



Submission by:

Rail Tram & Bus Union  
(Qld Branch)

to:

Productivity Commission

on:

# Road and Rail Freight Infrastructure Pricing

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## Glossary

ACTU	Australian Council of Trade Unions
ALP	Australian Labor Party
btk	billion tonne-kilometres
BTRE	Bureau of Transport & Regional Economics
ITF	International Transport Workers Federation
NTC	National Transport Commission
PC	Productivity Commission
RTBU	Rail, Tram and Bus Union
UITP	International Union of Public Transport

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## Executive Summary

This is a submission by the Rail, Tram and Bus Union (RTBU) on the Productivity Commission's position paper titled: *Road and Rail Freight Infrastructure Pricing, March 2006*.

The RTBU has a special interest in transport and rail transport in particular, and on behalf of its members is seeking the right policy approach to improving transport productivity in Australia by facilitating efficient investment, operation and use of transport infrastructure.

The RTBU promotes the development of transport to achieve the desired transport outcomes of effective and efficient, viable, safe and secure, and sustainable transport.

We conclude that:

- To adequately address the task of improving transport productivity in Australia, an integrated range of measures are needed, including planning, operational, regulatory, funding and collaboration strategies.
- Efficiency in freight transport requires a balanced approach to pricing across road and rail. Pricing regimes for using transport infrastructure should provide incentives for efficient allocation of the freight task to the most appropriate mode.
- A key strategy to ensuring a balanced transport system is to have a consistent evaluation methodology for investment across all transport modes, with due consideration of externalities.
- Urban traffic congestion requires that more comprehensive pricing mechanisms be considered, including road user charges and congestion pricing that go beyond current freight charges. This will require a national approach. There are considerable economic and political risks of not taking early action to ensure appropriate road user charges (including externalities) are considered.
- A longer term view is needed, considering the land use and transport planning nexus, including preservation of transport corridors and inter-modal hubs.
- We consider that there is an obligation to protect future generations from any negative environmental and financial impacts from today's decisions.

# 1. Rail, Tram and Bus Union

The Rail, Tram and Bus Union (RTBU) was formed on 1 March 1993, through a historic amalgamation of three railway unions and one tram and bus union.

The RTBU has 35,000 members in the rail, tram and bus industry across Australia. It is affiliated to the Australian Council of Trade Unions (ACTU), the International Transport Workers Federation (ITF) and the Australian Labor Party (ALP). The RTBU is the principal union in Australia in the public transport and the rail industry generally.

The RTBU is also an Associate Member of the Australasian Railways Association, and a member of the international Union of Public Transport (UITP).

We work to promote sustainable transport as an essential element in a fair and environmentally sustainable Australian society, and to promote the interests of rail and bus transport workers as a key element in achieving that goal.

The RTBU is clearly aligned with the environmental movement on the issues of urban planning, passenger transit, freight transport, energy use, reducing Greenhouse Gas Emissions and social justice.

We promote the development of transport to achieve the desired transport outcomes of effective and efficient transport; viable transport services; safe transport; and sustainable transport. These outcomes need to be carefully considered in the analysis of options for transport productivity in Australia.

We provide a unique perspective as a major stakeholder, due to its members being from the rail industry, being able to provide a practical experience to rail freight transport issues. Best practice in delivering customer service, safety and security requires active involvement of staff and their union.

We strongly support all efforts to insure inter-generational responsibility in relation to environmental sustainability and resource depletion.

The RTBU, as a major stakeholder would be pleased for further opportunities to provide input.

## 2. Overview

### Scope of the inquiry

.. a key contribution of this review would be to establish a framework and principles for pricing road and rail infrastructure, as well as feasible paths for implementing them in the medium to longer term. Moreover, because efficient prices provide signals about demand and the need for investment (or disinvestment), the Commission sees value in exploring mechanisms and institutional arrangements that would better integrate infrastructure supply and demand. [p14]

*Do participants agree with this approach?*

*Given the terms of reference, where can the Commission's inquiry add most value?*

We agree with this approach and consider that most value can be added by:

- Putting forward consistent methodologies for the pricing of infrastructure provision and use, across modes
- Ensure that full social costs of usage for each mode are recovered
- Suggesting ways in which externalities can be included in the recommended pricing approach. The climate change costs from greenhouse gasses; the health impacts of particle and other emissions; fossil fuel depletion rates, are all factors which need to be part of any modal pricing approach
- Providing a coherent argument for the recommended pricing principles and methodologies, through the quantification of national benefit to be derived from the adoption of those principles, and
- Suggesting ways in which the recommended pricing approach can be implemented in practice.

### 3. Desired Transport Outcomes

The RTBU promotes the development of sustainable transport to achieve the following desired transport outcomes:

- Effective and Efficient Transport;
- Viable Transport Services;
- Safe and Secure Transport; and
- Sustainable Transport.

#### Effective and Efficient Transport

To be able to address the transport task being faced, the most cost-effective and efficient balance of transport infrastructure and services (in terms of economic and sustainability criteria) should be pursued. This will ultimately be a balance of passenger and freight transport by car, truck, bus and train.

The growth in travel, in line with the growth in population, could result in a situation where road traffic becomes increasingly congested, the volume of heavy vehicle travel causes considerable road damage and safety, noise, energy and emission problems increase to alarming levels. As a result the potential for road user charging to address these issues increases.

Options that need to be considered include a range of road user charges such as mass - distance charges for heavy vehicles, road congestion charges, carbon and environmental taxes and removal of the Queensland fuel subsidy. All of these initiatives would mean an increasing role for rail, particularly for freight transport.

The RTBU is concerned that failure to manage the appropriate mode for the task, will mean a greater proportion of the task by road, requiring additional government investment in road infrastructure and inefficient and unsustainable use of community resources. The cost of an increased modal shift of freight to road through a policy decision which increases road's attractiveness, will adversely impact all levels of government.

## Viabale Transport Services

Transport services must be economically and financially viable to ensure their sustainability into the future for the benefit of transport users, industry, and the community as a whole. These considerations need to incorporate the full costs to the community, including externalities, inter-generation impacts etc.

Transport costs are a major component of the cost of doing business. Access to jobs must also be convenient to link employees and employers efficiently. Viable transport services also promote economic development by reducing costs.

Where transport services provide positive economic benefits for transport users, industry, and the community as a whole, then there is a strong case for Government financial support. Consideration must also be given to infrastructure whole-of-life considerations, as rail corridors and infrastructure generally have a much longer life than roads, particularly for rail lines on optimum gradients and alignments.

An integrated corridor approach to planning is required, which focuses on meeting future freight needs in the best way, irrespective of the transport mode, rather than focusing on separate rail and road transport modes.

Modal neutrality is of particular concern in urban areas where rail freight is constrained to off peak transit times, to provide priority for passenger rail demands in peak periods. Similar requirements, such as congestion pricing for heavy vehicles, should be considered for urban freight routes to ensure competitive neutrality. In the same way that freight routes and bypasses are provided for trucks in some urban areas, the same should approach should be used for freight rail.

The projected increasing cost of fossil fuel will have considerable impact on the economy and quality of life and energy efficient transport modes will become more critical.

## Safe and Secure Transport

A safe and secure transport system would be characterised by reduced crashes, personal injuries, medical costs, property damage and fatalities; reduced personal security events; infrastructure adequately protected against terrorism with adequate contingency; and quick response systems for natural disaster and other emergency events.

Promoting a balanced use of transport infrastructure should aim to ensure the safety and security for operators, employees, users and the community.

## Sustainable Transport

Much of current transport planning and investment is predicated on the availability and use of private motor vehicle. Unrestrained car use is a significant contributor to global warming. There is the potential for a dramatic reduction in the availability of oil supplies, and the possibility of rapid increases in the cost of operating motor vehicles (due to dramatically rising oil prices).

The RTBU is concerned that investment in transport infrastructure and services should aim to be sustainable, minimising the impact on the environment and providing equitably for future generations. The primary criteria include energy, greenhouse gas and other emissions and impacts on the physical, built and social environment.

There are at least three aspects of sustainability of interest:

- Efficient use of energy – more fuel efficient vehicles, greater use of rail, efficient use of fossil fuel use by transport to reduce energy and global (GHG) emissions and increased use of renewable energy;
- Cleaner air, and quieter environment: through reductions in emissions from mobile sources, and more efficient transport (higher occupancy), such as enhanced public transport and rail, walking and cycling; and
- A transport system integrated into the built and natural environment with minimal associated impact including on water quality and open space through sound planning, design, construction and operations.

Rail is certainly more efficient than road in terms of energy or fuel use for both mass passenger transport and bulk, long distance freight transport. The ACIL (2001) study indicated that articulated trucks used between three and seven times the energy compared to rail freight.

Rail freight produces significantly lower levels of greenhouse gas emissions than road freight (large trucks produce over twice as much as trains on average; small trucks are worse) (ACIL 2001).

Transport policy considerations must take into account the fact that fossil fuel is a non-renewable resource and there are real concerns about diminishing oil reserves.



## 4. Issues and questions

### Costs of providing and maintaining road and rail freight infrastructure

*Do participants agree that the Commission should focus on economic costs as the relevant measure of the costs of providing transport infrastructure? [p17]*

We consider that the Commission should focus on economic costs as the relevant measure of the costs of providing transport infrastructure to ensure that social and environmental consequences of transport are fully taken into account as well as other factors.

*Should the same methodologies for assessing capital costs be applied in each mode? [p18]*

We support the same methodologies for assessing capital costs being used for road and rail infrastructure.

*What are appropriate required rates of return on road and rail infrastructure? Should they be the same? If not, why not? [p18]*

We consider that rates of return should be compatible with those required by other publicly funded capital projects and should be the same for road and rail.

*Given a requirement for full recovery of freight infrastructure costs, how should common costs be allocated across freight and passenger uses? What are appropriate criteria? For example, should common costs be allocated on the basis of 'fairness' or of efficiency? Should common costs of road and rail be allocated in the same way? [p18]*

The RTBU considers that it is essential that common costs of road and rail be allocated on a consistent basis.

*Do you agree with the exclusion of some costs, such as enforcement costs, from the cost base for road charges? [p19]*

We consider that all costs should be included in the cost base for road charges.

## Full economic and social costs of road and rail freight

*What are the major externalities associated with road and rail freight infrastructure use?*

*How are these externalities related to road or rail use? For example, do the impacts vary by vehicle type, mass, distance travelled, location and type of road? What role do other factors play, such as vehicle age, or driver behaviour and ability?*

*Are any of these external effects already incorporated in freight costs? By what mechanism? To what extent do existing mechanisms adequately address the externalities? What are the costs of these mechanisms? [p20]*

We suggest that the major externalities associated with road and rail freight infrastructure use (generated by infrastructure users that are borne by others) are:

- Environmental costs include noise, local air pollution and greenhouse gas emissions from transport operations and upstream and downstream environmental costs implicit to the provision and eventual disposal of infrastructure
- Safety related costs of transport crashes or incidents
- Research and development costs for development of alternative sources of energy in recognition of the depletion of non-renewable energy resulting from its current use for transport
- Changes in land values as a result of accessibility changes, and
- Congestion.

These major externalities are directly affected by modal usage and indirectly influence people's use of the modes.

The extent of externality impact vary with exposed population, ie a notion of an environmental footprint of each mode, for example a transport emission of one kilogram of CO<sub>2</sub> (carbon dioxide) will have the same greenhouse gas effect wherever it is emitted. However, one kilogram of NO<sub>x</sub> (nitrous oxides) or PM (particulate matter) will have a much higher costs if it is likely to affect large populations (eg densely populated urban areas). Hence externalities cannot be treated the same way irrespective of population exposed.

Environmental externalities are currently not recovered at all and should be.

Transport pricing considerations must take into account the fact that fossil fuel is a non-renewable resource and there are real concerns about diminishing oil reserves. Unless given adequate consideration we will

impose grave restrictions on future choices and impose costs and risks on future generations.

This is identified in the discussions on future global oil production and demand as described by the Hubbert Curves (for more information see: <http://hubbertpeak.com> and subsequently [www.lifeaftertheoilcrash.net](http://www.lifeaftertheoilcrash.net)). See also the recent Griffith University study on *Oil Vulnerability in the Australian City* (available from: <http://www.griffith.edu.au/centre/urp>).

ACIL (2001) indicated that rail is far superior to road in terms of safety, in relation to safety and human trauma. The Queensland Rail Network Strategy (QT 2001) states “*rail urban transport is seven times safer than road per passenger kilometre*” and Laird (2002) estimated rail to be 29 times safer than road.

In addition, movement of bulk dangerous good commodities by rail enables a much better overall risk management environment. This is particularly important, for example in relation to the transport of Class 5 fertilisers which need to be carefully controlled for safety and national security reasons. Rail has the advantage over road transport by having specific, defined routes and a limited number of accredited operators, who operate under required safety procedures. Transport of dangerous goods is much more difficult to control and enforce for road transport, with multiple operators, and diverse potential routes.

*Are there other Australian or overseas studies estimating external costs of freight transport? How well do results from overseas studies translate to Australia?*

*How should greenhouse gas emissions be valued? [p21]*

We consider that there are many international studies on health impacts of emissions. There is mounting evidence that ultra-fine particle emissions cause significant health damage.

There is a large body of literature on the valuation of greenhouse gas emissions. The methodology used to calculate dollar values for greenhouse gas emissions is less important than the principle of consistently charging users for it.

Large productivity increases must not be at the expense of negative environmental and safety outcomes. Vehicle emissions from diesel engines in the form of particulate matter is known to have significant costs in terms of morbidity and mortality and have very negative local community impacts in terms of health.

Rail has far less impact in terms of environmental damage per unit of output (eg net tonne-km). Yet such impacts are not used to estimate costs and benefits of rail investment – mainly a financial evaluation is made purely on commercial viability grounds. Road projects, on the other hand, are usually evaluated on the basis of cost-benefit analysis which takes into account some externalities.

A recent European Union study has found that in Germany heavy vehicles produce up to five times the external costs of freight rail (EU 2003).

*How should a quality-adjusted life-year be valued? What discount rates are appropriate? [p21]*

We consider that the BTRE work on estimating health impacts points to the need to undertake further research to obtain Australian specific valuations. The BTRE has, however, generally taken a conservative approach to establishing the statistical value of life by using the human capital approach. By contrast, a willingness-to-pay to reduce risk approach, which is used more commonly overseas, generally results in a much higher values. The RTBU believes that a lower discount rate than is common for infrastructure should be used given the value the community places on measures that enable inter-generational impacts to be avoided.

### Options for pricing reform

*Do participants agree with this interpretation? If not, how should 'consistency' be interpreted?*

The RTBU agrees that consistency can be interpreted as requiring the same pricing principles to be applied to, and within, both principal modes of freight transport.

*Do participants agree with this interpretation? If not, how should 'competitively neutral pricing regimes' be interpreted? [p21]*

We agree that the term 'competitive neutrality' needs to be defined more broadly and that implies an absence of *differential* subsidies between transport modes. Ideally, if full social costs were recovered for each mode, there would not be a need for subsidies. The latter should be seen as second best solution when externalities are not recovered through pricing.

*Are rail and road network charges broadly covering their aggregate costs? If not, why not? [p22]*

We consider that road network charges do not cover damage costs due to road freight.

*How efficient are current charging arrangements for use of rail infrastructure? [p22]*

We consider that current rail charging does not recover sufficient costs for the long-term infrastructure investment which is needed on some corridors. This is because of a lack of past investment in those corridors and unfair competition from road transport which prevents higher charges being imposed for rail services.

*What are the key attributes of road use likely to affect road infrastructure costs (for example, vehicle and load mass, the distance travelled, the location and type of road)? What is the nature of the linkages?*

*How accurately can road use by trucks be linked to generation of infrastructure costs? How does the type of road affect these costs? [p23]*

We consider that charges need to relate as closely as possible to road damage caused plus any externalities. In this regard, we endorse the NTC's principle of introducing mass-distance charges.

*Should costs of some or all external effects associated with freight transport be incorporated in road and rail charges? Which ones? Why or why not? Is it feasible to incorporate costs of some or all externalities in road and rail prices? [p23]*

We consider that costs of some or all external effects associated with freight transport should be incorporated in road and rail charges – in particular congestion induced externalities; pollutants and greenhouse gas emissions. Fuel consumption is a good proxy for such externalities.

*Would incorporation of externalities in road and rail user charges lead to the efficient abatement of some or all externalities? Why or why not? For example, to what extent would imposition of congestion charges on heavy vehicles ease urban congestion in the absence of charges on passenger vehicles? By what mechanism would road or rail charges encourage reductions in noise and air pollution? [p23]*

We agree that incorporation of externalities in road and rail user charges would lead to the efficient abatement of some or all externalities. Congestion charges need to be imposed on all road users – passenger and freight. Direct links between externality costs incurred and charges would send the right pricing signal to users.

*Are some externalities already being addressed by other mechanisms? For example, through liability laws, infrastructure construction (including, for example, safety features and noise barriers), vehicle standards and regulations, road rules (for example, speed limits, driver fatigue regulations), or by actions of individuals affected? Are these the best feasible ways of 'internalising' the externalities? [p24]*

While some externalities might be covered through various instruments at present, we consider that there should be a more consistent and explicit basis for addressing them. For example, carbon trading should be actively pursued as a policy option.

### Impacts of different pricing regimes

*What are the likely resource impacts of a shift to pricing regimes that better reflect marginal costs of using road and rail infrastructure?*

*How would such pricing affect use of existing infrastructure? Would impacts vary across corridors? If so, why?*

*What are the likely efficiency impacts of different allocations of non-separable costs?*

*How could individual user charges for road use improve modal and network investment decisions? [p24]*

We consider that changes in pricing regimes would affect the relative use of current transport modes. This will require changes in investment profiles by mode and hence better allocation of resources.

Rail could win a significant market share on the North-South (Cairns-Melbourne) corridor if a balanced pricing, regulatory and operational framework is established for road and rail and appropriate infrastructure investment is made. The current average speeds for rail on the North-South corridor of less than 50 km/h are uncompetitive, which together with height and weight restrictions needs urgent investment to improve alignments and track standards. Unlike the road network, rail is constrained by 19<sup>th</sup> century track alignments, gradients and operating systems.

*How sensitive are freight users to price changes?*

*What are the key drivers of their decisions to use either road or rail transport?*

*On which routes and for which freight tasks are road and rail more likely to compete? What are the key factors influencing contestability? Are these factors likely to change? What proportion of the freight task is contestable? [p25]*

We consider that the key drivers for freight users are transit times, reliability of load availability schedules and price. The relative

importance varies with user and commodity type. The routes that road and rail are most likely to compete are on interstate corridors for general freight in containers.

Some regional and rural rail networks are suffering from underinvestment which will lead to increased reliance on road freight with associated non-recovered costs of externalities and road damage.

Rail is likely to see improvements in north-south corridor following long overdue investment in track and train control systems on this corridor. However, even after such investment, road will continue to have a competitive advantage, given proposed road improvements.

Non-bulk freight over medium to long distances should be contestable, assuming the infrastructure is capable of providing comparable levels of service (eg: transit times). However, rail is significantly constrained by poor horizontal and vertical track alignments.

*For which tasks and for what proportion of the freight task are road and rail complements?*

We consider that road and rail are complementary for all longer distance freight movement for commodities other than mineral traffic. Rail is especially well suited to the line-haul segments, while road complements rail for local distribution/collection functions

## Design and implementation issues

*If mass–distance and/or location charges were deemed to be efficient and technically feasible, how quickly should they be introduced? What are the major implementation tasks and risks? [p28]*

We consider that mass–distance and/or location charges should be introduced as soon as possible. The major implementation risks are in choosing a system that requires technology that is not yet proven.

*Would a system of incremental charging, as outlined by the NTC (2004a), provide a useful stepping stone to broader application of mass–distance charging? Are there drawbacks to such an approach? [p28]*

The RTBU considers that a system of incremental charging would be a second best solution. We strongly support the introduction of mass–distance charging as soon as possible.

## Impediments to efficient pricing and operation of transport infrastructure

*Other than price, what are the major impediments to efficient use of road and rail freight infrastructure? These might include (but not be limited to):*

- *prescriptive regulations;*
  - *differences in regulations across jurisdictions;*
  - *inadequate infrastructure investment decisions;*
  - *access impediments to rail track or intermodal facilities;*
  - *regulatory and planning impediments to private infrastructure investments; or industrial relations issues affecting service levels.*
- [p29]

*How should these impediments be addressed? Which are the most important? Is there a preferred sequence of reforms?*

*How can infrastructure investment decision-making be improved? For example, through application of consistent and transparent cost–benefit methodologies? Or are institutional reforms also needed to promote a more commercial approach to road and rail infrastructure provision and pricing? What institutional reforms would be most effective or desirable? [p29]*

We consider that consistent investment criteria on a full cost-benefit analysis basis is required for road and rail projects. The current approach, with its use of different criteria for each mode, lacks consistency and fairness.

## Other Issues

Urban congestion will become a major issue for efficient freight transport. A range of interventions are required to address this issue, including:

- Managing use of roads space to ensure its efficient use – including potential for curfews, congestion charging, parking pricing or controls in central business districts
- Investment in urban passenger transport to reduce inefficient road travel
- Investment in freight rail links in urban areas – such as critical links to ports and providing separate freight lines from urban passenger rail in constrained situations
- Establishment of new freight inter-modal terminal capacity in major urban areas – issues of optimum location of terminals to reflect current and projected location decisions of users, and
- Through effective land use planning reduce the need for freight movements through urban areas.



Railway operations are complex businesses with specific safety risks and systems for the safe operation of trains, signalling systems and the construction and maintenance of rail assets. Governments throughout the world have responded with industry specific legislation.

We believe that safety standards need to be improved, against the current trend due to deregulation, and that the RTBU needs to be involved in the development of rail safety legislation and regulations.

Industry has identified an emerging skills crisis in the rail industry. Rail is having difficulty in meeting existing demand for some specialised competencies. An ageing workforce makes these shortages worse. For example, the average age of rail safety workers is well in excess of the average age of Australian workers.

Education and training programs are required to address these skill shortages, through support for initiatives such as the Rail Cooperative Research Centre proposal for funding by Australian Research Council and industry. Portable nationally accredited qualifications should also form part of a national approach to education and training in the rail industry.

## 5. Conclusions

We conclude that:

- To adequately address the task of improving transport productivity in Australia, an integrated range of measures are needed, including planning, operational, regulatory, funding and collaboration strategies
- Efficiency in freight transport requires a balanced approach to pricing across road and rail. Pricing regimes for using transport infrastructure should provide incentives for efficient allocation of the freight task to the most appropriate mode
- A key strategy to ensuring a balanced transport system is to have a consistent evaluation methodology for investment across all transport modes, with due consideration of externalities
- Urban traffic congestion is going to be a major issue for freight into the future and more comprehensive pricing mechanisms need to be considered, including road user charges and congestion pricing that go beyond current freight charges. This will require a national approach. There are considerable economic and political risks of not taking early action to ensure appropriate road user charges are considered, and
- A longer term view is needed, considering the land use and transport planning nexus, including preservation of transport corridors and inter-modal hubs.
- We consider that there is an obligation to protect future generations from any negative environmental and financial impacts from today's decisions.

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*“The significant problems we have cannot be solved at the  
same level of thinking with which we created them”*

*Albert Einstein*

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