

*Summary of Submission to Senate Rural and Regional Affairs and Transport Legislation Committee re Auslink Bills from the Railway Technical Society of Australasia (RTSA)*

**Introduction** The current inquiry into the AusLink proposals and transport planning is timely. The 2004 OECD report on Australia and recent statements by the Reserve Bank of Australia show that Australia is now facing serious economic problems due to bottle necks caused by inadequate transport infrastructure. Other factors supporting a closer look at AusLink are that; since the start of 2005 oil prices have continued to trade above \$US40 per barrel, and that 'Peakoil' is something Australia may well need to address.

**Freight movements** AusLink is a good start but the first five year plan needs some modification to provide some funding for rail on each of the Brisbane - Townsville and Burnie-Hobart corridors. Advanced planning for a second five year track upgrade programme (2009-2014) for the North South rail corridor is also needed and this will require track straightening on the NSW Main South line. As is well known from experience, road or rail deviations have long lead times to address environmental impact assessment and land acquisition. Rail corridor protection at an early stage is essential.

It is necessary to restore the intended funding of \$400 million for regional strategic transport initiatives including rail as proposed by the AusLink White Paper. The need for grain line rehabilitation is urgent in most mainline states as is the need to make provision for major developments in regional areas. This includes the timber industry in South Australia and New South Wales. RTSA has serious reservations about increasing mass limits of heavy trucks and the current road pricing for these vehicles.

**Passenger movements** A disappointing feature of the Auslink initiative, as outlined in the White Paper and the current bills, is its failure to provide funding for urban transport. Efficient urban transport systems are essential for efficient and healthy cities. The problem is particularly acute in Sydney. The submission draws attention to external costs and suggests that there is a role for the Federal Government in improving urban transport.

For improving regional rail passenger services, RTSA commends the 'Queensland model' of upgrading mainline track for faster and heavier freight trains, and the use of medium high speed trains.

**Other** RTSA supports the formation of a National Infrastructure Advisory Council and a National Transport Advisory Council. We also support calls for a CoAG sponsored microeconomic reform program to focus on freight and passenger transport. This includes a reassessment of road pricing for cars in major cities and the heavier long distance trucks.



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## **Submission re Auslink - March 2005**

### **Introduction**

The Railway Technical Society of Australasia (RTSA) is a technical society of Engineers Australia. RTSA was formed in 1998 and has over 800 members. Since 1998, RTSA has made submissions to Parliamentary Committees and Government Departments re integrated transport planning with a detailed response to the AusLink Green Paper. RTSA's most recent submission is a 2005 Pre Budget Submission and a summary is attached (Appendix A) together with a copy of the submission itself (Appendix B) which covers in detail the main points. Appendix C addresses energy efficiency and external costs.

Given recent events in 2005, the current inquiry is timely. The recent events include the release of the 2004 OECD report on Australia citing, inter alia, *"Recently announced national land transport reforms planned under the AusLink framework need to be effectively implemented, to ensure efficient long-term investment and better integration of the network. .... More broadly, Australian governments should seek to establish an integrated reform agenda within a co-operative assessable framework covering all elements of land transport and shipping transport."*

As identified by the Reserve Bank of Australia, at this point in time, Australia is facing serious economic problems due to bottle necks caused by inadequate and/or substandard transport infrastructure. Since the 1970's, investment in infrastructure has fallen from about 7% of GDP to 3.6% of GDP. This is reflected in the inadequacies of transport systems particularly those servicing mineral exports. Rail is the key land side mode in this area and the failure to provide adequate rail networks for the bulk freight that use rail is leading to lost export opportunities. In addition, the North - South rail corridor linking Australia's three largest cities of Melbourne, Sydney and Brisbane is in substandard condition and multi-modal freight terminals in these cities are not adequate for the task of efficient intermodal freight transport. These failures increase the cost of the movement of imports with consequent increases in cost to Australian manufacturers and the Australian economy in general.

Since the start of 2005, oil prices have continued to trade above \$US40 per barrel, and more recently above \$US 50 per barrel. This is more than 50 percent higher than 12 months ago. Although a record \$US55.17 was set late October 2004 and prices would have to surpass \$90 per barrel to meet the inflation-adjusted peak set in 1980, it would appear that the days of cheap oil below \$US30 per barrel have gone. 'Peakoil' is no longer a wild theory, but something Australia may well have to deal with.

The way forward was identified in reports such as the recommendations of the 1979 Transport and Energy Overview that, inter alia, recommended appropriate road pricing, inclusive of externalities, the 1992 Federal Government policies on Ecologically Sustainable Development, and a National Greenhouse Reduction Strategy. These 1992 recommendations included reducing *'...total energy consumption in transport through improved technical and economic efficiency of urban and non-urban transportation and switching to alternative transport technologies or modes where this reduces greenhouse emissions per passenger or unit of freight.'*

### **Freight movements**

As per RTSA's earlier submissions, the AusLink proposal is a good start. However, the first five year plan needs some modification to provide some funding for rail in the Brisbane - Townsville corridor. At present, all AusLink funds for this corridor are allocated to the Bruce Highway. This is despite the demonstrated need to expedite Caboolture - Landsborough duplication and realignment, and to start planning for other rail deviations and rail bridges. Rail bridges needing attention include the Burnett River near Bundaberg which is now subject to a 15 km/h 'flat' speed restriction (ie no acceleration or braking).

In addition, some rail funding is needed for the Burnie-Hobart corridor. At present, all AusLink funding for this corridor is proposed for road. This is despite a maximum speed limit of 60 km/h of any train with no shortage of permanent and temporary speed restrictions, some as low as 20 km/h) and a light 18 tonne axle load limit.

It is also necessary to look at planning for a second five year capital works programme (2009 - 2014) for the North South rail corridor, including provision for track straightening on the NSW Main South line. This would complement the allocation of \$450 million in the 2004 Budget for work the NSW North Coast line, to include track straightening (as listed in the AusLink White Paper). As is well known from experience in upgrading the Hume Highway and the Pacific Highway, deviations - either road or rail-

can have long lead times to address environmental impact assessment and land acquisition. Advanced corridor protection is essential.

Equally important, it is necessary to restore White Paper (page 83) intended funding of \$400 million for regional strategic transport initiatives including rail. RTSA understands that in the lead up to the 2004 Federal election, this money was diverted to 'Roads to Recovery' for direct payment to Councils. Although a lesser funded replacement scheme of \$150 million over 5 years was promised, most of this has been earmarked for roads (eg \$30m for the Outback Road) and rail is now at the back end of a big queue with perhaps some funds for rail in 2008-09.

Yet the need for grain line rehabilitation is urgent in most mainline states. As well, the RTSA understands that three projects put forward for funding under the strategic transport initiatives are:

- Rehabilitation of the Eyre Peninsular narrow gauge lines wheat lines;
- Reopening of the Heywood - Mt Gambier line with gauge standardisation; and,
- Reopening of the Tumut line.

The latter two proposals result from developments in the timber industry. Heywood - Mt Gambier is prompted by the coming on line of the Blue Gum Plantations and consequent wood chip exports through Portland. Mt Gambier to Wolseley gauge standardization is also desirable. The interest in the Tumut line is due to the development of the Visy mills at Tumut. In all cases, we suggest failure to invest in modest rail rehabilitation will result in additional large numbers of heavy trucks.

The problem of grain movement and grain branch lines is a nation wide issue particularly in Victoria, New South Wales and Western Australia. RTSA has reservations about closing branch lines and putting B-Doubles and other heavy trucks on regional roads. RTSA also has strong reservations about increasing mass limits, with or without so called road friendly suspensions, whilst there is a strong debate about the adequacy of the level of road pricing for heavy trucks, and the structure of the present charges.

### **Passenger movements**

A disappointing feature of the Auslink initiative, as outlined in the White Paper and the current bills, is its failure to provide funding for urban transport. This is despite the strong support given in the many responses to the Green Paper for the Federal Government to accept some responsibility for urban transport that would include the movement of people (as opposed to improving freight movements) within major cities. Efficient urban

transport systems are essential for efficient and healthy cities. Most of Australia's main cities are major non bulk ports. At present the clogging of their road systems by private cars limits the capacity of those systems to serve ports, with consequent costs to both the export and import trades. This also represents a misallocation of resources as freight movement on freeways represent a better economic return than the driver only car using the road for personal transport. Rail can assist in rectifying this problem if urban rail systems are able to provide safe, efficient and reliable services. At present they can not due largely to past and present failures to provide adequate investment in infrastructure.

Appendix C notes that the average health cost of air pollution from cars etc in Australia's capital cities - an external cost - equates to some 16 cents per litre of fuel used.

The problem of excess motor vehicle usage is particularly acute in Sydney and its Greater Metropolitan Area. Incidentally, the RTSA supports retention of the rail line to Newcastle. In respect to Melbourne, if the Federal Government will not contribute to the Mitcham -Frankston tollway, we would suggest redirection of the funds to rail and urban public transport. The WA Government's investment in Perth's urban rail is commendable. The net result is a high level of service and attractive facilities leading to an increase in patronage. Adopting a multi-modal approach in solving transport issues, in particular coordinating rail and bus services and providing good interchange and parking facilities at stations, is also of note and something a revamped AusLink programme could encourage.

RTSA also supports improved regional rail passenger services. This includes the 'Queensland model' of upgrading mainline track for faster and heavier freight trains, and the use of medium high speed trains. RTSA would suggest that, with the Federal Government having all but ruled out a future for very high speed trains, should at least give some encouragement towards NSW adopting the Queensland model.

## **Other**

Like Engineers Australia, RTSA is a long-time supporter of the formation of a National Infrastructure Advisory Council. We would also support the formation of a National Transport Advisory Council, as suggested in the White Paper. As recommended by the Productivity Commission in its inquiry into National Competition Policy and more recently the Australasian Railway Association, a CoAG sponsored microeconomic reform program to focus on freight and passenger transport is desirable. RTSA supports this approach and trusts that it will include more attention to road pricing for both heavy trucks and passenger vehicles in our major cities.

## **APPENDIX A Summary of Pre – Budget Submission to the Treasury**

The RTSA places on record its appreciation of the 2004 Budget provision of \$450 million towards a Sydney - Brisbane track upgrade which includes track straightening and suggests areas to be addressed in the 2005 Budget as follows:

- A. Progress in implementing the AusLink White Paper;
- B. Support for improved road pricing, including from heavy trucks; and,
- C. A change in current aspects of the Tax System to encourage the use of urban public transport, and to give less incentive for motor vehicle usage.

Major points from the submission follow.

1. Rail freight is significantly safer than road freight (by a cost factor of 17 to 1) and on average, rail freight is three times more energy efficient than road transport. There is a need for the transport sector to reduce greenhouse gas emissions. This will require infrastructure investment and improved road pricing.
2. Truly efficient and competitive rail freight operations between Melbourne, Sydney and Brisbane will require some track straightening and/or advancing a Melbourne - Parkes - Brisbane route.
3. Further upgrading of the Brisbane Townsville line is required and grain lines in many states are in need of rehabilitation.
4. Investment in urban rail would reduce dependence on imported oil, reduce greenhouse gases, and improve road safety, and air quality in major cities.
5. The Society submits that the Government should tackle 'head on' a need to bring road user charges nearer to the total costs imposed on the community. The social and environmental costs from road and rail freight need to be recovered.
6. Our budget submission includes a ten point road pricing plan. This includes a phased introduction of road congestion pricing in Australia's larger cities and mass distance charges for the heavier long distance trucks.
7. The Sydney Greater Metropolitan Region has major road traffic problems. To encourage more use of rail needs large "catch up" investment is needed over the next decade. This could partly be funded through improved road pricing.
8. Education and training are increasingly important, and there is a role for the public sector in rail.
9. The proposals of the Productivity Commission in its Draft Discussion report on National Competition Policy that CoAG should drive reform in both freight and passenger transport are supported.

## **APPENDIX B Pre – Budget Submission to the Federal Treasury from the Railway Technical Society of Australasia January 2005**

### **Introduction**

1. The Railway Technical Society of Australasia (RTSA) is a technical society of Engineers Australia. The Society has about 850 members and hosted a major Conference on Railway Engineering in June 2004 with about 400 participants.
2. This submission updates a submission made to Treasury in October 2003, and subsequent submissions to Government by the Society including the Productivity Commission's inquiries into Energy Efficiency and National Competition Policy. A summary of a recent submission to the Productivity Commission re Energy Efficiency is attached.
3. In general terms, both the Society and Engineers Australia maintains that with the creation of a level playing field and a range of actions to improve the efficiency of both rail and intermodal transport, railways in Australia can deliver considerable transport cost savings to business and the community. Environmental benefits, including a reduction in Greenhouse Gas emissions, will also flow as a result.

The Society places on record its appreciation of the 2004 Budget provision of \$450 million towards a Sydney - Brisbane track upgrade, including as noted by The Treasurer, the Hon Peter Costello MP " *This will allow work like straightening the track lines from Northern New South Wales to Brisbane to allow faster movement of freight, with wide ranging benefits for producers.*"

In addition, the Society commends the release of the Guidelines Assessment Methodology Working Group report of November 2004 *National Guidelines For Transport System Management In Australia* plus the concurrent report on the need for transport data.

4. The Society has also welcomed the release of the Government's AusLink White Paper as a good starting step forward in land transport policy reform. However, in our view, further measures should be introduced in the May 2005 budget to facilitate the implementation of a new approach to transport policy. The main areas we would like to see addressed in the 2005 Federal Budget are:

- A. Progress in implementing the AusLink White Paper with further attention to the main objectives of "...ensuring that the nation's land transport infrastructure meets future challenges" and to make more use of the "better framework for decision-making and investment" provided by AusLink (White Paper, page vii).
- B. Support for improved road pricing, including from heavy trucks.
- C. A change in current Fringe Benefit Tax arrangements and other aspects of the Tax System to encourage the use of public transport, and to give less incentive for motor vehicle usage.

### **AusLink**

5. In regards to decision making under AusLink, the Society agrees with the Deputy Prime Minister Mr Anderson when speaking in Parliament on 9th December 2004 to the AUSLINK (NATIONAL LAND TRANSPORT) BILL 2004. *"We upgrade our roads and immediately they are filled with more cars. We simply have to do it in a more coordinated way and upgrade rail at the same time as we upgrade the roads. We need to do that in a coordinated and sensible fashion so that what belongs on the roads goes on the roads and what belongs on rail goes on rail."*

Or, to quote former MP Mr Colin Hollis speaking in Parliament on 8 February 1999 as Deputy Chairman of the House of Representatives Standing Committee on Transport etc. *"... the current upgrading of the Pacific Highway to a near four-lane standard by 2005 may prove to be in vain if all it achieves is taking more and more freight off rail and putting it onto B-doubles."*

6. However, we would express a concern about provisions made before the 2004 Federal Election to provide additional funding to extend the Roads to Recovery program for a further four-year period from 1 July 2005 (with \$1.45 billion for Roads to Recovery over the five-year period to 2008-09) paid directly to every local council. The Society understands this involves an additional \$75 million per year, quite possibly at expense of the funds announced in January 2004 to allow for an integrated approach to regional road and rail.

Grain lines in at least three mainland States (NSW, Victoria and SA) are now at risk of closure. In regards to NSW, real concerns were identified in a Green Paper released in November 2002 by the NSW Farmer's Association. These included the observations (p. 7 from a BAH report), *"Track, structures, signals and communication systems over most*



*of the CSO network were found to have deteriorated over the last 4 years and require restoration to ensure continued operation at an adequate performance level...The inadequate performance of the CSO network has been a major constraint to operators impairing reliability and cycle times and consequently overall competitiveness."*

The NSW Farmer's Association Green Paper also notes (p. 7) *"In general terms, it is apparent that successive Governments have failed to adequately plan to invest in an integrated transport system. This is evident from the differences in track standards across Australia and the enormous variability in the quality and capabilities of rail and road systems in NSW. While upfront capital costs are significant, without adequate infrastructure rural communities, and the businesses servicing them, will be badly affected, and the divide between urban and country areas will only increase."*

It is quite possible that new arrangements to come into effect in 2005 in WA will also place pressure on grain lines in that state. To quote from an earlier RTSA submission to the Productivity Commission re NCP: *"The main reason given for the closure of rural branch lines servicing the grain industry is that their cost to Government and the tax payer outweighs the benefit to the community of keeping the lines open. Grain transportation via heavy vehicles including B-Double trucks and the road network is thought to be appreciably cheaper and more efficient. However, estimates of cost reduction when the need for rail infrastructure maintenance is removed often fail to take into account excessive costs that are simply transferred onto those responsible for maintaining the local road network, and, the wider community."*

7. The decision of the Federal and Queensland Governments to allocate over \$400 million to the Bruce Highway and not one dollar to the Brisbane – Cairns rail track is of concern to the Society. This allocation appears to totally contrary to the intention of AusLink, as stated by the Deputy Prime Minister Mr Anderson on 7 June 2004 that Government *"will fund projects on the transport corridors that have the greatest importance for Australia's long term future, whether the projects involve road, rail ..."*

In addition, the Brisbane-Cairns line carries more freight than the Sydney-Brisbane railway line. The Sydney-Brisbane line has deserving projects noted in the AusLink Fact Sheets amounting to \$450 million. This again makes a lack of Federal funding for Brisbane – Cairns track very hard to understand.

The Caboolture - Nambour track was recognised as congested as long ago in 1994 in the BTCE report of the National Transport Planning Taskforce. It is now in all

likelihood the nation's most congested single rail track. The planned duplication with deviations of the Caboolture - Landsborough to Option 2 standard will assist in efficient interstate rail operations between Central and North Queensland and other Australian states. This includes the premier NQ Direct Services bringing Queensland fruit and vegetables to the Sydney and Melbourne markets.

Other desirable Queensland North Coast line deviations include: Landsborough - Nambour, the track near kilometre 218 (a tight radius curve requiring trains to slow down to 40 km per hour), and a bypass to go with a new bridge over the Burnett River at Bundaberg which is currently subject to a speed restriction of 15 kilometres per hour with no braking or acceleration. The speed restriction used to be 25 km/h.

Can Treasury imagine such a situation on the Bruce Highway? In North Bundaberg, and north of the Rockhampton Station the trains have to go down the middle of a road at a slow speed. Obviously, new rail bridges and on new alignment are needed.

8. Advanced planning for major rail works in the period 2009-2014 is necessary due to the long lead times for construction of either major new highways or railway lines. There are four broad considerations.

A. *The quantum of funds for rail investment*

In 1994, a National Transport Planning Taskforce found that an investment of over \$3 billion was needed to bring interstate mainlines up to the standard for rail to compete with road. As well, the Bureau of Transport Economics in a 1996 report on Transport and Greenhouse - page 210 - noted proposed rail infrastructure investments by corridor with a total Stage I of \$1263m by 2000, and \$2155m by 2010 (on the Melbourne- Brisbane corridor). This included \$1020m for Sydney - Melbourne (both stages). The AusLink White paper notes an allocation of \$477m for Sydney - Melbourne by 2009.

The estimate of \$3 billion was upheld by the House of Representative Committee of Transport etc where its 1998 Report "Tracking Australia" recommended this level of investment be made by the year 2010. This was with \$1 billion to be invested as a matter of urgency by 2001, and \$2 billion over the next ten years. To quote Mr Neville speaking in Parliament on 8 February 1999 as Chairman of the House of Representatives Standing Committee on Transport etc '*...when you consider that Queensland Rail will have spent nearly a billion dollars between Brisbane and Townsville in less than a decade on just one*

*line it is not a big ask that, for a national system that links the five mainland capitals, we spend \$2.75 billion over 12 or 13 years.*

B. *Track straightening* is also needed for the main line linking Sydney and Melbourne to complement the approved track straightening between Sydney and Brisbane. Here, Australia's two largest cities are linked by rail track with excessive curvature. The benefits of Sydney-Melbourne-Brisbane track straightening include

- \* lower rail freight transport costs (to customers) as well as the train operator,
- \* lower track maintenance costs,
- \* a safer Hume highway as rail lifts its modal share from a depressed 12± per cent, (articulated road freight accident costs average out about 0.5 cents per net tonne km as against rail at about 0.03 cents per net tonne km - a ratio of 17 to 1) and,
- \* a chance to upgrade intercity passenger rail services serving regional cities.

As per a recent submission to the Productivity Commission re Energy Efficiency cited below: In regards to the existing route, the RTSA proposes the construction of up to 200 km of new track between Campbelltown and Junee in five locations to replace 260 kilometres of old track with 'steam age' alignment. This would reduce freight train transit times by 1hr 45 min, reduce fuel use per 'standard' freight train (2 NR locos) by about 1300 litres, and cut other train operating costs and track maintenance costs. Such an investment would also complement the construction of 121 kilometres of rail deviations at 14 locations between Maitland and Brisbane noted on page 37 of the AusLink White Paper.

Volume three of the 2004 National Guidelines For Transport System Management In Australia gives further details of the major deviations noted in the ARTC Track Audit and also suggested by the RTSA in an earlier series of brochures. These are among many rail upgrading options to be considered, and we trust that the costs and benefits of the major deviations (which would take some years of advanced planning) could be compared with other options. Taking into account significant external costs that are also discussed in the attachment below (plus the recently released National Guidelines), rail deviations on main interstate track currently with substandard alignment is a type of track improvement that the RTSA considers may (subject to appraisal) be a worthwhile investment.

C. Consideration of the costs and benefits of completing *the Maldon – Port Kembla Railway* is also supported. This railway was started in 1983 and was effectively half-built during the 1980s. Work to date includes half a bridge, over 30 km of formation, two

tunnel portals, and Dombarton – Unanderra duplication. Its completion, coupled with a new Wentworth rail deviation between Menangle and Mittagong identified in an Australian Rail Track Corporation Track Audit at a cost of \$218 million, would provide a valuable Illawarra – Macarthur rail link. This would put Wollongong City about 65 km by rail from Campbelltown.

D. Consideration of an *Inland Route* linking Melbourne, Parkes and Brisbane. To quote again Mr Hollis speaking in Parliament on 8 February 1999 Australia needs to "... compare the national benefits of spending \$1000 million on facilitating road trains on the Newell and Goulburn Valley Highways, or to spend about the same amount in developing a basic inland standard gauge railway from Melbourne to Brisbane via Parkes that would be capable of carrying double- stacked containers."

### **Transport reform and transport pricing**

9. RTSA strongly supports the Draft Proposals of the Productivity Commission in its Draft Discussion report on National Competition Policy that CoAG should drive reform in both freight and passenger transport.

10. The Society submits that the Government tackles, head on, a need to bring road user charges nearer to the total costs imposed on the community. This will assist in both road vehicle demand management, and generating the additional revenue (acknowledged on page 11 of the Government's White Paper on AusLink) as necessary to maintain and improve the transport network's performance.

In this regard, we would draw attention to the editorial "*Rail plans needs political will*" for the Australian Financial Review 18 August 2004 - *in part: "If Mr Anderson wants to make progress towards his vision, he needs to help rail overcome these disadvantages. The \$1 billion provided under Auslink to the Commonwealth-owned Australian Rail Track Corporation, which plans to borrow another \$870 million from the market, will go a long way towards speeding up the journey. Flexibility should be improved by more investment in terminals (Auslink has another \$110 million for the Dynon Road terminal) and innovations such as road-rail interchangeable flat cars; the industry believes these can reduce the viable-trip threshold for rail from 1000 kilometres to 500-600 kilometres.*

*The strategy has accordingly earned two cheers from the investment community, which believes the Auslink rail money will underpin the shift from road to rail but do little actively to bring it about. The third cheer would be for full cost recovery from trucks, of which there is no sign. This would probably require the commonwealth and state governments to brave a deafening blockade of their respective parliament houses. In the past politicians have always backed off.*

11. The RTSA welcomes the formation of a National Transport Commission (NTC) in January 2004. RTSA notes that the NTC is proceeding to a third determination of road user charges for heavy trucks. A start should be made in 2005 or 2006 on moving towards mass-distance pricing for the heavier long distance trucks in Australia's south-eastern region.

The RTSA would also encourage the formation of a National Transport Advisory Council or NTAC. Such a body was mentioned in the White Paper on page 95, that notes *"The Australian Transport Council, comprising Australian Government, State and Territory Ministers with transport responsibilities, intends to establish a National Transport Advisory Council to provide strategic analysis and advice to Ministers on the long-term development of the national transport system."*

The RTSA would suggest that consideration be given to a NTAC having specific functions including road pricing, monitoring transport trends, and making recommendations to reduce dependence on imported oil and greenhouse gas emissions in domestic transport.

A ten point plan for improved road and passenger rail pricing follows at the end of this submission. This includes congestion pricing and mass-distance charging for heavier trucks.

12. The RTSA considers that the Federal Government should revisit the recommendations of the Fuel Taxation Inquiry, and in particular, initiate moves towards the recovery of social and environmental costs from road and rail freight. We have earlier suggested externality costs of about 40 cents per litre of diesel for road freight transport and about 5 cents per litre for rail freight. **Such land transport externality charges should be directed into funds to improve all land transport infrastructure. There is a good case for investment in both urban rail and intercity rail when such investment will reduce dependence on imported oil, reduce greenhouse gases, and improve road safety, and air quality in major cities.**

### **General comment**

13. The education and training of rail staff is increasingly recognized as important. Running a large railway is a complex business, and requires a diversity of skills, trades and professions (including accountants, engineers, and now lawyers). To realise its potential, rail infrastructure will need to be upgraded which requires a significant number of both skilled rail engineers and technically competent managers. The present indications are that in some areas, there will be a serious shortage of qualified railway engineers. The RTSA again notes the ongoing seriousness of the situation (RTSA had noted it as far back as 1999 in a joint report *Engineering for Rail Sector Growth* and summary brochure *Keeping Australia on Track- what you can do to ensure our rail companies have the necessary rail emerging skills*).

For its part, the RTSA introduced in 2002 an annual National Railway Thesis Award to encourage engineering students to consider completing their undergraduate thesis on a topic in railway engineering. In 2003, prizes amounting to \$6000 were made to the authors of four theses. The RTSA also introduced in 2004 a Young Railway Engineers Award.

It should be noted that the rail industry is also facing an increasing shortage of railway trades people in particular engine drivers. Shortages of these specialists is having an increasing impact on the operating efficiency of rail systems as evidenced by the current operational and staffing problems on the Sydney suburban system.

14. Separation of rail functions: The RTSA remains of the view that there is a very strong case for Queensland Rail (QR) maintaining its current configuration. It is worth noting that, from a technical viewpoint, there is a fundamental flaw in the concept of separating above and below rail sections of the industry. The wheel/rail combination is an integrated system, and keeping wheels rolling on rails in an efficient manner is essential to good rail productivity. If the responsibility for different parts of this system are given to different organisations, inefficiencies in the use of the rail and the use of the rolling stock will creep into the system.

Technical advances encompassing the wheel/rail system will be retarded. Evidence of this has already appeared in Australia (with the delay in fixing the track between Geelong and Ararat where new concrete sleepers sat by the side of the track in poor condition for four years, the delays in installing a triangle at Parkes, and the delays in improving safeworking systems), and also in North America where some rolling stock owners have no responsibility for the track. One of the reasons why QR is doing well is that it remains vertically integrated. One example is the introduction of the first regular tilt train service in the Southern Hemisphere which required track upgrading as well as construction of the new tilt trains.

The case for reintegration of track ownership and train operations within the Greater Sydney Metropolitan Region was accepted by the NSW Government following the fatal Waterfall high speed train derailment on 31 January 2003.

15. The RTSA sees considerable merit in good public enterprise in the operation of efficient railways, and advocates a mixed ownership of rail networks. This is to foster competition between the public and private sector as well as increasing the opportunities for innovative activities.

16. The RTSA also sees it as essential that public, as well as private, rail entities be entitled to earn a good return on commercial operations, be able to provide sufficient funds to upgrade their infrastructure and uptake new technology so as to remain competitive and maintain skill levels.

17. As indicated previously, an improvement in the quality and quantity of land transport data in Australia is necessary. Much annual data reporting has been lost with the privatization of rail systems and current private sector reporting falls well behind Canadian and United States practice. The Society welcomes moves by the Australasian Railway Association to improve rail data with its release of in 2004 of the *Australian Rail Industry Report:2003*.

18. Whether or not Australia chooses to ratify the Kyoto protocol (both the Society and Engineers Australia supports ratification), there is a need for the transport sector to be required by government to 'pull its weight' in reducing greenhouse gas emissions (otherwise they are set by 2010 to rise 48 per cent above 1990 levels).

As noted by the Western Australian Government's taskforce on sustainable transport is also desirable for Australia to reduce future dependence on imported oil.

## **Conclusion**

19. In conclusion, the Society looks forward to the 2005 Budget progressing further land transport reforms. These include:

A. Progress in implementing the AusLink White Paper with further attention to the main objectives of "...ensuring that the nation's land transport infrastructure meets future challenges" and to make more use of the "better framework for decision-making and investment" provided by AusLink (White Paper, page vii).

B. Support for improved road pricing, including from heavy trucks.

C. A change in current Fringe Benefit Tax arrangements and other aspects of the Tax System to encourage the use of public transport, and to give less incentives for motor vehicle usage.

20. The Society also submits that there is a good case for investment in both urban rail and intercity rail when such investment will reduce dependence on imported oil, reduce greenhouse gases, improve road safety, and improve air quality in major cities.



## **APPENDIX C Summary of submissions to the Productivity Commission re energy and external costs**

The Railway Technical Society of Australasia (RTSA) supports the 27 page submission to the Commission's inquiry into Energy Efficiency by Dr Philip Laird of the University of Wollongong prepared with the support of the CRC in Railway Engineering and Technologies. The following is mainly a summary of this submission to the Productivity Commission, with notes on external costs mainly taken from a RTSA submission to the Commission in its inquiry into National Competition Policy.

### **General comments on energy**

The importance of energy and the impact of its utilisation on sustainable development cannot be over-emphasised. Energy is involved in every aspect of human activity including industry, commerce, domestic requirements and transport.

It is therefore incumbent on Government and Society that we use energy efficiently. Accordingly, investment in research and development that will reduce energy use is supported (eg a new Energy R and D Corporation). The Commission is invited to explore the proposition that Australia should reduce its domestic energy use (ie energy use in Australia excluding that directly involved in producing exports) per capita, and, ways of achieving this.

Reduced domestic energy use would also reduce greenhouse gas emissions. Here it is of interest that Canada has a One-Tonne Challenge which calls on all Canadians to reduce their annual greenhouse gas emissions by one tonne per annum. Australia could consider a similar challenge for all Australian's to reduce their energy use.

It is submitted that more disclosure of timely information on energy use by both government and industry would be in the national interest. One way to achieve this would simply be for government, through legislation, to require disclosure in the relevant annual reports. Put simply, if you are not measuring energy use, or the cost of energy is perceived to be so cheap, then there is little or no incentive for energy conservation.

### **Transport**

Transport accounts for 41% of Australia's final energy usage. Most of this is used in road transport. Transport energy usage is now 24% above 1990 levels, and by 2010 could be as high as 44%.

As part of the challenge to reduce domestic energy use per capita - including in transport - the RTSA suggests that with the relevant policy levers this would give real incentives to cut waste and improve energy efficiency in moving people and freight.

Questions relating to 'cost-effective energy efficiency improvement in the transport sector' lead not only to questions of (efficient) conversion of energy into effort but also efficient use of energy for a given transport task. Ultimately the conversion of energy and the levels of energy use (as an input for a given transport task) revolve around the pricing inequities between rail infrastructure and road use. For although rail is clearly energy-efficient in the line haul freight task compared with road (about 3 tkm/MJ rail and about 1.2 tkm/MJ for road (where MJ=Megajoule and 1 litre of diesel = 41.77 MJ Full fuel cycle)), pricing mechanisms conspire against rail to perpetuate and encourage overuse of road transport.

Line haul pricing frameworks that ignore the social costs of trauma accidents and costs of pollution end up promoting 'technical efficiency' improvements in the production process (such as higher road mass limits, use of longer road vehicles and support for infrastructure capacity upgrades) rather than addressing the most appropriate mode of transport.

### **External costs**

External costs of road and rail freight transport have received attention in Australia by agencies including the former Inter-State Commission (1990 *Road use charges and vehicle registration; a national scheme*), and, the National Transport Planning Taskforce (NTPT - 1994 *Building for the Job*, p53) that noted, inter alia "...A pricing mechanism for road use, which relates use to cost of provision and external costs, such as congestion and environmental factors, needs to be developed

Further consideration was given by the Bureau of Transport Economics (1999) *Competitive Neutrality between road and rail* Working Paper No 40 and Austroads, (2003) *Valuing Environmental and Other Externalities*. Estimates for six external costs (comprising accidents, air pollution, noise, congestion, greenhouse gases and unrecovered road system costs) in urban and non-urban areas were given by the ARTC Track Audit in 2001 and for Queensland Transport in 2003. They are as follows in cents per net tonne kilometre.

	<b>Road Cost</b> (Qld Transport (2003) Rail Studies)	<b>Road Cost</b> (ARTC Track Audit)	<b>Rail Cost</b> (Qld Transport (2003) Rail Studies)	<b>Rail Cost</b> (ARTC Track Audit)
<b>Rural</b>	1.673¢	1.123¢	0.094¢	0.04¢
<b>Metro</b>	1.906¢	1.326¢	0.128¢	0.074¢

**References:**

1. Queensland Transport (2003) Rail Studies, 'Land Freight External Costs in Queensland'
2. ARTC Track Audit Appendix A, page 24 data
3. As cited in the RTSA primary submission to the Productivity Commission in its inquiry into National Competition Policy (May 2004, page 8)

The Bureau of Transport and Regional Economics (BTRE) in a 2003 paper *The economic consequences of the health effects of transport emissions in Australian capital cities* gave a mid-range estimate of the annual (2000) health related costs (mortality and morbidity) of air pollution from motor vehicles in Australia's capital cities as \$3.3 billion. This used a European approach that effectively uses PM10 levels. In a further 2003 BTRE paper (*Urban pollutant emissions from motor vehicles: Australian trends to 2020*) estimates are given of both PM10 emissions in Australia's capital cities and the kilometres driven for various types of motor vehicles. Analysis of this data shows, in part, that the average health cost of air pollution from cars (and other small passenger vehicles) in Australia's capital cities is 1.8 cents per vehicle kilometre.

Assuming an average fuel use of 11.4 litres per 100 km (ABS SMVU 2001 estimate), gives an external cost of about 16 cents per litre. Other external costs from motor vehicle use include noise, and part of the cost of road crashes. A greenhouse charge levy to cover a modest \$25 per tonne for carbon dioxide emissions would translate to about 6 cents per litre.

**Land freight**

Australia continues to have the highest road-freight-activity per capita nation in the world. There is scope for appreciable savings in diesel by rail winning more land freight. This will require more efficient and competitive rail freight operations as well as transport policy reform by Government. In turn, this will require more investment in rail track. This includes the interstate mainline track linking Melbourne, Sydney and Brisbane with some straightening of existing track as well as consideration of an Inland Route linking Melbourne, Parkes and Brisbane.

In regards to the existing route, the RTSA proposes the construction of 200 km of new track between Campbelltown and Junee in five locations to replace 260 kilometres of

old track with 'steam age' alignment to cut freight train transit times down by 1hr 45 min, reduce fuel use per 'standard' freight train by about 1300 litres, and cut other train operating costs along with reducing track maintenance costs. Such an investment would also complement the construction of 121 kilometres of rail deviations at 14 locations between Maitland and Brisbane noted on page 37 of the AusLink White Paper.

### **Urban Passenger Transport**

The greatest potential for saving liquid fuel in Australia is in moving people in major Greater Metropolitan Regions in a more energy efficient manner. Or, argued cogently by Prof Peter Newman and others (see, for example, the book *Back on Track; Rethinking transport policy in Australia and New Zealand*, UNSW Press 2001, Laird, Newman et al), reducing excessive automobile dependence. This will require better urban public transport (upgraded existing infrastructure with some new tracks and as well as improved service delivery well in some cities (particularly Sydney)) along with improved road pricing.

In relation to urban transport, market failures are also evident. Although, on average, public transport is nearly two times more energy-efficient than private transport (rail 0.65, buses 0.71 and cars 0.36 passenger-km/MJ), public transport is disadvantaged compared with private transport by a range of taxation measures (fringe benefits tax), expenditure and other policies that encourage private use. Although engine technologies continue to deliver marginal improvements in vehicle energy efficiency, these are offset by increased use of larger private vehicles (including sports utility vehicles) through market failure.

At the same time 'economies of density', in which public transport networks are 'connected up' through effective interchanging and use of real time information systems, remain undiscovered. Intensification of public transport services (and land use planning) allied with demand management policies offer the prospect (initially) of much higher levels of energy efficiency use than looking at conversion technologies.

Clearly these market failures create high economic, social and environmental costs. The Bureau of Transport and Regional Economics (BTRE) in a 2003 paper *The economic consequences of the health effects of transport emissions in Australian capital cities* gave mid-range estimates of the health related costs of air pollution from motor vehicles in Australia's capital cities. The mid-range estimate, for the year 2000, was \$3.3 billion. The BTRE effectively attributes air pollution costs to PM10 (particulate matter of size less than

10 microns) levels. In a further 2003 BTRE paper (*Urban pollutant emissions from motor vehicles: Australian trends to 2020*) estimates are given of both PM10 emissions in Australia's capital cities and the kilometres driven for various types of motor vehicles. Analysis of this data shows, in part, that the average health cost of air pollution from operations of cars (and other small passenger vehicles) in Australia's capital cities is 1.8 cents per vehicle kilometre. To recover this cost through fuel taxes would require, assuming an average fuel use of 11.4 litres per 100 km, a fuel levy of about 16 cents per litre.

The RTSA supports the Draft Proposal of the Commission in its Discussion Draft report on National Competition Policy in regards to Passenger Transport, and particularly that CoAG should drive a reform agenda.

### **Other comment**

Various Non-Governmental organisations in Australia have expressed some concern about transport policy. By way of example, the Chartered Institute of Transport in Australia found it necessary to issue a sternly worded statement at its 1998 National Symposium regarding the oil situation: *"Our greatest ever source of cheap energy may soon contract and the 'Petroleum Age' in which we live now can be seen to be approaching an eventual end. ...The Symposium heard that a clear consensus is emerging that cheap oil production outside the Middle East will begin permanent decline around the year 2000, to be followed by permanent world decline within 15 years. ... 'More of the same' in our current transport plans and ways of thinking is no longer tenable. ..."*

With recent international events and oil prices, this warning is now more relevant.

Also, as found by the Institution of Engineers, Australia (1999 *Sustainable Transport: responding to the challenges*) we have major problems in major cities, and, there is a need to respond to the challenges. In part:

A Taxation and fiscal policy instruments should encourage sustainable transport. At present, these measures encourage car and truck use.

B There is a strong case for increased investment in transport infrastructure that is more sustainable and uses less energy. Where market forces fail, government should intervene.

### **A ten point transport pricing plan**

The BTRE has more than once examined reducing energy use and greenhouse gas emissions from transport, including in 2002 with *Greenhouse policy options for transport - Australian trends to 2020*. Here, optimal road pricing was held to offer the best way forward.

This view was shared by the Parry Inquiry (NSW Ministry for Transport, 2003) that noted, inter alia (p72) *"The thinking underlying the support for road use pricing is that road access is currently 'too cheap' (as distinct from the general cost of motor vehicle use), as motorists are not directly bearing all of the costs associated with their decision to make a journey. For example, driving a vehicle is associated with costs such as congestion, road wear and tear, pollution and accidents."*

Optimal road pricing and other measures could well include:

1. Instigate road user charges (initially reinstatement of tolls and removal of toll rebates).
2. Remove the Queensland Fuel Subsidy Scheme.
3. Impose congestion charges for the CBD of Sydney and Melbourne (starting with say \$5 for a road vehicle to enter the Sydney CBD during weekdays).
4. Restore fuel excise indexation.
5. Ensure that the third determination of heavy vehicle road user charges (by the National Transport Commission) recovers the full road system costs from heavy vehicles.
6. Increase tariffs and annual registration fees for heavier four-wheel drive vehicles.
7. Support previous recommendations into inquiries into road pricing and urban transport.
8. Increase rail fares with proceeds going to a better rail system.
9. Improve land transport data, and raise the level of public debate re transport pricing.
10. Ensure that airports and seaports are not in receipt of hidden subsidies.