Dear Sir or Madam,

Comments on the Discussion Paper on “Light vehicle CO2 emission standards for Australia”

I submit my comments on the points addressed in the discussion paper, which many have been address and discussed in the recent publication of my article “Mandating emission targets can significantly reduce Road Transport Emissions in Australia” as a book chapter in the ‘Critical Issues in Environmental Taxation - Volume IX: Environmental Taxation in China and Asia-Pacific: Achieving Environmental Sustainability through Fiscal Policy’, which is attached for your consideration.

It is critical that the new vehicles being acquired each year are low emission vehicles. An estimated 800,000 new vehicles are acquired each year, and according to the Australian Bureau of Statistics (2008) these vehicles may remain on the road for an average of 8 years. In addition, Government and business buyers on sell their vehicle before the third year warranty expires. Generally these vehicles are larger high polluting vehicles, as evidenced by the National Transport Commission (NTC) (2011) with the average emissions by business buyers (222 g/km) and government buyers (225 g/km) both being above the average emissions by private buyers of 202 g/km in 2009.

Not only is Australia’s average emission for new passenger vehicles in 2009 of 210g of CO2/km forty-four per cent higher than the European average of 146 g of Co2/km (NTC 2011) but Australia’s three local car manufacturers: Ford Australia, General Motors Holden and Toyota Australia, produce large vehicles that have even higher average emissions of 247g/km in 2010. (NTC 2011)

The NTC reported that in the period Jan-Aug 2009, GM Holden (Australia) recorded the highest average emissions of 279g CO2/km and showed virtually no improvement in average vehicle emissions from 2005 to Jan-Aug 2009 (NTC 2009). This is despite the industry and the Australian Governments setting a voluntary emission target of 6.8L/100 kilometres by 2010 (equivalent to 159g CO2/km) to improve fuel efficiencies of all new passenger vehicles fuelled by petrol. In 2004, the FCAI was negotiating with the Australian Government to replace this target with a national average carbon emissions target (NACE) of 222g of CO2/km that applied to all new vehicles under 3.5 tonnes (FCAI 2008). This meant that the target would not only apply to new passenger vehicles, but to all new light vehicles such as SUV’s and light commercial vehicles (LCV’s) and to all types of fuel. However failure to have separate targets for such vehicles makes it difficult to compare the performance of the Australia’s passenger vehicles and LCV’s with international targets. For example the EU-27 achieved a NACE of 145.7g CO2/km in 2009 which is 33 per cent less than Australia’s

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1 Editors: Larry Kreiser, Julsuchada Sirisom, Hope Ashiabor and Janel Milne. Page 133 - 149
NACE of 218.5g CO2/km. Consequently Australia’s voluntary target are less ambitious, less environmentally effective and economically inefficient than other fiscal measures.

Light Vehicles CO2 Emission Standards discussion paper questions:

3.1.1 Single or Staged Targets?

Q1 Do you support the setting of staged short and medium term targets?

It is important to have short and medium term targets. Such targets provide certainty to the motor vehicle industry and allow the industry to plan for the long-term target. It allows the regulators to monitor the progress of the industry in meeting these targets and assess what advancement has been made in reducing emissions and meeting such targets.

Q2 If yes, do you consider 2020 is the logical date for a firm second stage target?

The long-term target at 2020 is appropriate. It is in line with the EU long-term target of 95g/km for 2020. Although Australia may not achieve the same target, its performance can be assessed in terms of what progress has been made.

Q3 Do you consider it is appropriate to set a target beyond 2020 at this stage?

Inappropriate to set long term targets beyond 2020, without knowing whether the above targets are met. Targets beyond 2020 may be set too low or too high.

3.1.2 What is the Appropriate Reference (Base) Year?

Q4 Do you consider 2010 is the appropriate base year for determining the targets?

It is appropriate to have 2010 as the base year for determining targets.

3.1.3 What is a Reasonable Target for Australia?

Q5. What rate of CO2 emissions reduction do you consider is achievable by 2015 and 2020 in Australia?

According to the research paper, EU set a voluntary target of 140g/km by 2008 in 1998. An interim target was set at 165 – 170g CO2/km by 2003. However the voluntary target of 140g of CO2/km was not reached in 2008/2009.

In 2009, the European Council and the European Parliament adopted the Commissions proposal to set a mandatory emission performance target of 130g of CO2/km by 2012 for all new passenger vehicles registered in the EU. A further reduction of 10g of CO2/km will be delivered by other technological improvements.

Australia had set a voluntary fuel efficiency target for new passenger vehicles of 6.8L/100 kilometer’s, fuelled by petrol by 2010, which is equivalent to an emission target of 159g of
Therefore it is considered reasonable that setting a target for Australian new light vehicle fleet of 150g/km by 2020 is reasonable.

The election commitment of 190g CO2/km by 2015 and 155g CO2/km by 2024 are too lenient and ineffective where manufacturers will not be ‘pushed’ to achieve significant reduction of CO2 reduction. The Australian made Camry is already achieving an emission of 142g CO2/km. This will encourage a greater production of such vehicles. Currently the Hybrid Camry did not reach its projected sales quota of 10,000 vehicles, with sales just over 6,800 in 2010. (NTC 2011). Without mandatory efficiency targets in Australia, sales of green cars are declining from 0.7% of total sales in 2009 to 0.6% in 2010. (NTC 2011)

Q6. What do you think is a reasonable CO2 target for the Australian new light vehicle fleet in 2015 and 2020?

As discussed above, it is reasonable for Australia to set its target for 2020 at 150g CO2/km by 2020. The interim target for 2015 of 180g CO2/km

Q7 Are there any impediments to Australia achieving the more ambitious rates of reduction embodied in Scenarios 5 and 6 above?

The Australian manufactured vehicles most likely will find it difficult to reach the above targets without bringing forward the production of low emitting vehicles. For example Toyota had the lowest average emissions of 204g CO2/km due to the availability of the Australian-made hybrid Camry in 2010. Without such low emitting vehicles, Ford and Holden will find it difficult to significantly reduce emissions.

Furthermore 85% of all passenger vehicles are imported into Australia. By mandating emission standards would mean that all cars imported into the country would need to satisfy such standards.

3.1.5 Should the Targets be Split ?

Q9 Should Australia set a single set of CO2 targets for all light vehicles or is there merit in establishing separate targets for passenger vehicles (cars and SUV’s) and for LCV’s (utes and vans) ?

The emission targets should not be merge for light vehicles and for LCV’s, as there are differences in the vehicles and the type of market acquiring these vehicles. Businesses generally acquire LCV”s which have different design features. The European Commission is preparing separate emission standards for LCV’s.

The 2008 IEA Study on the Review of International Policies for Vehicle Fuel Efficiency (IEA 2008) recommended that the introduction of fuel efficiency standards should be harmonized across countries, which will “enable comparison of targets between countries, reduce industry costs and remove barriers to trade.” (IEA 2008)

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* Above n1 at 140
3.1.6 How should the Target be Calculated?

Q10 Do you support the idea of bonus credits for new technology (such as EVs), flex fuel vehicles and other technologies or should the CO2 standard be purely performance based, treating all vehicles on the same basis (using the CO2 emissions result on the standard ADR test)? and

Q24 Do you agree that financial penalties are the most effective way to address non-compliance?

The system in the EU is effective where the emission performance standards are enforceable through charging penalties to manufacturers whose fleet’s average CO2 emissions exceed its limit in an year after the year the target has been set.\(^9\)

It is stated in the article on page 139: Penalties will be based on the number of grams per kilometre (g/km) that an average vehicle sold by the manufacturer is above the target, multiplied by the number of vehicles sold by the manufacturer. From 2012 to 2015, the penalties will be: a premium of 5 euro per vehicle for the first g/km if CO2; 15 euro for the second gram; 25 euro for the third gram; 95 euro from the fourth gram onwards. From 2019, manufacturers will pay 95 euro for each g/km exceeding the target. (EC 2009 Reg No 443/2009 Article 9) Manufacturers expect to meet the target to avoid the significant penalties.

Without penalties, the motor vehicle industry will not adopt the mandatory emission standards seriously, evidenced by the failure of achieving the past three sets of voluntary targets. The argument that regulation may impose additional costs of administration is outweighed by improvement of fuel efficiency and reduction of emissions of new vehicles.

Q16 Do you agree that the current VFACTS database is suitable as the primary data source for assessing and reporting compliance with the standards?

It would be preferable that the database chosen will be independent of FCAI, which represents the motor vehicle industry.

It is also stated that an independent government body such as the European Commission should prepare data and reports on the performance of the mandatory emission targets. It was not until 2010 that detailed information on average emission from new passenger vehicles and LCV’s was made available through the National Transport Commission.\(^10\)

3.2.5 Who is Responsible?

Q20 Do manufacturers particularly importers have any views regarding the identification of responsible entities under the standards?

The views of the importers are not relevant. The standards should be set on the basis of what is appropriate to improve the fuel efficiency of passenger vehicles, which must be met by all importers if they are to sell their vehicles in the country.\(^11\)

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\(^9\) Above n1 at 139
\(^10\) Above n1 at 142
\(^11\) Above n1 at 138
Q21 Do you consider there is merit in allowing manufacturers to pool, or is an approach that manufacturers are unlikely to pursue?

By allowing manufacturers’ to pool their vehicles will determine the fleet’s average CO2 emissions. This will determine if the fleet has met the emission performance standards set for the year.

The above comments are made in the context of supporting the recommendation made by the IEA for existing standards to be more stringent and harmonized in ‘as many aspects of fuel efficiency standards’ to enable comparison of targets between countries. The IEA states that such measures ‘will reduce industry costs and remove the barriers to trade.’

If there are any questions concerning the above response to the above submission questions, please do not hesitate to contact me on a.mortimore@griffith.edu.au

Kind regard

Anna Mortimore
Griffith University Taxation lecturer

PHD Candidate on the topic of Fuel efficiency of Road Transport Vehicles
Macquarie University

12 Above n1 at 142
9. Mandating emission targets can significantly reduce road transport emissions in Australia

Anna Mortimore

In 2003, the Australian government and the Federal Chamber of Automotive Industry (FCAI) reached a third agreement to improve fuel efficiency of all new passenger vehicles powered by petrol, by setting a voluntary target of 6.8 l per 100 km by 2010, which is equivalent to an emission target of 159 g CO₂ per kilometre. Australia failed to meet its third voluntary fuel efficiency target, illustrating that voluntary fuel efficiency targets do not work. The FCAI introduced an emission target of 222 g CO₂/km by 2010, which was not agreed to by the Australian government.

In 2009, the Final Report by the Vehicle Fuel Efficiency Working Group recommended mandating emission targets. However, the May 2010 Final Report of Australia’s Future Tax System stated that such targets are not required if a cap and trade system, known as a carbon pollution reduction scheme (CPRS), is introduced, as supplementary policies such as regulations will not achieve more abatement than the CPRS alone. In September 2010, the Australian government expressed commitment to introduce mandatory emission targets, but not until 2015.

This chapter examines whether a CPRS would have significantly reduced road transport emissions when fuel price increases can be inelastic and consumer behavioural anomalies may lead to market failure or whether a command and control regulation emission standards need to be mandated, to compel car manufacturers to increase technological advancement and the supply of low emission vehicles.

A comparative study with the EU will indicate whether the proposed Australian mandatory emission standards are harmonized with international standards, and whether Australia has considered the lessons learned from other countries in the design of their emission standards.
TECHNOLOGICAL DEVELOPMENT OF LOW EMISSION VEHICLES

According to the International Energy Agency (IEA) current policies are insufficient to stop road vehicle energy use rising above current levels and with projected car ownership worldwide set to triple to over 2 billion by 2050, global transport emissions will double without strong government action. (IEA 2009)

Julia King reported in the 2008 UK Review of Low-carbon Cars (King Review) that considerable CO2 emission savings of up to 30–50 per cent can be achieved through enhancing the conventional vehicle systems and using technology, that is ‘close to the market’, through advances in hybrid and battery technology. (King 2008:6) An almost decarbonisation of road transport could achieve an 80–90 per cent reduction in road emissions. (King 2007:4)

Therefore to limit the growth of road emissions, and the accumulation of high polluting vehicles, new cars sold each year need to be low emission vehicles. This will be dependent upon governments introducing ‘strong’ fiscal instruments to increase the demand and supply of low emission vehicles.

AUSTRALIA PREFERS MARKET MECHANISMS

In response, the Australian government released a White Paper in 2008 outlining Australia’s preference for market mechanism, a ‘cap and trade’ permit system, known as a ‘carbon pollution reduction scheme’ (CPRS). (Aust. Govt 2008)

The CPRS was scheduled to commence in 2010, but failed to receive bipartisan support. Consequently on 27 April 2010, the former Prime Minister announced that the government would delay the implementation of the CPRS.

It is outside the scope of this chapter to discuss the proposed CPRS in detail. Principally, the CPRS employs a ‘cap and trade’ emission trading mechanism to limit greenhouse gas emissions, where the right to emit greenhouse gas emissions becomes scarce and scarcity entails a price. (Aust. Govt 2008:5–7) The CPRS assumes consumers follow the rational economic model. That is, according to the Pigou theory (1932), the permit price per tonne of CO2, or the carbon price would increase fuel prices by the cost of emitting carbon and, over time, this would provide the necessary price signal for consumers to reduce their demand for fuel and encourage a shift to fuel-efficient vehicles. (Aust. Govt 2008:6–5) However, consumers
Mandating emission targets in Australia

may not necessarily respond to the increase in fuel prices, nor consider fuel efficiency in making their final choice of vehicle.

FUEL PRICES CHANGES MAY BE INELASTIC

It is argued that the CPRS will have minimal to no effect in encouraging demand for fuel-efficient low emission vehicles, if the ‘carbon price’ is not the ‘correct price’. But what ‘price’ will encourage a behavioural change to low emission vehicles? For example, even EU fuel prices, which are more than double Australian fuel prices because of high fuel taxes, did not abate the growth of carbon emissions in the EU. (Aust. Govt 2005:para. 8.4)

The UK Energy Research Centre (ERC) explains that demand response to fuel price changes is relatively inelastic, particularly when people become so dependent on their vehicles that they have little choice but to adapt to higher fuel prices. (UK ERC 2009:98) However, the fuel price elasticity of fuel demand is higher when fuel prices are higher, but this depends on the absolute level of price. (OECD/ITF 2010c:8). For example, reducing fuel demand in the passenger transport sector by 25 per cent may require a price rise of 41.7 per cent. (UK ERC 2009:100) This means that a high carbon price may be required to increase fuel prices to that level. But a high carbon price may not be acceptable by other sectors of the economy. It is also regressive, as it impacts on consumers who do not have the financial capacity to change to low emission vehicles.

CONSUMER BEHAVIOURAL ANOMALIES

The CPRS assumes a rational consumer will respond to the higher fuel prices by considering future fuel savings and respond by choosing a fuel-efficient vehicle. Observations by economists Turrentine and Kurani consider consumers’ fuel economy decision-making is more complex than any single economic model and ‘almost certainly do not make their decisions according to the strict model of rational economic behaviour.’ (US EPA 2010:5) On the contrary, consumer behavioural anomalies, or certain patterns of behaviour such as loss aversion and hyperbolic discounting, can impact on consumer’s final choice of vehicle. (OECD/ITF 2010b:24)

Loss aversion can influence decision-making when consumers give potential losses greater weight than potential gains. That is, consumers are reluctant to pay up front for uncertain reduction in fuel expenditure. (Reeson and Dunstall 2009:5), and require large financial benefits before switching to a smaller car or a car with a smaller engine. (King 2008:para. 4.9)
According to economic theory, such "behavioural anomalies" are described as irrational (Reeson and Dunstall 2009:3) and can lead to market failure, thus creating uncertainty for manufacturers in deciding whether to increase the supply of low emission vehicles, and may explain their underinvestment in energy efficiency when consumers are risk averse. (OECD/ITF 2010b:10)

Since it takes a long time for low emission vehicles to become dominant in the vehicle fleet, and rather than waiting for consumers to change their preference to low emission vehicles, it is argued that emission standards need to be mandated so that all vehicle manufacturers can invest with certainty in the technological development of low emission vehicles and the future decarbonisation of the road transport sector.

REGULATING EMISSION STANDARDS

Mandatory and voluntary emission targets adopted by the EU, Australia and Japan are shown in the Table 9.1

Table 9.1 Projected national average carbon emissions (NACE) for all new light or passenger vehicles

<table>
<thead>
<tr>
<th></th>
<th>Target (g CO₂/km)</th>
<th>Coverage</th>
<th>Code</th>
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<tbody>
<tr>
<td>NACE (current,</td>
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<tr>
<td>2007)</td>
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<td>(g CO₂/km)</td>
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<tr>
<td>Australia</td>
<td>226.1</td>
<td>222.0 (2010) New light vehicles</td>
<td>Voluntary</td>
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<td></td>
<td></td>
<td>&lt; 3.5 tonnes gross mass</td>
<td></td>
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<tr>
<td>EU</td>
<td>160.0</td>
<td>140.0 (2008) Newly registered vehicles,</td>
<td>Voluntary</td>
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<td></td>
<td></td>
<td>including SUVs</td>
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<tr>
<td>EU</td>
<td>160.0</td>
<td>120.0 (2012) Newly registered vehicles,</td>
<td>Mandatory</td>
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<tr>
<td></td>
<td></td>
<td>including SUVs</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>165.6</td>
<td>125.0 (2015) Cars and light trucks</td>
<td>Mandatory</td>
</tr>
</tbody>
</table>

Source: Australian Government, Department of Innovation Industry, Science and Research (2008), A New Car Plan for a Greener Future, p. 63: "A precise comparison between the European Union and other regulatory regimes is difficult because of differences in fleets and test methods."
VOLUNTARY EMISSION STANDARDS IN AUSTRALIA

Australia has a 'complete voluntary' agreement between the Australian government and the motor vehicle industry, known as the Federal Chamber of Automotive Industries (FCAI), where participation in agreements is solely at the discretion of the participating entity, and there is no serious pressure from government to compel the entity to join. (IPCC 2007:7.9.2.1) The FCAI developed a code of practice for reducing the fuel consumption of new passenger cars (IEA 2008:23), which is voluntary and not enforceable. The IEA reported that Australian automotive industries introduced two sets of voluntary targets in 1978 and 1987, which contributed to fuel efficiency improvements, and both targets failed because of consumers' preference for bigger cars. (IEA 2008:26) Obviously the Australian government's fiscal measures are 'strong' to shift consumers to low emission vehicles.

In 2003, the Australian government reached a third agreement with the FCAI to improve fuel efficiencies of all new passenger vehicles fuelled by petrol, by setting a 'voluntary target' of 6.8 l/100 km by 2010. (Aust. Govt 2007:38) The national average fuel consumption (NAFC) target applied to all new passenger vehicles sold by a manufacturer or importer in a given year. (ACIL 1999) The target represented the majority of passenger vehicles as 85.2 per cent of all passenger vehicles used petrol as at 31 March 2008. (ABS 2009)

In 2004, the FCAI and the Australian government commenced negotiations to change the above voluntary NAFC target to reflect the international challenge to reduce carbon emissions from motor vehicles and established a 'national average carbon emissions' (NACE) target. However, according to the Australian Transport Council, the parties were unable to agree on a revised target. (ATC and EPHC 2009:16) Even though there has been no agreement, the emission target shown in Table 9.1 is the target referred to by the FCAI in assessing the performance of Australia's fleet vehicles.

The NACE target proposed by the FCAI of 222 g CO₂/km by 2010 applies to all new vehicles under 3.5 tonnes. (FCAI 2008a) Vehicles include not only new passenger vehicles, but all new light vehicles such as SUVs and light commercial vehicles, and all types of fuel (petrol, diesel, LPG, etc.). (ABS 2009) FCAI claims that this enlarged list of vehicles and all types of fuels makes the target for reducing CO₂ more challenging. (FCAI 2008b) Consequently the FCAI argues that a comparison with other countries (see
Table 9.1) is difficult when international targets only apply to new passenger vehicles and SUVs. It is argued that failure to adopt a uniform target that is internationally uncompetitive fails to harmonise emission targets internationally and avoids scrutiny by masking the true performance of locally manufactured new vehicles. In addition the European Commission is proposing to adopt separate emission targets for light commercial vehicles that are more tailored to specific vehicle segments (IEA 2010a:25) such as longer model life; differences in CO₂ emission may vary because of vehicle size, shape, the load carried, the number of start-stops, and so forth. (European Automobile Manufacturers Association (ACEA) 2010b:5).

INTERNATIONAL TARGETS

In 1998, the Association of European Car Manufacturers (ACEA), which represents 80 per cent of new registrations in the EU, entered into 'Memorandum of Common Understanding' with the European Commission, a voluntary agreement to 'limit average emissions from newly registered passenger cars to 140g/km by 2008' (see Table 9.1). (EC 1998) An intermediate target was set at 165–170 g CO₂/km by 2003. In 1999, voluntary agreements with the same targets were entered into with the Japan Automobile Manufacturers Association (JAMA), which represents over 10 per cent of annual registrations in the EU, and with the Korean Automobile Manufacturers Association (KAMA), which represents less than 5 per cent of annual registrations. (Europa 2000) The EC agreed that if JAMA and KAMA were selling vehicles in the EU, they would also be required to achieve the EU target of 140 g CO₂/km by 2008.

The European Commission would report to the European Parliament and to the Council on the progress of the emission performance standards for new passenger cars. (Europa 2000) The above three manufacturers' associations would be required to confirm their progress regarding CO₂ emissions. In 2009, JAMA achieved an average CO₂ emission of 142.6 g CO₂/km and KAMA, 141.8 g CO₂/km for. In spite of achieving significant reduction in emissions since their 2003 interim targets of 165–170 g CO₂/km, both associations were unable to reach the 140 g CO₂/km target by 2008–09.

The voluntary agreements requiring fuel efficiency improvements accounted for high levels of dieselization of the passenger car market in the EU, but further reductions in emissions would need to be met through technological developments. However, this required new strategies and technological approaches, but manufacturers did not adopt these quickly enough and trends towards larger, heavier vehicles continued to offset much.
of the technology uptake.\textsuperscript{(IEA 2010b:21) Therefore the Commission reported to the Council and the European Parliament on 7 February that the target of 120 g CO$_2$/km set by the EU would not be met by 2012, unless additional measures were taken. (EC 2007)}

The proposal was met with heavy lobbying from the car industry. The point of contention was that the manufacturers of large and heavy cars could be in a disadvantageous position compared with manufacturers of smaller, lighter and lower emitting cars if a similar target was applied to all types of cars. (EC 2008).

The European Council and European Parliament adopted the Commission's proposal and set the most ambitious emission performance standards of 130 g CO$_2$/km by 2012 for all new passenger vehicles registered in the EU, mandated by the European Parliament and Council on 23 April 2009 (Regulation 443/2009/EC).\textsuperscript{2} A further reduction of 10 g CO$_2$/km will be delivered by other technological improvements such as tyre pressure monitoring systems, more effective air conditioning systems and by an increased use of sustainable biofuels. The Commission recommended improving vehicle labelling and encouraging sales of vehicles with low fuel consumption taxation measures. (EC 2010b) The emission performance standards will be enforceable through charging penalties for manufacturers whose fleet's average CO$_2$ emissions exceed the limit in any year after 2012 (Regulation 443/2009/EC, Article 9). The penalties will be based on the number of g CO$_2$/km that an average vehicle sold by the manufacturer is above the target, multiplied by the number of vehicles sold by the manufacturer. From 2012 to 2015, the penalties will be: a premium of €5 per vehicle for the first g CO$_2$/km; €15 for the second; €25 for the third gram; €95 for the fourth, and onwards. From 2019, manufacturers will pay €95 for each g CO$_2$/km exceeding the target (Regulation 443/2009/EC, Article 9). Manufacturers expect to meet the target to avoid the significant penalties. The regulation applies to all manufacturers that sell new cars in Europe, which includes the US Japanese and Korean manufacturers.

The EU mandatory targets have provided certainty to the EU motor vehicle industry by providing long-term targets of 95 g CO$_2$/km for 2020, and encouragement through providing manufacturers incentives by granting them super credits for vehicles with CO$_2$ emission below 50 g/km, where each vehicle is counted as 3.5 cars in 2012 and 2013, as 2.5 cars in 2014, 1.5 cars in 2015, and one car from 2016 (Regulation 443/2009/EC, Article 5). It is projected that this measure will contribute to more than one-third of the emission reduction from non-emission trading scheme sectors by 2020. (EC 2010a)
COMPARISON OF AUSTRALIAN AND EUROPEAN TARGETS

A comparison of the Australian and EU emission targets is possible as test methods used in measuring vehicle emissions are directly comparable in both countries. (Aust. Govt NTC 2009:25)

In 2009, the FCAI reported that Australia achieved a NACE of 218.5 g CO₂/km, an improvement of 1.8 per cent compared with the 2008 NACE of 222.4 g CO₂/km. In response the FCAI stated: 'Australia’s new vehicle market had reached a new environmental milestone with average carbon dioxide the lowest on record, helped by improvements in engine technology.' (FCAI 2010) However, the 2009 Final Report of Australia’s Vehicle Fuel Efficiency noted that it was 'not aware of any data or information that demonstrates that voluntary NAFC target has had any influence on the modest reductions in fuel consumption achieved to date.' (ATC and EPHC 2009:22)

The above 2009 NACE of 218.5 g CO₂/km for new light vehicles less than 3.5 tonnes gross mass represents the following vehicles: passenger cars CO₂ average of 195.5 g/km (down from 201.7 g/km in 2008); SUVs at 246.3 g CO₂/km and light commercial vehicles (LCVs) at 253.6 g CO₂/km. (Martin 2010) These ratings may have met the FCAI target, but not the Australian government’s fuel efficiency target for new passenger vehicles of 6.8 l/100 km, fuelled by petrol, which is equivalent to an emissions target of 159 g CO₂/km. (Green Vehicle Guide 2010) None of the Australian manufactured vehicles reached these targets. The National Transport Commission reported that in the period January–August 2009, GM Holden (Australia) had the highest average emissions of 279/km, and ‘showed virtually no improvement (~0.1 per cent) in the average vehicles emissions from 2005 to Jan-Aug 2009.’ (Aust. Govt NTC 2009:21), demonstrating that voluntary targets are ineffective when they are not mandated.

The EU-27 achieved a NACE of 145.7 g CO₂/km in 2009 (EU 2009), 33 per cent less than Australia’s NACE of 218.5 g CO₂/km. Australia’s voluntary targets are less ambitious, less environmentally effective and more economically inefficient than other fiscal measures.

Consequently Australia’s new passenger fleets are one of the world’s most polluting. The FCAI explained that the differences in the reported NACE targets for each jurisdiction are principally due to differences in consumer preferences for factors such as fuel type and vehicle size. (FCAI 2008b) However, it is argued that Australia’s voluntary targets and lack of fiscal measures penalizing the acquisition of high polluting vehicles has allowed the importation of high emitting vehicles such SUVs, which are
increasing in popularity. For example, in 2010 Toyota (Australia) sold more HiLux utilities, with a CO₂ rating of 217 g/km, than Corolla’s, with a rating of 173 g CO₂/km (Dowling 2010), and the lowest emitting vehicle in Australia, the Prius (89 g CO₂/km), sold one for every ten LandCruiser 4WDs sold. Thus the voluntary targets have failed to encourage the acquisition of low emission vehicles such as the hybrids, and have failed to encourage the acquisition of fuel-efficient vehicles that use diesel, as 84 per cent of Australia’s fleet in 2009 was registered with petrol type. (ABS 2009) In the EU, mandatory targets and fiscal incentives have encouraged the use of diesel, which has the advantage of producing less CO₂/km than equivalent petrol vehicles. For example, in 2009, the highest diesel usage recorded was in Belgium at 72 per cent, and France at 70 per cent. (OECD ITF 2010a:25)

AUSTRALIÀ CONSIDERS MANDATORY EMISSION STANDARDS

In 2008, the Council of Australian Governments requested the Australian Transport Council (ATC) and the Environment Protection and Heritage Council (EPHC) to form a Vehicle Fuel Efficiency Working Group, representing the federal and state/territory transport, environment and industry representatives, to evaluate potential vehicle fuel efficiency measures. (ATC and EPHC 2009:9) The working group report provided the framework for Australia’s National Transport Policy, within which to incorporate and report progress towards potential vehicle fuel efficiency measures. (ATC and EPHC 2009:17)

The working party identified that a CPRS would not adequately address potential market failures caused by ‘non-price barriers’ such as consumers’ choice of vehicle. (ATC and EPHC 2009:20) Therefore the working party report was made on the understanding that additional ‘complementary’ measures would work in parallel with the CPRS, to assist in the transition to a ‘low carbon economy.’ (ATC and EPHC 2009:18)

In response the working party recommended there was a case for mandating fuel consumption/CO₂ standards for new light vehicles sold in Australia, and advised that before appropriate legislation could be introduced, a ‘regulatory impact statement’ (RIS) would be required to assess the costs and benefits of such an approach. (ATC and EPHC 2009:26) This analysis would: consider the design of the standard; assess the technological options to achieve the various CO₂ emission targets; address the timing of the standard, providing initial and longer-term targets; consider how the target would support programmes such as the Australian government’s
Green Car Innovation Fund and Green Car Challenge; and how the standard can account for emerging technologies such as plug-in electric hybrid vehicles, fully electric vehicles and vehicles designed to operate on emerging low carbon fuels. (ATC and EPHC 2009:25)

Despite the good results achieved by the EU mandatory targets, the working party declined to harmonize their targets with international targets with proposed emission target scenario’s for all light vehicles up to 350 tonnes as follows:

- NACE target between 160 and 180 g CO₂/km in 2015; and
- NACE target of 150 g CO₂/km in 2020; or
- NACE target of 115 g CO₂/km in 2025 (ATC and EPHC 2009:50)

However, these regulatory standards are not as stringent as the EU targets. The targets combine both passenger vehicles and light vehicles, which have varying sales-weighted, average CO₂ emissions, making it difficult to make international comparisons. For example, the proposed NACE for 2020 of 150 g CO₂/km does not even meet the target achieved by the EU-27 of 145.7 g CO₂/km in 2009. But the level of emissions achieved by the EU only refers to passenger vehicles. Separate targets for passenger vehicles and LCVs would need to be set to make a proper assessment of the target’s performance. Also the delay of introducing and adopting the above proposed targets will fail to ‘allow industry time to adapt product development.’ (IEA 2010a:19)

Additionally, the above standards fail to adopt the recommendations made the IEA for existing standards to be more stringent and harmonized in ‘as many aspects of fuel efficiency standards’ to enable comparison of targets between countries. The IEA states that such measures will reduce industry costs and remove barriers to trade. (IEA 2010a:19)

In response to the public discussion on the vehicle fuel efficiency enquiry, the motor vehicle manufacturers opposed mandating emission targets. GM Holden (Australia) made submissions to the working party in November 2008, that ‘mandating emission targets should only be considered as a last resort, because they are an ‘extremely blunt instrument, costly, require significant government resources to effectively enforce, and generally will constrain innovation and disrupt normal market forces.’ (GMH 2008a:25)

The fact is that if the NACE targets were enforceable, Australia may end up not having a car manufacturing industry.

Naturally Australia’s motor vehicle industry would be supportive of voluntary targets, as it is party to the negotiations and may have some influence over the targets. (Thalmann and Baranzini 2008). It would also be supportive of agreeing to a CPRS market mechanism, which may have less
impact to the industry and may defer the introduction of more challenging measures such as taxes or command and control regulation.

The Australian FCAI also criticized the use of regulation in its submission to the Public Discussion Paper on Vehicle Fuel Efficiency, claiming ‘Japan, the United States and the EU have introduced second best measures to address fuel efficiency and emissions such as mandatory emissions targets, because they do not have a more efficient market based measure such as a CPRS.’ (FCAI 2008b:11)

The Australian Treasury’s Final Report on Australia’s Future Tax System, published on 2 May 2010, stated that once a CPRS was operational ‘additional measures that seek to reduce emissions (in sectors not covered by CPRS) and which are not justified on other grounds should be phased out.’ (Aust. Govt 2010a:360) The Final Report concurred with the above submissions made by GM Holden and the FCAI, that implementing non-market approaches through regulations was inefficient in achieving environmental outcomes and was likely to impose significant costs on business and households. (Aust. Govt 2010a:347)

It is argued that the additional costs of command and control regulation are outweighed by the certainty that manufacturers wish to bring forward to the market the technological development and supply of fuel-efficient vehicles, which requires a long lead-time of up to five years to design and produce such vehicles and a further seven years for automotive manufacturers to recover their investment.

At the time of writing this chapter, the Australian government announced in September 2010 that it was committed to introduce mandatory emission standards for light vehicles in 2015, but made no announcement on the emission targets.

GOVERNMENT’S ROLE IN SUPPORTING MANDATORY FUEL EMISSION TARGETS

It is argued that Australia has no independent government body, such as the European Commission to monitor and regulate the performance of the new passenger cars and SUVs in achieving emission targets. The Australian government did not have detailed information on average emission from new passenger cars and LCVs until 2010. The National Transport Commission (NTC) identified this shortcoming and the information has now been compiled. (Aust. Govt NTC 2009:1) However the NTC findings showed there are no comprehensive reports available for CO₂ emissions by vehicle segment, buyer type or manufacturer for Australia. (Aust. Govt NTC 2009:2)
It was the FCAI that prepared reports on Australia's NACE performance. The FCAI was responsible for introducing all three voluntary fuel efficiency targets and the 2004 NACE target. All fuel efficiency targets failed, and the Australian government did not agree to the 2004 NACE target.

Reviews of the motor vehicle industry performance in reducing emissions by automotive associations such as the Australian FCAI are likely to be biased to meet the needs of the industry rather than the environment, and the targets are less likely to be stringent. All submissions made by GM Holden to Australia's future tax system were supported by the FCAI, both opposing all taxes and mandatory regulations on carbon emissions.

The ATC, established in June 1993, is not a regulatory body, but provides advice to governments on the 'co-ordination and integration of all surface transport and road policy issues at a national level.' (ATC 2010) It was only at the request of the Council of Australian Governments in 2008 that the ATC prepared a report in 2009, identifying Australia's poor vehicle fuel efficiency and carbon emission standards record, when compared with international standards. Even then the proposed mandatory emission targets discussed earlier are not internationally compatible.

It is the role of the Australian government to recognize the shortcomings of the proposals - they are not in accord with the IEA's 2008 recommendations for harmonized fuel efficiency standards across countries.

Yet it appears that the Australian government will not adhere to the IEA's 2008 recommendations, considering the announcement made by the Prime Minister in July 2010 outlining future mandatory emission targets (Stanford 2010):

- NACE target of 190 g CO₂/km in 2015; and
- NACE target of 155 g CO₂/km in 2024.

These targets are even less stringent than the targets proposed by the working party, discussed earlier. In response, the Australian government has been criticized for 'dragging the chain on the issue of vehicle emissions in an attempt to protect the local car industry, which builds large six-cylinder sedans, utility vehicles and four-wheel-drives.' (Blackburn 2010)

Like the EU, the Australian local car industry will be able to meet the above targets and reduce emissions by converting their new passenger fleet from petrol to diesel. However, experience from the EU indicates that such targets will not 'push' the local car industry to reduce road transport emissions significantly without innovation and technological advances of low emission vehicles that will reduce the consumption of fossil fuels. Local Australian car manufacturers will not be competitive if stringent emission
targets such as the EU's mandatory target of 120g g CO₂/km by 2012 for new passenger vehicles is not adopted.

INTERNATIONAL HARMONIZATION OF AUTOMOBILE EMISSION STANDARDS

The IEA strongly recommends harmonizing as many aspects of fuel efficiency standards as possible across countries. (IEA 2010a:19) Europe has been at the forefront of international harmonization efforts with the 1958 Agreement of the United Nations Economic Commission for Europe (UNECE) on technical standards. (European Automobile Manufacturer's Association (ACEA) 2010) China and Japan have also adopted internationally harmonized regulations for emissions established for Europe by the UNECE. They have adopted target values in each class, divided by vehicle mass. (IEC, 2008:31)

Hence it is argued that international harmonization is important as the automotive sector is of a global nature, and is engaged in international trade. Harmonizing global standards and regulations will encourage more stringent targets and bring certainty to manufacturers by increasing the competitiveness of the industry and reducing industry costs and barriers of trade. (IEA 2010a:19)

For example, the automobile manufacturers associations active in the EU, namely the ACEA, the JAMA and the KAMA, are engaged in 'international harmonization' in meeting the mandatory standards of the European Parliament and Council, in order to be able to register their cars for sale in the EU. These automobile manufacturers account for 60 per cent of the world's new passenger vehicles; with the EU 27 producing 33 per cent of the world passenger car production; JAMA producing 20 per cent and KAMA producing 7 per cent. (Worldometers 2010)

Australia will not be engaging in the international harmonization of regulatory standards if the federal government adopts the proposed mandatory regulatory standards. Not only will the Australian vehicle manufacturers continue be uncompetitive, but the proposed mandatory emission targets will benefit the 81 per cent of vehicles imported into the country, as the targets are not stringent and will fail to restrict high emitting vehicles from being imported into the country.
CONCLUSION

It was argued that a cap and trade market mechanism such as a CPRS will not bring certainty to manufacturers in increasing the supply of low emission vehicles, because behavioural anomalies may create market failure and the possibility of price inelasticities of demand if fuel prices are not high enough. Rather than waiting for consumers to make a behavioural shift to low emission vehicles, it was more effective to introduce command and control regulatory emission standards, to create certainty for manufacturers to increase supply and invest in the technological advancement of low emission vehicles.

In 2010 the Australian government announced its commitment to introduce mandatory emission targets in 2015. However, Australia’s proposed mandatory target will not be harmonized with other countries, nor will it be as effective or stringent as that of the EU – the EU achieved Australia’s proposed target for 2020 in 2009. In effect Australia’s proposed targets will not push local car manufacturers to use technological advancement to produce low emission vehicles, nor restrict the importation of high emitting vehicles, consequently failing to cut the country’s road transport emissions significantly.

NOTES

1. Australia’s excise duty on unleaded petrol is AUSS0.38143 per litre, which is the fourth lowest tax rate of the OECD-30 countries.

2. Article 4, phasing in requirements where in 2012 65 per cent of each manufacturer’s newly registered cars must comply on average with the limit value set by the legislation. This will rise to 75 per cent in 2013, 80 per cent in 2014 and 100 per cent from 2015 onwards.

3. Prime Minister Julia Gillard.

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Mandating emission targets in Australia


