

## *Submission re Australia's future tax system*

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This submission will draw on research conducted at the University of Wollongong. However, it does not necessarily reflect the views of the University. The submission is mainly by way of a 2007 conference paper and draws on an earlier submissions including a 2008 one to the Treasury in the form of a Pre Budget submission.

Except to give support in principal to simplifying the taxation system and making it more equitable, the submission is restricted to land transport. Some comment on the three consultation questions re Fuel, roads and transport is also given.

### **Key messages in this submission**

Despite existing taxes on the purchase and use of motor vehicles, when all costs are considered, a case can be made that there is a "road deficit" now exceeding \$13 billion per annum. Of this hidden subsidy, some \$3 billion per annum may be attributed to the operation of articulated trucks, and this may be regarded as a "road freight deficit". As well as the use of motor vehicles imposing costs on society through greenhouse gas emissions, air pollution, noise pollution, urban congestion and road trauma, there are many other costs to consider.

The other costs include generous tax concessions for motor vehicle use and certain external costs cited in the 2004 and 2006 *National Guidelines for Transport System Management In Australia* of the Australian Transport Council (ATC). These guidelines give default Externality Values (Austroads) for Water, Nature and landscape and Urban separation (as well as some of the external costs listed above). Rail freight and passenger movements also incur external costs, although for a given transport task, these are lower than road transport.

The present relatively low level of road vehicle transport taxes by OECD standards are a major factor in distorting consumer choices between public and private transport, and between road and rail travel. The submission argues for an increase in fuel excise (with proceeds being applied to not only roads but alternatives to roads), congestion pricing with more tolling for light as well as heavy vehicles as a method of 'vehicle use demand management' and mass distance pricing for articulated trucks. Support is given for replacing registration, insurance and fuel charges by charges that better reflect "vehicle mass, distance travelled and the location of use". Indeed, this was put forward by Australian Transport Council as far back in 2002 in proposing a National Strategy for Lowering Emissions from

Urban Traffic. This strategy includes "...programs that encourage people to take fewer trips by car' and transport 'from predominantly fixed to predominantly variable costs [to ...] ensure that transport users experience more of the true cost of their travel choices.'

The findings of the 2002 Fuel Taxation Inquiry should be revisited by Government, and, fuel excise should be both increased and indexed.

At a State level, long standing anomalies like the Queensland Fuel Subsidy Scheme and the NSW Government's cash back scheme for use of certain tollways need review.

In addition, given both climate change and oil supply vulnerability, a sense of urgency is needed in rational transport pricing and upgrading of certain rail infrastructure.

The last word in this summary goes to the Secretary of the Australian Treasury, Dr Ken Henry (2002), who noted that even with significant increases in the sizes and loads carried by trucks, interstate kilometres travelled could grow by something like 75 per cent over a 15 year period. *"Urban car traffic is likely to grow at a much slower rate by about 20 per cent over 15 years, or 1.2 per cent a year. Including urban commercial traffic, the figure is likely to be more like 23 per cent. Even those apparently relatively modest rates of growth in urban traffic raise important issues, especially of urban congestion and, of course, urban air quality. And truck traffic projections raise questions about the capacity and quality of maintenance of our highways. **Not dealing with these issues now amounts to passing a very challenging set of problems to future generations.**"*(emphasis added)

### **Comment re oil vulnerability, climate change and external costs**

1. The reality is that the days of cheap oil are over, yet, long standing attitudes from the era of cheap oil continue to influence government policy. The world has now reached the situation as noted on 5 June 2008 (World Environment day) by Prime Minister Rudd in Parliament that *"More and more people are chasing less and less oil."*

Climate change is also of concern, yet despite ratification of the Kyoto protocol in December 2007, Australia still continues to lightly tax the use of liquid fuel. With the exception of the introduction of indexation of fuel excise, one has to go back some 30 years to find a move by the Federal government to increase fuel taxation. This was in August 1978, when Australia introduced import parity pricing for all Australian-produced crude oil as a revenue raising measure. The Prime Minister of the day made it clear that import parity pricing was being introduced in response to a changing world situation and a need to encourage energy conservation, oil exploration in Australia and the development of

alternative energy sources. Government complementary measures included a National Energy Conservation Program. In the eight year period 1976 to from 1984-85 there was a marked improvement in energy efficiency in land freight transport with diesel savings actually exceeding projected savings.

2. Quickly following the second world oil price shock in the late 1970s, a then relatively 'new' approach to energy use in transport was suggested in 1979 in a government Australian Transport Advisory Council publication called *Transport and Energy Overview*. Although the data used in this report is now dated, the approach is commended, as are the conclusions. In part: *"... rail is relatively energy efficient compared to road for long distance freight ... (and) ... does have fuel substitute options, such as coal-oil slurries or electrification ..... As far as possible pricing and cost recovery policies should be consistent across the modes so as to encourage use of modes appropriate to particular tasks. Appropriateness may be defined broadly as minimising the total social cost of transport services, including externalities."*

Yet, either improving the energy efficiency of cars, or getting people to move to more energy efficient modes of transport has proven difficult. By way of example, the Senate Standing Committee on Industry, Science and Technology in its 1991 report *Rescue the Future: reducing the impact of the greenhouse effect* that addressed, inter alia, transport. Noting that transport contributed over a quarter of Australia's Carbon dioxide emissions, the Committee made six specific transport recommendations. These comprised:

- an integrated national transport strategy within two years .
- a national action plan for urban public transport
- minimum fuel economy of 8 litres per 100 km for all new vehicles sold in Australia reducing to 6 litres per 100 km by 2005.
- incentives for fuel efficient vehicles, mode shifting to public transport, and replacing high standing charges (registration and insurance) by those proportional to vehicle use.
- favouring LPG and natural gas
- research re use of lower carbon fuels

The 1991 Senate Committee report also noted that *"already much has been written and said, including strategies and recommendations that would greatly reduce greenhouse gas emissions. The element that is missing is not information but action."*

Australia's record in achieving these six worthwhile goals has been limited. The integrated transport strategy had to wait effectively until 2004 with the release of the AusLink White Paper and this did not include urban public transport.

3. A 1991 report from an Ecologically Sustainable Development (ESD) Working Group on Transport is also of note. This report was one of nine reports on ESD sponsored by the Federal Government. The ESD transport final report gave a careful examination of the issues and made some 30 recommendations. These addressed concerns about concessions within the Fringe Benefits Tax system that encouraged the provision of company cars, the need to encourage the use of public transport as part of salary packages, better vehicle pollution control measures, effective schemes to improve fuel efficiency with labelling, the removal of subsidies to encourage greenfield suburbanisation, road pricing mechanisms, priority for high-occupancy vehicles, bicycling etc.

In 1992 Government policies on ESD, and a National Greenhouse Reduction Strategy 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'*.

However, since 1991 most of these recommendations have been passed over each year by Government when formulating budgets. Given oil vulnerability and climate change issues, it is now time to revisit these and related recommendations.

4. During the late 1990s, two notable contributions to the transport debate in Australia were made by non government organisations. One was from the Chartered Institute of Transport in Australia who found it necessary to issue a sternly worded statement at its 1998 National Symposium about 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. ..."*

Engineers Australia (1999)<sup>1</sup> found that we have major problems in major cities, and, there is a need to respond to the challenges. In brief:

- 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 less greenhouse gas intensive. Where market forces fail, government should intervene.
- C More holistic approaches to transport decisions are needed that integrate considerations of impacts on health, sustainability and greenhouse gas emissions.
- D There is a need for research to support cleaner transport fuels and technologies, along with transport pricing, economics and demand management technologies.

5. The Bureau of Transport and Regional Economics has more than once examined reducing energy use and greenhouse gas emission from transport, including in 2002<sup>2</sup> with some 11 groups of measures. These include reduce vehicle kilometres travelled (VKT), nine measures to reduce emissions per VKT, four road pricing measures (mass-distance charges for heavy trucks, tolls, internalising transport externalities and emission charging), carbon taxes and tradable permits. Optimal road pricing was held to offer the best way forward.

6. In addition, a National Strategy for Lowering Emissions from Urban Traffic and a National Action Plan, as approved by the Australian Transport Council in August 2002, recommended a new approach. To quote from the communique for this meeting: *The Strategy and Action Plan developed by the National Transport Secretariat in collaboration with all states, territories and the Commonwealth government provides a groundbreaking national approach to reducing greenhouse emissions from the transport sector. This includes, within the next 5-10 year 'programs that encourage people to take fewer trips by car' and transport 'from predominantly fixed to predominantly variable costs' to '... ensure that transport users experience more of the true cost of their travel choices.'*

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<sup>1</sup> Institution of Engineers, Australia (IE Aust -1999) *Sustainable transport: responding to the challenges*. See also related IE Aust 2001 reports re Sustainable energy use and sustainable energy innovation in the commercial building sector.

<sup>2</sup> BTRE (2002) *Greenhouse policy options for transport - Australian trends to 2020 Report* No 105

7. The House of Representatives Standing Committee on Environment and Heritage was inviting submissions in 2003, taking evidence in 2004 and in September 2005 their report on Sustainable Cities was released. Given the bipartisan approach taken in the report, and issues affecting sustainability, greenhouse gases and oil security, it is hard to understand why the response has been so delayed.

In regards to transport, this Committee made seven recommendations. These reflected the need for a new approach which is appropriate as the high costs of a 'business as usual' in urban transport policy continue to increase. They include (part # 6) that *"the Australian Government significantly boost its funding commitment for public transport systems, particularly light and heavy rail, in the major cities:* also that (# 8) *The committee recommends that the Australian Government review the current FBT concessions for car use with a view to removing incentives for greater car use and extending incentives to other modes of transport."*

To these seven recommendations must be added the complementary five transport recommendations (6 to 10 inclusive) of the Final Report of the Senate Inquiry into Australia's Oil Supplies released on 7 February 2007. These recommendations again received bipartisan support.

8. To quote from <http://www.climatechange.gov.au> (accessed 18 February 2009 via projections) *" Transport sector emissions in 2005 were 80.8 Mt CO<sub>2</sub>-e, 30 per cent higher than the 1990 emissions level of 62.1 Mt CO<sub>2</sub>-e.*

*The 'with measures' emissions in the Transport sector is projected to increase to:*

- *88.1 Mt CO<sub>2</sub>-e per annum over the Kyoto period, 42 per cent above 1990 levels.*
- *103.7 Mt CO<sub>2</sub>-e in 2020, 67 per cent above 1990 levels."*

It is also noted that emissions in the absence of abatement measures ('Business as Usual') are projected to be higher by the amount of 1.8 Mt CO<sub>2</sub>-e per annum over the Kyoto period and 5.0 Mt CO<sub>2</sub>-e in 2020.

9. From the ABS SMVU conducted annually by the Australian Bureau of Statistics (cat. no 9208.0) all registered motor vehicles in Australia travelled an estimated 215.2 billion kilometres in the 12 months ended 31 October 2007. This was an increase of 8.1 % compared with the 12 months ended 31 October 2004 (199 bn km). These vehicles consumed 30,047 million litres of fuel in the 12 months ended 31 October 2007. This was an increase of 9.2% from the 27,505 million litres of fuel used for the 12 months ended 31 October 2004. **This**

**suggests a decrease in average fuel efficiency for all Australian road vehicles from 2004 to 2007.**

By way of contrast to fuel use by road vehicles, during 2006-07, rail used some 899 million litres of diesel and 1750 GigaWatt hours of electricity (Australasian Railway Association 2007 rail productivity report at ara.net.au). This modest energy use was for both rail freight and passengers. The 2006-07 rail freight task at 199 billion tonne km was larger than the road freight task at 184 billion tonne km and the rail passenger task was small (at 11.8 bn passenger km) compared with a much larger road passenger task.

10. Since March 2001, fuel excise in Australia has remained at 38.143 cents per litre. From the RBA inflation quarterly calculator, by December 2008, the indexed cost would be 47.71 cents per litre an increase of 25.1 per cent.

From the Survey of Motor Vehicle Usage (SMVU) conducted annually by the Australian Bureau of Statistics (cat. no 9208.0) passenger vehicles used 18 876 million litres of petrol in the 12 months ended 31 October 2007. Had of this fuel been levied at an excise rate adjusted for CPI, at the 9.567 cents increase fuel excise would have been generating an additional \$1.8 billion of revenue per year by now. To this may be added over \$1 billion per year for diesel rebates to trucks etc.

11. The New Zealand Parliament approved in February 2002 a Land Transport Package called Moving Forward. Along with increasing petrol tax by 4.7 cents per litre in 2002 and a further 5 cents per litre in 2005 with proceeds going to alternatives to roads and replacing of road funds with transport funds, the package aims for a transport system that *is 'affordable, integrated, safe, responsive and sustainable.'*

Of note is a speech given by the Prime Minister Rt. Hon Helen Clark MP on 26 July 2007 to a conference 'Transport - the Next 50 years' held late July at Christchurch New Zealand. To quote in part: *"One thing is for sure: the era when transport planning focused excessively on building infrastructure to service the private motor-car is coming to an end. Today the focus is shifting to how to plan integrated and diversified transport systems, in which many modes play their part.*

*"....I believe that the sustainability challenge is a defining issue for the twenty first century. ... "Once you take a broader view of sustainability, it becomes clear that we have a once in a generation opportunity to improve our way of life, our standard of living, and the state of our environment by putting sustainability at the heart of our thinking and decision*

*making – as we must do with transport policy."*

In December 2007, the New Zealand Government released "Sustainable Transport", a discussion document to update the 2002 New Zealand Transport Strategy. The 2007 discussion paper proposed targets for other objectives including *"...increasing public transport use, increasing rail and shipping's share of freight movement and reducing carbon dioxide emissions from the vehicle fleet. Each of them is challenging and none of them will be achieved without acceptance that change is necessary and a willingness to make different transport choices."*

In a March 2008 speech to the Automobile Association, the NZ Minister for Transport reiterated the need for change: *The creation of a truly sustainable transport system – one that delivers on our economic, social and environmental needs – is not optional. We cannot carry on with 'business as usual'. Reducing transport's contribution to greenhouse gas emissions is vital. It is non-negotiable for the success of our transport system and for our position as a responsible international citizen."*

In August 2008, the New Zealand Transport Strategy was updated with stronger measures, including monitoring. These include the goal to halve by 2040 per capita domestic greenhouse gas transport emissions from 2007 levels. Some, but not all approaches of the Clark Government have been adopted by the current government. The new Government has agreed to support electrification of Auckland's urban rail system.

12. New Zealand has a system of road user charges system for heavy vehicles that uses mass-distance pricing. This system has been in successful use in New Zealand for three decades now and has assisted in both generating funds for road construction and maintenance, and it supports competitive neutrality between road and rail for freight.

13. In addition to under recovery of road system costs from heavy trucks (about \$1.5 bn pa), a 2006 paper of this writer (Laird *Freight transport cost recovery in Australia*, Australasian Transport Research Forum, see Appendix A) noted that on one set of assumptions, the social and environmental costs of articulated truck operations for 2003-04 were about \$1525m. The corresponding costs for rail freight (excluding iron ore operations in the Pilbara Region of WA) were about \$215m that fiscal year. The paper suggested:

Under present road pricing for heavy trucks and the absence of any diesel fuel excise being levied on rail since 2000, these external costs are not being recovered. Further work is required in the area of land freight external costs, including the cost of rail

congestion. However, this should not stop government now incorporating into road and rail pricing conservative values for external land freight costs, so that the operators of diesel powered road vehicles and trains pay a basic externalities charge. This charge could be later adjusted following refinement of the initial estimates. It is also recommended that the additional revenue generated be applied to long overdue land transport infrastructure upgrades.

14. There has been much under-investment in recent decades in Australia's urban and non-urban rail systems.

Quite simply, of Australia's five major cities, only Perth has a good urban rail system that has been recently expanded to meet growth areas and now demonstrates world best practice. Adelaide, Brisbane and Melbourne have catch-up programmes underway that need expediting. Sydney presents major challenges.

Public passenger transport services include inter-urban rail services (eg Sydney-Newcastle) and may also be regarded as including intercity services such as Sydney Canberra. The quality of these services including the all important transit time depend critically on track alignment and capacity questions. These are related to questions about the adequacy of existing interstate mainline track to support more freight on rail, as outlined in a 2007 report of the House of Representatives Standing Committee on Transport and Regional Services *The Great Freight Task: Is Australia's transport network up to the challenge?* This report outlines Australia's growing land freight task and gives numerous examples of inadequate transport infrastructure. As well as interstate mainlines linking Australia's three largest cities, this includes branch lines serving grain movements.

15. It can be argued that Australia's recent past and present road pricing policies have encouraged an increase in road vehicle use. More comment is given in the attached paper with reference to a \$13 bn per annum 'road deficit'. Coupled with some deficiencies in public transport, poor road pricing has led to excessive automobile dependence in our main cities. It is also a factor why Australia continues to have the highest road freight activity in the world (expressed as net tonne kilometers per capita).

16. A fresh approach is needed for both land transport pricing (including congestion tolling in cities and some intercity highway tolling plus mass distance charges for heavy trucks) and infrastructure funding.

At a State level, long standing anomalies like the Queensland Fuel Subsidy Scheme (which directly costs the NSW Government about \$40m per year) and the NSW Government's cash back scheme for use of certain tollways needs to be reviewed.

In addition, with the exception of tollways, there is no requirement for past road investments to provide a return to government. This could usefully be reviewed as well.

### **Brief responses to questions**

Q12.1 How can motor vehicle related taxes and road funding arrangements be designed to improve the efficiency of transport of people and goods in Australia?

Fuel taxation has many advantages in revenue raising and collection. It is recommended for light vehicles and for external costs of articulated trucks. However, it needs to be complemented by congestion charging in major cities, and mass distance pricing for articulated trucks and the heavier rigid trucks. Tax reform and rail funding is long overdue.

Q12.2 What should be the role, if any, of fuel taxes? What does this mean for how fuels and their uses are taxed and the rates of tax applied?

Fuel taxes should be retained, and indexed for inflation. There is a strong case to increase fuel taxation in Australia.

Q12.3 Do the existing tax arrangements lead people to make economically inefficient transport choices, and if so, how might they be improved?

Not only do the existing tax arrangements lead people to make economically inefficient transport choices, they also encourage people to low energy efficiency modes of transport. Improvements include increasing fuel excise with the use of indexation, congestion charging in major cities, tax reform and mass distance pricing for articulated trucks and the heavier rigid trucks.

Attention is also required to application of the 'polluter pays' principle in recovery of current environmental external costs for road and rail. This is appropriately done through a levy on fuel. Where such a levy is imposed, it is recommended that the net proceeds are applied to improving transport infrastructure (alternatives to roads as well as roads).

## **Road pricing in Australia - too little or too much ?**

**Australian Road Summit Sydney 27 - 28 February 2007**

## Dr Philip Laird, University of Wollongong

Road user rip offs or road deficits ?

Road user pricing for heavy trucks - has the Productivity Commission got it right ?

How would a carbon tax affect road use ?

A ten point plan for road pricing

### 1. Road user rip offs or road deficits ?

During the 1990s, it was common for motoring organisations and road transport interest groups to claim that aggregate vehicle related payments to Government exceeded road outlays by Government. Often, in their more extreme forms, propositions were advanced along the lines that motorists are ripped off and trucks more than pay their way. A good account of the question as to whether motorists pay too much was given in a 1999 booklet by Howard Pender<sup>3</sup>. This study was sponsored by the Australian Automobile Association and addressed three questions. First, are motorists lightly or heavily taxed? Secondly, should they be heavily taxed? Thirdly, what is the appropriate balance between taxes on vehicle ownership and use?

Like earlier studies (eg. May et al<sup>4</sup> 1984), Pender differentiates between 'charges' and 'taxes'. He refers to both overseas and Australian studies including those of Neutze<sup>5</sup> during the 1960's, the Inter-State Commission<sup>6</sup> the Industry Commission's 1994 definitive report on Urban Transport, the Business Council of Australia<sup>7</sup>, and the Bureau of Transport and Regional Economics (BTRE)<sup>8</sup>. Externalities are addressed in some detail. During 1997-98 in Australia, motor vehicle payments were \$12.4 billion including \$8.6 billion on fuel excise and \$2.3 billion on registration fees (but excluding stamp duty which is not specific to motor vehicles (BTE<sup>9</sup>)). In 1997-98, the outlay on road maintenance and construction was \$7.0 billion. The difference is over \$5 billion.

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<sup>3</sup> *Taxing cars - fleecing the fleet or subsidising smog ?* Australian Tax Research Foundation, Research Study No 33

<sup>4</sup> Report National Road Freight Industry Inquiry

<sup>5</sup> Max Neutze (1964) 'Pricing Road Use' *Economic Record* 40:175-186, and (1966) *Investment Criteria and Road Pricing The Manchester School*,

<sup>6</sup> Inter-State Commission (1990) Road use charges and vehicle registration: a national scheme

<sup>7</sup> Cox, J, 1994, Refocussing road reform

<sup>8</sup> Up to and including (1997) Taxes and charges in Australian Transport; a transmodal overview Working Paper 34

<sup>9</sup> Bureau of Transport Economics (1999) Public road-related expenditure and revenue in Australia

More recently, the BTRE<sup>10</sup> noted motor vehicle payments were \$15.8 billion in 2003-04 including \$9.6 billion fuel excise, \$3.2 billion registration, and \$1.9 billion stamp duty whilst in that year, the outlay on road maintenance and construction by Australia's three levels of governments was \$8.3 billion. By 2005-06<sup>11</sup>, urban and rural road agency expenditure (Federal, State and Local Governments) was \$10.4 billion.

### **1.1 One estimate of a 'road deficit'**

With the exception of fuel excise, there is a very limited effort to recover external costs from motor vehicle use. However, this is offset by Federal funds for roads (now at record levels), generous taxation deductions for motor vehicle expenses (about \$4.8 billion was returned in 2003-04 to taxpayers who as individuals, companies, partnerships or trusts claimed over \$18.5 billion that fiscal year<sup>12</sup>) and the Queensland Fuel Subsidy Scheme,

The BTRE<sup>13</sup> mid-range estimate of the annual health related costs from air pollution from motor vehicles in Australia's capital cities was \$2.33 billion for the year 2000. This comprises \$1596 million from the estimated cost of mortality (premature death as a result of air pollution), and \$735 million for morbidity (quality of life and/or productive capacity of victims impaired or reduced as a result of air pollution). Following a European approach<sup>14</sup> (the BTRE effectively attributes air pollution costs to PM10 (particulate matter of size less than 10 microns) levels.

In a further BTRE paper<sup>15</sup>, 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<sup>16</sup> shows that the average health cost of air pollution from operations of cars (and other

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<sup>10</sup> BTRE Public road-related expenditure and revenue in Australia (2006 update) Info Sheet 25

<sup>11</sup> National Transport Commission Third Heavy Vehicle Road Pricing Determination (THVRPD) Technical Report (Oct 2005, p13) .

<sup>12</sup> Australian Taxation Office, Taxation Statistics 2003-04 which notes inter alia companies claiming \$7.5 billion motor vehicle expenses (assume taxed at 30 %), and individuals, partnerships and trusts claiming about \$11.1 billion (assume taxed at the average personal rate of 23 %),

<sup>13</sup> BTRE 2005 *Health Impacts of transport emissions in Australia: Economic costs* Working paper

<sup>14</sup> Kunzli N, Kaiser R and Medina S, Public health impact of outdoor and traffic related air pollution: a European assessment, *Lancet* Vol 356, Sept 2 2000)

<sup>15</sup> BTRE 2003 *Urban pollutant emissions from motor vehicles: Australian trends to 2020*

<sup>16</sup> Laird P, *Revised Land Freight External Costs In Australia*, Australasian Transport Research Forum 2005

small passenger vehicles) in Australia's capital cities is 1.3 cents per vehicle kilometre (ranging from 0.7 cents per vehicle kilometre in Perth to 1.6 cents per vehicle kilometre in Sydney). To recover an average cost of 1.3 cents per car kilometre through fuel taxes, assuming an average fuel use of 11.4 litres per 100 km (ABS SMVU 2001 estimate), a **fuel levy of about 12 cents per litre** is warranted.

An outline of some external costs of motor vehicle use and 'road deficits' follows. This excludes an earlier estimate of road congestion costs in major cities of about \$12.8 billion in 1995 (BTRE, 1999)<sup>17</sup>;

- i. Road crash costs were estimated by the BTRE (2000) at \$15 billion (bn) in 1996. Less congestion costs it was \$13.5 bn. Only about \$8 bn was covered by insurance in 1997-98 (Laird et al 2001<sup>18</sup>); leaving about \$5.5 bn being a cost to the wider community.
- ii. Health related costs from the effects of air pollution from motor vehicles with mid-range estimates for the year 2000 of the BTRE as \$2.6 billion (capital cities as above plus \$0.3 billion for regions);
- iii. The cost of noise from all motor vehicles in urban areas as \$0.7 billion, as per a low range estimate of the Bus Industry Confederation (2001);
- iv. Net taxation refunds for motor vehicle use of \$4.8 billion in 2003-04 as above;
- v. A \$1.7 bn greenhouse gas cost in 2004 (at \$25 per tonne<sup>19</sup>);
- vi. An annual \$0.8 bn non-tariff automobile industry assistance programme;
- vii. An estimated increased health cost of lack of physical activity due to excessive car use of about \$0.8 bn per annum in Australia (Mason 2003)<sup>20</sup>
- viii. A Queensland Fuel Subsidy Scheme payment now costing the Qld Government over \$0.5 bn per year, and the NSW Government about \$40m per year; and,
- ix. Toll rebates in Western Sydney costing about \$60m per year.

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<sup>17</sup> BTE 1999 Urban transport - looking ahead

<sup>18</sup> Laird, P Newman, P Bachelors, M and Kenworthy, J (2001) *Back on Track: Rethinking Transport Policy in Australia and New Zealand* UNSW Press

<sup>19</sup> Based on the Australian transport sector accounting for around 76 million tonnes of Australia's total net greenhouse gas emissions in 2004 with 90 per cent due to road (from [www.greenhouse.gov.au](http://www.greenhouse.gov.au)) see also Laird P (2003) Australian transport and greenhouse gas reduction targets Australasian Transport Research Forum, Wellington, New Zealand

<sup>20</sup> Mason, C (2003) Personal communication, also *Transport and health: en route to a healthier Australia?* Medical Journal of Australia Vol 172, 6 March 2000 pp230-232

These approximate cost estimates add up to some \$17.5 billion. Road system costs in 2001-02 were about \$8 billion a year and road vehicle specific revenues (excluding stamp duty and GST) to Government in 2001-02 were about \$12.7 bn (BTRE, loc cit). Hence, excluding congestion costs, a case can be made that there is a 'road deficit' that is now about \$12.8 billion per year.

In regards to the costs of accidents involving motor vehicles it can be argued that some, but not all of these costs fall on other road users (see, for example, a 2005 BTRE paper<sup>21</sup>). Thus, the percentage of road crash costs that should be regarded as an external cost is open to question. Hence, the estimate of 'road deficit' of about \$13 billion per year is also open to question. However, treating external costs as zero is not a satisfactory policy option.

## **2. Road user pricing for heavy trucks - has the Productivity Commission got it right?**

Under a CoAG generated process, the Productivity Commission was directed in February 2006 to hold an inquiry into road and rail freight infrastructure pricing. This followed considerable difficulties experienced over many years by government in leading reform in the area of road pricing of heavy vehicles, and, the increasing need for Australia as a nation to make more effort in the provision of 'fit for purpose' transport infrastructure.

In March 2006, Australia's Federal and State transport ministers declined to adopt a benign third determination by the National Transport Commission (NTC) of charges for heavy vehicles. This was followed in May 2006 with a Federal budget granting an additional \$2 billion in road funding and a \$1.2 billion concession in road pricing for heavy trucks.

There appears to be three notable broad groups of estimates for road system costs attributable to heavy trucks:

- **Conservative or NTC** - as per the National Road Transport Commission (NRTC) first and second determinations and the NTC third determination.
- **Intermediate** - including the former Inter-State Commission findings<sup>22</sup> during the 1980s, the 1990-91 Over-Arching Group (OAG) recommendations and NSW permit fees for heavier semitrailers and all B Doubles in use to 30 June 1996.

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<sup>21</sup> Martin L (2005) *External accident costs of motor vehicles revisited* Australasian Transport Research Forum 2005

<sup>22</sup> Inter-State Commission (1986) Cost recovery arrangements for interstate transport, to (1990) Road use charges and vehicle registration: a national scheme Canberra

- **High, or "user pays"** - including the Bureau of Transport and Communications Economics (BTCE) 1988 report<sup>23</sup> noted in the draft report of the Productivity Commission, McDonnell's methodology (NSW) (see for example, this writer<sup>24</sup>), and ongoing New Zealand Road User Charges.

When announcing the NRTC first generation charges in 1992, the chairman, the late Gordon Amadee, conceded they would not be "user pays" as this would not be tenable<sup>25</sup>. The costs to the NSW Government of implementing the then new NRTC charges (as of 1 July 1996) was over \$60 million per year and NSW annual permit and registration fees of \$12,650 a year in 1989 for an 8 axle B-Double were slashed to \$5500. With Consumer Price Indexation, the 1989 NSW B-Double fee would now be about \$20,500 pa. This is almost three times more than the current NTC's \$7426 pa for an 8 axle B-Double. Subsidies are one reason why the number of large B-Doubles has grown so rapidly in recent years, as noted in the draft report — up from about 700 in 1997 to more than 6000 now. The difference between road system costs attributable to articulated trucks under the 2005 NTC model and using Macdonell's Methodology is approximately \$1.5 billion per year.

In 1992, the Industry Commission (IC)<sup>26</sup> had no doubt that the NRTC charges subsidized the heavily loaded big trucks that haul long distances each year. As the IC 1992 Annual report noted, the NRTC charges would distort road-rail competition as rail reform took place. After 15 years of rail reform following the formation of National Rail in 1992, Australia has now reached the point where such competition for freight is being distorted. However, the draft report of the Productivity Commission on road and rail freight found that with the exception of subsidies to the operations of many B-Doubles, the current charges are about right.

## 2.1 Externalities

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<sup>23</sup> BTCE (1988) *Review of road cost recovery*, Canberra

<sup>24</sup> Laird PG *Freight transport cost recovery in Australia*, Australasian Transport Research Forum, Gold Coast

<sup>25</sup> Sydney Morning Herald April 13, 1992 "Recession puts truck plan off road."

<sup>26</sup> Industry Commission (1992) Annual Report for 1991-92 page which held as a result of the NRTC charges *The result is that some vehicles - the heaviest travelling long annual distances - will meet less than 20 per cent of their attributed costs. ...The charges, as recommended, will therefore potentially distort the long-haul freight market as rail reforms take effect."*

Externalities, including air pollution in cities, and accidents involving both articulated trucks and freight trains were considered by the Productivity Commission. These environmental and social costs are not all internalised and some 'polluter pays' and other charges are warranted with the proceeds being applied to infrastructure upgrades. Although articulated trucks are driven about three per cent of all vehicle kilometres, about one road fatality in ten involves an articulated truck. In most cases, this is not the fault of the truck driver.

Most fatalities involving articulated trucks are on roads with speed limits exceeding 80km/h. Worse still, on the National Highway System in NSW, about one road fatality in three involves an articulated truck. More information on heavy vehicle safety is given in a report released by the NSW Motor Accidents Authority<sup>27</sup>. The May 2006 report of the General Purpose Standing Committee No. 4 of the NSW Legislative Council on Pacific Highway Upgrades notes that many people do not like seeing highways and roads overrun with big trucks – even on upgraded roads.

Energy efficiency and oil vulnerability issues affecting the transport of people and freight are identified in a report released 7 February 2007 of the Senate Rural and Regional Affairs and Transport Committee<sup>28</sup>.

## **2.2 Removing impediments to rail freight**

The Commission's draft report did not address in detail the speed-weight restrictions that reduce rail's efficiency and competitiveness in moving freight. The track linking Australia's three largest cities is substandard with some inadequate capacity. In many cases, it is simply not fit for current tasks let alone proposals under "Twice the Task" for rail to transport much more of the nation's freight.

As observed in numerous reports<sup>29</sup>, the state of the track linking Australia's three largest cities is "*substandard*". Trains going from Melbourne to Sydney turn 36 circles to the left and 36 circles to the right - 72 in all as they traverse 'steam age' aligned track with excessive curvature and extra length. The NSW North Coast line has worse alignment.

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<sup>27</sup> 2000 *Report of Inquiry into Safety in the Long Haul Trucking Industry*

<sup>28</sup> Report of the Inquiry into Australia's future oil supply and alternative transport.

<sup>29</sup> The Prime Minister's Task Force 1998 report on revitalising rail, the House of Representatives Standing Committee on Transport and Regional Services 1998 report *Tracking Australia* (and evidence to its current inquiry), this Commission in its 1999 *report on rail reform*, and more recently Engineers Australia infrastructure report cards.

Although the Australian Rail Track Corporation is investing \$2.3 billion to upgrade interstate track, there is no track straightening.

Construction of 200 km of track to modern engineering standards between Menangle and Junee, would get rid of 50 of these 72 circles and reduce point to point distance by 60 km, cut off 1 and ¾ hrs in transit time and save fuel. It is a good question as to whether the \$800 million allocated in the 2006 Federal budget to expedite Hume Highway upgrading would give the same economic, social and environmental benefits as reconstructing mainline rail track to modern engineering standards.

The branch lines in NSW, Vic and SA are a national disgrace. In Tasmania, the track is so bad no train is allowed on any section of track more than 60km/h with many permanent speed restrictions and a growing number of temporary low speed limits. Today, no State would tolerate an entire road system with a maximum speed of 60 km/h.

The Commission's draft report correctly notes poor track is due to past under-investment over many decades. It remains to be seen if the final report, when released, will articulate a way forward to get the public and/or private investment of the rail network in Australia's South - Eastern corner up to standard.

### **3. Greenhouse Gas emissions - impacts of a carbon tax ?**

In regards to various estimates for the costs of greenhouse gas emissions, a value of \$25 per tonne of carbon dioxide equivalent (CO<sub>2</sub>e) was supported by several writers (eg Quiggin<sup>30</sup>) and is similar to a value of \$NZ30 per CO<sub>2</sub>e tonne used by Transfund New Zealand<sup>31</sup>. It may be argued that a cost of \$25 per tonne of CO<sub>2</sub>e is either too low, or too high. A BIC<sup>32</sup>(2001) recommendation was for a tax using \$40 per tonne of CO<sub>2</sub>e, with their view that this estimate may prove to be conservative. Greenhouse gas emissions are discussed by the Productivity Commission in their draft freight report (on page 6.16-18 and Appendix C) with data showing that at \$10 per tonne CO<sub>2</sub>e, line haul road freight would

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<sup>30</sup> Quiggin J (1998) *Taxing times: A guide to Australia's tax debate*, UNSW Press

<sup>31</sup> Austroads (2000) *Australia Valuing emissions and other externalities: A brief review of recent studies*

<sup>32</sup> Bus Industry Confederation (2001) *Getting the Prices Right: Policy for More Sustainable Fuel Taxation for Road Transport in Australia* Submission (by Mr John Stanley) to the Commonwealth Fuel Taxation Inquiry.

accrue climate change costs of between 0.06-0.08 cents per net tonne km. For Sydney - Melbourne line haul road freight, the mid range is then about \$0.60 per tonne and for rail is about \$0.25 per tonne of freight. At \$25 per tonne CO<sub>2</sub>e, this is respectively \$1.50 (road) and \$0.62 (rail - which would reduce with the track straightening as above).

For petrol use in cars, using a factor of 1 litre of petrol directly emits 2.4 kg of CO<sub>2</sub>e<sup>33</sup>, at \$25 per tonne, a **fuel levy of 6 cents per litre** is warranted.

The year of 2006 was notable for an increased concern about global warming<sup>34</sup> (and the need to do something about it as per the UK Stern Report). Australia has the highest road freight per capita in the world (Austroads loc cit) in terms of net tonne-km per person) and hence the highest greenhouse gas emissions from freight movements per capita in the world (due to road freight being an energy intensive way of moving freight).

In reducing greenhouse gases, one can take a view that each sector should be required to 'pull its weight'. In the transport case, imposition of a charge is supported with the proceeds going into upgrading land transport infrastructure that will reduce oil use and greenhouse gas emissions in land freight transport. The appropriate level at this stage would appear to be \$10 per tonne, then moving to a higher amount.

#### **4. Road pricing policy options**

A BTRE 2002 report<sup>35</sup> gave some 11 groups of measures to reduce vehicle kilometres travelled (VKT), nine measures to reduce emissions per VKT, four road pricing measures (mass-distance charges for heavy trucks, tolls, internalising transport externalities and emission charging), carbon taxes and tradable permits. Optimal road pricing was held to offer the best way forward.

This view was shared by a NSW Inquiry<sup>36</sup> - "*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*

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<sup>33</sup> AGO Factors and Methods Workbook, Department of the Environment and Heritage, December 2006 page 10

<sup>34</sup> See for example, Steffen, W (2006) Stronger evidence but new challenges: 'Climate change science 2001 – 2005, DEH-AGO

<sup>35</sup> Bureau of Transport and Regional Economics (2002) *Greenhouse policy options for transport 2020* Report No 105

<sup>36</sup> (NSW Ministry for Transport (2003) Ministerial Inquiry into Sustainable Transport (Parry Inquiry via [www.transport.nsw.gov.au](http://www.transport.nsw.gov.au))

*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."*

A National Strategy for Lowering Emissions from Urban Traffic with a National Action Plan, as approved by the Australian Transport Council in August 2002, still awaits implementation. To quote in part from the communique for this meeting: *"...transport costs will have moved from predominantly fixed to predominantly variable costs. This outcome will address cost variations in transport modes and ensure that transport users experience more of the true cost of their travel choices."*

This could well include congestion pricing. The Productivity Commission's 2005 report into energy efficiency had a sole recommendation on transport: *"Australian governments should investigate the feasibility of introducing congestion pricing where it is likely to improve the economic efficiency of road use (including greater energy efficiency). It may be appropriate for such a study to be incorporated in a wider examination of efficient road pricing or in a review of passenger transport reform as a whole."*

Britain, faced with increasing road congestion, moved to a congestion charge in London which has since been increased. More recently, the Eddington Report released December 2006<sup>37</sup> reported that road tolls could benefit the economy to the tune of £28bn a year. With road charging, drivers would pay more to use roads when they were busy or more congested. The report was commissioned in 2005 by Chancellor Gordon Brown and written by former British Airways chief Sir Rod Eddington to examine options for modernising the UK transport network and commented on road pricing, road building, rail and airport investment, as well as the planning system. His report identifies three strategic transport priorities - congested and growing city catchments, "inter-urban" corridors and important international gateways showing signs of congestion and unreliability. The UK government has already indicated it will press ahead with trial road-pricing schemes. One motivation is that without change, congestion could rise by 25% by 2015 in big cities.

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

One approach to improved road pricing to remove large hidden subsidies from motor vehicle operations was given in 2004 in a submission (#186) to the House of Representatives Environment and Heritage Committee's inquiry into Sustainable Cities which proposed a ten point transport pricing plan along the following lines.

- i. Re tolls

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<sup>37</sup> [http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/01\\_12\\_06\\_eddingtonreport.pdf](http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/01_12_06_eddingtonreport.pdf)

- A. Remove toll rebates in Western Sydney, which is a costly scheme to administer.
  - B. Reinstate tolls at Berowra and Waterfall, with the proceeds being used to expedite long-overdue improvements of both the Pacific and Princes Highways.
- ii. Remove the Queensland Fuel Subsidy Scheme, at least from South East Queensland.
  - iii. Impose a congestion charge for access to the Sydney and Melbourne CBDs. It works well in London. And/or impose an environmental fuel levy for motor vehicle use in the Greater Metropolitan Areas of state capital cities and Canberra.
  - iii. Restore fuel excise indexation, with the additional revenue going into improved transport infrastructure. To ensure best use of funds, replace road funds (as enjoyed by the NSW Roads and Traffic Authority) by transport funds.
  - v. Ensure that the further determinations of heavy vehicle road user charges by the National Transport Commission recovers - at least the populous zone - the full road system costs from heavy articulated trucks, B-Doubles and road trains. Ensure that additional revenue is directed towards not only National Highway System maintenance (to compensate for changes under AusLink), but rail track and improved intermodal facilities.
  - vi. Increase annual registration fees for the heavier four wheel drive vehicles.
  - vii. Have the Productivity Commission examine urban transport.
  - viii. Increase rail fares, with all proceeds going into a better rail system.
  - ix. Improve land transport data, with publication of accurate, comprehensive and up-to-date information on all modes of transport, with details of energy use and greenhouse gas emissions.
  - x. Ensure that major airports (and aviation operations) and seaports are not in receipt of hidden subsidies.