, loading facilities, tonnage, and scheduling, are considered in the negotiations.

State Rail has signed three year contracts with the export coal companies and is currently negotiating a rate adjustment formula for the remainder of the contract period. The formula includes components which do not relate to rail freight costs, such as the average price of export coal and an index of road freight costs.

Although the market in which State Rail is now operating is deregulated, there are still mines for which road haulage is not a viable option due to restrictions on use of trucking in built up areas, or physical limitations imposed by coal loader design. In these instances, State Rail claims that it is sensitive to the prevailing circumstances, and refrains from monopoly pricing practice.

The current rating system is said to be designed to encourage efficiency by rewarding high volume producers, and those with loading facilities allowing high speed train turnaround. Performance Bonus Rebates are also applicable to mines sending their product over long distances, in recognition of the cost economies provided by long hauls.

Infrastructure

The New South Wales Government has invested considerable money into the State's coal rail system. Throughout the 1980's, over \$1 billion was spent on track strengthening, loading facilities, wagons and locomotives (Figure 12), and it is appropriate that a reasonable return on this investment should be earned through the rating system.

State Rail has recently announced moves to acquire a fleet of 80 new locomotives to improve its coal, grain and general freight operations.

A \$6 million upgrading program has been completed at the Port Waratah coal loader to provide accommodation for two 84 wagon coal trains at the same time. Previously the operation of the new long trains restricted other rail traffic by blocking points and cross-overs, causing delays.

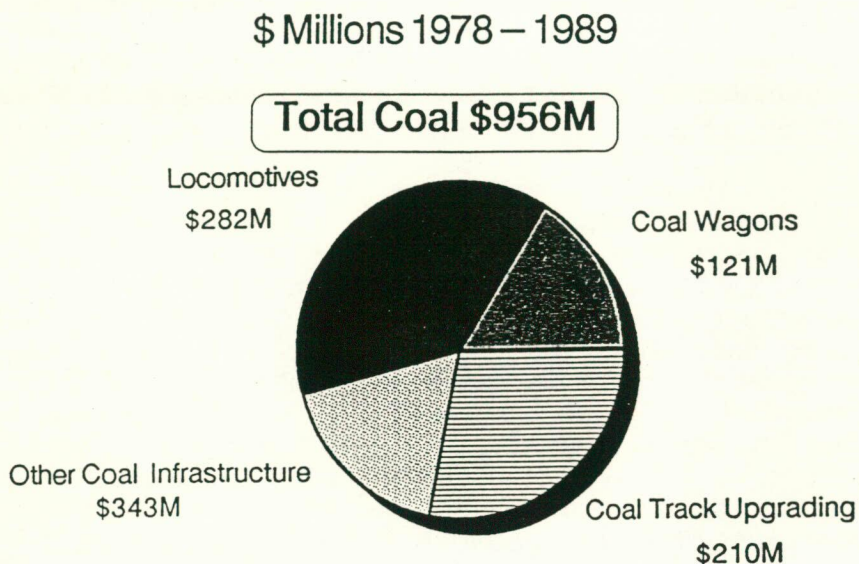


FIGURE 12: STATE RAIL'S CAPITAL INVESTMENT IN THE COAL RAIL SYSTEM

Source: State Rail Authority of New South Wales:
Brochure on State Rail and the NSW coal industry, March 1989

Future action for State Rail

Last year State Rail announced the following goals to be pursued with the New South Wales coal industry over the next three years:

- * Real rate reduction of up to 2% pa
- * Progressive elimination of cross-subsidisation within the coal freight rate structure
- * Freight rate incentives for new business
- * Performance incentives for port operators to maximise rollingstock utilisation
- * Expansion of State Rail's share of the export coal transport market (in competition with road transport).

Privatisation

The AMEC working group report on transport reform addresses private operation of railways. Greater competition in transport could be introduced by allowing increased participation by the private sector in some rail services.

In New South Wales there are already several examples of private sector involvement in the rail system, and these have been in place for a long time. The containers on the trains hauling concentrates from Broken Hill and Cobar belong to Pasmafinco, and appropriate allowance is made in setting freight rates. Several mining companies own tracks linking mines to the main lines. BHP hauls coal from the Wongawilli mine to the Port Kembla steelworks using its own locos, crew, and rollingstock, and waste from the steelworks is railed to the mine for backfilling. State Rail only charges the company on a per tonne basis for use of that part of the track belonging to State Rail. BHP also owns the wagons hauled by State Rail's locos and crew from Lambton Colliery to the Newcastle steelworks.

State Rail has investigated electrification of the Hunter Valley line, and has concluded that the proposal is uneconomic. However, in response to the concerns of the coal industry, State Rail has called for expressions of interest from the private sector to carry out electrification. The proposal calls for private companies to provide the overhead wiring, signalling and communications system, and to supply and maintain a fleet of electric locomotives operated by State Rail crews. According to the NSWCA, this is the first time State Rail has shown willingness to form a joint venture with private enterprise in operating its bulk freight business. A working party has recently been formed between the NSWCA and State Rail to review the cost differential between electrification and several other options, such as replacement of the existing diesel locomotive fleet with new diesel locomotives specifically designed for haulage of long coal trains.

State Rail has advised that there is no legislative or other regulatory restriction to private sector involvement in the rail system in New South Wales.

Diesel fuel excise on rail haulage

Excise on diesel fuel used in rail haulage was imposed in 1982. According to the NSWCA, around \$13 million is paid annually by State Rail to the Commonwealth Government as excise on diesel fuel used in rail haulage of coal, which equates to approximately \$0.40 per tonne. This is then passed onto coal producers.

The Commonwealth Excise Act 1901 provides for a rebate to be given on excise paid on diesel used in mining operations (other than for road transport). It also provides for a rebate on mineral rail haulage from a mine to another location if essential beneficiation occurs at that location. Three non-coal mineral judgements regarding rail haulage rebate have been granted by the Administrative Appeals Tribunal (AAT) - these have all been site-specific cases.

There have been attempts to obtain a rebate for railing export coal to ports where it was blended. The argument used is that blending of coal at the port is part of the beneficiation process and should receive excise rebate. One of these cases is pending a hearing by the AAT.

National freight initiative

At the Special Premiers Conference in October 1990, an agreement was signed between the heads of government to establish a National Rail Freight Corporation to handle interstate freight, commencing on 1 July 1991. It is unlikely that this will have a direct

impact on New South Wales, as little if any minerals are railed into or out of this state. However, new investment in track may indirectly benefit those mineral traffics that use the same track as interstate freight.

ROAD TRANSPORT

At the moment, roads constitute a relatively minor transport mode for minerals in New South Wales, largely as a result of a preference for rail, which is encouraged by government policy. Trucks are used for some short hauls of coal, particularly in the Southern Coalfield from mines that are not conveniently located with respect to the railway. However, for transport from pit to washery there is a trend to the use of conveyors.

Ore from BHP's Mt Aubrey gold mine near Peak Hill is trucked to BHP's gold plant at the London-Victoria mine at Parkes. Copper concentrate and some zinc concentrate produced at the Woodlawn mine are trucked to Port Kembla for smelting and export, respectively.

The major areas of concern regarding road transport in most states have traditionally been registration charges and road transport regulations. Recent moves towards full charging for use of the road system is emerging as a vital issue, for the road freight industry, the railways, and the general community. There is also concern in the general community about using roads for bulk freight haulage in areas of relatively dense population, particularly the Illawarra area and the Hunter Valley.

Roads and Traffic Authority

The Roads and Traffic Authority of New South Wales (RTA) is responsible for maintaining and improving the state's arterial road network. It also has responsibility for road safety and traffic management, and maintains vehicle safety standards, licenses drivers, and registers motor vehicles.

Funding

About one third of the RTA's budget is sourced directly from Commonwealth funding. In 1990/91, \$441.5 million will be provided by the Commonwealth Government under the ACRD Act and allocated as follows:

- * \$210.5 million towards national highway construction and maintenance (Hume, Princes, New England and Federal Highways)
- * \$123.4 million on selected national arterial road construction projects (Pacific Highway, some Sydney roads)
- * \$17.5 million on state arterial road construction and maintenance (state highways and main roads, i.e. classified roads)
- * \$90.1 million for distribution to local government for local roads (unclassified).

In addition, \$57 million are to be provided by the Commonwealth Government as follows:

- * \$14.5 million for the Black Spots Programme (to be confirmed)
- * \$33 million for provincial cities and rural highways (to be confirmed)
- * \$9.5 million for the Badgerys Creek airport area.

A total of \$498.5 million of Commonwealth grants will be provided in 1990/91, which will contribute to a total funding and expenditure budget of \$1,719 million.

The remainder of the RTA's budget on roads is sourced from State fuel tax, charges for vehicle registration, and Consolidated Revenue.

Substantial Commonwealth funding of roads is justified on the basis of the high level of interstate road freight in Australia. The Inter-State Commission has found that the road freight industry is the second most heavily taxed in Australia (after oil) by the Commonwealth Government, but that little of the revenue raised was returned to roads. In 1988/89, the Commonwealth Government's fuel excise represented 5.1% of total Commonwealth revenue. Of the \$4715 million collected from road users by the Commonwealth (Table 4), only \$1450 million, or 31%, was returned to roads, the remaining being retained in consolidated revenue for other purposes.

TABLE 4: GOVERNMENT REVENUE FROM ROAD USERS IN 1988/89

(Amounts in \$'000)

	States and Territories	Commonwealth	All
Registration charges	1 144 314	11 556	1 155 870
Vehicle inspections	11 924	288	12 212
Stamp duty	567 361	-	567 361
Other non-fuel revenue	84 946	-	84 946
Tot non-fuel revenue	1 808 545	11 844	1 820 389
Petrol excise/franchise	522 648	3 353 300	3 875 948
Diesel excise/franchise	158 521	1 350 000	1 508 521
Total fuel revenue	*690 189	4 703 300	*5 393 489
All	2 498 734	4 715 144	7 213 878

Note: * - Includes \$9,020,000 fuel franchise for petrol and diesel in the Northern Territory, which cannot be separated

Source: Inter-State Commission: Road user charges and vehicle registration: a national scheme, Table 5.1, March 1990.

New South Wales is located on a major corridor between Queensland in the north and Victoria and South Australia in the south. Substantial damage to New South Wales roads is done by non-NSW registered freight traffic passing between these other states through New South Wales. The RTA contends that when these factors are considered, New South Wales receives an inequitable share of Commonwealth road funding in relation to the other states.

The New South Wales Government supports the principle of cost reflective road use charges for heavy vehicles. Because of the inequitable Commonwealth funding situation, New South Wales is forced to have higher registration charges than other states, and in this way recovers a greater proportion of the costs such vehicles impose compared with any of the other states. However, this also encourages interstate freight hauliers to register their vehicles elsewhere. This in turn puts further pressure on charges and funding.

Furthermore, road construction costs in New South Wales can be significantly higher than in other states due to geographical differences, such as greater topographic relief, poor soils in the west, and areas of high rainfall.

Planning

The RTA is undertaking a transport strategy study which will set a foundation for road transport policy making in New South Wales over the next 20 years. The study will consider transport policy objectives and, within these, will investigate a broad range of future road network management options across the state.

The study has involved a series of workshops throughout the state, designed to generate ideas about likely or possible long-term conditions that could affect road transport and to clarify the policy context in which decisions about road transport would be made. Four workshops were held in Sydney, and three others were held in the country centres of Parkes (for central and western New South Wales), Newcastle (for the central coast, Newcastle, north coast, New England, and northwestern regions), and Goulburn (for the Wollongong, Southern Highlands, south coast and southwestern regions).

At the workshops, it was recognised that the principal task of the RTA in the future would be road maintenance rather than road construction. This would extend the moves the RTA had already made towards being primarily concerned with asset management and improved pricing of road use. Road asset management will also be a key issue for local government, with increasing demands being made on funds for local road maintenance.

In central, western and southern New South Wales, there was widespread support at the workshops for the further provision of inland ports with road "inputs" and rail "outputs". This involved seeing the freight system as a potentially integrated whole rather than as a series of different transport modes moving particular types of goods.

The "user pays" policy for roads

General road construction and maintenance costs

Although Australian long distance road freight rates are some of the lowest in the world, road users as a whole return more in taxes related to road use than is spent on roads by governments. Furthermore, substantial cross-subsidisation in road use and charges occurs *between* road user groups.

There is evidence that in Australia, heavy vehicles (say over 12 t gross mass) do not pay for the cost of the damage that they cause to roads. That is, light vehicles pay more than their attributable road damage costs, and subsidise heavy vehicles. This subsidisation or under-pricing contributes to some distortions in the use of heavy road transport, and between road and rail, with consequent higher road maintenance costs and possible revenue losses in rail transport.

External costs of road freight such as the costs of road crashes (to the extent that they are not covered by insurance payments), road congestion, and noise, dust, and air pollution that affect non road users or other classes of road users, can also be quite significant. The Consumer Transport Council (CTC), a Wollongong based community group, commissioned a report by Transport Energy Studies Pty Ltd for a submission to the Industry Commission inquiry into mining and minerals processing. The report is concerned with the costs of road transport of coal. For coal haulage, with a payload of 25 tonnes and no back loads, under-recovery of the road system costs is estimated to be 3.12 c/t-km. The report claims that the Queensland Government has estimated the

extra costs of road congestion, road accidents and air pollution associated with road haulage, along with those of noise, damage to road fittings and social disamenity, to be 3 c/t-km. The total unrecovered cost to the community of the road haulage of coal is therefore estimated by the CTC to be about 6 c/t-km.

On the basis of such a high estimate of under-recovered costs for road transport of coal, the CTC recommended to the Industry Commission that the Government intervene to ensure increased transport of coal by rail in preference to road. The Industry Commission, however, strongly advocates the use of market signals for determining the most appropriate transport mode, in conjunction with full cost recovery for roads.

The RTA established a Pricing Strategy Branch in 1990. The initial task of the Branch has been to formulate strategy for road cost recovery, including resourcing road infrastructure through private sector participation. Cost recovery from each vehicle class (eliminating hidden cross-subsidies) based on the "user pays" principle is the objective, with prices reflecting the costs of using, maintaining and enhancing roads. Future focus will be on recovering the road user costs borne by the community outside the road budget, including environmental and health related costs associated with traffic accidents, noise, dust and air pollution.

A New South Wales Taskforce on Road User Charges, with industry representation (but not from the mining industry nor from the minerals and energy portfolio), was established in September 1988. It was charged with reporting to the Minister for Transport on an appropriate structure and level of road user charges for New South Wales. It has developed a model which will improve efficiency and equity in road cost recovery and road user charges in New South Wales.

The Taskforce's activities have been overtaken by release of the Inter-State Commission's report on "Road user charges and vehicle registration: a national scheme". The proposed scheme involves replacing state fuel taxes and registration charges with a uniform national charging system based on Commonwealth fuel excise and weight/distance charges for heavy vehicles.

New South Wales has also contributed to an Australian Transport Advisory Council (ATAC) Working Party on Road Cost Recovery, focussing on uniform analysis of road expenditure. At the ATAC meeting on 7 September 1990, a majority of States supported in principle the development of consistent and equitable road user charges based on full road cost recovery. However, the specific ISC proposals were rejected by all States and Territories in relation to the detail.

Restructuring of road use charges was considered during the Special Premiers' Conference on 30 October 1990. Two options were canvassed:

- * a national registration scheme for all vehicles, based on ISC principles, with uniform charges, presuming co-operative referral of powers from State legislatures; or
- * a national scheme for heavy vehicles only.

The Premiers' Conference agreed to establish a national heavy vehicle registration scheme, through "co-operative" referral of powers or complementary legislation, with nationally consistent charges and uniform technical and operating regulations.

The Conference also agreed to forming a working group to report to the next Special Premiers' Conference on the implementation of the proposed new scheme, and to recommend whether there should be a joint Commonwealth/State/Territory organisation established to handle heavy vehicle registration and regulation.

The Premiers' Conference Steering Committee met on 14 November 1990 and established three expert groups to advise on:

- * road funding arrangements (chaired by Tasmania)
- * road charging (chaired by Western Australia)
- * road vehicle regulation (chaired by NSW).

Costs of impact on roads of new development

While proposed road user charges are expected to annually recover the general construction and maintenance costs for roads, they are not adequate to cover the specific economic impact on roads resulting from new industrial developments. New or upgraded roads are frequently required to be supplied by local government as a direct result of mining developments. Funding to reflect such impacts is more equitably provided by the developers than by road users collectively or by the general community.

Because developments tend to be discrete in time, rather than ongoing, developer contributions must be financially structured as part of the capital investment for the development. The RTA suggests that development impact charges could therefore be in the form of lump sums paid at the time of development, with the development impact valued over a time limit, say five years. To assess the impact of a development on the road system, a transport study should be incorporated in an Environmental Impact Statement.

There are several mechanisms by which developer contributions can be sought for road construction by councils, namely, the State Infrastructure Financing Policy, Section 94 of the Environmental Planning and Assessment Act, and the Local Government Act. There is also potential for application of new legislation under the State Roads Act. An alternative approach to funding of roads used by the coal industry is a suggestion by the Association of Coal Related Councils in the Wollongong City Council's Coal Transportation Task Force Report, that coal haulage roads presently under the responsibility or partial responsibility of local Councils, should be reclassified to be entirely the responsibility of the State Government.

Infrastructure financing policy. An Infrastructure Financing Policy was introduced into New South Wales in 1982. This policy was intended to regularise an emerging system of financial contributions paid by resource developers to local government to assist in overcoming funding shortfalls in respect of water and sewerage schemes and other forms of urban and social infrastructure.

This scheme had a high up-front cost component and had several other disadvantages, including an inflexibility with application to different communities. It is now generally agreed that the 1982 policy is inadequate, and accordingly the policy is under review.

Section 94 contributions: The NSW Coal Association and the Association of Coal Related Councils agree that the 1982 Infrastructure Financing Policy should be set aside in favour of amended Section 94 provisions of the Environmental Planning and Assessment Act 1979. This is in accordance with recommendations of an Environment and Planning Commission of Inquiry by Mr W Simpson into contributions under Section 94 in October 1989.

With assistance from other agencies, including the Department of Minerals and Energy, the Department of Planning is formulating guidelines for using provisions under Section 94 of the Environmental Planning and Assessment Act for developer contributions. These provisions allow local government to impose conditions on development consents

related to recovery of costs for provision of additional or improved infrastructure required as a result of a development. Justification for developer contributions can be either that the developer will directly benefit from the provision of the amenities or services, or, the amenity or service provided will overcome an otherwise negative effect of the development on the community.

The guidelines for administration of Section 94 need to ensure that the contributions sought by councils are a fair apportionment of the cost of providing the facility, and that if the facility is used by others, the developer must only be required to contribute an amount commensurate with the use resulting from the development. For example, if a mine developer is required to contribute to the upgrading and maintenance of local roads, then it must be ensured that a contribution is only charged where the use made of the roads by the development is over and above that of other users, including freight carriers.

As mining (particularly for minerals other than coal) is usually a temporary form of land development, the guidelines should also take into consideration the possibility that the local community may have some residual benefit from a facility financed by contributions made by the mine developer on closure of the mine, and so the contributions levied should be proportionally adjusted downwards.

The mining industry has reported that it is usually the case that the mine developer bears the initial costs of roads, but the use of those roads is shared with others, and that the roads will not be used by the mine after closure, without any compensation to the miner.

The application of the guidelines by councils would need to be monitored to ensure that all industries are fairly and consistently treated, and that particular industries are only levied contributions for costs that result from their specific developments.

It also must be ensured that councils do not circumvent the operation of the guidelines for Section 94 contributions by topping up on other charges to the developer through the Local Government Act. For example, it may be possible for a council to charge a reasonable levy for road maintenance under Section 94, and simultaneously "double dip" by setting an additional road haulage levy per tonne-kilometre under the Local Government Act, or incorporating a road maintenance component into its local rates which are also levied under the Local Government Act.

The major limitation to the use of Section 94 for road financing is that there currently are no provisions for cost recovery for infrastructure required in one local government area as a result of a development in another council area. Also, coal haulage roads usually comprise a mix of local roads maintained by local Councils and state roads maintained by the RTA. In his Commission of Inquiry report on Section 94 contributions, Mr Simpson recommended amendment to Section 94 to make provision for contributions from developers for essential infrastructure outside a consent authority area and for that normally provided by the State Government.

Advice received from member Councils to the Association of Coal Related Councils in 1988 showed that they had been able to negotiate contributions for road works under Section 94 for at least 20 mines. These include 8 cases of per tonne levies for maintenance contributions, 8 examples of companies being required to carry out necessary upgrading/construction works, and 9 examples of cash contribution. Councils had also negotiated contributions for road works outside Section 94 in relation to 5 mines. Section 94 contributions are also levied frequently on extractive industries. For example, Tallanganda Shire is expected to receive \$170,000 this year from Section 94 contributions towards roads.

Local Government Act: Section 245 of the Local Government Act theoretically gives Councils a mechanism for recovering the cost of repairs to extraordinarily damaged roads. However, the provisions of this Section render recovery action impractical.

State Roads Act: To overcome the identified problems with application of Section 94 of the Environmental Planning and Assessment Act, new legislation for developer contributions under the State Roads Act is also being considered by the RTA and an inter-departmental working party. Under this Act, contributions may be obtained for facilities directly related to a mine development, e.g. turning lanes, medians, and traffic lights at the point of access of the development.

Other impact of mine development on roads

Aside from contributions to road construction and maintenance, local government and communities are concerned with the environmental impact of heavy vehicles carrying minerals on public roads. Whenever a mine developer proposes to transport minerals by road, there is inevitably strong opposition from the local community, which is concerned with the accelerated damage to local roads, as well as the increased traffic congestion and associated danger for private motorists, and dust and noise.

This concern may be alleviated by the developer contributing to road improvements and maintenance. However, it may be the main basis for Commissions of Inquiry into mine developments, such as the proposed Mitchells Flat coal mine near Singleton. Occasionally, new mine developments are only viable if they are permitted to use road haulage for the initial few years, allowing them time to establish full production and build a modern loading facility for rail haulage. The Rixs Creek mine will road haul 300,000 tpa until it is established, and the Mitchells Flat proposal is for up to 1.2 mtpa to be road hauled to the rail loader at Branxton, until the mine is into full production.

In recognition of these concerns, the New South Wales Government has sought to avoid the use of public roads wherever possible for coal transport. For example, out of a total annual delivery of almost 20 mt of coal to power stations, only about 1.25 mt (6%) are delivered by public road, the remainder being supplied either by rail, conveyors, or over private haul roads. For new coal supply contracts, the Electricity Commission requires that tendering companies obtain all necessary approvals for the delivery method proposed.

The Government has a general policy of requiring coal to be transported by rail in preference to road wherever possible. More specific policies are contained in regional environmental plans, which require consent authorities for major coal developments to ensure that there is an environmentally acceptable mode of transport associated with a development, and if public road haulage is the only feasible mode of transport, it should be restricted to the most environmentally acceptable route. These policies are implemented by placing restrictions on coal transport in conditions attached to development consent.

The RTA is involved in either comment on, or approval of, several aspects of any potential mining operation or coal transport. The RTA may comment on or may require the application of conditions to leases and development consents for mines.

Specific approvals from the RTA are required for the following activities:

- * Provisions of accesses from private property to classified roads
- * Construction of conveyors or other structures over or under a classified road
- * Heavy load permits
- * Operation of B-doubles.

Also, when considering lease applications for underground coal mines, the RTA examines the potential for subsidence of any existing road. Generally the RTA does not object to mining under roads, provided that no pillar extraction takes place. Where pillar extraction takes place, the area for the extraction should be located to minimise or eliminate the risk of differential subsidence of the road, or the road should be relocated prior to pillar extraction. If damage occurs to roads through mine subsidence, compensation is payable by the Mine Subsidence Board, which liaises with the RTA on planning aspects.

For new developments, the State Pollution Control Commission (SPCC) requires that coal trucks must comply with the following:

- * the load must be covered
- * any spillage must be cleaned
- * the underbody/wheel are must be washed down
- * trucks are not allowed onto stockpiles.

The noise level of vehicles is restricted by both the RTA and the SPCC, although these have different recommended maximum levels. Road noise is being addressed by the RTA via Australian Design Rules for new motor vehicles, state laws regarding offensive noise, and work on new road surfacing.

PORTS

Reform in the Maritime Services Board

New South Wales ports are administered by the Maritime Services Board of New South Wales (MSB).

Fundamental reform of the MSB has been effected through the new Marine Administration Act 1989 (see above). The most significant structural reform is the formation of three subsidiary port authorities, together with downsizing of head office and central support. The head office of the MSB will be mainly responsible for policy development.

These recent organisational changes to the MSB will lead to:

- * Increased local decision making.
- * Progressive pricing reform along user-pays, cost-recovery lines.
- * Increased private sector involvement in the development and ownership of port facilities and in the provision of port services.
- * Clear identification of commercial, non-commercial and regulatory functions.

The overall aim of the reform is to improve the efficiency of New South Wales ports and increase their responsiveness to user needs.

As an implementation of New South Wales Government policy, the MSB is looking to minimise its own capital expenditure on port development. Rather, it will encourage the proponents of port developments to arrange funding on a commercial basis and without the application of MSB capital.

As part of the process to put the MSB on a commercial footing, the MSB has identified core and non-core MSB activities. As a result of this approach, the coal loading activities

of the MSB have been clearly identified as non-core, and as such are the target for divestment either by lease, sale or corporatisation.

In the future the MSB will concentrate directly on its role as a port authority. The resultant corporate strategy will call for the MSB to focus on its core activities, namely:

- * port landlord
- * provider of marine and related services
- * regulatory functions, i.e. safety, etc.

Coal loading

Coal is the dominant commodity handled by New South Wales ports, and is exported from Newcastle, Sydney and Port Kembla. Together these ports are capable of exporting about 60 mtpa, which is well ahead of current requirements. Figures from the Joint Coal Board show that in 1989/90, 30.2 mt of coal were exported through Newcastle, 9.7 mt through Port Kembla, and 2.8 mt through Sydney (a total of 42.7 mt exported in 1989/90 compared with 40.3 mt in 1988/89.)

Newcastle is the largest coal port in Australia and serves the Hunter Valley, Newcastle and Gunnedah Coalfields, and the Ulan mine in the Western Coalfield. Two coal loaders operate in Newcastle. The state's newest coal loader - Kooragang - has been built to Stage 1 of three stages, with a current capacity of 18 mtpa. The Port Waratah coal loader is the state's largest coal loading facility with 28 mtpa capacity. Ownership of these loaders has recently changed (see below). The MSB's Carrington Basin coal loader was decommissioned in December 1988. Coal shipments from the Port of Newcastle range from 10,000 t to 130,000 t, averaging 65,000 t.

The Port Kembla coal loader is owned by the MSB, and operated under lease by a consortium of export coal companies. With a capacity of 14 mtpa, it is the major export port facility for the Southern Coalfield, including the Burragorang Valley, and the southern part of the Western Coalfield.

Sydney has two small loaders - the MSB's Balmain loader of 4.5 mtpa capacity, and the Balls Head loader of 1 mtpa capacity owned by Coal and Allied Industries Ltd. Balmain handles coal from the Western Coalfields and from the Burragorang Valley in the Southern Coalfield. Balls Head exports coal from Wallarah Colliery on the south coast of Newcastle.

Privatisation of Port Kembla loader

On 30 July 1990, a lease for the Port Kembla coal loader was signed with Port Kembla Coal Terminal Ltd, a consortium of coal exporters comprising Austen and Butta, Australian Iron and Steel Pty Ltd, Clutha Services Pty Ltd, Kembla Coal and Coke Pty Ltd, Oakbridge Ltd, and Metropolitan Collieries Ltd. The consortium will pay \$192 million rental, plus commercial interest, for the lease of the loader over 20 years, with an option to renew the lease for a further 20 years. The consortium took possession of the loader on 13 August 1990, but the land remains the property of the MSB.

No MSB employees were forced out of a job as a result of the handover of the Port Kembla coal loader. In the run up to the handover of the facility, 150 MSB employees at the loader accepted voluntary redundancy packages. The 220 remaining MSB employees have transferred to the consortium.

Despite manning reductions, it is understood that the consortium will continue to apply the loading charge which the MSB has had in force up to the time of handover (\$5.10 per

tonne), and in addition, will be charging shippers the equivalent of the MSB's Wharfage (\$0.48 per tonne).

The MSB retains no operating responsibilities at the loader, and will only receive a rental payment calculated per tonne of throughput. No Wharfage has been payable to the MSB at Port Kembla from 13 August 1990.

Under the agreement, the ship loaders on the old No. 1 berth, currently used mainly for coke, will be refurbished by the MSB. No. 1 berth could then be used for loading coal onto small ships when the Balmain loader closes (see below).

Merger of loaders at Newcastle

The MSB has withdrawn from the coal handling business in Newcastle, having sold its 20% interest in the Kooragang coal loader to Port Waratah Coal Services Ltd (PWCS) for \$20.2 million. This follows PWCS' purchase of BHP's 30% interest in that loader, and together these purchases have enabled the merger of the two coal loaders in Newcastle.

The withdrawal of the MSB has included the shiploading functions, where employment has been reduced from 270 to 90. These wharfside operations were purchased from the Government at a cost of \$18 million. Total employees involved in coal loading in Newcastle has been reduced from 500 to 275 over the last year.

Following the merger, PWCS announced an immediate cut of 15c to \$4.95 per tonne in coal loading charges. There have been two further cuts totalling 45c, bringing the coal loading charge down to \$4.50 per tonne. Altogether, these three cuts are said to amount to an annual saving of \$19.8 million to coal companies using the port. PWCS has attributed the cuts to reduced management costs (management is said to have been halved since the merger), lower interests rates on financing of the merged company, reduced wharfside costs, and slightly above programmed throughput.

The Newcastle operation has become one of the largest capacity loader operations in the world. Productivity has jumped from 11th to second behind a smaller, non-unionised coal loader in the USA, following signing of a landmark enterprise agreement eliminating demarcation problems. Productivity has risen from about 50,000 tpa per man in 1988 to 120,000 tpa per man at the end of 1990, according to the NSWCA. The enterprise agreement between the Waterside Workers' Federation and the Foremen Stevedores Association would eliminate demarcation issues between the coal storage yards and the waterfront.

Land rental for Kooragang loader

The Kooragang coal loader is located on land owned by the Minister for Public Works. Oakbridge Ltd, the NSW Coal Association, and the Kooragang Coal Loader Ltd (KCL) have claimed to the Industry Commission inquiry into mining and minerals processing that the rental of the land is excessive. Oakbridge said that the annual rental charge was greater than the land value, while the Coal Association stated that the excess over a fair market rent is approximately \$5 million pa (about 17 c/t) and that the market rental value is of the order of \$200,000 pa. PWCS has claimed in a letter to the Deputy Premier, Minister for Public Works and Minister for Roads, that the rental payment for land is the largest single impediment to the Newcastle loaders becoming world competitive.

Payment for lease of the land for the loader is not a conventional land rental, but is based on coal throughput, with a minimal rental to apply should throughput fall below a certain amount. Rentals based on throughput are not an uncommon commercial practise, and

such an arrangement has been incorporated into the new lease for the Port Kembla coal loader on the insistence of the coal industry.

The annual rental is the greater of a base amount of \$2.5 million (escalating by movements in the Consumer Price Index since 1982, and therefore currently around \$4.6 million pa), or 25 c/t (also escalating by CPI since 1982, currently 47 c/t). In addition to the rental, KCL's land rental agreement provides for KCL to pay all land tax, water and council rates, which currently amount to around \$400,000 pa.

The Public Works Department has said that the rental based on throughput for 1989/90 was \$4.99 million, in 1988/89 - \$4.98 million, 1987/88 - \$4.81 million, and 1986/87 - \$3.85 million. The Joint Coal Board has determined that KCL's throughput in 1989/90 was 13.35 mt, which means that the annual rental would have been \$6,274,500. Over both coal loaders in Newcastle, this represents about 20 c/t. KCL claimed to the Industry Commission that its 1989/90 rental was \$6.345 million, which was regarded to be 92% of the market value of the land.

KCL signed the 30 year lease for the loader in 1982, with two options for renewal of 10 years each. It is understood that the lease was negotiated in 1981 when the coal mining industry was relatively buoyant. At the second round of hearings for the Industry Commission inquiry into mining and minerals processing, KCL indicated that the only land of suitable size available in the port of Newcastle at the time was the present site. The state government was said to therefore have been in a very strong market position.

The area leased comprised 150 hectares of semi-swamp. To raise the land to a usable condition, KCL invested \$13.5 million on dredging and pumping of river sands, and \$8.0 million on land stabilisation. Approximately 60 ha of the site remain in an unreclaimed state.

KCL approached the Department of Public Works in October 1987, seeking to renegotiate its rental due to the company's liability for land tax, and not because it found the rental arrangements, as such, to be unsatisfactory.

In a letter dated June 1988, Premier Greiner stated that "Whilst the rental is in accordance with the agreement negotiated in 1982, it does not represent a market rental for the land, but a return to the community for the export of coal from New South Wales."

In October 1988, KCL offered to purchase the MSB's share in the Kooragang coal loader. This request was refused at the time.

KCL submitted an offer to purchase the coal loader site in January 1989. The Government examined the options of selling the freehold title to the land, renegotiating the lease payment terms, and selling its interest in the remaining term of the lease. As the land effectively belongs to New South Wales, the Government has a responsibility to take into account the wider interests of the community, with a view to maximising the benefits to the community. The option of selling its interest in the lease is currently favoured by the Government. Following evaluation of KCL's offer and subsequent discussions with the company, KCL was advised by the Minister for Public Works and Deputy Premier that:

- * The offer for the purchase of the freehold was not acceptable as a matter of policy; that is, the Minister was no longer selling freehold on Kooragang Island.
- * The Minister for Public Works (as land owner) was prepared to enter negotiations with KCL regarding a possible "up front" payment of rental for the remaining term of the lease, assessed in accordance with the rental structure provided in the lease.

The main advantage to KCL of an "up front" payment would be that it allows expansion of the coal loading operation and savings on the lease payments.

There has been no formal response from KCL to the Minister's correspondence, presumably because the recent merger of the Newcastle coal loaders has been of greater and more immediate importance to the coal industry.

In more recent talks, KCL has sought to have the Department of Public Works vary the basis for assessing rental, from one based on throughput to one based on an unimproved land value, with a view to reducing the amount of rental payable, both on the existing loader and on any expanded future loader operation.

While the Department of Public Works has indicated that it does not favour varying the basis of rental assessment for the loader at its present capacity, it would be prepared to consider alternative proposals for assessment of rental for the additional throughput resulting from expansion (that is, beyond the current capacity.)

Further information has been sought from KCL to enable the Department of Public Works and the Treasury to more fully consider this issue and to make appropriate recommendations to Government.

The land occupied by the loader was valued at about \$7.25 million as a vacant site in March 1989 by the Valuer-General. The average of two independent valuations commissioned by KCL in 1989 was \$6.880 million, which is not far below the Valuer-General's figure. The current value of the land occupied by the loader is unknown. Kooragang Island has recently been seen as a prime location for industrial development, and the demand for land on the island has increased substantially over the past few years.

Future of the Balmain coal loader

The MSB-run Balmain coal loader handles about 2 mtpa (compared to 30 mt loaded annually at Newcastle), and is outdated and inefficient, with its equipment up to 30 years old. The Minister for Transport announced on 30 July 1990 that this facility will close in 3 years time. Meanwhile, the MSB is seeking to rationalise the operation and is considering proposals by Balmain coal shippers to enter a 3 year arrangement under which they would operate the facility. It is expected that coal handled by the Balmain loader will eventually be diverted to Port Kembla.

Charges for coal loading at Port Kembla

At the Industry Commission inquiry into mining and minerals processing, Oakbridge Ltd claimed that the MSB owned and operated Port Kembla coal loader has been pricing consistently above the other coal loaders in the state, and that this has been associated with overmanning at Port Kembla.

This is now a matter of historical curiosity since the Port Kembla loader has been leased to a consortium of coal exporters. Nonetheless, the following Tables 5 to 7 show that Oakbridge's contention is incorrect:

TABLE 5: COAL LOADING CHARGES AT PORT KEMBLA

PERIOD OF EFFECT	CHARGE (\$/T)
08/12/80 to 30/06/81	2.90
01/07/81 to 30/06/82	3.13
01/07/82 to 31/12/82	3.52
01/01/83 to 31/12/85	4.68*
01/01/86 to 06/03/88	5.08
07/03/88 to 31/05/89	4.78
01/06/89 to 12/08/90	5.10

* New Port Kembla Coal loader entered service on 22/11/82

Source: MSB

TABLE 6: COAL LOADING CHARGES AT BALMAIN

PERIOD OF EFFECT	CHARGE (\$/T)
01/07/80 to 30/06/81	1.70
01/07/81 to 30/06/82	2.74*
01/07/82 to 31/12/85	3.36
01/01/86 to 31/06/89	3.81
01/06/89 to 31/03/90	4.40
01/04/90 to present	5.00

* Loader upgrading from 2.8 mtpa to 4.5 mtpa capacity completed in 1981/82

Source: MSB

TABLE 7: COAL LOADING CHARGES AT NEWCASTLE (\$/T)

PERIOD OF EFFECT	LOADING COMPONENT (MSB)	HANDLING COMPONENT (PWCS)	COMMON CHARGE
01/04/80 to 30/09/81	1.06	2.05	3.11
01/10/81 to 31/03/82	1.06	2.20	3.26
01/04/82 to 31/06/82	1.06	2.90	3.96
01/07/82 to 30/09/82	1.12	2.90*	4.06
01/10/82 to 31/12/82	1.12	3.10	4.22
01/01/83 to 31/03/83	1.43	3.10	4.53
01/04/83 to 31/03/84	1.43	2.81	4.24
01/04/84 to 30/09/84	1.43	3.24**	4.67
01/10/84 to 31/03/85	1.43	2.92	4.35
01/04/85 to 30/09/85	1.43	3.17	4.60
01/10/85 to 31/12/85	1.43	3.47	4.90
01/01/86 to 31/03/86	1.55	3.35	4.90
01/04/86 to 30/09/86	1.55	3.65	5.20
01/10/86 to 31/03/87	1.55	3.73	5.28
01/04/87 to 30/09/87***			5.28
01/10/87 to 31/03/88			4.98
01/04/88 to 31/03/89			4.85
01/04/89 to 30/09/89			4.78
01/10/89 to 31/12/89			4.90
01/01/90 to 30/06/90			5.10
01/07/90 to 30/09/90****			4.95
01/10/90 to 30/11/90			4.75
01/12/90 to present			4.50

* Additions were completed at the Port Waratah loader during this period, requiring the MSB to meet higher costs due to an agreement with PWCS.

** From 01/04/84 (commencement of KCL operation), the handling component was the responsibility of NEWCOL - a partnership between PWCS and KCL.

*** MSB joined NEWCOL on 01/04/87; since that date there has been no distinct loading component or handling component to the common charge.

**** MSB no longer a participant.

Source: MSB

Port charges

Pricing reform in the MSB involves a move towards cost-based charging phased in over three to five years to allow users, particularly those who have been effectively subsidised in the past, to adjust to the new economic environment. Some users, including coal exporters, will benefit from progressive reductions in cargo-based charges.

Port users will also benefit from pricing reform where wharfs are privately owned, such as BHP (Newcastle), Australian Iron and Steel (Port Kembla), Port Waratah Coal Services (Newcastle), Shell (Sydney) and Caltex (Botany).

Charges for wharf services

Wharf services provided by the MSB include dredging of the berthing basin; provision of the wharf structure, serviced land adjacent to the wharf, moorings, pavements, some utilities, wharf sheds, offices, and workers' amenities; wharf management and patrol, and wharf and area maintenance and cleaning.

Wharfage: Wharfage used to be called the Harbour Rate, which incorporated charges for ship services such as channel and breakwater construction. It is charged to the cargo owner and is based on the volume of cargo traded. Different rates apply to different wharfs as the MSB's costs vary from wharf to wharf. Charges are to be progressively eliminated at private wharfs.

The following Table 8 shows the wharfage rates applied to export coal over the past 10 years:

TABLE 8: MSB WHARFAGE FOR EXPORT COAL

PERIOD OF EFFECT	RATE (\$/T)			
	ALL PORTS	BALMAIN	NEWCASTLE	PORT KEMBLA
01/01/80 to 31/12/80	0.25			
01/01/81 to 31/12/81	0.30			
01/01/82 to 31/12/82	0.44			
01/01/83 to 15/01/84	0.51			
16/01/84 to 31/12/85	0.54			
01/01/86 to 31/05/89	0.58			
01/06/89 to 29/06/90		0.58	0.58	0.48
30/06/90 to 12/08/90		0.58	0.44	0.58
13/08/90 to present		0.58	0.44	0.00

Source: MSB

Site Occupation Charge: The new Site Occupation Charge (SOC) is a time based charge levied per shift for which a berth is reserved or worked, and is related to the value of the asset being used. It is charged to the site occupant which, in most cases, is the stevedore. The charge only applies at MSB common user wharves, and so therefore does not apply to coal loading berths. Companies which lease or own port facilities are exempt for this charge. The SOC is equivalent to a casual hire charge and is levied from the time the first cargo is delivered to a wharf until the last imported cargo is cleared. Thus it provides a financial incentive to encourage the movement of cargo from the wharf. More efficient movement of cargo would be reflected in reduced MSB charges to the stevedore.

The SOC is already prompting an increased number of applications to lease wharves. Leasing will enable stevedores to more accurately forecast costs and will provide an incentive to maximise the use of those wharves.

Charges for navigation services

Navigation services include breakwaters, channels, navigation aids, hydrographic surveys, port communications, emergency response units, port management, vessel inspections, harbour cleaning, and environmental monitoring.

The new Navigation Services Charge is levied per vessel visit on the ship owner, and is related to vessel size. It varies with each port.

Figure 13 shows the MSB's charges in relation to international navigation charges. Navigation charges in the world usually reflect the volume of shipping. The cheapest port is Hong Kong, which has a good natural harbour and handles lots of shipping.

The approach to charging with regard to export coal

The Marine Port Charges Act introduced a user-pays philosophy and provided for phased elimination of cross-subsidisation.

The lease of the Port Kembla coal loader includes handover of the responsibility for maintenance of wharveside depth. Wharfage itself was eliminated at Port Kembla from 13 August 1990. However, the loading charge of \$5.10 includes a lease payment to the MSB of \$2.50/t in the first year, decreasing over 5 years to \$2/t in the sixth year.

At Newcastle, the MSB is still responsible for dredging adjacent to the coal loading wharves. Since withdrawal of the MSB from coal loading, wharfage was reduced at Newcastle on 30 June 1990 from \$0.58 to \$0.44 per tonne, with prospects of further reductions in 1991/92 and subsequent years, leading to eventual elimination.

Phasing out of wharfage for privately owned or leased wharves will be associated with phasing in of the navigation services charge.

Depth alongside berth and at channel

Consultants engaged by the Inter-State Commission suggested that the overall performance of coal loaders in New South Wales is compromised by restricted depth alongside berths, compared to coal ports in Queensland.

Warnings have been given by Port Waratah Coal Services of the need to monitor the depth of Newcastle port, and for consideration of further deepening to ensure that the port's shallowness does not restrict its growth potential.

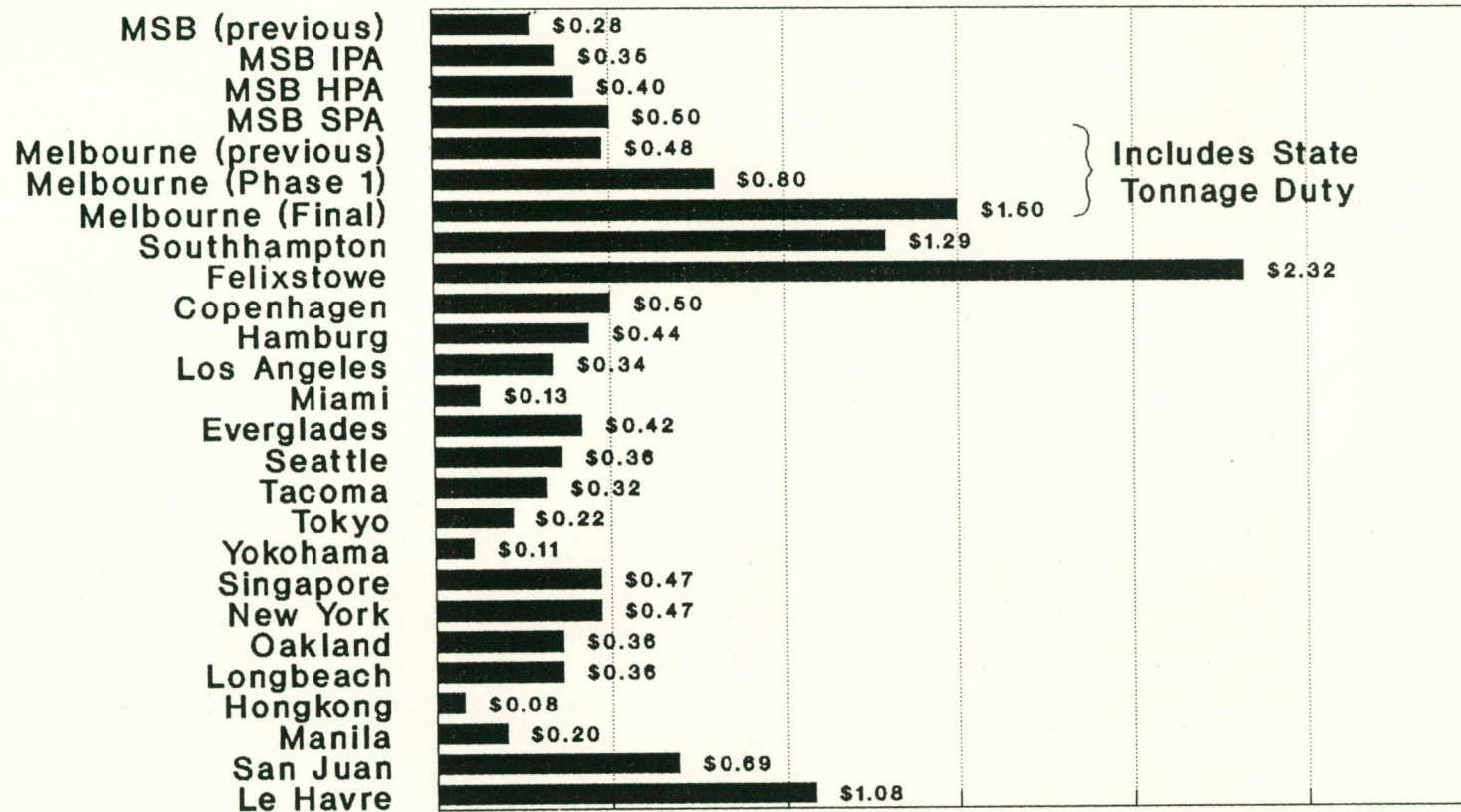
Between 1979 and 1983, Newcastle port was deepened by 4 metres to 15 metres, more than doubling its deadweight cargo capacity. It currently has a capacity of handling deadweight cargoes of up to 140,000 tonnes on traditionally designed vessels, although 177,000 tonnes of coal have been loaded on a vessel by the Kooragang loader. In the past 5 years, the number of ships entering the port needing tidal consideration has increased from 30% to 50%. It has been reported in the press that silt is now clogging channels and reducing depths to less than 15 metres, requiring ships to be short-loaded by up to 3000 tonnes.

The MSB operates a constant dredging programme in its ports. In November 1990, the Hunter Ports Authority launched its new dredger, the "David Allan", which will be used in all New South Wales ports for both channel deepening and widening, and maintenance dredging.

Possible container facility in Newcastle?

The Hunter Ports Authority has called for expressions of interest for redevelopment of the disused Basin coal loader area in Newcastle. This area has been suggested as a site for a container facility, although interest also has been shown in using it as a

FIGURE 13: Navigation Charges
Comparison with Other Ports



Navigation Charge per GRT (\$A)

Based on average size vessel of
21,500 GRT spending 3 days in port

Source: Maritime Services Board of New South Wales, unpublished data

distribution point for motor cars and for the shipment of freezer cargoes. Currently, Botany Bay is the main container port in New South Wales, with containers also being handled in Sydney. However, a container facility in Newcastle would probably be of greater value to any minerals processing industry based north or west of Sydney. The Basin site already has rail access, and a new road could be constructed to keep traffic using the site off residential streets.

Several expressions of interest for developing the site were received in 1990, but the economic downturn has dampened enthusiasm. The site is currently used occasionally for timber cargoes. The potential for development as a container facility remains.

ROAD AND RAIL ACCESS TO PORTS

In the 1987/88 financial year, 82% of export coal in New South Wales was transported to ports by Government rail, 17% by road, and 1% by coastal shipping.

Consultants for the Inter-State Commission investigation into the waterfront identified a disparity between the nominal road and rail receipt capabilities of the Port Kembla coal loader and actual road and rail throughputs. The new Port Kembla loader was commissioned in 1982 with capacity to handle up to 12 mt of rail delivered coal per annum and 2 mt received by road. However, recent rail haulage of coal to Port Kembla has only been around 5 mtpa, and in 1987/88, 5.8 mt were transported by road (c.f. a total of 7.48 mt of coal transported to all New South Wales ports by road in 1987/88). According to State Rail, there is ample spare capacity for rail access to the Port Kembla coal loader, sufficient as well to accommodate the impending closure of the Balmain coal loader.

This disparity between the nominal road and rail receipt capabilities of the Port Kembla loader and actual road and rail throughputs has substantially contributed to handling inefficiencies at the interface between land transport and the terminal, according to the consultants to the Inter-State Commission. This is most clearly evidenced by frequent long queues of coal trucks waiting at the entrance to the terminal to unload.

Furthermore, the local community in the Illawarra area has voiced strong disapproval of coal trucks, especially concerning truck routes through shopping centres, and their accident rate. The CTC has evidence that from 1978 to 1985, there were 20 fatal crashes in the Illawarra region involving coal trucks, causing 27 fatalities (see Table 9 below). That group does not have any up to date statistics on fatal coal truck accidents, but advice was received that the accident rate has decreased since 1985.

Coal transport in the Illawarra Region has been examined in a report issued in November 1990 by the Wollongong City Council Task Force on Coal Transportation.

At the Port of Newcastle, where most coal arrives at the loaders by rail, train scheduling is a critical factor in maximising efficiency. The local coal industry, in association with State Rail, has developed a computer based planning system known as PISCES. Given that approximately 120 different types of coal are presently blended to provide 80 export brands at Newcastle, the PISCES system provides a valuable tool in scheduling trains and stockpile management. The system is not yet developed to its full potential. PWCS is in the process of upgrading the PISCES system, while the Port Kembla loader consortium is also investigating the provision of a similar system.

**TABLE 9: NUMBERS OF PERSONS KILLED OR SERIOUSLY INJURED
IN ACCIDENTS INVOLVING HEAVY TRUCKS IN THE ILLAWARRA**

1978 to 1985

YEAR:	ALL HEAVY TRUCKS		COAL TRUCKS		COAL TRUCKS	
	FATAL CRASHES	FATAL- ITIES	FATAL CRASHES	FATAL- ITIES	NONFATAL ACCIDS	INJU RIES
1978	9	10	2	2	1	2
1979	13	19	4	9	7	16
1980	6	7	1	1	2	3
1981	10	16	4	6	3	5
1982	10	11	3	3	2	2
1983	5	5	3	3	4	4
1984	6	7	3	4	9	12
1985	5	6	1	1	2	1
TOTAL	64	81	20	28	30	45

Source: Information compiled from files of the Illawarra Mercury by The Illawarra Environment Centre for the Wollongong Community Transport Concern Association (now the CTC)

The unreliability of shipping schedules is a key factor in determining train and loader efficiency. It has been suggested that scheduling problems caused by random ship arrivals could be alleviated through adoption of a ship appointment system. Ship appointment systems have operated in the United States and South Africa, but the shipping industry has been reluctant to introduce such a scheme in Australia.

History of the Port Kembla coal loader

In the early 1970's, coal producers from the southern and western coalfields, in anticipation of the expansion of coal exports, proposed the inclusion of a coal loader at Botany Bay. In 1971, a detailed proposal was made for a loader with an initial capacity of 7 mtpa to be operational at Botany Bay in 1978. Construction commenced by the Liberal Government, but the Labor Government halted work in 1976. In June 1977, Premier Wran announced that Port Kembla would be the site of a new coal loader with an initial capacity of 14 mtpa, and that Balmain would be upgraded from 2.5 to 4.5 mtpa capacity. It was also announced that a new rail link from the western coalfields, from Maldon to Port Kembla, would provide the facility to transport coal by rail.

Wollongong City Council issued Development Consent for the new coal loader in 1979. Conditions of the Development Consent limited road receipt of coal to 2 mtpa, while the

rail receival facility was designed for 12 mtpa. Currently, 5-6 mtpa of coal are received by road, and another 5 mtpa by rail.

State Environmental Planning Policy No. 7

SEPP 7 was formulated to regulate the receival of coal by road at the Port Kembla coal loader from collieries not connected by rail or not able to meet shipping requirements during a rail transport disruption.

The policy allows coal to be received only between 7:00 am to 6:00 pm Mondays to Saturdays, except public holidays. These hours can only be varied in exceptional or emergency circumstances and generally only for short periods. The collieries involved are Avon, Brimstone No. 1, Huntley, South Bulli, and Westcliff. Should the Huntley mine re-open, it will probably also deliver its coal by road, although construction of a ramp onto the highway will be required.

The curfew on coal receival by road effectively concentrates deliveries into 11 hours per day. On the other side of the loader, ships can load 24 hours per day. This discrepancy between coal receival and coal loading is the source of further inefficiency.

Maldon-Dombarton rail link

The Maldon-Dombarton rail link was planned in the early 1980's when exports through Port Kembla were expected to reach 22 mtpa, 18 mtpa of which would have used the new line. It was commenced by the Wran Government in December 1983, with an anticipated operational date of December 1986. It was stopped by the Greiner Government in 1988, with a tunnel partially constructed at both ends. The current New South Wales Government position is that the expected increase in traffic on this link, if it was to be completed, does not justify the capital expenditure at present. Information from State Rail is that completion of the 35 km rail link at a cost of \$196 million would increase rail capacity for coal to Port Kembla by only 2 mtpa. However, the project has not been "abandoned", and freight levels and forecast demand will be kept under review by State Rail.

The route of the proposed rail link passes through water catchment area. The link would be applicable to coal transported from the Blue Mountains and the Cambelltown areas.

Coal from the Western Coalfield currently is railed to the Flemington sidings, shunted, and then railed through Marrickville to Port Kembla along the Sutherland line. There are limitations on the amount of coal that can be railed this way:

1. It requires four locomotives to haul the coal up the slope from Como to Waterfall, at a grade of around 1:38; two locos are dropped off at Waterfall.
2. There are curfews on coal trains to allow for the peak commuter trains: 6-9 am and 3-6 pm each working day.
3. Electric coal trains need to be spaced an hour apart to allow the electricity to build up.
4. Low voltage electric locos are inefficient.
5. 31 wagon trains are very short.

State Rail is currently trialling 42 wagon coal trains through Enfield. These require 5 locomotives to Waterfall, two of which are then removed.

Coal trains passing through Moss Vale also have 31 wagons.

For maximum benefit of the Maldon-Dombarton link, the St Marys-Glenlee link would also need to be constructed, as well as a rail curve at Harris Park. To justify all of the capital expenditure would probably require the proposed BHP mine at Macarthur South to be developed, but this is not likely within the next 10 years.

The CTC maintains that the Maldon-Dombarton link is feasible, and that Commonwealth funding should be used to complete it.

Western Coal Rail Freight Equalisation Scheme

Under this scheme, Western collieries and KCC's mine at Tahmoor are subsidised for the extra cost of railing to Port Kembla instead of to the earlier proposed coal loader at Botany Bay. Details of this scheme are not revealed in recent state Rail annual reports and remain unclear.

Conveyors

O'Briens Drift is a conveyor owned by BHP for transporting coal down the escarpment to a loader for railing into the steelworks. It mainly passes underground through old mine workings.

There is a proposal for a conveyor from Northcliff and Westcliff to the South Coast line at Coalcliff Collieries, with an opportunity for joint use of the conveyor with Appin Colliery. The route of the conveyor is under consideration.

Alf Critcher has proposed the establishment of a common user stockpile facility near Wilton, an overland conveyor from the stockpiles to the edge of the escarpment, and then an underground conveyor beneath Wollongong and emerging at the Port Kembla coal loader. Coal from the West@elds and Tahmoor would be hauled to the Wilton stockpiles by rail, while coal from Bargo and the Burratorang Valley would use road transport. The major obstacle to implementation of this concept is a lack of a body to initiate, implement and manage the project.

Coal truck routes

Coal trucks arrive at the loader at an average rate of one per minute. Trucks are required to pass through residential suburbs, albeit on main roads, and the associated noise and dust and danger to private motorists is of concern to the community.

The RTA has suggested that development of the Illawarra Highway via Caloola Pass, as an alternative to Macquarie Pass, to connect the Hume Highway west of Moss Vale with Port Kembla would also assist exporters. This would require Commonwealth funding (about \$50 million), and negotiations with the Commonwealth Government are underway.

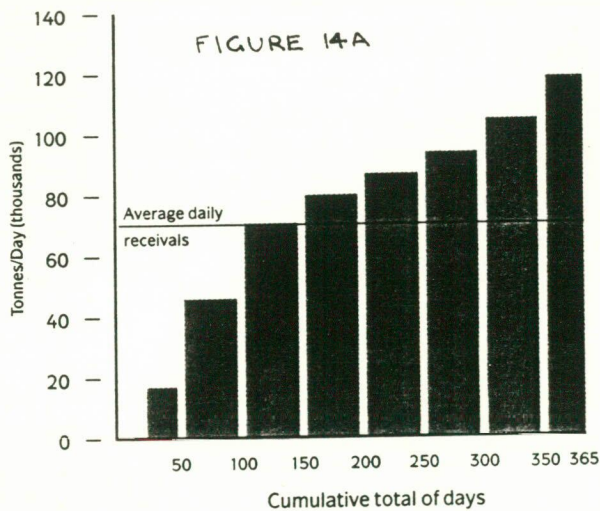
Specification of coal receipt at the Port Kembla loader

Rail receipt of coal is effected by bottom discharge from coal wagons on a single balloon track. Each wagon discharges a 75 t payload. The coal is then conveyed to a stacker.

Coal received by road is tipped straight into one of three 1000 t bins.

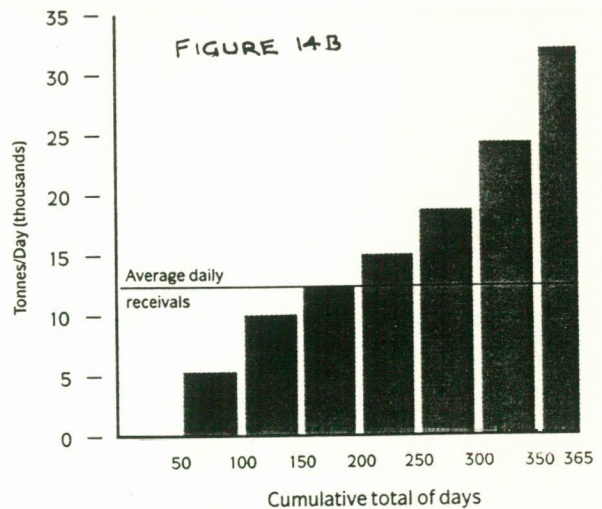
There is therefore potential to handle receipt of four types of coal simultaneously, three by road and one by rail. There are three coal stackers, but only two can operate simultaneously. If necessary, a fifth coal can be received, but it has to be tipped on a temporary stockpile and then rehandled later.

Coal loaders are operated on a cargo assembly basis so that most of the coal for a shipment is received at the loader before the ship has arrived. At all New South Wales coal ports, the rate of coal delivery is widely variable. Figure 14 shows the peaking impact of export coal delivered by rail to the Newcastle, Balmain and Port Kembla ports. Efficient utilisation of locomotives and rolling stock is severely inhibited by such large variations in demand, especially at the Balmain and Port Kembla coal loaders. Coal receipt therefore requires careful scheduling to stack it efficiently, to avoid mixing coal from different mines, and to avoid delays of access to the facility. A smoothing of demand for rail and road transport services can be achieved by additional stockpile capacity at the loaders.



The peaking impact – Newcastle export coal delivered by rail year to 31 March 1990

Source: State Rail, 1990



The peaking impact – Port Kembla export coal delivered by rail year to 31 March 1990

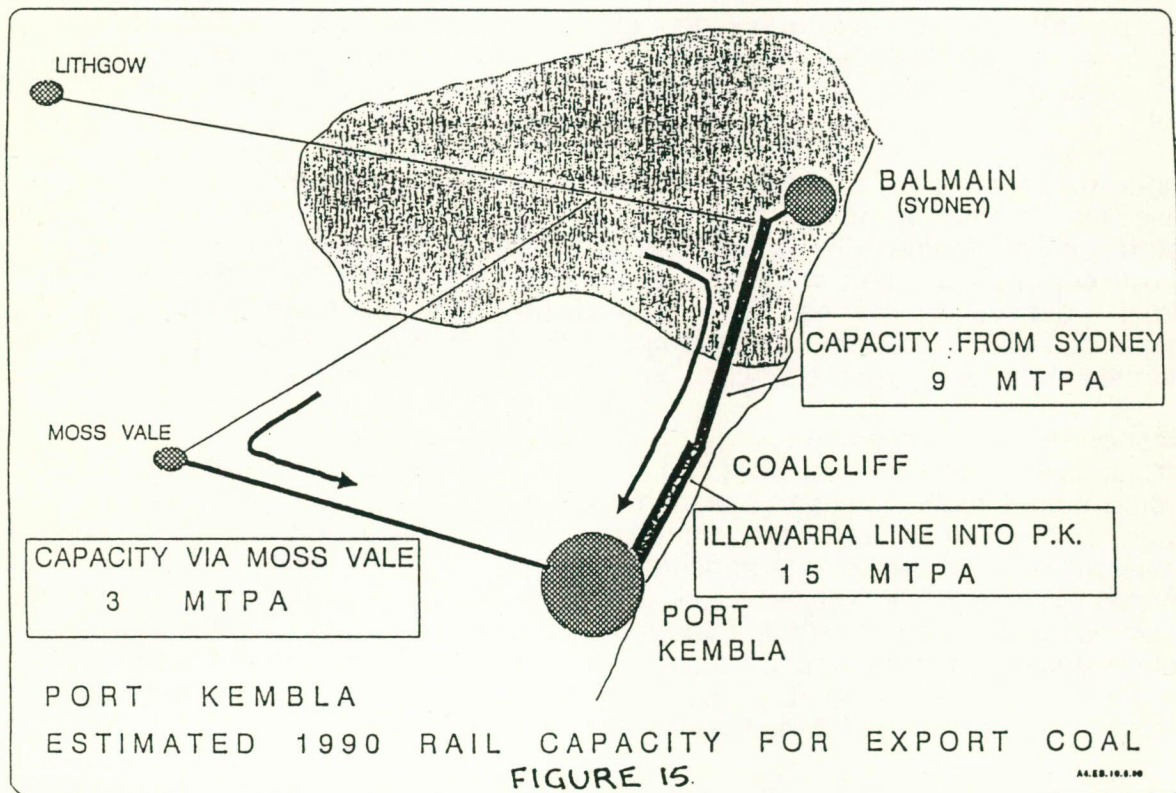
Source: State Rail, 1990

The road receival facility at the Port Kembla coal loader is currently operating at or near capacity, and the capacity of the rail receival facility will be stretched to meet export projections over the next few years and to accommodate closure of the Balmain loader. State Rail has advised that the existing track capacity of the southern rail system exceeds the current level of coal tonnages required to be handled. The overall track capacity for coal into Port Kembla is of the order of 18 mtpa (Figure 15), which exceeds the 11.2-14.5 mtpa expected to be delivered to Port Kembla by rail in 1994/95 and the rail receival capacity of the loader itself.

The ISC Waterfront Investigation identified several areas where infrastructure improvements at the Port Kembla coal loader would increase efficiency of rail receival:

1. expanded flow paths and surge bin capacity;
2. installation of a fourth stacker;
3. improved boom length;

As the coal loader has now effectively been privatised, initiatives in these areas rests with the private sector.



Source: Wollongong City Council: Coal Transportation Task Force Report, November 1990.

CONCLUSIONS

The reform process

Under the umbrella of "microeconomic reform", significant reform of transport in Australia has been proposed and implemented to date. The directions for reform arise from major inquiries into transport which have been conducted by Commonwealth and State bodies. The minerals sector and the general community have also funded some studies. New legislation has provided the basis for reform in rail and road transport and in ports in New South Wales. Fundamental structural changes have been made to the transport authorities, particularly the SRA and MSB. The Commonwealth Government has recently got behind the National Freight Initiative, and a national system for charging for and funding roads, while the Commonwealth has chaired the AMEC working group on transport costs and competitiveness in the minerals sector. It has to be concluded that the momentum for transport reform has never been greater.

A major emphasis of reform in all facets of transport has been on basing charges for transport infrastructure and services on cost recovery for infrastructure, recovery of cost for efficient service plus a reasonable profit, and equitable recovery of costs from users. Unless the "user pays" principle is applied to all modes of transport (and across the entire nation), and a consistent pricing methodology is used, it will be difficult to compare the economic viability of different transport systems. Market signals will therefore continue to be distorted, for example, in favour of road transport rather than rail for bulk freight.

Encouragement of private investment in the provision of transport infrastructure and services is the other broad approach to reform taken in rail, roads and ports. Overseas experience with private railways in the United States, toll roads in France, and the move towards complete private ownership of port authorities in New Zealand suggests that there is great scope for further moves towards privatisation in New South Wales. The case for privatisation is that private companies face stronger incentives for productive efficiency than government agencies.

Transport reform is expected to result in two major benefits. Firstly, more equitable charges for transport infrastructure and services, incorporating removal of cross subsidisation, should lead to an overall reduction in transport costs for the minerals sector. This in turn will assist the minerals sector, which is export oriented, to improve or at least maintain its level of international competitiveness. Secondly, privatisation provides industry with increased opportunity to participate in decision making regarding the provision of transport infrastructure and services and pricing structures. That is, through ownership, privatisation allows the industry to be more responsible for its overall performance, rather than merely relying on governments to provide and then laying criticism on governments for inefficiency and higher charges.

Transport chains

There is a well developed infrastructure for the transport of minerals into, around and out of New South Wales, utilising rail, road, and sea transport. Onshore minerals transport is dominated by rail, with coal accounting for the bulk of State Rail's freight, and base metal concentrates being the next largest revenue earner for State Rail. Coastal shipping is used for short hauls of some coal, but mainly for alumina and iron ore imports to New South Wales. Well established port facilities for import and export of minerals are located at Newcastle and Port Kembla.

There is a need to consider the capacity of the current transport chains to accommodate growing mine production. Insufficient capacity leads to inefficiencies, which in turn lead

to extra costs. The most critical section of the minerals transport system in New South Wales is that concerning the transport of export coal to and through Port Kembla.

Reform in rail

Significant reform has been undertaken and is continuing in State Rail, and this has been acknowledged by the coal industry as being of benefit in the form of reduced freight rates. Rail freight rates, however, remain the main contentious issue, particularly for the transport of coal and base metal concentrates. The industry claims that there is scope for further productivity increases to be made and passed onto mineral exporters as further reductions in freight rates.

State Rail is committed to a reduction in coal freight rates of 2% pa over the next few years. The coal industry and the base metal exporters claim that they are still being charged excess freight rates based on what the market will bear rather than based on cost of providing an efficient service plus a reasonable profit. On the other hand State Rail claims that it is still losing money on its coal freight business, although the deficit is being reduced with productivity improvements and reductions in staff.

If State Rail's contention is true - and there is really no way to verify it from its annual reports - then overall the minerals industry is *not* being charged more than the cost of providing the service. Nonetheless, the debate over excess rail freight rates is fuelled by State Rail's reticence to reveal its costs. Its annual reports provide information on freight revenue, but costs are amalgamated for the entire rail operation. Even the level of revenue detail has been reduced in the 1989/90 Annual Report. Without figures at least of the operating cost of hauling coal and other minerals, it is impossible for State Rail's clients and the public to gauge the equity of rail freight pricing.

The Industry Commission inquiry into rail transport has raised the issue of transparency in pricing where rail authorities have a natural monopoly. There are several levels of transparency. It is not argued that costs of individual traffics be made public, because the industry is also sensitive about releasing information about its own costs. However, there is scope for rail freight costs to be made somewhat "translucent" by public release of costs for provision of all coal transport, or all base metal concentrate transport, so that the confidentiality of individual producers would be protected.

Unfortunately, even such a level of transparency would mask the significant variation in a rail authority's costs in terms of cents/tonne-kilometre (or dollars/tonne), which are dependent on the distance hauled, terrain, loading and unloading facilities, use of private sector rollingstock and locomotives, tonnage, etc. Hence there is expected to be a significant variation in rail freight rates, and the "subsidisation" of some mines by others is highly probable. Cross subsidisation of some mines by others has been admitted by State Rail in hearings for the Industry Commission inquiry into rail transport.

The whole debate on rail freight rates comes down to the outcome of successful negotiations between a rail authority and a miner. Certainly, greater transparency should assist miners in their negotiations by allowing them reference to the revenues and costs of freighting each commodity by the rail authority. There is even justification for a miner to be told of the costs for railing its own minerals.

The most important reform in New South Wales with regard to freight pricing is the introduction of opportunities for negotiation, rather than simply using a standard schedule of freight rates. These negotiations are said to be truly commercial, and accordingly there are going to be some mines that will pay more than what could be regarded as "cost plus a reasonable profit", as well as some marginal mines that will receive some assistance in freight rates. The important point is that overall, the mineral industry should not be seen to be held to ransom by the rail authorities abusing their

monopoly powers, nor be subject to resource rent through excess freight rates. The Australian Bureau of Agricultural and Resource Economics (ABARE) has studied the effect of resource taxation on the export coal industry, and concluded that taxation through excess government charges for infrastructure and services can distort investment decisions in the minerals industry and reduce efficiency of resource allocation in the economy, although the significance of such distorting effects is unclear.

To date, there has been no compelling evidence given to the Industry Commission inquiries indicating that any mining development has not gone ahead chiefly because of rail freight rates, despite ABARE's assertions on resource taxation. Even coal mine closures in 1987 were not due to freight rates, according to evidence given by the NSWCA to the inquiry into rail transport.

State Rail justifies its level of secrecy by saying that it now has to be competitive with other modes of transport, and therefore it makes better business sense to reveal as little as possible about the costs of the operation. In fact, however, State Rail has a natural or imposed monopoly in most cases of minerals transport. The natural monopoly arises from the relatively long distances to be hauled, and imposed monopolies arise from conditions of development consent requiring coal to be transported by rail in preference to road for environmental reasons.

Another practical reason for State Rail's reluctance to divulge cost information is the difficulty of allocating capital and maintenance costs for track used for freighting a variety of commodities, and perhaps also used for passenger rail. Even the basic method of allocating capital costs is debatable.

The other major contentious issue regarding rail freight is the method of freight rate escalation. State Rail has claimed to the Industry Commission that its new rate adjustment formula for export coal has generally received favourable reaction from the industry. However, the NSWCA has criticised the formula for not taking account of improvements in State Rail's productivity. It maintains that in view of major staff reductions in the freight group of State Rail, real reductions in coal freight rates of up to 2% pa are inadequate. It advocates that rate adjustments should be based on actual increases in operating and capital costs, with allowance for increasing productivity. Exxon has submitted to the Industry Commission that rail freight rates should be based entirely on the cost of providing the service. Furthermore, it has been suggested that fixed (capital) costs should not be escalated, only the operating costs.

Finally, if rail freight charges are to truly reflect the actual cost of providing an efficient service plus a reasonable profit, a problem arises in the interpretation of "reasonable". It is unlikely that agreement could be reached on this easily. However, probably the magnitude of the profit is not as important as simply knowing what the profit actually is, so that State Rail's clients have a fair knowledge base on which to conduct their freight rate negotiations. It comes back to the requirement for an appropriate level of transparency. It is expected that the INDUSTRY COMMISSION will recommend greater transparency in the business of rail authorities in its draft report on rail transport, which is due for release in March 1991.

The AMEC working group on transport costs advocates that private investment in and private use of Australia's rail system should be permitted. Resource developers have proven to be capable of building and operating railway systems in a very efficient manner. For example, iron ore producers operate their own railway systems in the northwest of Western Australia, and base metal miners operate the Emu Bay Railway in western Tasmania. There are several small scale examples of private involvement in New South Wales rail, and State Rail has recently demonstrated its willingness by calling for expressions of interest for electrification of the Hunter Valley line. Apart from BHP, there really has not been much interest from the mineral producers to run their own trains. It would seem reasonable that if the system run by State Rail was as inefficient,

costly, and as much of an impediment to competitiveness as has been alleged by the mining industry, then the industry would get itself organised and become more involved in rail transport, in much the same way as it has become involved in coal loading. Certainly the present New South Wales Government has shown that it favours privatisation wherever feasible. There is no legislative or other regulatory restriction to private sector involvement in the New South Wales rail system.

Reform in roads

Reform in the charging for and funding of roads has been given impetus through consideration at the Special Premiers Conference. It is expected that such treatment at a national level will lead to more equitable road funding and charging arrangements on a user pays and cost recovery basis. It is inappropriate to deliberate further on this issue until the working group on implementation of a national heavy vehicle registration scheme reports to the next Premier's Conference in May 1991.

At a more local level, developer contributions for road infrastructure required as a result of a mine development will probably continue to be made mostly through Section 96 of the EP&A Act. Suitable guidelines need to be formulated for implementation of Section 94. In addition, amendment to the legislation is warranted to allow for developer contributions outside the area of a consent authority and for roads normally funded directly by the RTA.

The mining industry has expressed concern to the Industry Commission inquiry into mining and minerals processing regarding the equity of any road cost recovery system. Any system to recover road costs from users should be applied equitably to *all* road users, not just to the mining industry.

Reform in ports

Reform of operations of the MSB has been welcomed by the minerals sector, particularly the export coal industry. More equitable port charges based on the user pays principle, and withdrawal of the MSB from coal handling have resulted in substantial savings, as evidenced by reductions in coal loading charges at Newcastle. Additional savings could be expected in the longer term as a result of privatisation of the Port Kembla coal loader.

Land rental for the Kooragang coal loader remains the major contentious issue for the export coal industry on the waterfront. The coal loading company has on several occasions sought changes to the rental agreement signed with the Minister for Public Works in 1982, and negotiations on a modified agreement applicable to expansion of the coal loader are underway. An earlier response from the Premier effectively admitted that the rental terms contain a component of an indirect royalty or a resource rent on the coal handled by the loader, rather than representing simply a normal market rental. In this way the rental agreement raises significant revenue for the State.

The Kooragang coal loader land rental issue is rife with discrepancies and has some similarities with the debate on excess rail freight rates. The current annual payment for leasing the land is certainly not in excess of the land value as claimed by Oakbridge to the Industry Commission. However, it is clear that the payment includes an indirect royalty which ABARE argues is an inefficient and distorting mechanism for collecting resource rent. The actual magnitude of the royalty component is not clear, but the industry has not demonstrated that this in any way has affected the viability of the export industry of the Northern Coalfields. Reduction of the throughput payment rate represents a possible mechanism of State Government assistance to the Northern Coalfields should the coal industry fall again on bad times. The terms of the agreement represent an example of poor negotiations on behalf of the industry, which is now

seeking to redress the situation. Nonetheless, it appears that KCL entered the agreement willingly, cognisant of all relevant information needed to make a decision. The forthcoming national review of mineral royalty would be an appropriate forum in which to review this type of arrangement, provided consideration of indirect royalty was included in the terms of reference.

Land transport-seaport interface

The disparity between the nominal road and rail receival capabilities of the Port Kembla coal loader and actual road and rail throughputs has been identified by the ISC as a source of coal handling inefficiencies. Furthermore, the relatively large number of coal trucks in the Illawarra area compared to the other coalfields has stirred up considerable local discontent, some of which inevitably grows into disapproval of the actual coal mining operations which are vital for the local economy. Relaxation of the curfew for road receival of coal at Port Kembla would spread out the arrival of coal trucks, although the local community might view this as increasing the period of danger, dust and noise pollution, and inconvenience.

It seems unlikely that the Maldon-Dombarton rail link is going to be completed in the foreseeable future. State Rail claims that the current rail system is capable of handling the expected increase in coal railed to Port Kembla in the next few years, including the increase due to the closure of the Balmain loader. However, additional stockpile capacity and road receival capacity, and a fourth stacker at the loader will probably be required in the next few years. Now that the loader has been privatised, the coal industry itself will be responsible for these requirements.

Suggestions for common user conveyors and stockpiling facilities away from the Port Kembla loader have been made, and these have potential to alleviate some of the problems with transporting coal to the loader. Unfortunately the coal industry has shown a lack of enthusiasm for such suggestions, and there are widely divergent views on solutions to most of the perceived problems. It would be appropriate to follow up on the Strategic Study of the Southern Coalfield (which identified the problems) and the Coal Transportation Task Force Report (which identified the solution options) to ensure that planning for improved efficiency of coal transport through Port Kembla, allowing for the expected increase in coal production, is effected. In the likely event that the Joint Coal Board will be disbanded, a group comprising the NSWCA, the local councils in the Southern Coalfields, the MSB, State Rail, and the Department of Minerals and Energy should formulate a practical strategy.

Unpredictable peaks and troughs in demand for rail services by coal exporters requires the provision of more rolling stock than is necessary for average export levels. To maintain sufficient locomotives, wagons and crews to cater for the variable demand adds to the cost of rail transport. This aspect is being pursued by State Rail, the coal industry and the MSB. Modern computerised coal transport scheduling systems may go a long way to maintaining efficiency in the coal transport chain in the short term, but there is a need for substantial investment in expanded stockpiling capacity at both Port Kembla and the Port of Newcastle in the long term.

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APPENDIX - Abbreviations

The following abbreviations are used in this report for quantities:

t	tonnes
mt	million tonnes
pa	per annum
mtpa	million tonnes per annum
tpa	tonnes per annum
tpd	tonnes per day
c/t	cents per tonne
c/t-km	cents per tonne-kilometre
ha	hectares

