Australian Transport Council / Environment Protection and Heritage Council – Vehicle Fuel Efficiency Working Group

Vehicle Fuel Efficiency –
Potential measures to encourage the uptake of more fuel efficient, low carbon emission vehicles.

Submission Template

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Comment on the discussion paper is invited from interested stakeholders and members of the public. While comments are welcome on any aspect of the paper, readers are particularly asked to respond to the questions raised in Section 4 regarding the potential measures and in Section 7.

All submissions will be treated as public unless confidentiality is requested for all or part of the submissions. The Working Group requests, however, that the scope of any material requested to be kept confidential be limited to the minimum necessary.

Readers are encouraged to use this submission template as a basis for submissions. The Working Group has posed a series of targeted questions in order to provide a degree of consistency across submissions and to simplify the consideration of submissions. Readers are not required to complete the entire submission template. Comments on individual measures are welcome. Submissions in alternative formats will be accepted.

Electronic and handwritten submissions are welcome. A separate template for handwritten submissions is available from the Vehicle Fuel Efficiency Secretariat.

Contact details have been requested in case the Working Group needs to contact you to discuss aspects of your submission at a later date.

Please attach this coversheet to your submission and submit it to the Working Group via:

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General comments on a package of measures

1. Do you consider the actions of the type outlined in this paper are required, or are current arrangements sufficient?

Yes, these actions are required. However, there are several opportunities to extend these actions into other related areas that are not included so far, for example:

A. Motorbikes, scooters and power assisted push bikes
B. Technologies to improve vehicle fuel efficiency that can be retrofitted in the aftermarket
C. Scrap incentives
D. Driver training – Eco Driving

2. If you consider further actions may be required, which measures, or package of measures, offer the greatest potential to cost-effectively reduce greenhouse emissions from the road transport sector?

A. Motor cycles, scooters, and power assisted pedal cycles are not included in the proposed incentives even though they are the vehicle classes with the lowest average fuel consumption (as mentioned in the paper). On average **Passenger Vehicles consume about twice as much fuel as Motorcycles;** scooters and power assisted pedal cycles are even more efficient. Therefore these vehicles should be included in any scheme, in particular the incentives of measure 2.2 and 2.1. The additional costs for the importers are quite low, around $3000 for one certification test to measure CO2, but on the other hand this would be a big potential benefit for that industry.

Another reason to include these vehicles is that the average car occupancy for journeys to work is only somewhat higher than 1, actually only about 1.2 according to Public Transport User Organisation (Common Urban Myths About Transport, Public Transport User Organisation, 2006, http://www.ptua.org.au/myths/carpool.shtml). That means that cars with 5 seats or more are not fully utilised most of the times and CO2 emissions could be reduced if a smaller vehicle with only one or two seats would be used instead.

The report mentions that safety issues may restrict the widespread use of motorcycles and scooters on Australian roads. The reason is that the risk to be injured on these vehicles is much higher compared to travelling in a car (Integration of needs of moped and motorcycle riders into safety measures, 2001, Review and statistical analysis in the framework of the European research project PROMISING, Workpackage 3, SWOV Institute for Road Safety Research, http://ec.europa.eu/transport/roadsafety_library/publications/promising_deliverable_3.pdf).

To avoid an increase in injuries through the greater use of scooters and motorcycles only those vehicles should be included in the proposed schemes of measure 2.1 and 2.2 that satisfy similar or equivalent standards as required for normal passenger cars, for example ADR 69/00 Full Frontal Impact Occupant Protection and ADR 72/00 Dynamic Side Impact Occupant Protection.

A1. The development of **improved safety systems** for motorbikes, scooters and power assisted pedal cycles would be a big help to increase the uptake of these very efficient vehicles. Specific incentives are required to facilitate the development and production of

such safety systems. This would not only increase the uptake of these very fuel efficient vehicles but more importantly it would reduce the risks involved in the operation of these vehicles. Such safety systems for tilting one track vehicles would be a fantastic opportunity to generate income through exports to markets that are much bigger than Australia, for example China, India, Japan, Europe and even the US. The growth potential for electric scooters only in China is huge: 'Industry sources expect after a number of years at least 350 million of China's 450 million push-bike owners will switch to electric scooters' (http://www.evworld.com/news.cfm?newsid=13431).

B. The incentives of measure 2.2 should also be applied for **technologies to improve vehicle fuel efficiency that can be retrofitted** in the **aftermarket**. Examples could be variable compression ratio systems, cylinder deactivation systems, and exhaust energy recovering systems that improve warm up, reduce friction and improve combustion efficiency. Variable compression ratio systems are a key enabler to make better use of the CO2 reduction potential of LPG and CNG as these fuels have higher Octane ratings and therefore tolerate much higher compression ratios. That efficiency potential can only be used if the compression ratio is adjusted for these fuels.

Certification requirements for such systems require a dedicated framework, standards and procedures. The Australian Standard AS 4430.2-2004 for the "evaluation of devices, additives and processes which claim to improve vehicle performance" could be the foundation of such a framework.

B1. To increase the supply of such fuel efficiency improvement systems some incentives are required to develop, certify and produce such systems. The green car fund could be extended to include such technologies. Because all big and established manufacturers already own their existing production facilities, they don't have a great interest in changing them as that would reduce the return on the original investment. Therefore it is more likely that new energy efficiency technologies for aftermarket conversions will be developed by small and medium enterprises. These SME's often have less access to financial resources so it would be beneficial if support from State Governments could be combined with programs from the Federal Government which is normally not possible. Instead of grant schemes that don't need to be repaid it would more effective to establish loan funds with low interests that will be repaid once a technology has been commercialised successfully. A good example for such a scheme is the VISTECH program from the Victorian State Government.

C. Scrap incentives for old and inefficient vehicles would help to reduce carbon emissions. Old inefficient vehicles would be replaced by newer ones that are much more efficient - because they either use newer technologies, or because they are smaller, or a combination of both. A recent report from the Royal Automobile Club Foundation for Monitoring in the UK showed that the ideal age to incentivise car scrappage would be for 17-18 year old cars (http://www.racfoundation.org/files/Car%20ownership%20in%20Great%20Britain.pdf). The study also refers to scrap incentive schemes from countries like Spain, France, Italy, Greece, Norway, Denmark, Hungary, and Ireland and local governments in the US and Canada.

Such a scheme would also remove most of the non-catalytic converter equipped cars. That would further reduce carbon emissions as cars without catalysts produce regulated emissions of up to 100 times the levels compared to ADR79/02 compliant vehicles. Even though the absolute numbers of the regulated emissions are relatively low in numbers, their greenhouse potential can be quite big. Nitrious Oxide (N2O) for example has a global warming potential that is 310 times bigger than CO2 (AGO Factors and Methods Workbook, December 2006, Australian Government, Department of Environment and Heritage, Australian Greenhouse Office).

The scrap incentive scheme could work as follows: if an old registered car is scrapped when

a new car is bought an incentive is paid based on the reduction in carbon emissions: for example 350g CO2/km for the old vehicle minus 100g CO2/km for the replacement vehicle equals 250g/km CO2. That will result in a lifetime CO2 reduction of 37.5 tonnes CO2 (over 150,000km) which is worth $1,500 CO2 credits at a cost of $40 per tonne CO2 credits.

This theoretical CO2 saving needs to be adjusted because the old vehicle has a much lower remaining lifetime and resulting mileage to be travelled. The average mileage AM is 150,000 km so with a normal distribution it can be expected that on a statistical average the maximum mileage MM is around 300,000km. That means if a vehicle currently has completed 150,000km (CM) the remaining lifetime RM is expected to be 75,000km. so the equation is: RM = (MM – CM) / 2.

The CO2 emissions to produce the vehicle should also be considered as they can vary from vehicle to vehicle even though they are relatively small compared to the emissions produced during their usage. A recent study showed that CO2 emissions to produce a vehicle can range from between around 12% for a baseline Euro 3 compliant petrol vehicle and 20% for a Euro 4 compliant Diesel vehicle (FVV research report 784, 2004, CO2 Emission Trade Off). So if an adjustment is required it needs to be based on a percentage of the emissions required to produce the replacement vehicle in combination with the remaining mileage RM of the old vehicle related to the average mileage AM of the new vehicle. So the adjustment factor AF could be something like the following:

AF = 15% x CO2 emissions replacement vehicle in (g/km) x (AM – RM).

A simple method to estimate the resources (e.g. CO2 emissions) used to produce a product is the input-output analysis. The simplest form just multiplies the cost of a product with the annual CO2 emissions of a country divided by it GDP. Further detailed analysis are possible by dividing an economy in different sectors, like manufacturing, mining service etc. which adds accuracy (Will, 1988, energy analysis of multivalent heating systems, University of Siegen, Germany; Stahmer, Carsten; Reich, Utz-Peter, Input-Output Calculations: Energy models and problems of price adjustments, 1981, Frankfurt, Germany).

Such a scrap incentive would also have a very positive impact on the economy as it would accelerate the sale of new cars in general. The scrap incentive should not be limited to the purchase of new cars because old cars are more likely to be replaced by cars that are only a couple of years younger, as highlighted in the RAC report. The reason is that owners and buyers of old cars often have a very limited budget available which doesn't give them the opportunity to buy a more efficient new car.

D. Driver Training: The way how a vehicle is operated has a huge influence on the fuel efficiency, up to an average of 24% (Ford press release 2008 http://media.ford.com). Even within the very tight tolerances of the ADR81/02 drive cycle the variation due to drive style influences can be several percent (Will, 2007, Emerging Transport Technology Conference Adelaide, http://www.greenfleet.com.au/transport/40.asp). Therefore a special driver training should be part of the Driving Licence training and -test in each state. It might be considered to provide that training even for all existing license holders. The Drivers Licence training should also include some practice with low performance manual transmission vehicles to make people familiar with these very fuel efficient vehicles.

3. In your view, are there particular combinations of measures that would enhance the potential benefits of the measures?

To include power assisted pedal cycles, scooters and motorcycles (proposal A) in the incentives of measures 2.1 and 2.2 in combination with incentives for the development and

production of technologies that improve the safety of these vehicles (A1) together with scrap incentives (C) probably offers the biggest potential benefit.

The inclusion of aftermarket retro fitment of fuel economy technologies (B) and incentives for their development (B1) in combination with measure 2.2 also offer a huge potential because the fleet of existing vehicles that can be modified is around 15 times bigger compared to the numbers of new vehicles sold per year.

4. Are there barriers or challenges to the uptake of low emission transport technologies in Australia which have not been identified in this paper?

A challenge that has not been identified in this paper is the current global financial crisis. The effect could be that it will become much more difficult to access capital to develop and produce new technologies.

Another effect is that the purchase of new more fuel efficient vehicles will be delayed, on the other hand this could result in a reduction of travel in general which will automatically result in lower carbon emissions.

For a person who moved from Europe to Australia it is interesting to notice that even though similar models are available in Australia as they are in Europe, in Australia the entry models with low performance and better efficiency mostly are not available. This is even more surprising in light of the speed limits in Australia that are lower compared to Europe or in particular Germany. A reason for this very interesting phenomenon might be that most Australians are very used to cars with big displacement engines, most Australians probably learned to drive with these types of cars that have lots of torque at low engine revolutions. Even though cars with smaller displacement engines often deliver a similar performance it is very unusual for many drivers to use higher engine speeds to fully utilise this potential. Also the automatic transmissions are much more popular than manual transmissions as they are much easier to operate. On the other hand many of the low displacement entry models from Europe are only available with a manual transmission that requires different driver skills.

Manual transmissions are generally more efficient compared to automatic transmissions. However, in some instances sophisticated automatic transmissions can deliver a better fuel efficiency compared to a manual transmission with the same engine in the same vehicle. The reason for that effect is the difference in the test procedure for automatic and manual transmissions: For manual transmissions ADR 81/02 precisely describes the gear to be used during the test, but for automatic transmissions the shift schedule is not regulated. That means that the shift schedule for automatic transmissions can be programmed and tuned to give the best fuel economy in the drive cycle. For manual transmissions the same could be achieved either by training of the drivers or by introducing **shift indicator lights** that indicate when the driver should change gears for optimised fuel efficiency. That requires a small change of ADR81/02 so that flexible shift schedules can also be used for manual transmissions in combination with shift indicator lights. The potential introduction of shift indicator lights in the relevant regulations is already discussed in Europe for a potential introduction with Euro 6 emission regulations.

This barrier might be overcome in the long term by changing the requirements of the Drivers Licence Training to make it a mandatory requirement to be trained in both, a high performance automatic vehicle as well as a low performance manual transmission, similar as it is a common practice in Germany since over 25 years.

5. Are there opportunities to improve vehicle fuel efficiency within the Australian road transport sector which have not been identified in this paper?

Two opportunities have not been identified in that paper:

1. There is an emerging trend for new fuel efficient cross over vehicles that combine the safety and comfort advantages of cars with the driving fun and small footprint of a motorbike and at the same time achieve fuel efficiencies much better than any car or motorbike as they are more aerodynamic than any motorbike. This is enabled by special tilting control technologies so these vehicles can be enclosed even though they are very narrow. Examples of these types of vehicles are the VentureOne electric vehicle (US), the Carver (NL), the Clever (developed with significant support from the European Union), and the Ecomobile or Supertracer (Ch).

2. To retrofit existing vehicles with fuel efficiency technologies, similar to LPG conversions and performance tuning kits like supercharger conversions or "chip tuning". This is already a quite large market in Australia and the relevant infrastructure (dealerships, tuners, conversion businesses) is currently available.

6. Do you have views on possible social or economic impacts arising from measures outlined in this paper? How could these impacts best be managed?

Potential economic impacts could be that it will become even more difficult for the 3 remaining Australian vehicle manufacturers to maintain their production operations in Australia as their production facilities are set up to produce larger cars. This could be managed if the CO2 emission standards and the incentives would be related to the maximum payload of the vehicle, (Will, Submission for the Review of Australia's Automotive Industry 2008, pages 21 and 22, http://www.innovation.gov.au/automotivereview/Documents/28%20Will%20070508.pdf).

Another alternative to the payload related CO2 emissions would be CO2 emissions related to the numbers of passengers that can be transported. The risk of both these proposals is that bigger vehicles often do not make use of their full capacity, in particular related to the passengers. That could be overcome by installing a technology that can record the passenger load on-line. People could be awarded credits once a year dependent on the average number of passengers they have transported (additional to the driver). The installation of such a technology would be voluntary but the system should be designed in a way that it pays back for a vehicle owner if the average passenger load is 1 or more additional to the driver.

7. General Comments

It is very likely that the proposed measures will result in a further shift of the market towards smaller cars. Various studies indicate that the fatality risk increases dramatically for lighter cars when cars of unequal mass crash into each other. For example, if the mass of the bigger car is 50% heavier, the fatality risk for the driver of the lighter car can be between 2 and 5 times higher (Evans, Frick, Car Mass and Fatality Risk: Has the relationship changed ?, American Journal of Public Health, Jan. 1994; Buzeman et al., Car occupant safety in frontal crashes: a parameter study of vehicle mass, impact speed and inherent vehicle protection, Elsevier Science, Paper PII:s0001-4575(98)00020-7, 1998; L. Sparke, Engineering Heritage Victoria Guest Speakers' Program, 2007, http://www.consuleng.com.au/). It is often argued that therefore a reduction of vehicle size will result in an increase in fatalities with all the associated social and economic consequences.

However, this relationship can be seen from another angle: it means that a driver of a heavier car bears a higher risk towards the driver of a smaller car. The ultimate comparison is a crash between a car and a pedestrian: if a pedestrian "crashes" into another pedestrian the fatality risk is probably 0. But if a car hits a pedestrian he faces a much higher fatality risk which increases with the speed of the accident. This is another reason that drivers of heavier vehicles should be charged more compared to smaller vehicles because of the higher social and economic risk associated with the higher masses of these vehicles.

Category 1 Measures to Increase the Supply of Low Emission Vehicles

1.1 CO_2 Emission Targets for New Light Vehicles

1. Do you consider there is a case for tightened CO_2 standards for the light vehicle fleet in Australia?

Yes, examples from Europe or the US show that voluntary agreements in Europe didn't work and even the CAFÉ requirements in the US didn't help a lot as people preferred to pay instead of swapping to more fuel efficient vehicles.

2. If you consider tightened standards are required, should they be voluntary or mandatory?

They should be mandatory but payload adjusted or adjusted to the number of passengers, as explained under General question 6.

3. Do you have a view about the design of any system – for example do you agree that the standard should be a sales-weighted average? Do you agree with the European Union proposal to link the standard to vehicle weight, or should it be based on different parameters?

The standard should respect the payload per kerb weight ratio or the numbers of passengers that can be transported. A standard based on the "footprint" of a vehicle (mentioned on page 43) has the same problem as a weight based standard: it reduces the appeal to reduce the size of the vehicle to improve fuel efficiency. An alternative approach that hasn't been discussed too much is to introduce a target based on a percentage improvement specific to the actual performance of each individual vehicle manufacturer. That means that each manufacturer has to achieve the same percentage improvements in line with the Kyoto protocol based on the current performance (lets say 2007). That has been discussed in Europe but in Europe the weight based target showed a good correlation with the fleet based average CO2 emissions and weights of the individual manufacturers. This might be much different in Australia.

4. Do you consider that CO_2 standards can effectively operate independently of other measures, or are other measures critical to their success?

The biggest success can be achieved by combining different measures.

5. Do you consider that market pressures, such as rising fuel prices, will be sufficient to deliver significant CO_2 reductions from the light vehicle fleet, without the need for CO_2 standards?

No, because fuel prices do not take into account the long term effects, in most instances people make decisions based on short term- to medium term ranges. Regarding CO2 emissions the full life time of a vehicle is important and it would be beneficial if the economic effects of these could be brought forward and baked into the purchasing decision for new vehicles.

6. General Comments

One of the biggest nuts to be cracked could be the fact that very often specific vehicle features are only offered in combination with a more power-full, more expensive – and less fuel efficient engine. An example is cruise control which is not available for a Ford Fiesta, so if a customer wants a Ford car with a cruise control, he needs to buy at least a Ford Focus.

A way to overcome that crux is competition. For most vehicle manufacturers participation in racing competitions has a very long history. A new competition to achieve the biggest improvements in manufacturer specific fleet average CO2 emissions would be a great way to improve the efficiency of new cars. The competition could involve a price that is awarded on a yearly basis firstly for the manufacturer with the biggest fleet improvements and secondly for the manufacturer with the lowest average CO2 emissions in general. Such a competition could create great media attention on an ongoing basis which would help to further raise the awareness of end customers regarding that important issue. Progress can be reported and published monthly or maybe even weekly. For the manufacturers this has the advantage that they can monitor the effectiveness of their marketing activities not only based on the sales volumes and profits, but also related to the fleet average CO2 emissions.

Category 2	Measures to Increase Demand for Low Emission Vehicles
2.1	Restructure State registration and stamp duty charges for light vehicles

1. Would a stamp duty differential charging scheme be an effective means of encouraging consumers to purchase more fuel efficient vehicles?

Clearly yes, similar as the effects of the recent changes in the LCT.

2. Would a registration differential charging scheme be an effective means of encouraging consumers to purchase more fuel efficient vehicles?

Yes, to a certain extend.

3. Of the range of basic system models outlined in Measure 2.1 of the discussion paper, which would be the most effective at improving vehicle fuel efficiency and most understandable to the average motorist?

A linear system as to be introduced in Germany in 2009 would be the most effective. With a system that includes different ratings (e.g. from A to G) there is no incentive for a manufacturer to move from one edge of the range to the other side unless he can get into a better category. Another positive affect of a linear system would be that it will help to educate the end customer to understand the relationship between cost and carbon emissions better.

4. What other considerations should be made in the design of any system?

n/a

5. General Comments

n/a

Category	2	Measures to Increase Demand for low emission vehicles
	2.2	Provision of direct financial incentives/disincentives based on vehicle CO_2 emissions.

1. Do you consider that direct rebate for low emission vehicles are an effective measure in reducing CO_2 emissions?

Yes

2. If so, do you consider that the cost of rebates should be offset with higher fees on high emitting vehicles (i.e. a feebate scheme)?

Yes

3. Do you agree that any scheme should be based on CO_2 emissions and not linked to particular technologies?

Definitely yes, otherwise the potential of developing alternative more cost effective technologies will be reduced, firstly because manufacturers will invest more in infrastructure related to the prescribed technology, and secondly because alternative technologies would not benefit from the same incentives.

4. If a scheme was to be introduced, would you support it being based on a single threshold, or do you support a range of "class" based thresholds? What do you consider are the advantages and disadvantages of such approaches?

A class based or even better linear system is preferred as explained in 2.1 Question 3

5. General Comments

n/a

Category	2	Measures to Increase Demand for Low Emission Vehicles
	2.3	Develop fleet purchasing frameworks that incorporate greenhouse reduction objectives

1. Do you consider fleet operators would be motivated to participate in a national fleet accreditation process to improve the fuel efficiency of their fleet?

Yes

2. If you do, what benefits do you consider fleet operators would expect to result from participation in such a scheme?

n/a

3. Do you think that an accreditation scheme should have the sole goal of reducing CO_2 emissions? Should additional goals be considered (such as air quality)?

Yes, other goals as air quality and vehicle safety (for passengers and pedestrians) should be considered.

4. Are you aware of fleet fuel efficiency schemes operating within Australia or overseas? Has there been an analysis of the effectiveness of these schemes?

Not more than what has been discussed in the paper.

5. General Comments

n/a

Category 3 Measures to Improve Consumer Awareness

3.1 Including Fuel Consumption Data in Vehicle Advertisements

1. Do you consider there is a case for including fuel consumption and CO_2 emissions data in vehicle advertising?

Yes

2. If so, what do you think would be the best way to implement it?

A system with different categories would be very beneficial with ratings from A for zero carbon emissions downwards to G or lower. This could be supported by a colour scheme like blue or white for zero CO2 emissions followed by green, yellow-green, yellow, orange and red and black. Only one fuel consumption number should be sufficient, the others (part 1 for the urban cycle and part 2 for the extra urban cycle) will probably confuse customers more than it would help. Regarding electric vehicles the CO2 emissions should be published based on the average CO2 emissions required to produce the electricity in the state where it will be registered, these numbers should be published yearly.

3. Are there any matters not identified which would facilitate or impede the introduction of this measure? We are particularly interested in any published material you can point to.

No

4. What do you consider are the costs and benefits of the measure, and their likely magnitude? What is the basis of your views on this question?

n/a

5. Are you aware of any other countries implementing similar measures, and whether there has been any analysis of their effectiveness?

Not more than what has been discussed in the paper.

6. General Comments

n/a

Category 3 Measures to Improve Consumer Awareness

3.2 Standards / Labelling Requirements for Non-engine Components Which Impact on Fuel Consumption

1. Do you consider that measures in relation to non-engine components are worth pursuing?

Labelling of components which impact on fuel consumption is worth pursuing, in particular related to **replacement parts as tyres**. For tyres the rolling resistance should be published according to standard SAE J1269 (Rolling Resistance Measurement Procedure for Passenger Car, Light Truck, and Highway Truck and Bus Tires (March 1987), in 1994 SAE Handbook, Vol. 3, 1994).

The vehicle manufacturers should also publish the rolling resistance of the original tyres so that customers could compare how the replacement tyres perform compared to the original tyres.

This could be supported with a table (based on a rule of thumb) that calculates the fuel economy effects of these tyres compared to the originals. For example a 10% improvement in rolling resistance improves the fuel consumption by around 1% as mentioned in VDI report 1505 (VDI Society for Automotive and Traffic Systems Technology (VDI-FVT), technologies around the 3-litre car, 1999)

The same should apply for **engine oils**, which have a significant effect on fuel economy. The viscosity of the oils need to be classified in a way that is easier to understand by the average customer, for example along their viscosity:

Viscosity	Rating
SAE 0 W	A (green)
SAE 2.5 W	B (yellow-green)
SAE 5 W	C (yellow)
SAE 10 W	D (orange)
SAE 15 W	E (red)
SAE 20 W and higher	F (black)

A similar system can be used for components that change the **aerodynamic drag**: the effect of the drag should be measurement with- and without the device on a base vehicle. The labeling can be implemented by a similar classification system starting with Rating A for a positive effect, Rating B for no effect down to Rating F for a fuel efficiency reduction of 5%. The rule of thumb related to fuel economy is that a 10% increase in aero drag (c x A) results in 1.5% higher fuel consumption (VDI report 1505, 1999).

Regarding **air conditions** the fuel economy should be published with the air-conditioning at maximum performance compared to without. This will give customers a clear idea about the effects of air conditioning. Discussions in that direction have started in Europe towards Euro 6 emissions regulations and in the US this a drive cycle that includes AC usage – the SC03 as part of the 5 cycle method - has already been implemented and will be used to report the fuel economy performance of a vehicle.

Systems that haven't been discussed are tuning kits to increase the performance of a vehicle.

There are around 1000 workshops in Australia that develop and or install and sell these kits which could include simple items as only the tuning of the engine control module up to installation of super chargers or turbo chargers. There is no agency – like the AAFRB in Victoria - that controls the activities of these workshops to ensure that their tuning kits don't have a negative effect regarding their emissions performance. All these tuning kits should be labeled based an certified emissions tests so that the customer is informed if the product has a negative or positive effect regarding their emissions performance.

2. Do you agree with the Working Group's assessment that Australia should move quickly to assess/establish within Australia any measures agreed to internationally?

Yes.

3. General Comments

n/a

Category 3 Measures to Improve Consumer Awareness

3.3 Heavy Vehicle Environmental Rating Scheme

1. Do you consider there are gaps/inadequacies in the provision of heavy vehicle fuel efficiency data to business purchasers? Can you identify those deficiencies?

Yes, it is very difficult for customers to compare fuel efficiency as there is no standard yet.

2. If deficiencies exist, what do you consider is the most effective way to address these? Do you consider there is a case for web-based fleet management tools, and how should they be funded?

An easy and very cost effective way to address this shortfall would be to amend ADR80/03 (emission certification requirements) so that the measurement of fuel efficiency would be included. The fuel efficiency can be calculated by the same carbon balance method as used in ADR81/02 for passenger cars and light duty trucks. The ADR80/03 test procedure defines several engine operating points with different speeds and loads to be tested. The emissions are reported in mass per energy delivered (g/kWh), therefore the fuel efficiency can also reported in g/kWh.

3. What do you think would be the most important areas for any tools to address?

The ADR requirements to publish fuel efficiency.

4. Are you aware of any other countries implementing similar measures and whether there has been any analysis of their effectiveness?

Don't know.

5. Are there any additional matters that would facilitate or impede the introduction of fleet management tools? We are particularly interested in any published material you can point to.

Don't know.

6. Do you think the development of fuel efficiency guides for fleets would be a cost effective means to reduce fuel use of heavy vehicles?

Yes, similar as for passenger cars.

7. Do you consider there is a case for development of a heavy vehicle environmental rating scheme similar to the light vehicle rating scheme? Do you agree with the assessment that any scheme should wait for the finalisation of international emission measurement standards?

Yes, such a scheme would be beneficial. The definition and revision of ADR's typically takes very long, also there are currently now test facilities available in Australia that could perform even ADR80/03 so therefore the best option is to introduce this new standard at the same time as the UNECE as mentioned in the report.

8. What do you think would be the most important areas for any scheme to address?

The most important area is that a standard is available as a basis to compare efficiencies of different models.

9. General Comments

n/a

Category 3	Measures to Improve Consumer Awareness
	3.4 Establish a technology demonstration scheme for Australian road transport fleets linked to achievement of greenhouse outcomes

1. Do you consider a subsidy scheme to support the development and trial of emerging low emission technologies is necessary to encourage innovation within the light commercial and heavy vehicle market segments? If so, is it an effective approach?

Yes to both questions.

2. Are there additional (non-financial) barriers to the adoption of proven and emerging low emission technologies within the light commercial and heavy vehicle segments?

Yes, the engine manufacturers for these vehicles are all overseas.

3. Are you aware of any other countries implementing similar measures and whether there has been an analysis of its effectiveness?

No.