1 March 2006

Committee Secretary
Senate Rural and Regional Affairs and Transport Committee
Department of the Senate
Parliament House
Canberra ACT 2600
Australia

To whom it may concern

ATA Response to the Senate Rural and Regional Affairs and Transport References and Legislation Committees Inquiry into Australia's future oil supply and alternative transport fuels

Please find attached the Australian Trucking Association's submission. The submission addresses each of the (4) specific terms of this Inquiry.

Road will remain as the dominate mode of transport in Australia due to a number of reasons. Barring quicker than anticipated advancements on the 'supply side' (i.e development, commercialisation and utilisation of 'futuristic' engine and fuel technologies), it is likely that internal combustion heavy vehicle engines and the use of petroleum products will be commonplace in the 'mainstream' for an extended period of time.

Diesel prices have increased in Australia by 80% between 1999 to today. Indications are that prices may remain high and volatile for an indefinite period of time. ABS data indicates that the industry has had trouble 'passing on' these rising fuel costs to freight customers, to a point where the industry's profit margins have dropped well below Australian industry-wide levels. To maintain a sustainable industry, these costs will need to be passed on - intuitively, to the detriment of the Australian economy.

To offset these costs, and in the absence of radical 'supply side' measures, the ATA calls on all Governments to pursue a vigorous and sustained productivity and efficiency reform agenda for the industry to reduce Australia's demand for petroleum products; achieve improved safety and environmental outcomes; and offset current and future labour productivity problems. The agenda is large and a very high level of government commitment is needed. Recent COAG and NTC support to this agenda is a step in the right direction.

Further, and specifically in relation to the NTC's 3rd charges determination pricing proposal currently with the ATC for vote, the ATA calls on government to not increase the taxes and charges payable by the industry, especially on the high productivity vehicle combinations such as B-Doubles and road-trains.

A number of other 'demand side' options for reducing Australia's transport fuel demands are included for consideration.

Please feel free to contact me on (02) 6253 6900 if the Secretariat would like to discuss any aspect of our submission. We would welcome the opportunity to discuss our submission before a hearing.

Yours sincerely

Ross Fraser
Chairman ATA

AUSTRALIAN TRUCKING ASSOCIATION
RESPONSE TO THE SENATE RURAL AND REGIONAL AFFAIRS AND TRANSPORT REFERENCES AND LEGISLATION COMMITTEES INQUIRY INTO AUSTRALIA'S FUTURE OIL SUPPLY AND ALTERNATIVE TRANSPORT FUELS

MARCH 2006

KEY POINTS

- The Australian freight task in billion tonne kilometres is expected to almost double by 2020. Due to a number of reasons, road will continue as the predominate mode and will consume approximately 70 - 80% of the total transport energy needed.

- Whilst domestic refining capacity is sound, the domestic oil quality and supply is not. Australia will become increasingly reliant on imported petroleum products and exposed to the associated price sensitivities placing an onus on the road transport industry and customers to respond quickly and transparently to changing oil prices. Australian industry must begin to accept fuel cost variation clauses as a standard in freight contracts.

- The price of crude oil has more than doubled over the past four years. However, the price of crude oil fluctuates regularly reflecting the interaction of global business cycles and ad hoc global developments. Forecasting is therefore difficult. The Australian Bureau of Agricultural Resource Economics (ABARE)'s current forecast is for a gradual easing in oil prices over the short and medium term.

- This forecast is consistent with the US Department of Energy's forecast for imported crude oil (to 2030). However, and significantly, diesel prices may still stay above 2004 levels (average Australian capital city diesel bowser price in 2004 was 102 cpl) for a sustained period of time and may be higher if the Australian dollar depreciates in the future as predicted by ABARE.

- The socio economic impacts of rising fuel prices has been significant with the road freight industry having variable success in 'passing on' higher freight costs. Analysis of the Australian Bureau of Statistics (ABS) Producer Price Indexes for Australian 'petroleum products' and 'road freight rates' indicates that between March 1997 and March 1999, there was a parallel symmetry of freight rates and oil prices meaning that freight rates increased 'at pace' with oil prices. However post March 1999, freight rates did not increase proportionally to the increases in petroleum products meaning that operators have absorbed a percentage of these higher input costs over this period.

- A reflection of very high levels of competition, this absorption of rising input costs has contributed to the road freight industry earning on average profit margins that are lower than Australian industry standards. The ABS estimates that the Australian industry average profit margin (i.e all industries) was 7.2% in 2002-03[1]. This compares to the 'Transport and Storage' industry whose profit margin in 2002-03 was estimated to be 5.6%, decreasing from 6.4% in 2001-02[2]. This 13% decrease in profit margin between 2003 and 2002 is against the backdrop of an approximate 21% increase in diesel 'burn prices' over this time.

- Unsustainable profit margins will necessitate the 'passing on' of costs emanating from rising oil prices and other compliance costs. An expectation therefore that freight rates may permanently reflect those of 'today' may have an impact on Australian industry and the community at large in terms of reduced consumption, exports, investment and overall GDP unless Government's vigorously pursue 'costs offsets' via an ongoing productivity and efficiency reform agenda. It is generally believed that the macroeconomic impacts of higher freight rates fall disproportionately larger on rural/regional Australia.

- Given this outlook, a number of key strategies are needed:

[1] Cat No. 8155.0 Australian Industry, Experimental Estimates, Industry Performance by ANZSIC Class, Australia, 2002-03
[2] Cat No. 8155.0 Australian Industry, Experimental Estimates, Industry Performance by ANZSIC Class, Australia, 2002-03

(i) Encourage productivity measures that will facilitate productivity growth. These reforms as a minimum must provide for a higher community and government acceptance and (general road) access of larger combination vehicles (i.e trucks that carry more trailers as part of a combination) and standard combinations that have higher mass limits on individual axle groupings (where the road network can support it) where and when the operator is appropriately authorised to do so; and

(ii) Taxes and charges and compliance costs increases generally should be constrained and should not discriminate against high productivity vehicles. The proposal of the NTC to the Australian Transport Council to increase the heavy vehicle road user charge from 20 to 22.1c and to substantially increase the registration charges on the larger combination heavy vehicles (i.e B-Doubles and road trains) is strongly opposed. The ATA opposes these increases as the trucking industry fully pays its way based on current charges and allocated road use costs, and that the COAG announcement of a land transport pricing review on 10 February 2006 has overtaken the NTC heavy vehicle (3rd) charges determination process. The ATA firmly believes that the NTC recommended charges, currently with Australian Transport Council Ministers for a vote, should be 'put on ice' for the period of the PC inquiry.

- The ATA applauds the efforts of the NTC to address this significant issue by undertaking its 'Twice the Task' project work and the recent Council of Australian Governments (COAG) acknowledgment of the need for substantial productivity reform within the road transport sector.

- The modal mix of the total volume of transport activity is an important consideration. This depends on consumer choice, vehicle or mode pricing and prevailing legislative or fiscal measures that influence mode selection. The issue of competitive neutrality between rail and road is an issue of considerable public policy debate at present and will be the subject of a major Productivity Commission (PC) review due for release later in 2006. The ATA welcomes this Inquiry.

- Given that only a very small amount of freight is potentially transferable from road to rail (best available estimates at the present time is that only 15% of freight is truly contestable between these modes), higher road costs with no other viable mode options will simply increase the costs to producers and consumers or exacerbate the cost pressures of those who are unable to pass costs on.

- Government can do more to reduce industry costs to increase profitability and encourage investment in safer, cleaner and more productive equipment (for eg B-Doubles) by ensuring that reforms are implemented consistently and uniformly across all jurisdictions to promote operational efficiencies. This is an issue that needs immediate attention by government.

1. BACKGROUND

The ATA is the peak body of the Australian trucking industry. Its 16 member organisations include state and territory based trucking associations, sectoral trucking associations, national trucking companies, the Transport Workers Union and directly elected owner-driver and small fleet operators on its General Council.

2. INTRODUCTION

The 'hire and reward' and 'ancillary' trucking industry (excluding storage and logistics) in 2002-03 contributed approximately 3.4% of Australia's GDP. The focus of this submission is in relation to the 'hire and reward' sector of Australian industry – representing those that operate primarily for remuneration and those that perform the critical role of carrying the vast sum of the road freight task.

Against the four specific terms of the Inquiry, the ATA takes the following view.

3. ISSUES

TERM OF REFERENCE ONE

Projections of oil production and demand in Australia and globally and the implications for availability and pricing of transport fuels in Australia

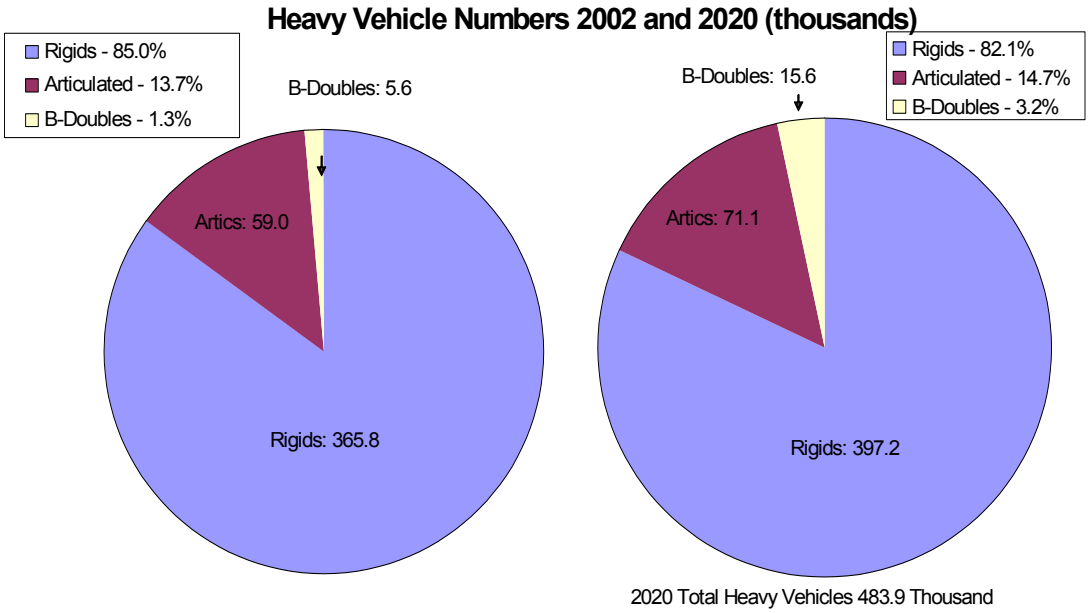
The Bureau of Transport and Regional Economics (BTRE) estimate that the Australian freight task will increase from 375.1 billion tonne kilometres (btkm) in year 2000 to 648.0 btkm in year 2020 with *road* increasing its relative share of the total freight task (see **Graph One**).

Graph One

(Source: BTRE Presentation, Phil Potterton, Trucks to Meet the Future Freight Task, Seminar Presentations, 6-7 July 2004)

The increase in the number of heavy vehicles according to the BTRE to meet this expected doubling of the freight task is demonstrated below (see **Graph Two**). It is expected that 'articulated trucks' and 'B-Doubles' will carry a larger percentage of the freight into the future.

Graph Two



(Source: BTRE Presentation, Phil Potterton, Trucks to Meet the Future Freight Task, Seminar Presentations, 6-7 July 2004)

This projected increase in the freight task and subsequently, heavy vehicle numbers, is believed to be a function of low freight rates in real terms that are underpinned by very strong market contestability; strong economic and population growth; and relatively low volumes of contestable freight.

Importantly, these BTRE calculations assume significant increases in payload and that issues in relation to B-Double and large combination vehicle access (to Australian roads) are overcome. The ATA, whilst hopeful that these devlopments do occur, is not as optimistic and as such, the ATA considers that these projections are likely to be conservative with more, not less, heavy vehicles a likely outcome.

The report, *Energy in Australia, 2005,* published by the Department of Industry and ABARE estimate the energy consumption in the transport sector to 2029/30 (**Table One**).

Table One

46] Energy consumption in the transport sector a

	2004-05 z	2009-10 z	2014-15 z	2019-20 z	2029-30 z
	PJ	PJ	PJ	PJ	PJ
Road transport	1 038	1 142	1 240	1 346	1 558
Railway transport	32	32	33	34	37
Water transport	53	55	57	58	61
Air transport	166	203	249	302	431
Other	19	20	20	22	19
Total	1 308	1 453	1 600	1 762	2 106

a Net energy consumption (defined as total fuel input less energy produced). **z** ABARE projections.
Sources: ABARE, *Australian Energy: National and State Projections to 2029-30.*

(Source: *Energy in Australia*, 2005, Department of Industry and ABARE)

Over time road transport will remain as the largest energy consumer across all modes – maintaining an approximate 70 - 80% share. In volume terms, the energy values of PJ (petajoules) as provided in **Table One** can be converted to diesel litrage. Assuming that every road transport operator consumes diesel (i.e LPG, CNG consumption etc is disregarded for these purposes), total expected diesel consumption over this period would be (see **Table Two**):

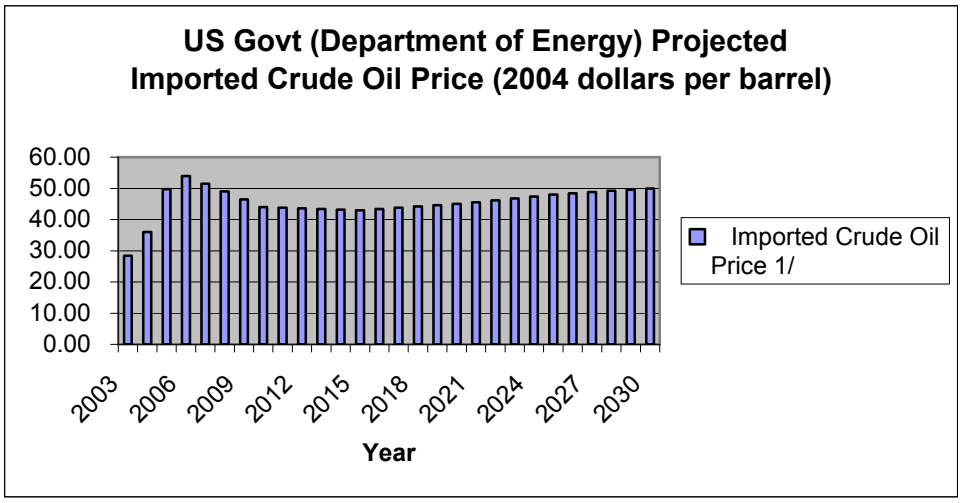
Table Two

Year	Petajoules	Converted to Diesel (l)
2004/05	1038	27,029,520,000
2009/10	1142	29,737,680,000
2014/15	1240	32,289,600,000
2019/20	1346	35,049,840,000
2029/30	1558	40,570,320,000

The ongoing debate and conjecture surrounding the availaibilty of oil (i.e the 'depletionists' and 'anti-depletionists' debate) and whether a supply peak has been reached and accordingly, what the long term price may be, is not a debate that the ATA is qualified to enter.

This conjecture coupled with extreme demand side sensitivities (eg 'harshness' of European winters and unknowns in relation to Chinese and Indian demand etc) means that forecasting likely oil prices is very difficult. However, the US Government's Department of Energy does attempt to do so and their projections are given at **Graph Three**. General indications seem to be that the US crude oil barrel price will remain volatile and remain above 2004 prices. Excluding important variables such as refining costs and exchange rates, and given Australia's increasing reliance on imported 'heavy' crude, these percentage increases and decreases may be indicative in the Australian context.

Graph Three



The World Business Council for Sustainable Development (WBCSD) in their report, *The Sustainable Mobility Project Full Report 2004* (pp.20, 2004), suggest that 'over the next 30 years ICE (internal combustion technology) will continue to improve, given the availability of suitable and appropriate enabling fuels'. They also stress that in in the pursuit of 'stringent exhaust regulations…fuel consumption will increase for all (diesel) engines, but the extent of this reduction varies with engine type' (pp. 71).

This is happening at present and is of deep concern to the Australian heavy vehicle industry. The Australian Government has introduced Australian Design Rules ADR 80/01 (Euro 4 and US and Japanese equivalent), and ADR 80/02 (Euro 5 and US and Japanese equivalent), for implementation in Australia in 2007/08 and 2010/11 respectively. Governing the allowable emissions (i.e air pollutants only, not CO_2) of heavy truck engines sold in Australia (all of which are imported), these engines will be less fuel efficient than their Euro 3 predecessors.

The impact of meeting the Euro 5 standard is where attention needs to be. Indications are that heavy vehicle engine and truck manufacturers will favour selective catalytic reduction (SCR) technology to meet this standard. This technology, in achieving a further reduction in NOx (see **Table Three** below), is expected to accrue a 0 - 6% fuel efficiency penalty compared to today's Euro 3 (and US and Japanese equivalent) engines. Coupled with higher purchase costs in the vicinity of >US$10,000, and other operability concerns associated with heat rejection and urea cost, supply and distribition, this transition is not highly anticpated by operators.

Table Three

Euro Standards				
	Reductions in Air Pollutants			
Euro (and US and Japanese Equivalent) Standard	Nitrogen Oxide (NOx)	Carbon Monoxide (CO)	Hydrocarbons (HC)	Particles
(ADR 80/00) Euro 3	5	2.1	0.66	0.1
(ADR 80/01) Euro 4	3.5	1.5	0.46	0.02
(ADR 80/02) Euro 5	2	0.46	0.46	0.02
Values in g/kWh				

Post 'Euro 5', indications are that manufacturers may favour homogenous charge compression ignition combustion process (HCCI) engine technologies. This advanced combustion process reduces the complexity of exhaust gas after treatment systems and could become available after 2010. Partly homogenous combustion processes are however expected earlier.

Importantly, these technogies are ICEs which require diesel or a like petroleum-based energy equivalent fuel. As such, the WBCSD concludes that 'gasoline and diesel are likely to remain the major road transport fuels for the ICE and its derivatives to 2030, tailored to enable the most efficient engine technology and vehicle emission control systems to function effectively' (pp. 72, 2004).

The WBCSD do however acknowledge that:

> *Engines powered by natural gas, methanol and ethanol are already being used in selected truck and bus applications around the world. Efforts are underway to apply new propulsion system technologies such as hybrids and fuel cells to selected truck and bus types. These efforts are less well known than those associated with light-duty vehicles. But they deserve wider recognition. Fuel and emissions savings from applying a hybrid system to a single city bus can reduce CO2 emissions by as much as applying this technology to more than 20 light-duty passenger vehicles (pp. 89, 2004).*

And

> *In December 2000, the US Department of Energy published a "technology roadmap" identifying what it considered to be promising technologies for heavy trucks (Class 8s),14 transit buses, medium trucks (enclosed, single-axle delivery trucks), small trucks ("working" pickups with a manufacturers gross vehicle weight exceeding 8500 pounds – approximately 3900 kg.), and military vehicles. The technology roadmap also discussed "crosscutting technologies" such as alternative fuels, internal combustion engine technologies, exhaust after-treatment technologies, hybrid electric propulsion technologies, mechanical hybrid truck technologies, fuel cells, auxiliary power, thermal management, materials, more-efficient and/or lower-emissions engine systems, vehicle intelligence, and other innovative high-payoff technologies (pp. 89, 2004).*

Acknowledging that the new heavy vehicle market in Australia is a relatively small market by international comparison, and all heavy vehicle engines utilised in Australia are manufactured abroad (although some assembly of trucks does occur domestically), there are a number of impediments that serve to deter international manufacturers from investing in the research and development to advance these fledging technologies and for Australia therefore to utilise these technologies.

These impediments are best described by the WBCSD:

> *At present there is no guarantee that many of these technologies (as stated above) and fuels will be used widely. In general, both the vehicles incorporating them and the fuels that they must use if GHG emissions are to be reduced are more expensive than the vehicles and fuels they would replace. Moreover, the benefits of GHG emissions reduction accrue to society at large rather than to any individual transport user. So the incentive for individuals to incur significant extra costs voluntarily to acquire and operate vehicles that emit significantly fewer GHGs is likely to be quite limited. Incentives will probably be needed, and only governments have the resources and authority to create them (pp. 104-105, 2004).*

And

> *The SMP assessment is that the most accurate judgment that can be made at present about these advanced vehicles and fuels is that their current costs are much too high for them to compete in the marketplace with today's vehicles and fuels. At these cost levels, the incentives required to bring about their introduction in significant numbers almost certainly is beyond governments' ability to sustain financially. So the most important challenge over the next decade or so will be to determine whether the high costs of these vehicles and fuels can be reduced to the point where it is meaningful to consider them as serious candidates for adoption on a worldwide basis* (pp. 107, 2004).

In the expected absence of radical 'supply side' technological breakthroughs and successful commercialisation of low cost and highly reliable alternative fuels and low cost and more fuel efficient heavy vehicle engines, there is likley to be a continued reliance on ICE engine technologies and petroleum based fuels for heavy vehicle road transportation into the future. This view is reflected by ABARE's long-term energy consumption and production projections that indicate 'that Australia's dependence on imported oil and petroleum products will increase considerably over the period to 2019–20'[3].

The ATA would infer from this that Government should not rely on the 'supply side' but concentrate on implementing demand side policies and programs to achieve reductions in fuel consumption. The ATA has a number of suggestions for improving the 'demand side' and these are outlined at 'Options for reducing Australia's transport fuel demands'.

Whilst demand for oil and petroleum products in Australia is likely to increase considerably in absolute terms over the next period, and given Australia's limited capacity to fulfill this demand from domestic supplies therefore increasing our reliance and vulnerability to imported product prices, one must look to projected international crude oil prices to begin to estimate what the price for diesel maybe in Australia over the ensuing period. Oil is a particularly difficult commodity to price forecast due to the many supply and demand side sensitvities that govern its price.

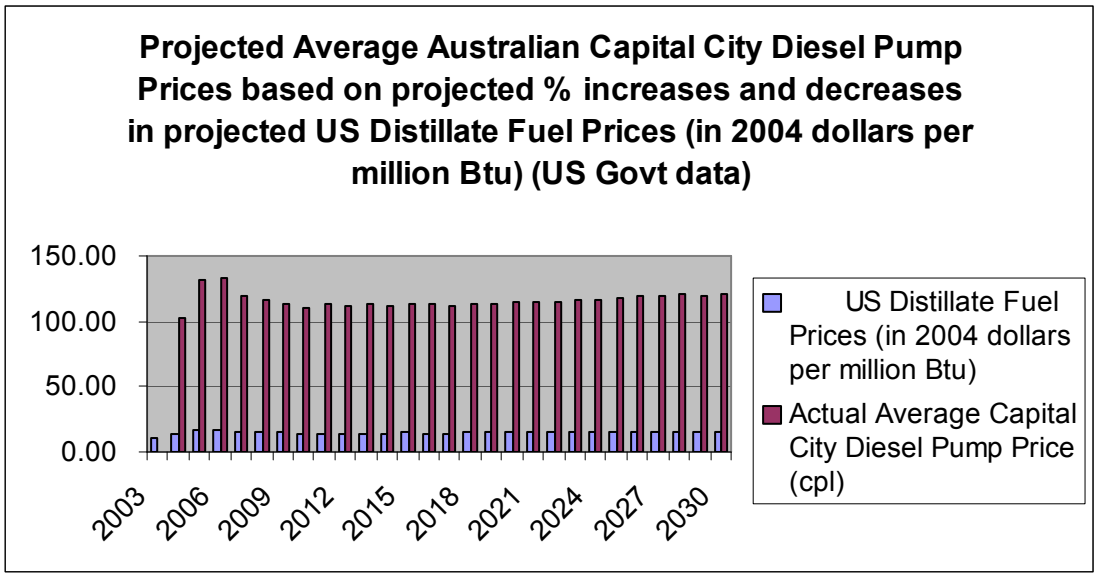
Building on the data presented at **Graph Three**, the US Government's Annual Energy Outlook 2006 (Early Release) forecasts the price of distillate fuel in 2004 US dollars between 2003 and 2030. Assuming that the Australian diesel pump price mirrors the percentage increase and decrease in the forecasted price of distillate fuel, one may estimate what the future Australian diesel prices might be (see **Graph Four**).

Using this approach, and given that the average capital city diesel pump price in Australia in 2004 was 102.6 cpl, then the average capital city diesel pump price in Australia between 2003 and 2030 would be

[3] Report of the Biofuels TaskForce to the Prime Minister, pp. 37, 2004)

approximately 116 cpl. This approach does not take into account exchange rates nor likely CPI increases, refinery costs fluctuations and the like and should not be relied upon for any substantive reason but too indicate that diesel prices in Australia may continue at their current high levels equating to sustained high freight rates and a need for Goverrnment's to plan for ongoing and sustained productivity and efficiency offsets.

Graph Four



The data presented at Graph Four is supported by ABARE whose 'current forecast (for oil prices) is for a gradual easing in oil prices over the short and medium term'[4]. However, it is not insignificant that it predicts that the Australian dollar (that has averaged around US74c in 2005-06) may 'return to a trend level of US65c in the medium to long term (Penm and Fisher 2005)'[5]. This will place upward pressure on oil and diesel prices in Australia if not offset by a reduction in global prices generally.

[4] Report of the Biofuels TaskForce to the Prime Minister, Appendix Three, ABARE analysis, pp. 10, 2005
[5] Report of the Biofuels TaskForce to the Prime Minister, Appendix Three, ABARE analysis, pp. 10, 2005

TERM OF REFERENCE TWO

Potential of new sources of oil and alternative transport fuels to meet a significant share of Australia's fuel demands, taking into account technological developments and environmental and economic costs

Table Four represents the cost structure of a typical owner/driver operation that undertakes predominantly long distance tasks, and is operating a relatively modern heavy vehicle. With fuel representing the largest individual cost input, a very strong market or commercial incentive exists to maximise fuel efficiency and/or to lower this cost value.

Table Four

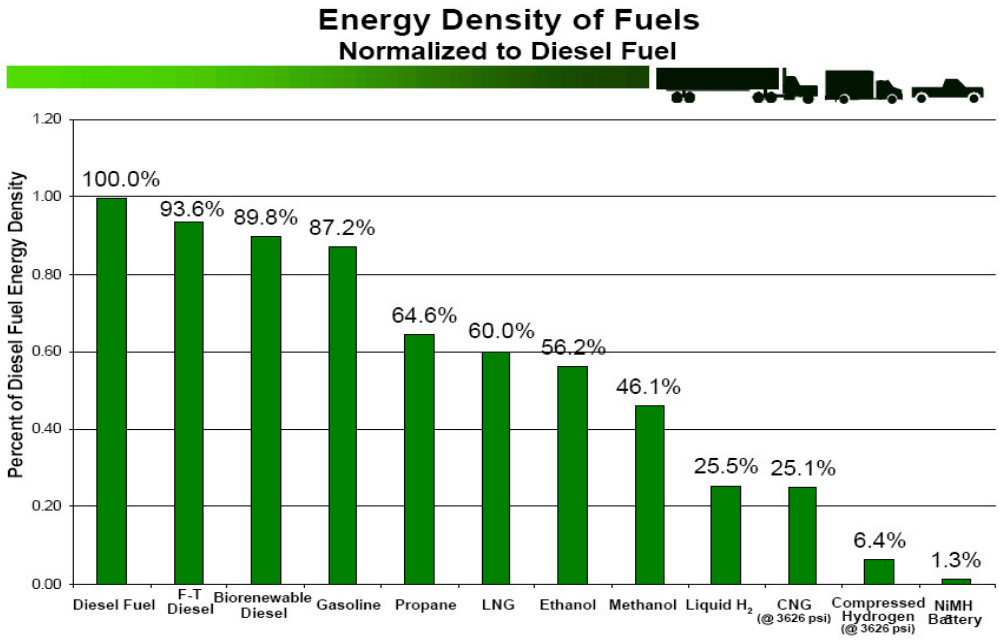
Insurance	6%
Overheads including road user and registration charges	12%
Capital	16%
Labour	24%
Repairs and Tyres	12%
Fuel	30%

As such, and in relation to the latter, operators over the last number of decades have trialled alternative fuels such as biodiesel blends, diesohol and gas derivatives such as LPG and CNG.

As a generalisation, and in the absence of more 'qualified' results that have become independently assessed and made publicly available to the contrary, anecdotal advice from operators is that the consumption of alternative fuels has lead to few commercial advantages because of operability issues and generally higher net costs vis-vis (pure) diesel consumption. The advantages of diesel go beyond price considerations and include: good energy density (power per volume); relatively safe; hard to ignite; enables highly efficient engines; high compression ratios; and it is ubiquitous (i.e its available everywhere from an established distribution network).

The issue is that alternative fuels in the main have a lower energy content than diesel (see **Graph Five)** meaning that engines often have to be modified to utilise them and usually more fuel volume is needed per kilometre travelled which raises cost concerns.

Graph Five



(source: Dr James Eberheldt, US Department of Energy, 2002 Diesel Emissions Workshop)

Biodiesels

In responding to the (Prime Minister's) Biofuels Taskforce in June 2005, and specifically in relation to biofuels (not gas derivatives), the ATA modelled at what diesel and biodiesel price combinations biodiesel is likely to become commercially attractive for operators.

Table Five summarises the results of this analysis.

Table Five

Per Biodiesel/Diesel Cost Combination, Total Industry Wide Increase or Decrease in Fuel Costs of Linehaul Single Trailer and B-Double Applications (Combined) Assuming all Operators Consume a B5 Biodiesel Mix Relative to B0 (at the same diesel costs) in the Year 2015

Summary Table							
Per Biodiesel/Diesel Cost Combination, Total Industry Wide Increase or Decrease in Fuel Costs of Linehaul Single Trailer and B-Double Applications (Combined) Assuming all Operators Consume a **B5** Biodiesel Mix Relative to **B0** (at the same diesel costs)							
		Pump Price of Diesel (includes GST and excise) (c/l)					
		110	120	130	140	150	160
Cost of 100% Biodiesel Product (excl GST but has excise added) (c/l)	60	-$98,892,101	-$148,780,226	-$198,668,351	-$248,556,476	-$298,444,601	-$348,332,726
	80	$19,949,149	-$29,938,976	-$79,827,101	-$129,715,226	-$179,603,351	-$229,491,476
	100	$138,790,399	$88,902,274	$39,014,149	-$10,873,976	-$60,762,101	-$110,650,226
	120	$257,631,649	$207,743,524	$157,855,399	$107,967,274	$58,079,149	$8,191,024
	140	$376,472,899	$326,584,774	$276,696,649	$226,808,524	$176,920,399	$127,032,274
	180	$614,155,399	$564,267,274	$514,379,149	$464,491,024	$414,602,899	$364,714,774

Conclusion: Compared to B0 at the same costings above, the total fuel cost to single trailer and B-Double operators in the year 2015 of B5 biodiesel is LOWER only in the shaded cost combinations represented above

Table Five demonstrates that compared to the base case (i.e B0 at the same diesel costings above), the total aggregated fuel cost to single trailer and B-Double operators in the year 2015 (when the full excise arrangements for alternative fuels are in place) of B5 biodiesel consumption is LOWER only in the shaded cost combinations represented above.

B5 has been selected as it represents a blend level that most heavy vehicle manufacturers are willing to accept without compromising warranties.

That is, and for example, if in 2015 B5 costs were 150 cpl for diesel (representing 95% of blend) and 80 cpl for B100 (representing 5% of blend), compared to the base case (i.e B0 diesel costing 150c/l), there would an economic gain to the industry in terms of aggregated fuel savings in the vicinity of $179m. Alternatively, and for example, if in 2015 B5 costs were 140 cpl diesel and 140 cpl for B100, compared to the base case (i.e B0 diesel costing 140 cpl), the total additional fuel costs to the industry would be in the vicinity of $226m.

These varying levels of commercial attractiveness reflect the fact that biodiesel blends have (generally) less energy content than pure diesel and as such heavy vehicles would need to consume more fuel per kilometre traveled. At times (and as represented in the shaded cost combinations above) the increase in fuel consumption of biodiesels can be offset if the price of the bio product that goes into the biodiesel blend is low enough.

Of note is that the alternative fuel excise amounts are low today and will increase to their full amounts in stages by 2015. This means that the analysis provided in **Table Five** above would be 'more biodiesel friendly' if excise arrangements applicable between today and 2015 were used.

The environmental benefits of a B5 biodiesel blend have been well documented. **Tables Six** and **Seven** demonstrate that the full life cycle greenhouse gas emission and air pollutant emissions reductions of B5 are marginal for rigid heavy vehicles. One would expect that these benefits would be worse for articulated trucks as more fuel would be required per kilometrekilometer traveled.

Table Six

Table 33. Percentage change of full life cycle GHG emissions (CO_2-e) of BD5 relative to LSD, ULSD, and XLSD (rigid truck) (%)

GHG as CO_2-e (% change to each diesel type)	Biodiesel (canola) BD5	Biodiesel (tallow) BD5	Biodiesel (waste oil) BD5
To LSD			
GHG (Upstream)	13.9	12.3	-3.08
GHG (Tailpipe)	-4.86	-4.86	-4.86
GHG (life cycle)	**-1.6**	**-1.9**	**-4.55**
To ULSD			
GHG (Upstream)	14.27	12.9	-1.05
GHG (Tailpipe)	-4.9	-4.9	-4.9
GHG (life cycle)	**-1.5**	**-1.5**	**-4.18**
To XLSD			
GHG (Upstream)	15.17	13.9	1.16
GHG (Tailpipe)	-4.1	-4.1	-4.1
GHG (life cycle)	**-0.1**	**-0.4**	**-3.04**

(Source: Main report by ABARE/CSIRO/BTRE into the *Appropriateness of a 350 ML Biofuels Target* provided to the Department in December 2003)

Table Seven

Table 36. Percentage change of full life cycle air pollutant emissions of BD5 relative to LSD, ULSD, and XLSD (rigid truck)

Impact category (full life cycle) (% change to each diesel type)	Biodiesel (canola) BD5	Biodiesel (tallow) BD5	Biodiesel (waste oil) BD5
To LSD			
CO	-14.35	-14.77	-15.21
NO_x	-3.96	-4.02	-4.47
NMVOC	-15.33	-15.45	-16.1
PM	-2.72	-2.77	-3.02
To ULSD			
CO	-13.41	-13.82	-14.27
NO_x	6.41	6.35	5.85
NMVOC	-8.17	-8.3	-9.01
PM	-2.14	-1.85	-2.17
To XLSD			
CO	-11.27	-11.69	-12.14
NO_x	10.9	10.81	10.27
NMVOC	-4.92	-5.07	-5.8
PM	0.08	0.06	-0.28

(Source: Main report by ABARE/CSIRO/BTRE into the *Appropriateness of a 350 ML Biofuels Target* provided to the Department in December 2003)

Environmental altruism and cost to one aside, product availability is another key criteria. Given the inherent nature of trucking operations, fuel must be available at many locations at all hours of the day and night. This is key issue for alternative fuels and as such, its application may be better suited to niche and off-road applications. It is understood however that trucks can utilise biodiesel and diesel without modification relatively easily so this may not be such an issue for biodiesels.

Barring other possible benefits such as regional development and import substitution, one could conclude that 'mainstream' operators in the hire and reward trucking sector are unlikely to support the consumption of biodiesels until price combinations reach levels that are more commercially attractive; it is widely available; and there are assurances in relation to operability, reliability and durability.

Given that oil prices may stay at relatively high levels, the ATA would support a government facilitated heavy vehicle biodiesels trial program to assess the 'life cycle' environmental performance and economic benefits of biodiesel across the very diverse nature of trucking operations (i.e large and small trucks etc).

Diesohol

Diesohol is a blend of diesel and ethanol.

The ATA and truck manufacturers do not support the mainstream consumption of diesohol due to the handling and storage and safety issues associated with diesohol's very low flash point. The operating environment of the industry is not geared to utilise high flash point liquids.

Further, it is of concern that diesohol consumption can increase hydrocarbons – a hazardous air contaminant that acts as a precursor to the formation of ozone. It is also of concern that diesohol may also lead to poorer CO_2 outcomes for the industry.

The consumption of diesohol may therefore in part be counterproductive to addressing Australia's air pollution and greenhouse gas issues although it is accepted that the science in relation remains somewhat unclear.

Gas Derivatives

A number of hire and reward operators have trialled LPG and CNG. There is however an absence of trial data in the public domain, and as such the ATA cannot reach any conclusions to the merits or otherwise of gas derivatives as an alternative fuel. The ATA understands that the Australian Greenhouse Office is about to release a compendium of trial results in the April 2006.

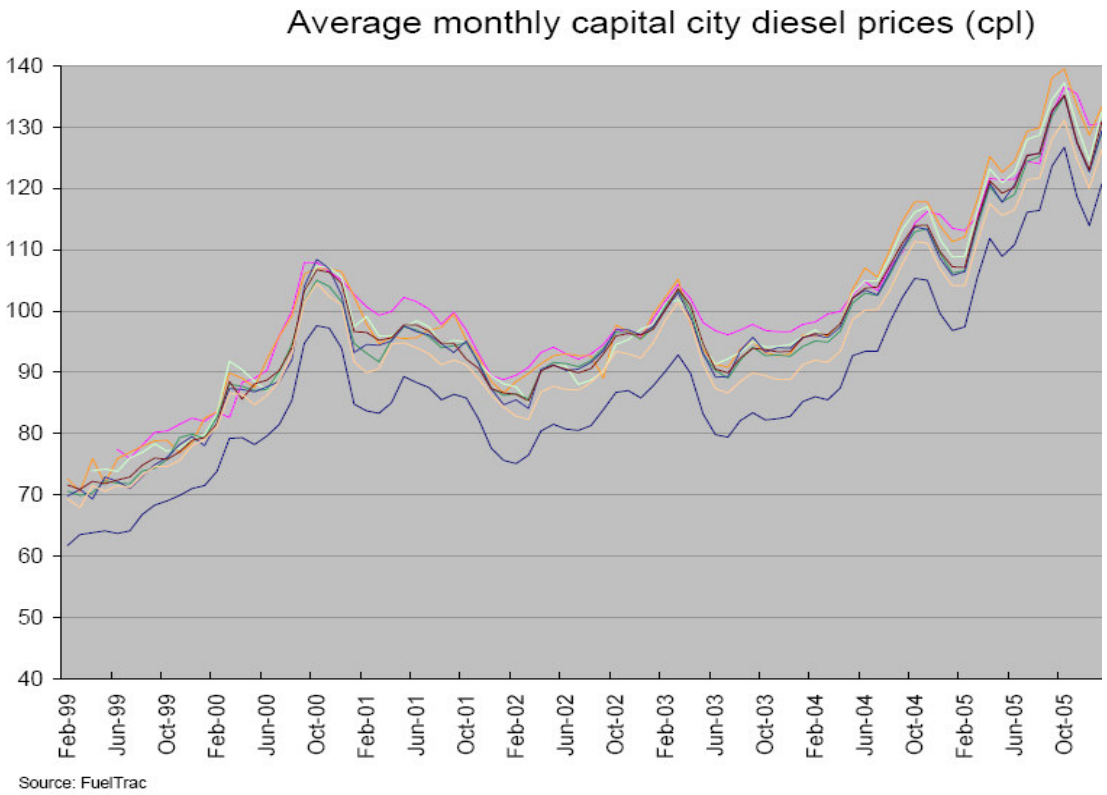
TERM OF REFERENCE THREE

Flow-on economic and social impacts in Australia from continuing rises in the price of transport fuel and potential reductions in oil supply

As demonstrated at **Graph Six**, there has been a substantial increase in average monthly capital city diesel prices over the period February 1999 to today. Assuming operators are registered for the GST and are eligible to claim the on-road grant, these prices (cpl) would be reduced by (1/11th) and approximately 18c cpl (i.e the on-road grant amount) respectively for most hire and reward operators.

FuelTrac estimate that the average monthly capital city diesel price in January 1999 was approximately 70.2 cpl and rose to $1.28/l in January 2006 – representing an 80% increase.

Graph Six



(Source: http://www.aaa.asn.au/petrol/diesel.pdf)

The impact on the hire and reward industry of these rising prices is significant.

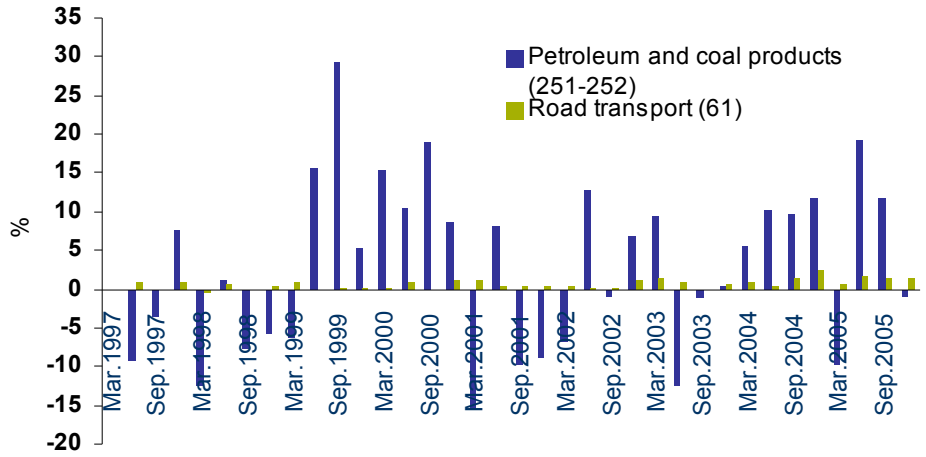
Using economic terminology, the hire and reward trucking sector is close to 'perfectly competitive' in its market structure. It is estimated that 92% of operators have 1,2,3 or 4 heavy vehicles in their fleet[6] - meaning there is a predominance of small businesses.

Very low barriers to entry, an inability to create scale, a homogenous service, and general high contestability has led to a situation where operators earn on average profit margins that are lower than Australian industry standards. For example, the ABS estimates that the Australian industry average profit margin (i.e all industries) was 7.2% in 2002-03[7]. This compares to the 'Transport and Storage' industry whose profit margin in 2002-03 was estimated to be 5.6%, decreasing from 6.4% in 2001-02[8]. This 13% decrease in profit margin between '03 and '02 is against the backdrop of an approximate 21% increase in diesel 'burn prices' over this time.

Due to the very high levels of contestability in the hire and reward road transport industry, operators have varying success in passing these costs onto road freight customers. Using ABS Producer Prices Indices for 'petroleum and coal products' and 'road transport freight rates' it is possible to calculate the percentage increases and decreases in these prices each quarter between March 1997 and September 2005. **Graph Seven** demonstrates the extreme variance in the price of petroleum products over this period (both up and down) and the relative stability of freight rates.

Graph Seven

Percentage Changes in Petroleum and Coal Products and Road Transport Freight Rates March 1997 and September 2005



(Source: 6427.0 - Producer Price Indexes, Australia, Dec 2005)

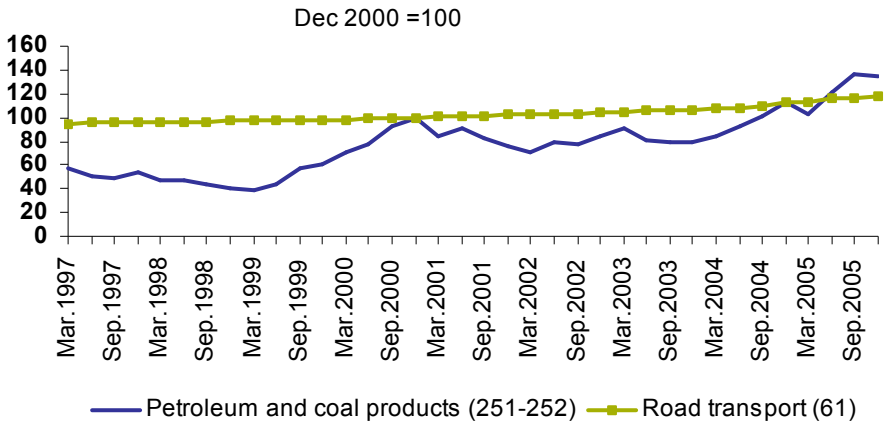
Graph Eight demonstrates that whilst the inability of freight rates to 'keep pace' with the nominal price of petroleum products over this period.

[6] ACIL Tasman, August 2004, Trucking – Driving Australia's Growth and Prosperity

[7] (Cat No. 8155.0 Australian Industry, Experimental Estimates, Industry Performance by ANZSIC Class, Australia, 2002-03)

[8] (Cat No. 8155.0 Australian Industry, Experimental Estimates, Industry Performance by ANZSIC Class, Australia, 2002-03)

Graph Eight

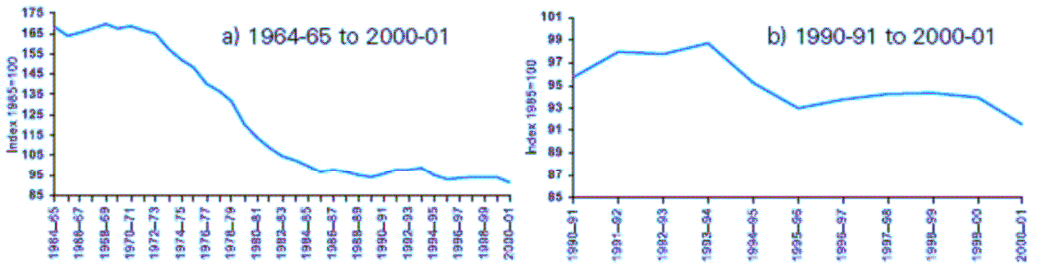


In **Graph Eight**, road transport freight rates and petroleum products have been put into '2000 dollars' to enable trend analysis. Starting at the time period of March 1997 and going to approximately March 1999, there is a distinct decoupling of freight rates and oil prices meaning that freight rates are increasing relatively greater than oil prices. However post March 1999, the distance between the two graph lines gets increasingly closer and in March 2005 actually crosses. This means that freight rates have not increased proportionally to the increases in petroleum products meaning that operators have absorbed a percentage of these higher input costs.

It is not surprising that this inability to absorb rising fuel prices has resulted in a lowering of profit margins in the 'Transport and Storage' Industry as indicated above. To remain sustainable, road transport operators must begin to pass on the full costs of rising fuel prices onto customers. In previous years, substantial productivity gains (i.e introduction of B-Doubles, higher mass limits etc) were achieved in the industry that allowed higher input costs to be offset thereby allowing freight rates to stay relatively stable and actually decrease by almost half between 1964-65 and 2000-01 (see **Graph Nine**).

Graph Nine

Figure 11 **Real road freight rates, 1964-2001**



Data source: ACIL Tasman (2003) using data from Bureau of Transport and Regional Economics, Freight Rates in Australia, Information Sheet 19

Unfortunately today, productivity gains have been exhausted meaning that cost offsets are unlikely and costs will need to be passed on. This slowdown in road transport productivity is supported by the BTRE

who state, 'the limited evidence available suggests that there is a possibility that improvement in the total factor productivity in the road freight sector may have slowed down' (*Working Paper 60,* 2004, pp.18)

Assuming that rising costs (fuel, other compliance costs etc) are passed on by the industry, higher freight costs may have a very large and perverse effect on the community and the macroeconomy at large. Given the highly contestable nature of most Australian industries, it is likely that much of these costs will be absorbed. However, and regardless of whether absorption is or is not possible, the adverse consequences in terms of GDP, exports and investment could be significant. This is worthy of closer consideration by Government.

The ATA estimates that given that the average monthly capital city diesel price in November 2003 was approximately 90 cpl (representing a 'burn price' of 64 cpl) and rose to $1.30/l in November 2005 (representing a 'burn price' of 100 cpl), then the total increase in the costs to society (assuming all of Australian industry can pass higher costs on also) stemming from rising oil prices and higher freight rates would have been in the vicinity of $3.25 billion[9] over the period 2003 and 2005.

An inability on behalf of the road transport industry to pass these costs on will lead to lower operating profits, which can lead to (inter alia):

- An inability to expand the business and employ more staff – thereby mitigating efforts to develop economies of scale and scope and increase profitability and preventing investment in more modern and productive equipment. This is significant because not only does this detract from profitability, but more modern prime movers and trailers are considered to be safer and more environmentally friendly than equipment manufactured before it;
- An inability to pay competitive wages to retain and develop staff; and
- Performance standards being compromised.

In summary, and in the absence of a new wave of productivity and efficiency reform in the industry, and a very low ability to absorb higher costs as reflected in decreasing profit margins, the industry to remain sustainable must pass higher costs onto customers.

9 That is, in November 2003, it is estimated that the total road freight cost to society when diesel was 64 cpl and the average freight rate was $1.50/km and assuming 12,505 million kilometres were travelled was $18.76 billion. In November 2005, the total road freight cost to society when diesel costs rose to 100 cpl and the number of kilometres travelled by the industry increases by 4% per annum since 2003 (representing an 17% increase in total costs if fuel represents 30% of total operating costs) and the average freight rate rose to $1.76/km to recover these costs, was $22.13b (assuming the same amount of kilometres are travelled).

TERM OF REFERENCE FOUR

Options for reducing Australia's transport fuel demands

Options for reducing Australia's transport fuel demands can be classified into three discrete factors. Each is discussed in turn.

Factor (1) – The amount of energy required by the average vehicle used by each transport mode to perform a given amount of transport activity.

This depends on the energy consumption characteristics of the mode or conveyance and the conditions under which it operates.

To reduce fuel consumption per unit transport activity, it is necessary to reduce the amount of energy required to produce that unit of transport activity (i.e fleets need to become more energy efficient).

The inherent obstacles in stimulating the 'supply side' (i.e engine manufacturers etc) to move beyond internal combustion engines that are powered by petroleum-based products have been discussed above.

It is also not insignificant that the new wave of heavy vehicle engine technologies that will be utilised by most developing countries to address air pollution in the short to medium term are less fuel efficient than their predecessors and alternative diesels, such as biodiesel, contain (and generally) less energy content than low-sulphur diesel.

The emphasis must therefore lie with 'demand side' policies. Whilst fuel costs constitute approximately 30-50% of a road transport operators input costs, and significant market incentives already exist to maximise fuel efficiency, there are still 'failures' in the market that need to be addressed that could be addressed via the following initiatives:

- Encourage good maintenance of trucks and improved driving practices. Proper maintenance can have a significant impact of a vehicle's fuel efficiency.

  Whilst the Government has introduced the 'conditional credits' regime as part of its Energy White Paper 2004 announcement which places an obligation on operators who own pre 1986 manufactured trucks to show 'proper maintenance' to the Australia Taxation Office in order to receive the grant, the ATA would like to see more positive approach that encourages good maintenance via the accreditation program, TruckSafe, and governments and markets reward these accredited operators via the provision of regulatory concessions and general preference respectively.

  The provision of training and education information that informs mechanics, owners etc about 'effective maintenance' is critical and there is a role for government in this regard. Simple information also for drivers on best practice driving would also be a worthy initiative.

  Further, Australian Government programs such as the Greenhouse Challenge (GC) and the Energy Efficiency Opportunities Program (EEOP) will be mandatory for those operators that consume in excess of 13 and 16 million litres of diesel per annum respectively. Whilst difficult to say with confidence, these thresholds may capture approximately 50 operators in the GC and approximately 10 operators in the EEOP. Importantly, these larger operators only carry approximately 15% of the road freight task. The ATA would suggest that Government is not effectively targeting in its program activity those (i.e small businesses) who contribute overwhelmingly to the issue.

- Whilst heavy vehicles utilising fuel-cell and other developing technologies are being trialled around the world, they remain costly. Because the benefits of these technologies accrue to society at large rather than to any individual transport user the incentive for individuals to incur these significant extra costs voluntarily to acquire and operate these vehicles is likely to be limited. The ATA believes that Government must seriously begin to consider monetary incentives to encourage users to purchase vehicles that utilise technologies that do not reap commercial benefits but have other significant advantages.

- Like the 'Green Vehicles Guide' that rates smaller vehicles according to their green credentials, a similar 'Green Heavy Vehicle Guide' could be produced. This would assist customers to make informed decisions as to the on road-merits of heavy vehicles against criteria such as fuel efficiency, aerodynamic drag performance, the ability of the vehicle to reduce rolling resistance and even the ability of ability to conserve fuel with the air conditioning on.

- Historically, Australian Governments have shown a preference to harmonise with international heavy vehicle standards when attempting to address the negative externalities associated with heavy vehicle usage (eg emission and noise standards).

  Australia is a geographically large country with highly dispersed population with key environment differentiators, including the distances trucks travel. For example, the annual distances travelled in Europe are 100-150,000 kilometres, in North America it is 150-200,000 kilometres, and in Australia 250,000 + kilometres). Further, many diverse transport solutions exist (for example, Europe uses single trailers, COE designs, 350-450HP and 44 tonne GCM, North America uses single trailers, conventional designs, 400-500HP, 38 tonne GCM and Australia uses multiple trailers, COE and conventional designs, 500-600HP, 42-150+ tonne GCM, roadtrains and B-Doubles) with very high ambient temperatures.

  The utilisation/productivity and reliability of the truck to its conditions is therefore a critical determinant when assessing the merits of an international standard. As mentioned, Australia will transition to Euro 4 and 5 emission standards in 2007/08 and 2009/10 respectively. These technological solutions are likely to be result in fuel efficiency penalties in the pursuit of reductions in fuel efficiency. Given that the majority of high horsepower trucking operates in rural/regional Australia and air pollution isn't a significant issue, the questions of international harmonisation have to be seriously questioned.

  Harmonisation with overseas standards diverts resources away from new products, can add costs and complexity, the regulation is typically not based around productivity but safety and environmental gain, it ignores the unique Australian transport environment and may reduce the efficiency of the Australian Road Transport Industry.

  The ATA would like a complete review of the merits of harmonisation and an examination of how market-based mechanisms could be better utilised to address externalities.

- Congestion is expected to become a major issue in the future. The following excerpt from the NTC Position Paper, *Improving the Regulatory Framework for Transport Productivity in Australia, February 2006* (2006) highlights the concerns:

  > *In the light of strong forecast freight growth, limited opportunities for infrastructure development and the growing passenger transport task it will be in urban areas where the impact of freight will be the most evident. BTRE forecasts imply that one in four vehicles on metropolitan roads will be a light commercial vehicle or truck by 2020 (BTRE, 2003). Operating under a 'business as usual' paradigm will see the impact of congestion growing at an exponential rate. These impacts are forecast to include:*

- *Road traffic predicted to increase by 40% during 2002-2020*
- *Estimated cost of road delays to increase from $12.8b in 1995 to $29.7b in 2015 (Chair SCOT Urban Congestion Management Working Group, 2005.)*

The ATA would add that port bound traffic is increasing considerably and significant congestion issues exist.

The ATA is supportive of the AusLink proposal to assist in addressing these concerns and others but is concerned that its implementation is taking longer than what is needed. It is of course imperative that proper planning and analysis underpins these significant investment decisions. The ATA also supports other investment options, including private sector involvement, if it promotes the optimal provision of road and related assets.

- The speed of the vehicle and the amount of wind resistance that is created has a significant impact on the fuel efficiency of a heavy vehicle.

  The company policy of Simon National Carriers is to restrict its heavy vehicles to a speed limit of 90 km/hr (10 km/hr lower than the legislated speed limit). The benefits of this in terms of accrued fuel savings have been significant. The rationale is that because linehaul route completion times are dependent on many external factors such as towns and hills, and less than 30% is at the actual speed limit, there are not significant differences in time completion rates between a vehicle doing 100 km/hr compared to 90 km/hr. Simon National Carriers estimate that on standard line haul trips the fuel savings are in the magnitude of 5 - 8%.

  This type of information should be disseminated to the industry. The ATA has secured financial assistance from the Australian Greenhouse Office to complete a 'Best Practice Environment Guide' for the industry that showcases operators and their 'best practice' environmental practices. The ATA is eager to engage with Government in completing other like activities.

Factor (2) – The total volume of transport activity. This depends on the number of transport vehicles operated and their use.

Addressing this factor goes to the heart of increasing the productivity and efficiency of the industry.

Whilst strong demand for road freight has been an omnipresent characteristic for some time, the task has been achieved because of gradual productivity gains and a fluid labour market. Today however, road agencies and road 'owners' are very reticent to allow 'longer', 'wider', 'heavier' trucks and trailers due to perceived limited capacities in the road network and because of a severe labour shortage in the industry as a result of changing social expectations and retiring 'baby boomers'.

The BTRE assert in *Working Paper 60, An Overview of the Road Transport Industry*, that '(although) limited (,) evidence available suggests that there is a possibility that improvement in the total factor productivity in the road freight sector may have slowed down' (pp. 75,2003), and 'a looming driver shortage could have a significant impact on the road freight industry, unless solutions are implemented soon' (pp. 5, 2003).

Productivity and efficiency improvements are the area where it is felt that significant progress can be made to reduce the total volume of transport use. These objectives are the subject of a current review by the NTC (the 'Twice the Task' policy position paper was released 17 February for public comment). This paper signals (4) main priority areas of reform relevant to road transport, being: less prescriptive regulation; the optimisation of infrastructure usage by a different pricing regime (more direct fee for

service); better matching between road capabilities and vehicle type; and a more proactive and flexible approach to implementation of reform across jurisdictions.

Significantly also was the recent COAG announcement (Friday 10 February 2006 Communiqué) that 'endorsed a new National Competition Policy (NCP) reform agenda aimed at providing a supportive market and regulatory framework' in a number of sectors including transport within the context of a competitive neutrality review and 'productivity-enhancing reforms'.

These are all significant developments that need to be carefully worked through by the ATA and a response will be detailed in time. In the interim, it is reassuring that the NTC has at least recognised the urgency of the issue and has promoted 'productivity' reform to government for attention.

In the absence of a detailed response to the NTC proposals above, what is clear is that, and given that the last substantial productivity gain to the industry was the introduction of the B-Double combination (a two trailer combination that can carry approximately 1.5x the weight of a single trailer combination) in the 1990's, there must be a higher community and government acceptance and (general road) access of larger combination vehicles (i.e trucks that carry more trailers as part of a combination) that have higher mass limits on individual axle groupings (where the road network can support it) and where the operator is appropriately authorised to do so.

The NTC's 'Performance Based Standards' (PBS) reform agenda attempts to address these issues. The issue is that the application of PBS will not be broad across the industry (due mainly to cost) and lower barriers and broader access will be required if substantial productivity gains are to be realised.

For significant productivity reform to be embraced, road asset owners will have to adopt a less conservative approach to their roads capabilities; education campaigns will be needed to assure the community that longer and heavier trucks are safe; and different pricing signals may need to be introduced to better align road and vehicle capabilities.

In relation to pricing signals, the NTC's 4th Charges determination will endeavour to introduce a 'fee for service' pricing regime that is underpinned by technological solutions to determine the appropriate fee. The ATA remains sceptical as to the true cost-benefit merits of this approach and supports the suspension of the current NTC 4th heavy vehicles charges scoping study for the period of the Productivity Commission transport pricing inquiry.

The fuel efficiency and productivity gains of larger combination vehicles are significant and their application on Australian roads should be encouraged wherever possible. The American Transportation Research Institute in conjunction with Cummins completed recently completed a major study into the fuel efficiency of larger vehicles. In essence the results demonstrated that the heavier the truck is the better it is on effective fuel economy (litres / ton mile) and emissions.

The study looked at vehicles with 80,000 (36 tonnes), 100,000 (45 tonnes), 120,000 (54 tonnes) and 140,000 lb GVM (63.5 tonnes) (i.e B-Double capacity). Compared to the base case of 80,000 lb GVM (36 tonnes), the decreases in fuel consumption and emissions per ton-mile ranged from:

- 4 to 19% at 100,000 pound GVW;
- 15 to 22% at 120,000 GVW;
- 27% at 140,000 pounds GVW

At 140,000 lb the study found a 27% improvement for fuel consumption and emissions. This would indicate that the Australian B-Double fleet is providing a 27% improvement in fuel consumption and emissions compared to single trailer today compared to 80,000 lb GVM (36 tonnes), single trailer combinations.

The safety and other broad environmental benefits (i.e noise) of less heavy vehicles on the road (than need be) should also not be understated.

Other areas where education could be provided include:

- Better matching the vehicle type to the work to be undertaken.
- The routing of vehicles to achieve maximum efficiency for the time spent on the road and the road terrain and therefore fuel used.
- Utilisation of telematics systems in order to achieve more efficiencies.
- That trucks/combinations are acquired in order to take advantage of the maximum mass allowed on a given truck/combination in any given jurisdiction.

Factor (3) – The modal mix of the total volume of transport activity. This depends on consumer choice, vehicle or mode pricing and prevailing legislative or fiscal measures that influence mode selection.

The issue of competitive neutrality between rail and road is an issue of considerable public policy debate at present and will be the subject of a major Productivity Commission review due for release later in 2006. Another interrelated matter currently being reviewed is the merits of mass distance charging or 'fee for service' charging. The ATA is heavily engaged on both issues and discussions are ongoing.

Given that only a very small amount of freight is potentially transferable from road to rail (best available estimates at the present time is that only 15% of freight will ever be truly contestable between these modes), higher road costs with no other viable mode options will simply increase the costs to producers and consumers or exacerbate the cost pressures of those who are unable to pass costs on.

A significant issue at present is the proposal of the NTC to the Australian Transport Council to increase the heavy vehicle road user charge from 20 to 22.1c and to substantially increase the registration charges on the larger combination heavy vehicles (i.e B-Doubles and road trains). The ATA opposes these increases as the trucking industry fully pays its way based on current charges and allocated road use costs, and that the COAG announcement of a land transport pricing review on 10 February 2006 has overtaken the NTC heavy vehicle (3rd) charges determination process. The ATA firmly believes that the NTC recommended charges, currently with Australian Transport Council Ministers for a vote, should be 'put on ice' for the period of the PC inquiry.

Government can do more to reduce the costs on the industry to increase profitability and encourage investment in safer, cleaner and more productive equipment (for eg B-Doubles). Given the inherent nature of trucking operations, including intra and inter state travel with multiple depot and yard locations, it is imperative that jurisdictions seek to promote very high safety outcomes whilst mitigating compliance costs to promote operational efficiencies and certainty. A major issue is the lack of national consistency in relation to all manner of law (i.e OH&S, road transport law etc) that impacts upon the issue. This is an issue that needs immediate attention by government.