Submission to the New South Wales Department of Planning and Infrastructure re Port Kembla Grain Terminal Application DA 0844/672 MOD 1

Philip Laird, University of Wollongong, July 2011

The exhibition by the New South Wales Department of Planning and Infrastructure of the relevant Environmental Assessment and inviting of submissions is appreciated. The present submission is based on research conducted at the University of Wollongong. This research was supported, in part, by various government agencies at a federal and state level. However, the views and research findings remain the responsibility of the writer.

The present proposals by the Port Kembla Grain Terminal (PKGT) are basically two fold: to lift a long standing curfew on grain truck deliveries to the loader and to potentially expand road receival of grain from 200,000 tonnes per annum to an unlimited amount. The reasons for objections to the two proposals follow and the present submission will address aspects of the proposal, and external costs.

1. The road curfew, and other constraints on road haulage of grain to the PKGT, have been in place since the mid 1980s when the terminal was opened.

The curfew is desirable for amenity and safety reasons and does, in a blunt manner, place some limitation on the road haulage of grain. This is important as road haulage of coal to the Port Kembla Coal Terminal PKCT is already high (it was about 5.1 million tonnes per annum (mtpa) in 2009-10 with a conditional consent in 2009 allowing a two stage escalation to 10 mtpa), and other factors.

2. Truck curfews are by no means unique to the road haulage of grain to the PKGT. At the Melbourne suburb of Yarraville in the State of Victoria, a street is subject to ongoing trucking curfews. To quote the notice current in 2008:

NIGHT & WEEKEND
TRUCK CURFEW
FRANCIS STREET
8 PM - 6 AM MON - SAT
1 PM SAT - 6 AM MON

The website as of 4 July 2011

http://www.vicroads.vic.gov.au/Home/Moreinfoandservices/HeavyVehicles/RouteInformation/TruckCurfews.htm

lists no fewer than eight (8) other locations with trucking curfews at these or similar times including Francis Street. Other restrictions, including 8am to 9.30am, 2.30pm to 4pm, during school days and 7am to 7pm weekdays may also be found on this list. Plus some curfews/total bans of 24 hours 7 days a week.

2. From page 43 of Appendix D Traffic Impact Assessment for the Environmental Assessment currently on exhibition

Table 4.1 Comparison of current and proposed PKGT operation

	Current *	Proposal **
Annual limit on road receivals (mtpa)	0.2 mtpa	Nil
Operation * **		
Truck capacity (tonnes per truck)	32	32
Road hopper capacity (trucks per hour)	8	8
Potential daily capacity (if hopper works to capacity):		
Trucks per day	96	192
Tonnes per day by road	3072	6144

* Current Single shift (12 hours a day) 5 days (Monday to Friday)
** Proposal 24 hours a day 7 days per week

The following information could have well been provided in Table 4.1

	Current *	Proposal **
Potential weekly capacity (if hopper works to capacity):		
Trucks per week	480	1344
Tonnes per week by road	15,360	43,008
Potential absolute maximum annual capacity (if hopper works to capacity):		
Trucks per year (52 weeks)	24,960	69,888
Tonnes per year by road	**798,720**	**2,236,416**

It is recognised that the terminal is unlikely to operate 52 weeks per years. The potential likely maximum annual capacity (if hopper works to capacity from January to July inclusive taking 80 per cent of grain with 20 per cent over remainder of year as noted on page 7 (section 1.3.4 Operational Parameters of the Traffic Impact Assessment) as against current cap of 200,000 tonnes pa is shown as below.

Table Comparison of current and potential PKGT operation

	Current *	Potential Proposal ***
Trucks per year	6250	50,400
Tonnes per year by road	200,000	1,612,800

* Current Single shift (12 hours a day) 5 days (Monday to Friday)
*** Proposal 24 hours a day 7 days per week with 80 per cent receival over 7 months.

The amount of 1.6 million tonnes per annum, even as an upper limit, of grain on road, when combined with other bulk traffic, is likely to lead to significant adverse impacts. This assessment is based on the comment by the NSW Roads and Traffic Authority in the Submissions Report for the Port Kembla Outer Harbour Expansion released by the Department of Planning in June 2010 that included that after consideration of the impact of Stage 1 Port Kembla outer harbour traffic volumes (bulk commodities 4.25 mtpa and general 2. Mpta iif the predicted rail mode shares (50 per cent bulk = 2.125 mtpa and 80 per cent containers = 1.6 mtpa leaving a maximum of 2.525 mpta on road) could not be achieved, there would be likely ***"… unacceptable impacts to road safety and traffic efficiency as well as environmental issues such as amenity, noise and air quality."***

3. Section 9.6 on page 13 of the Environmental Assessment draws on the **Illawarra Regional Strategy**. Attention is also drawn to statements on page 4 of the actual 2006-2031 Illawarra Regional Strategy of the Department of Planning that are not in the Environmental Assessment as follows (emphasis added).

"It is important that the Region's transport networks support economic growth and maximise the efficiency of freight transport. In particular, what is required are strategic transport corridors to support development of the port of Port Kembla, ***increase***

the proportion of freight transported by rail*, efficiently link regional centres and towns, and support public transport."*

Any approval to lifting the limit road haulage of grain to the PKGT from the present level 200,000 tonnes per annum to as much as 1.6 mtpa (an eight fold increase) has the marked potential to reduce *"the efficiency of freight transport"* (from increased road congestion, increased road wear and tear and increased energy usage). More grain on road would also reduce *"the proportion of freight transported by rail"*.

4. Constraints on the existing rail system are noted in the environmental assessment and other reports. As well as factors affecting above rail operations, below rail constraints include grain lines in need of re-opening and or rehabilitation, the Main South Line and the Moss Value Unanderra line subject to significant speed-weight restrictions, and, where used for grain to Port Kembla, the Sydney to Port Kembla line affected by rail congestion and curfews.

Rail constraints (which are in need of addressing and may well include completion of the Maldon Dombarton rail link) coupled with factors favouring road haulage means that it may be all too easy for more grain to go by road to Port Kembla unless there are appropriate checks and balances. It is submitted that these checks and balances, including a firm limit on actual road haulage receivals, with appropriate conditions, should be addressed by the proponent.

5. The relevant Director General's Requirements provide for the inclusion of *"a historical overview of the terminal's operation"*. This, in part, is addressed on page 8 of the main Environmental Assessment where it is claimed that the conditions 8,9 and 10 were (in 1984) *"imposed in response to community concerns about the haulage of grain on Wollongong streets. At that time, in the 1980s, trucks were required to transit via residential areas to PKGT."* And so on.

It is a matter of record that the Masters Road deviation was opened in 1978 (Illawarra Mercury, 19 September 1978 "Coal truck route opens") and this obviated the need for bulk trucks to traverse Bourke and Corrimal Street. It is also a matter of record that there was much community concern about the levels of coal trucking to Port Kembla during the 1980s, and that the initial proposal for the Port Kembla Grain Terminal was for rail only receival, Subsequently, for various reasons, which the proponent rather than

individuals responding to Environmental Assessment should provide, a decision was taken by the Wran Government for the then new Port Kembla Grain Terminal to have limited road receival, with a curfew.

Concern during the 1980s, and the 1990s, about levels of coal trucking to Port Kembla was also reflected in a number of official reports. These include

Other reports of note include those of the:

- 1990 Report of the Wollongong City Council Coal Transportation Task Force
- Coal Resources Development Committee (1989) Strategic Study of the Southern Coalfield
- Report of the Commissioners of Inquiry (1993) re Port Kembla Coal Loader, and
- The Kinhill Engineers Report for Wollongong City Council (1995).

Some comment from these reports follows:

A. The 1990 Report of the Wollongong City Council Coal Transportation Task Force noted, inter alia, that the NSW Roads and Traffic Authority had then suggested that an average external cost of pavement wear and tear due to bulk haulage is 3 cents per net tonne kilometre.

B. The road pricing issue in relation to coal had been earlier taken up by Coal Resources Development Committee (1989, Strategic Study of the Southern Coalfield p49) that noted there is a potential to use "hidden costs" of road transport *"... as a form of cross subsidy for coal producers who do not use road transport"*.

In addition, a NSW Coal Development Strategies Industry Task Force report (1990, p59) noted :*"Road haulage has significant community costs including noise and dust pollution, increased energy usage, increased road maintenance, safety hazards, negative effects on tourism and complaints from local residents"*.

C. The Report of the Commissioners of Inquiry (1993) re the Port Kembla Coal Loader was followed by the NSW Minister for Planning making a determination in 1994 granting consent for expansion of the Port Kembla Coal Terminal. In addition, the Minister for Planning also acknowledged three other items. These were:

i. Noise Impacts on residents along Mt. Ousley Road (leading to noise walls).

ii. Formation of a Working Party by the NSW Department of Transport into Burragorang Valley Coal Transportation arrangements.

iii. BHP giving a commitment to upgrade O'Briens Drift.

Although O'Briens Drift may have been upgraded during the 1990s, it is now closed, thus putting more heavy trucks onto the Mt Ousley and other main roads.

D. Following approval in 1993 by the Federal Department of Local Government of funding for a $100,000 feasability study for completion of a St Marys/Badgerys Creek - Campbelltown - Maldon-Dombarton rail link, a report was presented to Wollongong City Council in May 1995. This report examined in some detail potential coal and general freight traffic.

The main finding of the Kinhill Engineers report, based on calculated negative Net Present Values, was *"...that the St Mary's - Port Kembla rail link is not economically feasible"* at this time. The Kinhill Engineers report recommended instead that

i. payment of Community Service Obligation (CSO) payments to encourage all Clutha coal onto rail.

ii. *"...establishment of an effective road use charging system whereby road coal freight vehicles pay for the full external costs"* such as pavement damage, congestion, noise and environmental costs [NSW moved away from this in 1996 when adopting Australia wide heavy vehicle charges determined by the National Road Transport Commission; and the issue is was noted by the Henry Tax Review and is now receiving ongoing attention by the National Transport Commission and CoAG].

iii. use of planning instruments to maintain the St Marys Glenlee and Maldon - Dombarton rail corridors.

In addition, a report Air Quality in the Illawarra (1985) by the Illawarra Environment Centre (prepared with the financial assistance of the Federal Department of Environment) had recommendations including # 7 *"The state government should recognise the need for an adequate rail transport system for coal in the Illawarra so that the coal loader can operate at its originally planned level of road receival."*

The same comment now holds for the grain terminal. It is accepted that road infrastructure improvements have taken place since the 1980s. However, these been accompanied by a large and significant increase in traffic volumes over the years.

It is submitted that the Environmental Assessment) of proposal has failed to provide an adequate historical overview, and that an improved one should be provided as part of a submissions report.

6. Recent historical context

In 2009 the NSW Minister for Planning determined a Major Projects application by the Port Kembla Coal Terminal (PKCT) to lift a long standing curfew on road deliveries by coal trucks to the PKCT and to lift already high levels of road haulage of coal of some 5.1 mtpa of coal to the PKCT, in two stages, to a maximum of 10 mtpa. The application resulted in the Department of Planning receiving no fewer than 122 written objections.

As noted by the 2009 Director-Generals Report (p12), "The main grounds for objection included:

- noise, road safety and driver behaviour, dust and air pollution, impact on infrastructure and greenhouse gas emissions due to an increase in heavy traffic movements;
- choice of road transport in preference to provision of a rail link, in particular the completion of the Maldon-Dombarton rail line to transport coal more efficiently from the Western Coalfield; …
- limited community consultation during the environmental assessment process."

As noted above, in June 2010, the Submissions Report for the Port Kembla Outer Harbour Expansion released by the Department of Planning included comment by the NSW Roads and Traffic Authority that after consideration of the impact of Stage 1 Port Kembla outer harbour traffic volumes (bulk, general and limited containers) if the predicted rail mode share could not be achieved, there would be likely ***"… unacceptable impacts to road safety and traffic efficiency as well as environmental issues such as amenity, noise and air quality."***

In December 2010, the Port Kembla Port Corporation and/or its clients concerned with the importation of cars via the Inner Harbour failed to meet a consent guideline that 20 per cent of all cars should leave Port Kembla by rail. It is noted that the Inner Harbour project approval does not require PKPC to achieve the target for 20 per cent of freight to be moved by rail by December 2010, but rather to aim to achieve the target by that date. The project approval includes a condition for the proponent to report back to the Department on its progress towards achieving this transport modal split.

In early 2011, the Port Kembla Outer Harbour Expansion concept plan and Stage 1 construction and operation was conditionally approved.

It is also noted that the Department in March 2011 put in place strict conditions to ensure a high rail mode share for freight at the Port Kembla Outer Harbour expansion. By way of example, the conditions require PKPC to demonstrate in future project

applications that adequate rail infrastructure is in place, or will be provided in a timely manner, in order to support the operation of Stages 2 and 3 of the project (which include the construction and operation of container berths and multi-purpose terminals and berths).

PKPC is also required to prepare a Rail Master Plan to support future stages of the concept plan. The Rail Master Plan must address rail infrastructure upgrades to achieve the desired modal splits. Importantly, the plan must be approved by the Director General of the Department prior to the start of construction of Stages 1B and 1C of the project, as these stages propose land reclamation for use as container and multi-purpose terminals.

This approach by the Department could well be undermined by granting a consent variation along the lines sought by the Port Kembla Grain Terminal.

7. Many people living close to major highways are subject to noise from so called engine or Jacobs brakes. This includes people living within a few hundred metres of the Mt Ousley Road (where the noise barriers are of limited value) and the F6.

From the RTA website
http://www.rta.nsw.gov.au/heavyvehicles/reducingnoise.html

Noise from heavy vehicle engine compression brakes is a significant and on-going cause of complaint for many NSW residents.

Engine brakes are devices fitted to the engine of heavy vehicles to slow the vehicle down. They are often referred to as ‘auxiliary braking devices’ or ‘secondary retarders’.
… Complaints have increased from residents affected by heavy vehicle noise. The worst problems occur when drivers use their engine brakes unnecessarily near built up areas, especially at night when residents are trying to sleep.

Although a noise camera was installed in 2007 by the RTA on the down hill side of the Mt Ousley Road, truck noise continues to be a problem.

By way of contrast, for several years, the City of Calgary in Canada has prohibited the use of engine brakes within its city limits. To quote from
http://www.calgary.ca/portal/server.pt/gateway/PTARGS_0_2_563630_0_0_18/Engine+Retarder+Brakes.htm

"The use of all engine retarder brakes is prohibited in the city of Calgary. The sound of an engine retarder brake can be very disturbing to residents in communities close to truck routes. Under the provisions of The Calgary Traffic By-law, the penalty for using an engine retarder brake is $250."

A VicRoads website http://www.vicroads.vic.gov.au/Home/Moreinfoandservices/HeavyVehicles/ComplianceAndAccreditation/HeavyVehicleNoise.htm states in part

"Although not all heavy vehicles emit excessive noise or have noisy engine brakes, those that do can affect a community's quality of life, especially in built up areas."

The website notes that VicRoads is taking a two staged approach to manage truck noise and reduce its impact our communities. This two stage approach appears to be stronger than the provisions that currently apply in NSW.

8. Earlier submissions from this writer and others to the Department re the PKCT and others noted previous fatal crashes involving coal trucks on Illawarra roads, where during the eight years from 1978 to 1985, trucks hauling coal to Port Kembla were reportedly involved in some 27 road fatalities. This includes no fewer than six lives were lost in one week during May 1979 in two such accidents on Mt Ousley Road.

Bulk haulage by road to Port Kembla is not without fatal road crash risks. This included a regrettable fatal road crash as noted by the St George & Sutherland Shire Leader for 18 September 2008 an article "Farewell to `shire girl' " with the death of a 21 year old female University student. To quote in part (Page: 4) "when returning to her Woronora Heights home when the passenger van she was driving ran into the back of a coal truck near Bellambi Creek. When the accident happened, she was driving home from Wollongong University…."

The fatal accident was also noted in the Illawarra Mercury of 16 September 2008 (page 6) "Funeral service on Friday for student killed in crash".

An examination of the Environmental Assessment shows little or no attention for the potential of bulk haulage of grain by road to be involved in fatal road crashes.

In addition, the Picton Road is known to be a dangerous road. This aspect appears to be lightly treated in the Environmental Assessment.

Re road safety, it is worth noting that the original consent precludes grain trucks accessing the Port Kembla Grain Terminal from using Macquarie Pass. Again, this is missing in the Environmental Assessment.

9. The Environmental Assessment and its appendices relies heavily on the percentage of bulk haulage trucks of all road vehicles using various roads. However, the

road haulage of bulk commodities creates an impact on certain Wollongong roads that is far in excess of the mere numbers of trucks in the various traffic streams.

Standard methodology of assessing road system costs and impacts includes not only vehicle numbers, but three other standard and important indicators:

- Passenger Car Equivalents (including 3 for a semitrailer and 4 for a B-Double),
- Average Gross Mass Vehicle kilometres, and,
- Equivalent Standard Axle kilometres (which take into account the wear and tear on the roads caused by heavy trucks and other vehicles).

These parameters are outlined in official reports such as those of the National Transport Commission, yet only vehicle numbers and vehicle kilometres appear to be used in the PKGT Environmental Assessment.

In the five years from 2004 to 2008, the number of persons killed in road crashes involving articulated trucks was 801 (2008 Statistical Summary Road Deaths Australia, Department of Infrastructure, Transport, Regional Development and Local Government, 2009, Table 21). The total number of deaths from road crashes over these five years in Australia was 7879, with articulated trucks involved in 10.2 per cent of this loss of life.

Typically, articulated trucks are about involved in about 3 per cent of vehicle kilometres travelled by all vehicles on Australian roads. Such vehicles that include grain trucks are accordingly over-represented in road crash fatalities.

Even without road accidents, the introduction of more heavy trucks carrying coal on a highway system already stretched at peak hours (as noted in the 2007 Auslink Sydney-Wollongong final corridor strategy) will cause incremental increases in car journey times. The situation is compounded by the 2008 start up of car imports into Port Kembla, with up to 24 car carrying trucks per hour, the 2009 permitted increase in coal truck numbers, and now bulk haulage trucks associated with Stage I of the Outer Harbour.

Thus, the impacts of truck numbers go far beyond just the numbers of trucks and should include Passenger Car Equivalents (which reflect space occupied by vehicles) and Equivalent Standard Axle kilometres along with road safety factors. The use of plain truck numbers (or even vehicle kilometres) in the Environmental Assessment understates the real impact on the road system, and other road users.

10. It is submitted that road haulage of grain to the PKGT should continue to be limited to 200,000 tonnes per annum (tpa). However, if this limit is to be increased, the

increase should be specified and the total amount limited to say 300,000 tonnes per annum and accompanied by other conditions, to include a mandatory Code of Conduct for Grain Truck Drivers (as per coal truck drivers since 2009), and payment of a surcharge reflecting community costs. In addition, the actual tonnages received by road need to be monitored. Ideally this would be by a Government agency. If done by the PKGT, there should be conditions requiring the timely public release of audited road haulage tonnage data (on a quarterly basis is suggested).

It is further recommended that a submissions report be required and prepared that will fully address community concerns raised in submissions including external costs.

External costs and emissions

11. Despite external costs being a required part of the AusLink project assessment in the *National Guidelines for Transport System Management In Australia* released in 2004 (and updated in 2006) by the Australian Transport Council (ATC), there is no reference to external costs in the submissions report. This omission is even more surprising given that such costs of grain transport were raised in the following documents:

A. The 2004 Final Report of the NSW Grain Industry Infrastructure Committee (GIAC). The GIAC report notes five values (noise, air, greenhouse, congestion and accident for non urban areas) from earlier reports and on (p24), inter alia, "… that while the external costs of road transport are greater than for rail the overall size of external costs is not significant in comparing road and rail modes for this task."

B. The Victorian Rail Freight Network Review in its 2008 report *Switchpoint: The template for rail freight to revive and thrive!* considered (pages 27 and 28) externality costs in terms of cents per net tonne km for both road and rail based on ATC unit values. As noted in the Victorian report "… the ratio of road to rail costs in the rural environment is around 6.4:1. This is less than the ratio of around 10:1 evidenced in the values calculated by Queensland Transport, as used in the NSW Grain Industry Advisory Council (GIAC) Report into grain branch lines.."

The Victorian report also notes measures in Western Australia to keep certain freight traffic on rail and after noting the need for a holistic approach and the objective of "Triple bottom line outcomes" made 29 recommendations. These were in the spirit that

the "the Government provides a fit-for-purpose regional rail freight system at reasonable cost, which is capable of efficiently transporting known freight volumes at prices competitive with road, providing a platform for future growth which is economically, socially and environmentally responsible."

C. The 2009 *New South Wales Grain Freight Review* considered external costs with a use of a mixture of ATC values and crash costs (road and rail) adjusted for inflation.

12. In addition, a current Review of Access Pricing for the NSW Grain Line Network by the Independent Pricing and Regulatory Tribunal of New South Wales is of note.

13. Regulations requiring the transportation of certain bulk haulage to rail is done by the New South Wales Government for a number of reasons. These reasons include a long standing recognition that road haulage can and does impose significant environmental and social impacts. These impacts can in part be qualified by using external costs. Thus, in seeking to lift constraints on grain trucking (either hours of operation where it could be argued that the noise external costs are higher at night than during the day, and congestion and safety external costs are higher in times of peak holiday traffic), it can be argued that external costs should be taken into account.

The bottom line is that external costs should not be treated as zero. Or set aside by proponents whose actions could lead to a marked increase in external costs.

14. External costs may be regarded as "costs imposed outside market transactions and they fall on a number of individuals or groups ...other than those individuals who give rise to the costs" (Inter-State Commission, 1990, *Road Use Charges and Vehicle Registration: A National Scheme* p89). Reports published in Australia during the 1990s touching on external costs in transport include that of the Bureau of Transport and Regional Economics (BTRE) with its definitive 1999 report *Competitive Neutrality between road and rail.*

With the growing land freight task and projections for future growth, accounting for external land transport costs have been of increasing interest to government. Related reports during the current decade include the 2000 and 2003 Austroads reports *Valuing Environmental and Other Externalities,* Australian Transport Council's 2004 *National Guidelines for Transport System Management* (updated in 2006) along with two BTRE

reports *Land Transport Infrastructure Pricing: An Introduction*, Working Paper 57 in 2004 and *Health Impacts of Transport Emissions in Australia*: Economic Costs Working Paper 63 in 2005. A New Zealand Ministry of Transport *Surface Transport Cost and Charges* study released in 2005 is also of note.

Six external costs of road and rail freight operations in both metro and non-urban areas were identified in a 2001 Track Audit prepared for the Australian Rail Track Corporation (ARTC). These external costs are accidents, air pollution, noise pollution, greenhouse gas emissions, congestion, and incremental road damage. For each external cost, estimates were given in terms of cents per net tonne km for both metro and non-urban areas.

The ATRC Track Audit estimates were updated in two studies conducted for Queensland Transport in 2001 and 2004. Further information can be found in a 2005 paper (see Appendix A) *Revised Land Freight External Costs In Australia*. The aggregate revised aggregate estimates of unit external costs, in year 2000 values (with values in brackets after adjustment to 2011 values (using CPI multiplier 1.411 from the RBA inflation calculator from March 2000 to March 2011) are approximately:

2.75 (3.88) cents per net tonne km for road haulage in urban areas,
1.98 (2.79) cents per net tonne km for road haulage in non - urban areas,
0.43 (0.61) cents per net tonne km for rail haulage in urban areas, and
0.17 (0.24) cents per net tonne km for rail haulage in non - urban areas.

15. Clearly there is a choice of unit values that can be used for external costs, including the 1990 estimate noted by Wollongong City Council whose Coal Transportation Task Force report noted, inter alia, that the NSW Roads and Traffic Authority had then suggested that an average external cost of pavement wear and tear due to bulk haulage is 3 cents per net tonne kilometre.

The estimate of 3 cents per net tonne km for under-recovery of road system costs from heavy truck operations, along with the fourth power law, was accepted in a series of decisions in the New South Wales Land and Environment Court (Justice Stein, 1989, Transcript of Judgement re Baulkam Hills Shire Council and another party, New South Wales Land and Environment Court). This Court has upheld in a number of cases the right of Local Government Councils under the New South Wales Environmental Protection and Assessment Act, 1979 to impose additional road use charges on heavy truck haulage as a condition of development consent where road haulage is involved.

An estimate of 3 cents per net tonne km for road wear and tear only is the highest unit cost, and the ATC unit costs appear to be the lowest.

16. Use of the 2011 estimates above based on the 2001 ARTC Track Audit means 2.79 cents per net tonne km (ntkm) for road haulage and 0.24 cents per ntkm net tonne km for rail haulage in all areas; plus an extra 1.09 cents per ntkm for road haulage in urban areas, and an extra 0.37 cents per ntkm for rail haulage in urban areas.

So, for one tonne of grain moving 400 km (the average length of haul noted in the Environmental Assessment) with 10 km via urban areas there is a total $11.27 if it moves by road and $1 tonne if it moves by rail.

So if one million tonnes per annum of grain moves from rail to road to Port Kembla, the additional external costs are **over $10 million per annum.**

Potential sources of grain for Port Kembla include the AWB silos at West Wyalong and Stockingbingal and the ABA silo (at The Rock). These are modern facilities designed for quick loading of trains (at 800 tonnes or more per hour), of which some may go to Melbourne. It is clear that the external costs of moving grain by rail to Melbourne from these facilities would be far less than trucking to Port Kembla.

17. Greenhouse gas emissions are addressed in the Environmental Assessment. However, the information on transport emissions in the Environmental Assessment is all too limited and could usefully be addressed in a submissions report.

From the Survey of Motor Vehicle Usage conducted annually by the Australian Bureau of Statistics (ABS cat. no 9208.0) and its data re articulated trucks in Australia, including diesel use their average road freight output of ***37.98 net tonne km per litre.***

Overall, Australia's hire and reward railways had in 2006-07 an average rail freight output of ***128.5 net tonne km per litre*** (from Australasian Railway Association (2008) *Australian Rail Transport Facts 2007* page 18).

By way of example, the switching from rail to road for the movement of 1 million tonnes per annum of grain over 400 km would lead to an increase in the use of diesel of some 7.5 million litres of diesel a year. Greenhouse emissions would then increase by **about 200,000 tonnes per annum.**

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APPENDIX A Land Freight External Costs

Executive Summary of a 2005 Australasian Transport Research Forum Paper *Revised Land Freight External Costs in Australia* Sydney, P Laird, University of Wollongong

This paper outlines some estimates of external costs of land freight transport published in Australia since 1990. The earlier reports include those of the former Inter-State Commission, the National Transport Planning Taskforce, the Victorian Environment Protection Authority and the Bureau of Transport and Regional Economics with its 1999 report *Competitive Neutrality between road and rail.*

With the increasing land freight task and projections for future growth, estimates of external land transport costs have been of increasing interest to government. Recent examples include Queensland Transport, the Victorian Department of Infrastructure, the NSW Department of Transport study of grain transport options, the Australian Transport Council's 2004 *National Guidelines for Transport System Management*, and, the 2003 Austroads report *Valuing Environmental and Other Externalities.* A New Zealand Ministry of Transport *Surface Transport Cost and Charges* study released in 2005 is also of note.

The paper gives particular attention to six external costs of road and rail freight operations in both metro and non-urban areas identified for the Australian Rail Track Corporation's 2001 Track Audit. These external costs are accidents, air pollution, noise pollution, greenhouse gas emissions, congestion, and incremental road damage. The results of two studies conducted for Queensland Transport in 2001 and 2004 that provided updated estimates for each of the Track Audit externalities are discussed. The revised estimates of unit costs include:

1. Australia wide accident costs of 0.6 cents per net tonne kilometre (ntkm) for road freight moved by articulated trucks and 0.03 cents per ntkm for rail freight.

2. An average cost of air pollution in capital cities of 0.65 cents per ntkm for freight moved by articulated trucks and 0.22 cents per ntkm for rail freight moved by diesel electric locomotives. These estimates are based on PM10 emissions as discussed in two BTRE reports *Health Impacts of transport emissions in Australia: Economic costs* (2005) and *Urban pollutant emissions from motor vehicles: Australian trends to 2020* (2003).

3. Noise in capital cities - 0.22 cents per ntkm for road, 0.12 cents per ntkm for rail.

4. A greenhouse gas cost (based on $25 per tonne of carbon dioxide) of 0.18 cents per ntkm for road freight moved by articulated trucks and 0.06 cents per ntkm for rail freight.

5. Road congestion (metro only) 0.10 cents per ntkm for road. -

6. Pending the third determination of road user charges for heavy vehicles of the National Transport Commission, under-recovery of road system costs from articulated trucks at 1.0 cents per ntkm.

Table 1 Recommended revised Australian land freight externality costs

Externality Measure	Road (c/ntk)	Rail (c/ntk)
Accident Costs	0.60	0.03
Air pollution		
- Metro	0.65	0.22
- Rural	0.13	0.04
Noise pollution		
- Metro	0.22	0.12
- Rural	0.07	0.04
Greenhouse gases	0.18	0.06
Congestion (Metro only)	0.10	-
Increased road maintenance	1.00	
TOTALS		
Metro	**2.75**	**0.43**
Rural	**1.98**	**0.17**

Reference: As per text. Note that road maintenance costs for roads of light construction are higher, also that any rail track subsidies may need to be taken into account.

It may be noted that, excluding unrecovered road system costs, the metro articulated truck road external cost of about 1.75 cents per net tonne km is less than half the approximate value cited in the above Austroads report of some 4 cents per net tonne km.

Lower unit costs are given for air pollution and noise for road and rail haulage in non-urban areas.

Even if the users of land freight transport are not required to meet their full external costs, such costs should be fully accounted for when major infrastructure investment decisions are being made. Based on the information in this report, the values in Table 1 are recommended.

It is also of note that road vehicle operators using petrol pay an appropriate de facto externalities charge through fuel excise without rebates, and the assigned average health costs from car use (1.3 cents per km) in the state capital cities equates to about 12 cents per litre of petrol used.

However, following introduction of the New Tax System in 2000, the operators of heavy vehicles were granted conditional rebates for the use of diesel, which have since been further extended to effectively require no payment of external costs (of about 20 cents per litre prior to 2000).