

Submission to the Senate Environment and  
Communications Legislation Committee

Inquiry into the Motor Vehicle Standards (Cheaper  
Transport) Bill 2014

## Table of Contents

Executive Summary.....	3
Introduction .....	5
The Department’s role in transport energy efficiency .....	5
Motor Vehicle Standards Act 1989 .....	5
National Energy Productivity Plan .....	5
Comments on the Bill.....	6
Proposed targets.....	6
Design of the proposed targets .....	7
Scope of standards.....	7
Responsibility for compliance .....	7
Administration of standards .....	8
Emission and Fuel Efficiency Standards .....	8
What is meant by vehicle fuel efficiency? .....	8
New Light Vehicles in Australia.....	8
Current vehicle emission standards in Australia.....	9
Consideration of CO <sub>2</sub> Standards in Australia .....	9
Consumer preferences for light vehicles .....	10
Current measures to improve fuel efficiency .....	11
Fuel consumption labelling.....	11
Green Vehicle Guide .....	11
Alternative fuels and electric vehicles .....	12
Review of the <i>Motor Vehicle Standards Act 1989</i> .....	12
Intelligent Transport Systems .....	12
G20 Transportation Task Group.....	13
Conclusion.....	13
References .....	14

# Executive Summary

This submission provides comments in relation to fuel efficiency standards, the Motor Vehicle Standards (Cheaper Transport) Bill 2014 and highlights the work of the Department to date to improve vehicle fuel efficiency in Australia.

Domestic transport emissions accounted for 17 per cent of Australia's greenhouse gas emissions in 2013<sup>1</sup>, with light vehicles accounting for over 70 per cent of these emissions<sup>2</sup>. As part of its greenhouse gas emissions reduction target of 26-28 per cent below 2005 levels by 2030, the Australian Government is committed to considering options to improve the light vehicle energy efficiency of vehicles through the **National Energy Productivity Plan**.

Mandatory fuel efficiency or CO<sub>2</sub> standards are in place in approximately 80 per cent of the global light vehicle market – including the United States (US), the European Union (EU), Canada, Japan, China and India. Australia is one of only six countries in the OECD without light vehicle emissions standards.

International experience demonstrates that there is scope for CO<sub>2</sub> emissions/light vehicle standards to make a substantial contribution to Australia's future emission target. In the absence of standards, Australia's vehicle emissions will decrease as Australia will naturally benefit based on countries with standards – however, this will be at a slower pace than those countries with standards currently in place.

The adoption of standards may have an impact on costs to manufacturers and consumers due to the need for new technologies and design features, but these could be offset by fuel savings over the life of the vehicle. Further modelling work is needed to better understand the current cost benefits of adopting specific standards.

The Department considers that there are a number of issues with the Bill as it currently stands.

- The target – Is in line with the targets adopted by the EU. Under this scenario Australia would start from a much higher base than the EU to achieve this and manufacturers would find it challenging to meet such targets given that product planning is locked in three or four years in advance, with limited scope for changes. Also noting that Australians vehicle choices align with the US rather than the EU, it is considered that a more appropriate standard be set.
- Design of the proposed targets – The Bill appears to be based on a uniform average target for all manufacturers and importers. This differs from the US and EU approach which is based on a sales weight average, that also allow flexible options such as allowances and credits to encourage high cost, high abatement technologies. It is recommended that the Bill align with the US and EU and consider some form of a credit system.

---

<sup>1</sup> UNFCCC Taskforce Review Report August 2015. Setting Australia's post-2020 target for reducing greenhouse gas emissions.

<sup>2</sup> Commonwealth of Australia (Climate Change Authority) 2014, Light Vehicle Emissions Standards for Australia Research Report, June 2014.

- Scope of standards – It is considered that including motorcycles within the scope of the Bill may restrict choice for consumers, as given the timeframes involved manufacturers may be reluctant to invest resources into improving the efficiency of vehicles. It is also noted that the inclusion of motorcycles in standards is relatively uncommon internationally, with China being the only country to date to include it within the scope of its standards.
- Responsibility of compliance – Under the Australian Government’s *Motor Vehicle Standards Act 1989* it is generally the manufacturer rather than the importer/distributor that is responsible for compliance, as importers generally have a limited role in ensuring conformity of production. Consideration should be given to aligning the Bill with the *Motor Vehicle Standards Act 1989* and make the responsibility for compliance with whoever is responsible for conformity of production, usually the manufacturer.
- Administration of standards – Currently the Bill identifies the Clean Energy Regulator as being responsible for implementation. There may be some scope to streamline reporting arrangements under both the *Motor Vehicle Standards Act 1989* and the proposed bill.

# Introduction

## The Department's role in transport energy efficiency

The Australian Government, through the Department of Infrastructure and Regional Development (the Department), contributes to the prosperity of the economy and the wellbeing of all Australians by supporting and enhancing our transport systems.

The Department also provides a range of functions that support the Australian Government's role in improving transport energy efficiency and environmental performance. These include:

- administering standards for vehicles entering the Australia market for use in transport under the *Motor Vehicle Standards Act 1989*;
- supporting the development of a nationally coordinated approach towards facilitating the adoption of higher productivity vehicles; and
- supporting technologies that promote a more efficient use of transport infrastructure.

## Motor Vehicle Standards Act 1989

The *Motor Vehicle Standards Act 1989* provides the legislative basis for Australia to set new vehicle design and performance standards for safety and environmental performance. Under the Act and the *Motor Vehicle Standards Regulations 1989* (the Regulations), the Australian Government maintains a system that generally requires road vehicles to meet national design and performance standards – Australian Design Rules (ADRs) – before they can be supplied to the Australian market. The ADRs set requirements for vehicle safety, environmental performance and anti-theft protection in line with community expectations and international standards.

## National Energy Productivity Plan

The National Energy Productivity Plan (the NEPP) is an Australian Government initiative to support energy consumers to make better decisions on energy. The Plan will include measures to make energy choices easier and will encourage improvements in the efficiency of appliances, equipment, buildings and transport.

The Department is working with the Australian Government Department of Industry and Science to consider the options to improve energy productivity in transport for inclusion in the NEPP. The options considered will include, but will not be limited to:

- better tools to help consumers make informed choices when buying a new car;
- measures encouraging innovation in the sector; and
- targets for improving the average efficiency of new vehicles.

The NEPP will be progressed in collaboration with the states and territories through the Council of Australian Governments' (COAG) Energy Council. The Council will seek to agree collaborative measures to support an initial NEPP work plan by the end of 2015. The NEPP may also include measures undertaken by one or more jurisdictions, and voluntary industry action.

# Comments on the Bill

## Proposed targets

The Bill seeks to adopt EU CO<sub>2</sub> emissions targets (130g/km for 2015 and 95g/km in 2020) in Australia from 2017 and 2021 respectively. The current average CO<sub>2</sub> emissions of new vehicles sold in Australia is 188g/km (177g/km for passenger vehicles and 235g/km for light commercial vehicles)<sup>3</sup>.

Given the higher CO<sub>2</sub> emissions for Australian light vehicle fleet as compared to the current European fleet, the Department considers that manufacturers could find it challenging to meet the proposed targets within the proposed timeframe. This is particular the case for Light Commercial Vehicles, even with the percentage phase in stipulated in this bill. The Department has been previously advised by vehicle manufacturers/importers that product plans are largely locked in with international parent companies at least three to four years in advance thus limiting scope for changes beyond that point. It is unlikely that manufacturers and importers will have factored in the introduction of specific CO<sub>2</sub> emission standards for Australia within that timeframe.

To achieve this target, manufacturers and importers may need to adopt more expensive technologies or restrict the availability of certain vehicle models (and therefore consumer choice), both of which would come at an increased cost to manufacturers and consumers. As fuel saving benefits are not immediately realised and are subject to fluctuations in fuel prices, these benefits tend to be more heavily discounted by consumers. This could also increase the risk that consumers may choose to keep their existing vehicle or purchase an older model vehicle over purchasing a newer, more efficient vehicle.

Although more efficient vehicle technologies are available in markets with standards, vehicle manufacturers advise that these technologies would need to be tested and adapted to ensure they are fit for purpose in Australian conditions. For example, the sulfur limit for petrol sold in Australia is up to 15 times higher than that permitted in Europe and the minimum octane level for petrol sold in Australia is 91 RON (Research Octane Number), which is lower than Europe's minimum of 95 RON. Industry has raised concerns that vehicles may not operate as effectively on fuels that only meet the minimum Australian fuel specifications if they have been optimised for European fuel specifications.

The Australian vehicle market also accounts for less than two per cent of the global new vehicle market, which would make it more difficult for manufacturers to recoup the cost of any technology and design changes beyond those required to meet standards in higher volume markets.

---

<sup>3</sup>National Transport Commission, Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014 Information paper, April 2015.

## Design of the proposed targets

The Department notes that the annual target proposed in this Bill appears to be a uniform annual average target for all manufacturers and importers, regardless of the composition of the vehicles they sell. This differs from the EU and US approach which sets an attribute based standard on a sales weighted average basis for each manufacturer, rather than a uniform target applying to all manufacturers. In the EU, the target for each manufacturer is adjusted on the basis of vehicles mass. Whereas the US standards adjust a manufacturers' target on the basis of footprint (length of wheelbase multiplied by track width).

The intent of this approach is to apply the regulatory burden more equitably and better accommodate the needs of consumers that require, or desire, larger or heavier vehicles. It appears that the proposed Bill could potentially apply a disproportionate regulatory burden on manufacturers and importers selling vehicles in Australia who rely on a higher proportion of sales from larger, heavier or higher powered vehicles.

The Department notes that standards in the EU and the US provide for various allowances or "credits", which enable manufacturers to further reduce their reported average emissions. These credits are intended to encourage investment in technologies that have benefits not captured in a standardised test cycle (such as air conditioning refrigerants with a lower global warming potential) or high cost, high abatement technologies such as electric vehicles. The Bill does not appear to include any provisions for a 'credit' system which may make it harder for manufacturers and importer to meet the proposed standards in Australia as compared to the EU.

## Scope of standards

The Department notes that the default definition of a passenger vehicle under the proposed Bill includes motorcycles (L category vehicles). Unlike four wheeled passenger and light commercial vehicles, there is currently no ADR that requires motorcycle manufacturers to test and report on their CO<sub>2</sub> emissions. If motorcycles were included in the scope of this Bill, a new test procedure would need to be specified in the regulations. Further while there is an international standard for measuring motorcycle fuel efficiency and CO<sub>2</sub> emissions; the Department understands that China is the only country to date that has included motorcycles in vehicle efficiency standards<sup>4</sup>. As such manufacturers may be reluctant to invest resources into improving the efficiency of motorcycles for a relatively small Australian market restricting choice for consumers.

## Responsibility for compliance

Clause 4(2) of the Bill imposes the obligation to comply on the 'persons selling the vehicles', which appears to cover both manufacturers and importers. Under the *Motor Vehicle Standards Act 1989*, it is generally the overseas-based manufacturer, rather than the importer, that obtains and holds the approval to supply vehicles to the Australian market and associated responsibilities for ensuring conformity of production. If this bill was implemented, care would need to be taken to ensure these importers were aware of their obligations, as their current role in ensuring conformity of production may be limited.

---

<sup>4</sup> transportpolicy.net – China: Motorcycles: Fuel Consumption, accessed 16 September 2015.

The Department also observes that distribution rights for vehicle brands can also change from time to time, and recommend further clarity be provided on compliance and reporting responsibilities, where distribution rights change between companies, particularly during reporting years.

### **Administration of standards**

The Department understands that the Bill identifies the Clean Energy Regulator, as being responsible for administering these standards. As manufacturers are currently required to submit information to the Department for the purposes of complying with the *Motor Vehicle Standards Act 1989*, there may be scope to streamline reporting arrangements for manufacturers under both the Act and the proposed bill.

Clause 6 of the proposed Bill contains provisions to specify the amount a manufacturer or importer must pay if the mean specific emissions of CO<sub>2</sub> exceed the standard, based on a formula. The Department understands that the formula is intended to be based on the European formula, but considers that this should be clarified.

## **Emission and Fuel Efficiency Standards**

### **What is meant by vehicle fuel efficiency?**

The proposed *Motor Vehicle Standards (Cheaper Transport) Bill 2014* seeks to achieve a number of objectives including improving the fuel efficiency of new cars purchased in Australia, reducing costs for motorists and reducing emissions into the atmosphere. Fuel efficiency is effectively how much fuel a vehicle uses per kilometre. Improving the efficiency of a vehicle means it uses less fuel to travel the same distance and is primary way to reduce CO<sub>2</sub> vehicle emissions.

To ensure all fuel types are treated in an equitable manner and to recognise the broader environmental benefits of improved fuel efficiency, the preferred measure for vehicle fuel efficiency is in terms of grams of CO<sub>2</sub> emitted per kilometre (g/km). Some fuels, such as diesel, have a higher energy content and may go further in terms of kilometres per litre of fuel, but also produce more CO<sub>2</sub> per litre of fuel consumed. Other fuels such as Liquefied Petroleum Gas, have lower energy content and may not go as far in terms of kilometres per litre, but produce less CO<sub>2</sub> per litre of fuel consumed.

### **New Light Vehicles in Australia**

Light vehicles are generally taken to include passenger vehicles and light commercial Vehicles (LCVs) with a gross vehicle mass up to 3.5 tonnes. The Federal Chamber of Automotive Industries (FCAI) vehicle sales data categorises passenger vehicles into light, small, medium, large, upper large, sports, people movers and sports utility vehicles (SUV) which range from light to upper large. Light commercial vehicles are categorised into pick-up/cab-chassis 4×2, pick-up/cab-chassis 4×4 and van/control cab truck.

Since 2000 annual new light vehicle sales in Australia have grown by more than 50 per cent, surpassing 1.1 million vehicles sold for the 2015 financial year. That period has also witnessed a change in the new vehicle mix with a decrease in the proportion of passenger cars, and an increase in the all-terrain wagon or SUV category. Between 2000 and 2015,



passenger cars have decreased their market share from 70 to 48 per cent while SUVs have increased from 14 to 34 per cent (the light commercial vehicle share has shown less overall variation, from 16 per cent in 2000 to 18 per cent in 2015).

Motor vehicles are durable goods and in 2015, the average age of all vehicles registered in Australia was 10.1 years<sup>5</sup>. Improvements to fuel efficiency within new sales can take substantial periods of time before being fully reflected in overall fleet averages. The current level of new sales accounts for replacement of between six to seven per cent of the fleet each year.

### **Current vehicle emission standards in Australia**

There are currently no standards regulating CO<sub>2</sub> emissions in Australia although air pollutant (or noxious) emissions standards are mandated through ADRs. These standards are based on standards adopted through the United Nations World Forum for the Harmonisation of Vehicle Regulations. They follow the 'Euro' series of emission standards adopted in the EU and many other countries. The United States and Japan have their own national standards, which are generally considered to be equivalent in stringency to the 'Euro' standards allowing them to be sold in Australia.

The principal ADRs currently regulating light vehicles emissions are ADRs 79/02, 79/03 and 79/04 (Emission Control for Light Vehicles) and set performance based requirements for emissions of air pollutants that impact on urban air quality and human health. ADR 79/02 currently mandates compliance with Euro 4 emission requirements for light vehicles. The subsequent ADRs put in place transitional arrangements to require that all newly approved light vehicle models manufactured from 1 November 2013 and all light vehicles manufactured from 1 November 2016 comply with Euro 5 emission requirements.

The main air pollutant emissions addressed by these ADRs are hydrocarbons, oxides of nitrogen and particulate matter. They are not directly related to fuel efficiency and make a limited contribution to overall greenhouse gas emissions. They do, however, provide a precedent for the introduction of other emission standards in Australia.

### **Consideration of CO<sub>2</sub> Standards in Australia**

Mandatory standards cover approximately 80 per cent of the global light vehicle market, including the European Union (EU), the United States (US), Canada, Mexico, Brazil, Japan, China, the Republic of Korea and India.<sup>6</sup> These standards are generally based on fleet wide average targets to allow for the diversity of consumer and business needs in the vehicle market (such as, vehicle type, engine size and power, fuel type, and transmission type). The target set for these standards can differ across countries likely reflecting the consumer preferences of those markets. For example the EU passenger vehicle fleet target for 2015 is 130g/km while the US target for 2016 is 139g/km<sup>7</sup>.

---

<sup>5</sup> Australian Bureau of Statistics, 9309.0 - Motor Vehicle Census, Australia, 31 Jan 2015.

<sup>6</sup> [theicct.org/info-tools/global-passenger-vehicle-standards](http://theicct.org/info-tools/global-passenger-vehicle-standards), accessed 16 September 2015.

<sup>7</sup> The International Council for Clean Transportation, Factsheet - United States, Light-Duty Vehicle Efficiency Standards, November 2014, and Factsheet - EU-28, Light-Duty Vehicle Efficiency Standards, December 2014.

Despite the absence of mandatory CO<sub>2</sub> emission standards in Australia, annual CO<sub>2</sub> emissions reductions continue to be delivered in the new vehicle fleet, from 247g/km in 2004 to 188 g/km in 2014.<sup>8</sup> Recent estimates by the Bureau of Infrastructure, Transport and Regional Economics also indicate an overall drop in rated CO<sub>2</sub> emissions intensity of new light vehicles of over 30 per cent from 1980 to 2014.

The historical data on new vehicle purchases suggests that it is reasonable to expect that under a business as usual scenario (BAU), CO<sub>2</sub> emissions from new light vehicles, on average, will continue to improve although not at the rates in other countries where mandatory standards are in place. Initial research within the Department has found that under a BAU scenario the average CO<sub>2</sub> emission intensity of light vehicle sales is forecast to decline to a level of between 155-160 g/km by 2025. Under this scenario, Australia does gain moderate advantages over time from overseas fuel economy standards, as more imported vehicles incorporate technologies aimed at meeting the CO<sub>2</sub>/km targets of their respective national schemes.

Based on overseas experiences, it appears there is scope for vehicle efficiency standards to make a substantial contribution to any national CO<sub>2</sub> emission targets by a 2030 timeframe, noting that over three quarters of the vehicles that will comprise the 2030 on-road fleet have yet to be sold.

The adoption of standards may have an impact on costs to manufacturers and consumers due to the need for new technologies and design features but these could be offset by fuel savings over the life of the vehicle. Further modelling work is needed to better understand the current cost benefits of adopting specific standards.

### Consumer preferences for light vehicles

As noted above the consumer preferences of individual markets can have a bearing on setting of emission standards within that market. When considering the setting of Australian emissions it is worth noting that broadly, consumer preferences within the Australian market are more closely aligned with the US market than EU markets. For example, there is a much greater proportion of light vehicles with diesel engines, within the EU than in either Australia or the US. Diesel based engines are generally more fuel efficient than petrol based engines and can therefore make a greater contribution to a vehicle fleet's overall emissions target.

Recent research undertaken by the National Transport Commission found that Australian consumers had a much stronger preference than their UK counterparts for larger, more powerful vehicles, such as SUVs, and for vehicles with automatic transmissions. Departmental analysis has also found that average fleet CO<sub>2</sub> emissions in the US and Australia are similar overall (but varied with vehicle type), while the emissions from the German fleet are significantly lower. A range of factors contributed to these variations between Australian and Germany, including:

- the relative market share of vehicles across categories (the car, SUV and LCV);
- the mix of vehicle/engine size;

---

<sup>8</sup> National Transport Commission, Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014 Information paper, April 2015.

- the mix of automatic and manual transmissions; and
- the proportion of diesel engines in the fleet.

## Current measures to improve fuel efficiency

The Australian Government has range of measures in place that directly and indirectly improves fuel efficiency within the transport sector.

### Fuel consumption labelling

To date the Department's principal approach to encourage the uptake of more fuel efficient vehicles has been through education and information sharing. Under the *Motor Vehicle Standards Act 1989* all new vehicles sold in Australia must display a fuel consumption label in accordance with ADR 81/02 (Fuel Consumption Labelling for Light Vehicles). These labels are affixed to car windscreens in dealer showrooms and are designed to help consumers make better informed choices about the environmental impact of a new vehicle, and its anticipated running costs.

Each label displays three fuel consumption figures (in litres/100km) one based on an urban drive cycle test, another based on an extra-urban (highway) drive cycle test and a combined figure based on the combined results of both tests as well the CO<sub>2</sub> emissions value from the combined test results. The figures displayed on fuel consumption labels are based on standardised tests conducted by vehicle manufacturers in carefully controlled conditions in specialised vehicle emission laboratories and in accordance with ADR 81/02. To ensure the quality and consistency of test results, laboratories and their facilities are subject to audit by the Department.

Although no test can simulate all 'real world' conditions labelling does provide a common basis for comparison of individual vehicle models.

### Green Vehicle Guide

The Department also maintains the Green Vehicle Guide (GVG) website which enables consumers to compare the environmental performance of new vehicles sold in Australia. The GVG uses data submitted by manufacturers to comply with the relevant ADRs for fuel consumption labelling. The current GVG website uses a star rating system that gives equal weight to CO<sub>2</sub> and other air pollutant emissions. The GVG is undergoing a major upgrade that will shift its focus to tailpipe CO<sub>2</sub> tailpipe emissions as the principal basis for ranking vehicles. The new website will be compatible with mobile devices enabling greater accessibility to consumers (while in dealer showrooms) and will include an improved fuel calculator to make it easier to make more realistic comparisons of fuel costs between vehicles of different fuel types.

The website also provides advice on how driver behaviour can improve a vehicle's environmental performance. Further information on the GVG and fuel consumption labelling can be found on the Department's website at:  
<https://www.greenvehicleguide.gov.au/>

## Alternative fuels and electric vehicles

Potential reductions in vehicle emissions can also be achieved by switching from more fuel intensive sources (petrol) to alternatives with lower emissions such as natural gas, biofuels (ethanol) and biodiesel as well as using hybrid and electric vehicles (depending on the upstream energy source).

To facilitate the uptake of such technologies the Department encourages performance based approaches to ADRs that allow for innovation in vehicle design, including alternative power sources, rather than prescribe a particular alternative. If a vehicle meets the ADRs, powered by electricity or otherwise, there is no impediment to it being used in Australia. Furthermore, if electric vehicle manufacturers or importers are able to demonstrate compliance with the current ADRs, there are no further regulatory barriers to these vehicles being supplied to the market.

However, with regard to hybrid and electric vehicles, the National Road Safety Strategy 2011-2020 has identified longer term actions such as the development of standards for battery and system safety and crash protection of occupants from high voltage vehicle systems.

## Review of the *Motor Vehicle Standards Act 1989*

The Australian Government has been undertaking a review of the *Motor Vehicle Standards Act 1989* in close consultation with the community and industry over the last 12 months. The review is focused on strengthening the safety and environmental performance of Australia's vehicle fleet while removing unnecessary restrictions and regulatory burdens on Australian businesses and individuals.

Recognising the global nature of the vehicle market, the United Nations has led the cooperative development of international vehicle standards. The Government has committed to accelerating the harmonisation of the Australian Design Rules (ADRs) with the United Nation (UN) standards, which represent international best practice, will ensure Australians have access to safe vehicles with the latest technologies at the lowest possible cost.

## Intelligent Transport Systems

More broadly the Department is also exploring opportunities to achieve reductions in greenhouse emissions through development, adoption and deployment of Intelligent Transport Systems (ITS). ITS generally refers to the use of information and communications technology for transport to achieve safety, mobility and environmental outcomes. ITS includes a suite of current and emerging stand-alone technologies such as traffic management systems and connected and automated vehicles.

Australia is actively embracing ITS applications and technologies and in some instances is a world leader in their deployment, such as for example through smart motorways, and electronic tolling. Effectively deployed ITS can enhance movement of commuters and freight through existing transport infrastructure, reduce congestion, lessen travel times and inform future planning for our transport networks. This will not only assist in reducing greenhouse emissions but also bring significant productivity and safety benefits.

## G20 Transportation Task Group

Australia will also continue to work through international fora, including the G20 Transportation Task Group (TTG), to identify further opportunities to achieve greater vehicle efficiency. The TTG was established to build broad domestic support and enhance capacity within G-20 countries for comprehensive domestic action to reduce the energy and environmental impacts of motor vehicles.

The TTG identifies and exchange best practices among G-20 countries to enable collective action to support the implementation of cost-effective programs that reduce the energy and environmental impacts of motor vehicles. Other G-20 countries who are members of the TTG include Brazil, Canada, the European Union, France, Germany, Italy, Japan, Mexico, Russia, New Zealand, Spain and the United States.

Further information on the G-20 Transport Task Group is at <http://www.ipeec.org/TTG.html>

## Conclusion

The Government has identified improving vehicle efficiency as one of possible measures to achieve its announced emissions reduction target for 2030. The Department has commenced initial steps to identify viable options for improving vehicle efficiency and with the Bureau of Infrastructure, Transport and Regional Economics is currently developing projections for light vehicle emissions under a business as usual scenario.

These projections will help inform the development of possible measures to improve vehicle emissions. In developing these options the Department also notes that the Government's preference is to consider non-regulatory approaches where possible and for any additional regulatory burden to be offset by reductions in the regulatory burden from other regulation.

## References

Australian Bureau of Statistics, 9309.0 - Motor Vehicle Census, Australia, 31 Jan 2015

The International Council on Clean Transportation (2014). Global passenger vehicle standards. Retrieved from: [theicct.org/info-tools/global-passenger-vehicle-standards](http://theicct.org/info-tools/global-passenger-vehicle-standards), accessed 16 September 2015

The International Council for Clean Transportation (2014), Factsheet - United States, Light-Duty Vehicle Efficiency Standards, November 2014,

The International Council for Clean Transportation (2014), Factsheet - EU-28, Light-Duty Vehicle Efficiency Standards, December 2014

transportpolicy.net – a joint effort of ICCT and DieselNet (2013) – China: Motorcycles: Fuel Consumption, accessed 16 September 2015

National Transport Commission, Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014 Information paper, April 2015

UNFCCC Taskforce, Review Report. Setting Australia's post-2020 target for reducing greenhouse gas emissions, August 2015