



ACT
Government
Environment and
Sustainable Development

Low Emission Vehicle Strategy

Discussion paper



JUNE 2014



Have your say

The ACT Government encourages members of the public to provide comments on the options contained in this discussion paper.

The options included in this paper are not all-inclusive and members of the public are also encouraged to provide any additional ideas for consideration.

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Message from the Minister

Transport is fundamental to our quality of life and to a growing and vibrant city. Increasing levels of traffic and congestion, ambient noise and greenhouse gas emissions are some of the challenges that the transport sector generates in cities around the world. In Canberra, the transport sector contributes around a quarter of all greenhouse gas emissions generated.

The goal of the Low Emissions Vehicle Strategy is to reduce transport generated greenhouse gas emissions, but the Strategy may also produce co-benefits to both individuals and the broader Canberra community.

I encourage you to read this discussion paper and make a submission. I hope that this paper, which will be used to develop an ACT Low Emission Vehicle Strategy, will act as a catalyst for some more innovative ideas to make Canberra a highly liveable and truly sustainable city.

Simon Corbell MLA
Minister for the Environment and Sustainable
Development





Executive summary

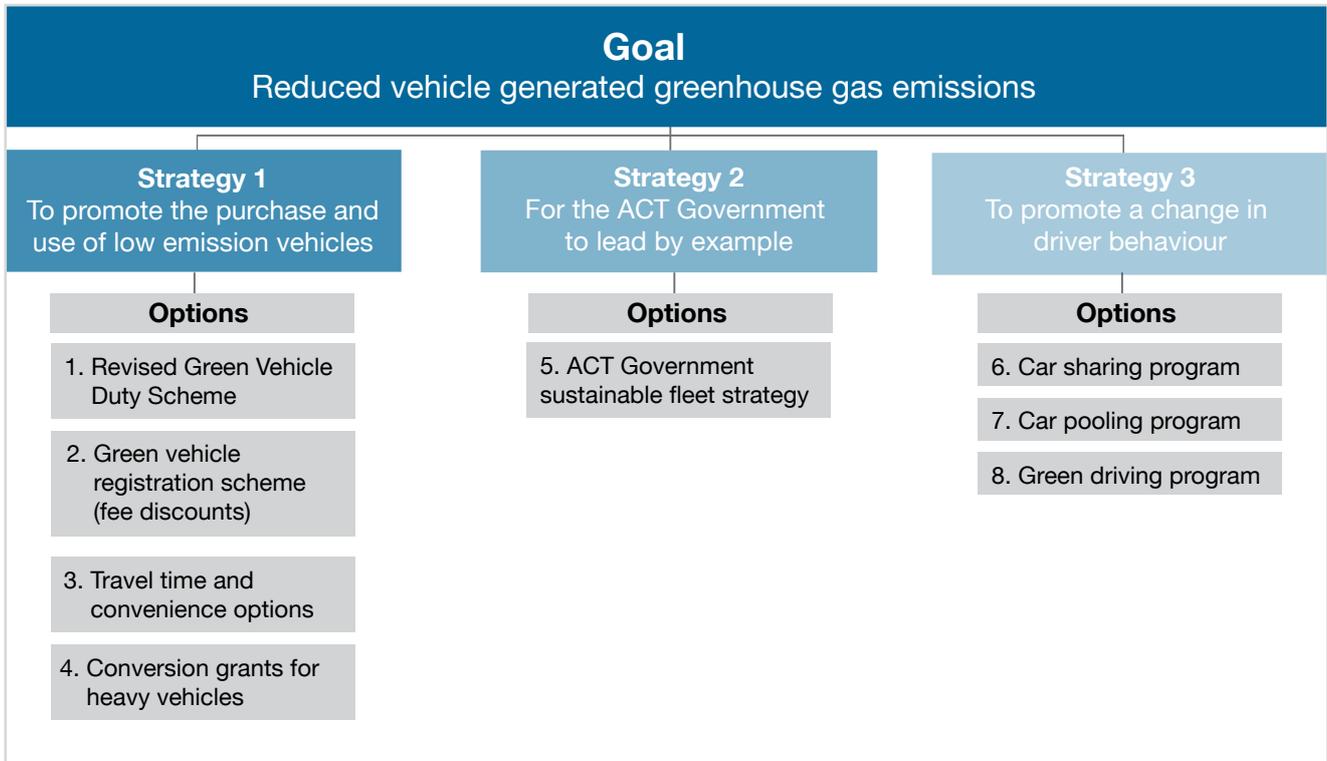
The ACT Government has set an overarching policy framework, from the ACT Planning Strategy, Transport for Canberra and the government’s climate change strategy, AP2, to make our city a better place to live, work and do business and targets a more sustainable Canberra. A desired outcome in achieving a more sustainable Canberra is reducing greenhouse gas emissions. The transport sector is a major contributing factor to greenhouse gas emissions. In 2011 transport accounted for 16% of Australian and 23% of ACT emissions. The Low Emission Vehicle Strategy (LEVS) will provide a framework targeting the reduction of vehicle emissions through a range of actions in the ACT.

The LEVS discussion paper provides the basis for progressing the strategy by outlining the context of emissions for the ACT, opportunities and challenges in reducing vehicle emissions and identifying a number of options that could potentially be implemented in the ACT. The purpose of this discussion paper is to consult with the community

about the most effective options to reduce transport generated greenhouse gas emissions.

The LEVS has a goal of reducing vehicle greenhouse gas emissions. This goal is supported by three strategies and eight options for consideration. There are significant challenges to reducing transport emissions in the ACT, primarily due to the planning and layout of the city, with low population densities dispersed over a large area with a good road network that encourages use of vehicles. The ACT Government cannot achieve a reduction in greenhouse gas emissions alone. The only way to achieve the necessary reductions is to work with the ACT community.

The ACT Government invites members of the public to have their say and provide comments on the ideas contained in this discussion paper. The options will be subject to further evaluation prior to implementation. Members of the public are also encouraged to provide any additional ideas for consideration.





1. Introduction

This Low Emission Vehicle Strategy (LEVS) discussion paper provides the basis for progressing a LEVS by outlining the context of emissions for the ACT, opportunities and challenges in reducing vehicle emissions and identifying a number of options that could potentially be implemented in the ACT. The purpose of this discussion paper is to consult with the community about the most effective options to reduce transport generated greenhouse gas emissions.

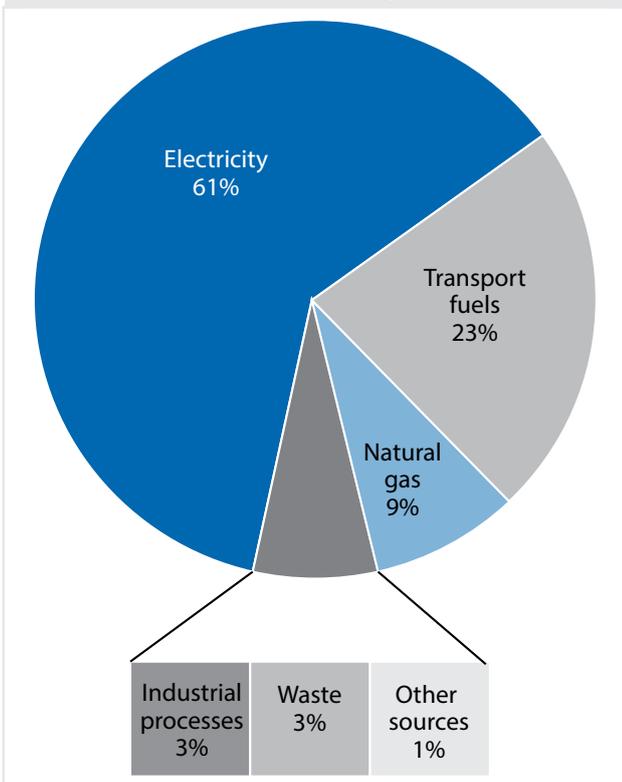
1.1 Why do we need a Low Emission Vehicle Strategy in the ACT?

While recognising that the car will continue to play a crucial role in the transport needs of ACT residents, there are opportunities to reduce transport generated greenhouse gas emissions.

Canberra was planned around self-contained town centres, with employment close to residential areas. The intention was to provide greater accessibility, reduce the need for longer trips and reduce congestion in central Canberra. While this has had some success, considerable cross-city travel occurs to access employment and other services. One of the key challenges which faces Canberra’s transport system is that Canberra has low population densities dispersed over a large area. Households often have several workers working in different locations. Therefore, it is expected that the car will continue to be the dominant mode of transport, perhaps for a long time.

A desired outcome in achieving a more sustainable Canberra is reducing transport greenhouse gas emissions. The transport sector is a major contributing factor to greenhouse gas emissions. In 2011 transport accounted for 16% of Australian and 23% of ACT emissions (Figure 1).

**Figure 1: Share of emissions by sector
ACT Greenhouse Gas Inventory 2011**





1.2 What is the Low Emission Vehicle Strategy policy context?

The delivery of a LEVS is a commitment under Transport for Canberra and the ACT climate change policy, AP2.

Transport for Canberra is the foundation document for transport planning in the ACT to 2031. Transport is a vital component of responding to the challenges facing all major Australian cities: air quality; traffic volumes and congestion; ambient noise; greenhouse gas emissions; social exclusion; urban sprawl and infrastructure that is reaching capacity.

AP2 – A new climate change strategy and action plan for the Australian Capital Territory, provides a pathway to achieve the ACT’s legislated greenhouse gas reduction targets. *The Climate Change and Greenhouse Gas Reduction Act 2010* sets a target for 2020 of a 40% reduction in greenhouse gas emission based on 1990 levels and zero net emissions by 2060.

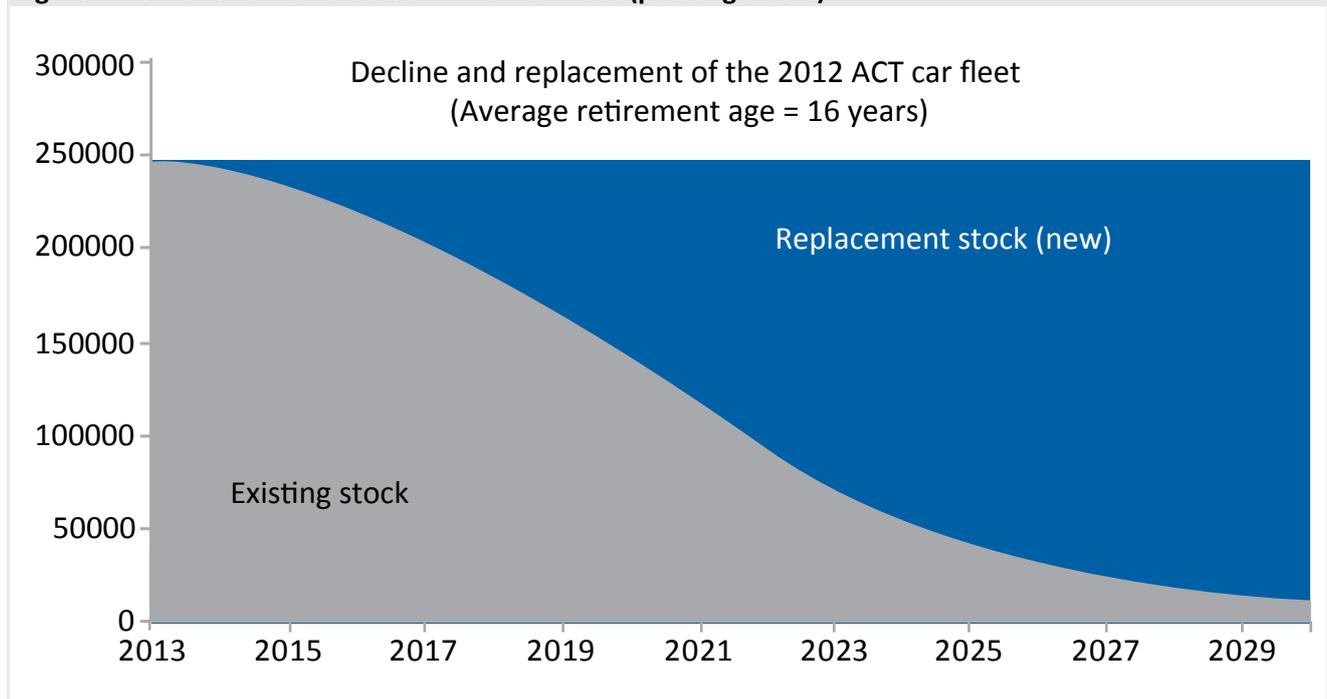
The LEVS will build on policies and measures which discourage vehicle use and encourage a shift in behaviour to using healthier and more sustainable modes of transport. This must be an integrated approach across land use and transport planning.

1.3 What are the challenges in reducing transport emissions in the ACT?

Canberra faces several challenges in its quest to reduce greenhouse gas emissions generated by transport. This includes:

- the planning and design of Canberra
- the relatively high cost of new low emission vehicles compared to other vehicles
- the slow turnover of passenger vehicles in the ACT resulting in a relatively high percentage of vehicles that are aging and are less economical and fuel efficient. The average retirement age of vehicles in the ACT is 16 years (Figure 2)
- lack of choice of low emission vehicle options on the market
- lack of extensive refuelling and recharging infrastructure for electric vehicles
- relatively low fuel prices
- uncertainty about the durability and reliability of new low emission technologies, particularly the distances that can be reliably achieved.

Figure 2: Turnover of vehicle stock in ACT car fleet (passenger cars)





Fuel consumption

In Australia, the national trend in average fuel consumption per kilometre travelled has been relatively stable over time, due to the combined impacts of rising fuel costs, technical innovation, improved engine efficiency and fuel consumption. However, fuel consumption benefits have not been fully realised due to a combination of slow fleet turnover and increasing vehicle weight from the addition of more features and improved safety features.

The traditional approach to improving vehicle efficiency was based on industry self-regulation and the provision of fuel consumption information to consumers (via compulsory fuel consumption labelling, and the establishment of the Australian Government Green Vehicle Guide).

Tracked over the decade from 2002 to 2012, the emissions intensity of the average new vehicle fell 20% (Figure 3). The reduction from 2011 to 2012 alone was 4%. While this improvement may seem to be a relatively slow change, it was achieved without government intervention measures such as mandatory standards. National initiatives are being explored to introduce mandatory fuel efficiency standards as a means of accelerating the efficiency trend even further.

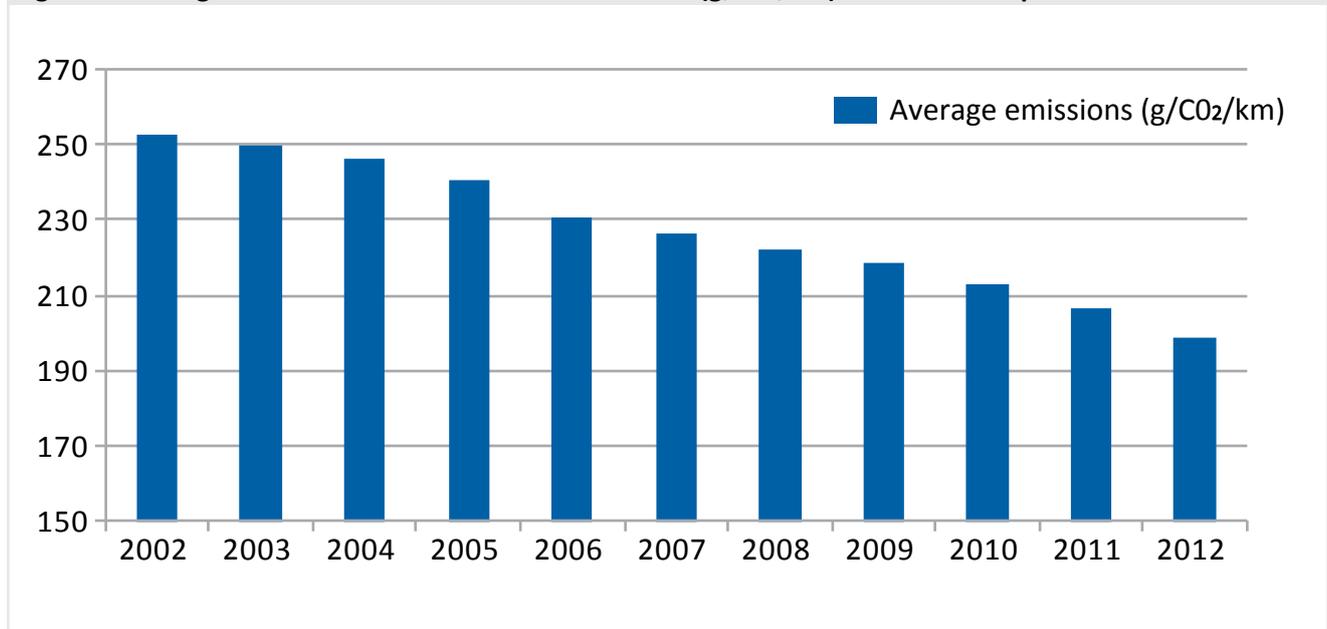
Integrated planning

Canberra is multi-centred with five self-contained districts of Belconnen, Central Canberra, Gungahlin, Tuggeranong and Woden. Each district contains residential suburbs of relatively uniform density. Individual suburbs are served by local and group centres which were designed to contain shops and services capable of meeting everyday needs and to be within walking distance of houses in a neighbourhood. The idea that self containment of districts would reduce the need for residents to travel has not been fully realised. The location of employment has resulted in some people travelling long distances between districts to work.

Contemporary planning in Canberra, as demonstrated by the ACT Planning Strategy, Transport for Canberra and the City Plan aims to develop a more compact city with residential, commercial, retail and recreational land uses sensitively mixed together.

The relatively small population of Canberra reduces the economies of scale for public transport, while the very low population density reduces cost effectiveness of public transport. The community therefore tends to rely on individual car use.

Figure 3: Average emissions of new vehicles in Australia (g/CO₂/km) National Transport Commission 2013





Vehicle numbers in the ACT

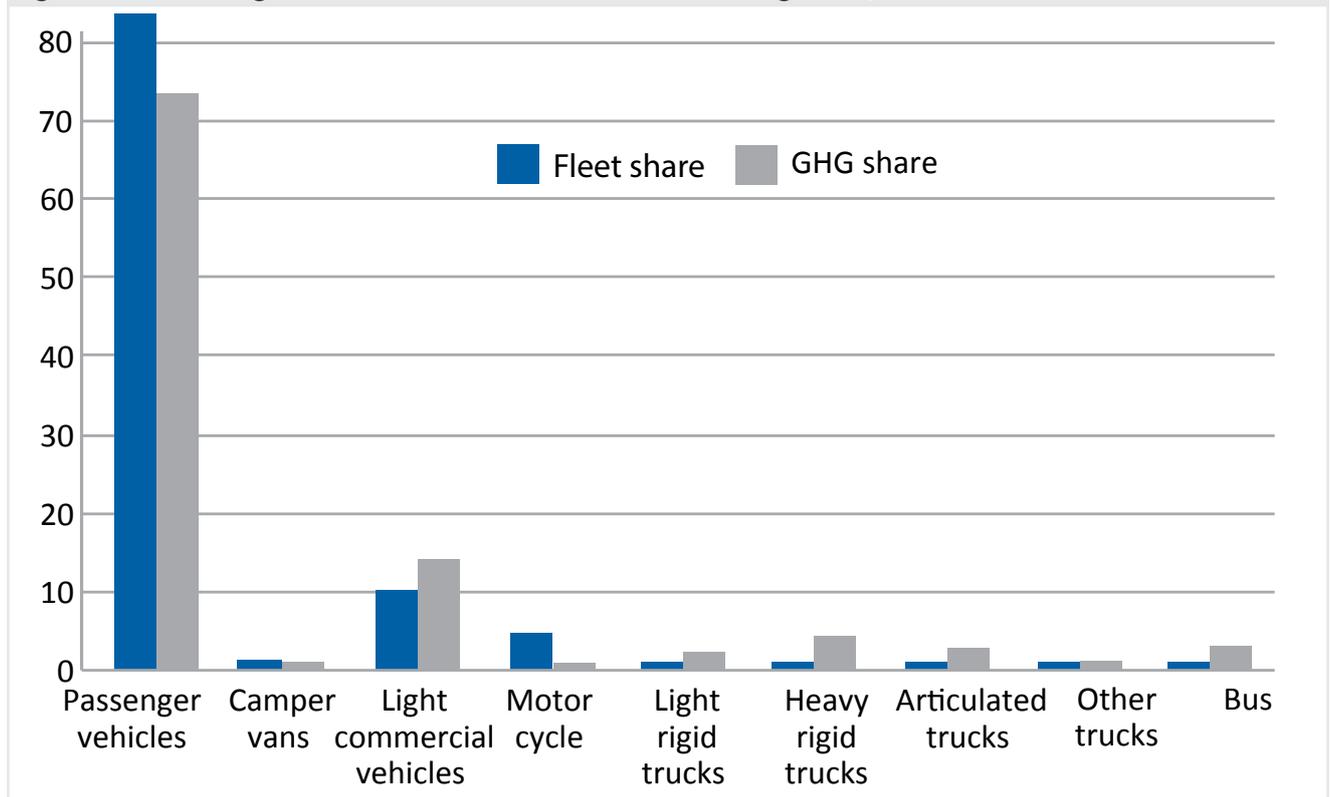
Passenger vehicles dominate both the number of vehicles (83.6%) and direct emissions produced (73.5%) in the ACT (Figure 4). The relatively small contribution from heavy vehicles, which comprise trucks and buses, is an expected result considering the minor role Canberra plays in the national freight network.

The most important insight from this data is that any future LEVS measures should focus on passenger vehicles as a priority.

1.4 What low emission vehicle policies are currently in place in the ACT?

The ACT already has a number of policies and programs in place for reducing vehicle emissions. Most focus on behaviour change to increase the productivity of transport (more passengers per vehicle), or to shift transport choices to less polluting modes (swapping private motor vehicle trips for buses, bicycles and walking). In addition, the ACT is also impacted by national policies relevant to low emission vehicles and can be influenced by programs in other states, particularly NSW and Victoria.

Figure 4: Fleet and greenhouse shares of ACT motor vehicle segments, 2012





The ACT currently has two main policies that can directly affect the uptake of low emission vehicles. These are the Green Vehicle Duty Scheme and a registration discount for electric vehicles and gas vehicles. Both are financial instruments designed to provide incentives for the adoption of lower emission vehicles via a lower rate of fees for low emission vehicles than for conventional vehicles.

Green Vehicle Duty Scheme (GVDS)

The ACT has an incentive mechanism that provides a differential stamp duty for green vehicles. Stamp duty is levied at the time of vehicle sale, and the GVDS applies only at the first sale of a new vehicle. It is therefore a one-off measure and is essentially a discount on the 'on-road cost' of a new vehicle purchase.

The level of stamp duty payable is calculated based on a combination of the carbon dioxide and air pollution ratings from the Green Vehicle Guide. When introduced in 2011, this scheme provided: a saving for the best and above average performance; no change for average; and a penalty for below average. A typical benefit was about \$1,000 on a \$35,000 vehicle at the highest standard, and \$350 for above average.

Based on analysis for the period September 2008 to June 2011, the Green Vehicle Duty Scheme has influenced the following market shift in the new vehicle market:

- The proportion of A rated vehicles (environmental leading edge models) sold has increased from approximately 2% of new car sales in the fourth quarter of 2008 to approximately 7% of new car sales in mid 2011.
- The proportion of B rated vehicles (models with environmental performance significantly above average) sold has increased from approximately 9% of new car sales in the fourth quarter 2008 to approximately 27% of new car sales in mid 2011.
- The proportion of C rated vehicles (models with average environmental performance) sold has decreased from approximately 75% of new car sales in the fourth quarter 2008 to approximately 54% of new car sales in mid 2011.
- The proportion of D rated vehicles sold has remained relatively constant at approximately 12-14% of new car sales throughout the period.

Gas and electric vehicle registration discount

A supplementary financial incentive for new vehicle purchasers is a registration fee discount for electric vehicles and those powered by natural gas. Unlike the one-off stamp duty discount, the registration discount applies each time the vehicle registration is renewed, providing an ongoing and reinforcing benefit to the owner. There is currently no real benefit for gas vehicles as these must undergo mandatory annual inspections and the discounts offset the cost of the inspection.

The discount is currently set at 20% off the registration component only (excluding Compulsory Third Party Insurance, Road Rescue Fee, Road Safety Contribution, and Short Term Registration Surcharge).¹

To lead by example, the ACT Government has begun to introduce electric and hybrid vehicles into its fleet and has undertaken a pilot carpooling scheme for ACT Government staff.



2. What is a low emission vehicle?

The most common features describing low emission vehicles relate to vehicles that:

- use substantially less fuel than conventional vehicles
- use an alternative fuel with a much lower emissions intensity
- carry significantly more people or freight than a conventional vehicle.

The term 'low emission vehicle' can be used in a number of ways. It is proposed that the LEVS will classify a low emissions vehicle as one emitting relatively low levels of greenhouse gas emissions (which also corresponds to lower fuel consumption). This is consistent with the legislated greenhouse gas reductions requirements for the ACT. A classification system or standard will need to be put in place to classify which vehicles meet standards and might receive incentives. The current classification system used for the ACT is the ACT Green Vehicle Guide rating which is based on a combination of two environmental ratings from the Commonwealth Green Vehicle Guide: the greenhouse rating, based on a vehicle's carbon dioxide emissions, and the air pollution rating, a measure of noxious pollutants that reduce our air quality.

The rating is an environmental performance score out of 20. Vehicles are split into four categories:

- A:** Environmental leading edge models (Score 16+)
- B:** Models with environmental performance significantly above average (Score 14+)
- C:** Models with average environmental performance (Score 9.5+)
- D:** Models with below average environmental performance (Score under 9.5).

It should be noted that the measurement of noxious pollutants is becoming increasingly negligible due to the mandatory implementation of *Euro 4* air pollutant and particulate emissions standards for new vehicles sold in Australia. Further, the progressive implementation of more stringent *Euro 5* and *Euro 6* standards will mandate noxious pollutant emissions readings that are so low as to render their measurement irrelevant.

A clear definition and classification of a low emission vehicle will be a key component of the LEVS to ensure clarity about eligibility of vehicles under the proposed options.





3. Proposed strategies and options to form the Low Emission Vehicle Strategy

The options identified in the paper are intended to inform a public discussion on a range of actions that may be pursued by the government.

All the options are subject to further analysis and agreement in the final Strategy.

The LEVS will provide a framework targeting the reduction of vehicle emissions through a range of actions in the ACT.

The LEVS has a goal of reducing vehicle greenhouse gas emission. This goal is supported by three strategies:

- to promote the purchase and use of low emission vehicles
- for the ACT Government to lead by example
- to promote a change in driver behaviour.

Eight options have been identified that could potentially be implemented in the ACT.

Review periods will be built into the LEVS to ensure the ongoing effectiveness of actions. Options that include fee discounts and subsidies in particular, will need to be reviewed regularly to ensure appropriate levels of funding.

The options included in this paper are not all-inclusive and members of the public are also encouraged to provide any additional ideas for consideration.

The effectiveness of actions to lower greenhouse gas emissions

The relative performance of different types of transport policy action to reduce greenhouse gas emission varies widely in cost effectiveness². Based on international best practice, four broad categories of policy option can be identified from low cost per tonne abated to high cost. Low cost abatement options such the green driving program targeting behaviour change require no new physical assets or infrastructure. Policy options in the high cost category involve the provision of significant physical infrastructure on the public transport network.

Charging points for electric vehicles, car sharing, cycle and walking facility provision and encouraging increased purchase rates for new, more efficient vehicles are options in the intermediate cost effectiveness categories.

The strategy will targets options that are effective in reducing passenger vehicle emissions but also considers ease of implementation. Broader strategies and actions such as encouraging active transport and public transport are identified in Transport for Canberra. The final low emission vehicle strategy will be part of the broader transport, planning and climate change strategies and will work in combination with these policies.

Strategy	Options
To promote the purchase and use of low emission vehicles	1- Revised Green Vehicle Duty Scheme 2- Green vehicle registration scheme (fee discounts) 3 - Travel time and convenience options 4 - Conversion grants for heavy vehicles
For the ACT Government to lead by example	5 - ACT Government sustainable fleet strategy
To promote a change in driver behaviour	6 - Car sharing program 7 - Carpooling program 8 - Green driving program



Strategy 1 – To promote the purchase and use of low emission vehicles

Option 1 -

Revised Green Vehicle Duty Scheme

The revised Green Vehicle Duty Scheme is intended to provide greater incentives to encourage the purchase of low emission vehicles.

Reducing the purchase cost of a low emission vehicle is one of the most effective ways of influencing people's purchase behaviour. This is because most low emission vehicles are priced higher than a conventional vehicle due to expensive engine or drive train technology and lightweight materials. Providing an incentive at the showroom can bring costs closer to conventional vehicles, and reinforces the message that government and the ACT community support a low emission vehicle choice. Many countries offer rebates or grants to buyers of electric vehicles to reduce the acquisition cost to a level more competitive with conventional fuelled vehicles. Incentives can be as high as \$6000 or more. Similarly, some countries in the EU provide a sliding scale rebate or fee (fee bates) that incentivise or penalise vehicle choices on the basis of emissions. The Australian Government's Alternative Fuels Conversion Program (2002-2008) and the current LPG Vehicle Scheme (AusIndustry 2013), whereby vehicle owners receive \$2000 to purchase a new factory-fitted LPG or \$1000 to have an aftermarket system fitted (subject to meeting guidelines), are two local examples. In the absence of a grant to drive behaviour change, the ACT could help reduce the higher purchase price of a low emission vehicle by increasing the financial concessions under the Green Vehicle Duty Scheme.

Option 2 -

Green vehicle registration scheme (fee discounts)

The intention of a green vehicle registration scheme would increase and expand the registration discount for low emission vehicles.

A similar approach to revising the Green Vehicle Duty Scheme (Option 1) could be used for registration discounts. A registration discount is considered effective, given that vehicle owners receive an ongoing incentive during the life of the vehicle. The scheme, which is currently restricted to gas and electric vehicles, could be expanded to reward other low emission vehicles.

This approach makes low emission vehicles more attractive by reducing their annual operating costs. While the registration cost is only a small part of vehicle operating costs, it is a highly visible cost that people compare between vehicles. The repetitive nature of registration fees also makes the message self-reinforcing; if vehicle owners are told each time they pay their registration that they can save hundreds of dollars by switching to a lower emission vehicle, it will be an additional consideration at the time of their next vehicle purchase.

The ACT's existing 20% discount for gas and electric vehicles could potentially be expanded to provide more generous discounts (to include a wide variety of low emission vehicles). The complex calculation currently used to determine registration fees could be amended to align with the classification system used for the Green Vehicle Duty Scheme. To ensure the government does not suffer a loss of revenue, the discounts could be offset against increases in the registration fee for less fuel efficient vehicles, in the same way that less fuel efficient vehicles pay more stamp duty. The far lower number of low emission vehicles means that it would only require a small increase in the much larger number of average and worse-than-average vehicles. The complexity of changing heavy vehicle registration fees, which are now set by the National Heavy Vehicle Regulator, can be avoided by providing a registration rebate to owners who live and have their vehicles registered in the ACT. The rebate would cover the difference between the actual fee paid and the discounted fee considered appropriate.



Option 3 - Travel time and convenience options Incentives to improve travel time and convenience (for example, use of transit lanes) for low emission vehicles.

Incentives to encourage the take up of low emission vehicles can also span non financial benefits. Measures that impact on time and convenience for motorists can be powerful drivers of vehicle choice. Importantly, policy measures in this area can be designed to deliver an ongoing and regular benefit that has high value to the motorist and comes at minimal cost to the ACT budget.

Benefits can be readily attached to low emission vehicles through transit lane access arrangements for low emission vehicles. Reserved parking spaces for low emission vehicles are already used as an incentive in some US cities, in much the same way that disabled parking or 'parents with prams' are eligible for priority parking places at public venues such as shopping centres in Australia. These allocated parking spaces also increase the visibility of, and thereby help to market, low emission vehicles.

The achievability of these time savings and convenience benefits within the context of ACT travel, access and congestion patterns is a key factor in determining their likely dollar value.

Option 4 - Conversion grants for heavy vehicles Providing a subsidy for the conversion of heavy vehicle engines to use low emission fuels.

Compared with cars and light commercial vehicles, heavy vehicles have a very large energy requirement. However, environmental impacts from fuel use – including greenhouse gas emissions, particulates and other air pollutants – are often poorly reflected in fuel pricing.

Because the freight industry is very competitive, operators are under great financial pressure, with average industry margins of around 3%. Under these circumstances policy makers may wish to offer incentives for the uptake of low emission fuels, since the business case would otherwise need to be very convincing and savings reliable.

For example, the use of natural gas to replace diesel can be very beneficial for a truck fleet. It provides a greenhouse gas benefit, it can reduce fuel costs overall, and it can reduce the typical volatility in fuel prices associated with oil-based fuels. The cheapest natural gas fuelling systems (gas fumigation), which substitute a proportion of gas for diesel (up to 60%, but typically less than 30%) can be installed for less than \$20,000. The more effective and better integrated a system becomes, the higher the cost.

The high additional cost of vehicle conversion must be covered by fuel savings, so the operator must drive high annual distances and/or the difference in price between diesel and gas must be high.

A small subsidy provided for the conversion costs to operate on gas could provide the incentive to convince many operators to make a switch. Where past programs have provided large subsidies to address the limited availability of commercial capital to truck fleets, as the gas system costs have fallen the key barrier has become uncertainty about fuel savings (being a function of gas substitution, distance travelled, and the relative prices of diesel and gas). With a small grant, the balance of financial risk to ensure a system can pay for itself in a reasonable time may be enough to make the business case viable.



Strategy 2 – For the ACT Government to lead by example.

Option 5 - ACT Government sustainable fleet strategy Support low emission fuel uptake in the ACT Government fleet and contribute to the development and wider availability of these fuels as a pathway to reducing fleet emissions.

The ACT Government owns and operates a fleet of 1,210 vehicles (as at 9 July 2013,) spanning passenger sedans and wagons, utilities, vans, minibuses, tippers and trucks. According to National Transport Commission estimates (2012), the ACT Government's fleet has the lowest emission intensity of any government vehicle fleet in Australia. On a recent counting, 35 vehicles are hybrid and electric vehicles and 683 are diesel vehicles. Diesel vehicles offer the opportunity to achieve substantial greenhouse emission savings, and demonstrate new fuel and technical flexibility through the use of bio-diesel.

In greenhouse gas accounting, use of biodiesel offers a greenhouse gas benefit of almost 100%, having the potential for a vehicle that is nearly zero emissions, provided it exclusively used 100% pure biodiesel. In practice, biofuels are almost always blended in a ratio with the conventional fuel they replace (B20 for 20% biodiesel, 80% diesel; E85 for 85% ethanol, 15% petrol). Experience in other fleets shows it is feasible to use high ratio blends of biodiesel without problems (Binns 2013).

However, the potential emissions savings of biodiesel cannot be guaranteed through vehicle capability alone, because there is no way of forcing a vehicle owner to use biodiesel. Similarly, some biofuels do not have a net emissions benefit, so proper selection of supplier and fuel is required to ensure an emissions saving is real.

Conveniently, the ACT fleet has both these factors under its own control. Potentially, it could firstly select an environmentally sustainable biofuel (through independent assessment of the supplier or product), and then ensure the fuel is actually used in its vehicles (via its own depot refuelling or fleet restrictions).

Many councils (including City of Sydney, City of Adelaide, Brisbane City Council, and Sunshine Coast Council) have contributed to the development and wider availability of biodiesel, both as a pathway to reducing fleet emissions and as means of supporting local or regional businesses.

Overall greenhouse gas emissions from the ACT government diesel fleet are estimated at around 3,375 tonnes of CO₂e per annum. Use of B50 diesel blend (i.e. 50% biodiesel and 50% from refined crude oil) would deliver an immediate greenhouse saving of about 1,680 tonnes of CO₂e per annum from the existing fleet. Assuming an increase in the total energy requirement of the fleet of around 2% per year – and maintaining a biodiesel purchasing policy throughout the period – would see these annual emission savings grow to around 1,940 tonnes of CO₂e in 2020, and over 2,400 tonnes in 2031.

Of course, these greenhouse gas savings assume only 2% energy growth per year. But diesel vehicles are available in nearly all segments, so with a targeted purchasing policy that favours diesel over petrol vehicles, the savings could be much higher.

To increase emissions reductions from the use of biofuels, the ACT could also provide incentives for non-government fleets to switch to biodiesel. This could be done via a fuel mandate or excise reduction/rebate. Alternatively, a verification scheme could be implemented to validate fuel records of participating vehicles; however this would necessarily be a retrospective scheme.



Strategy 3 – To promote a change in driver behaviour

Option 6 - Car sharing Program

Support car sharing businesses which provide convenience for individuals/businesses to access fuel efficient vehicles for short periods of time to reduce costs of ownership and also reduce the number of kilometres travelled.

Car sharing can be likened to short-term car rental, but primarily differs from traditional rental arrangements because car sharing is not limited by office hours. Reservation, pick up and return is all self-service. Vehicles can be rented for a short period (minutes or hours) or by the day. Day rentals are often comparable to charges made by traditional car rental organisations. Car share members have been pre-approved to drive (with checks on driver's licences and a method of payment in place).

Car sharing programs offer a fleet of cars which are made available to individuals or businesses who can sign up to a membership. Members can book a vehicle that is located nearby for a short time, with the cost calculated on the period of time the car is used and the trip distance. Fuel costs are included in the rates. The vehicle is parked in a dedicated parking spot and returned at the end of the booking.

Car sharing is attractive for those who choose not to buy, or cannot afford a private vehicle or for people who would like occasional access to a vehicle of a different type than they use day-to-day. Car sharing provides flexibility for residents who have chosen to base their travel predominantly on public transport, walking and cycling. Car sharing can also be used by businesses that do not wish to expend significant sums of money on purchasing a vehicle for occasional employee business trips.

Commercial car sharing operations exist in a number of Australian cities, including Sydney, Melbourne, Adelaide and Brisbane.

The experiences of other Australian jurisdictions suggest that car sharing would require effective public-private partnership and strategic forward planning. The success of car sharing companies that operate in other Australian jurisdictions often relies on local councils providing car spaces on the street, in car parks and in the central business district for car sharing vehicles.

Often car sharing facilities are best suited to:

- reserved street parking spaces adjacent to rapid transit corridors, retail and employment centres (for exclusive use by car share vehicles)
- residential high density developments
- commercial office buildings
- shopping centres
- university grounds
- hotels.

Since 31 May 2013, the Parking Code requirements for residential uses in the city and town centres have been changed to allow developers to determine the quantum of parking they will provide (including visitor parking). This means that any development including a residential component may provide as much or as little on-site parking as they decide, including the possibility of none at all.

The objectives of a car share policy in the ACT could include the following.

- Reduce greenhouse gas emissions: The vehicles in a car share fleet are typically new cars and are more efficient than the average household vehicles. An ACT car sharing policy should take the opportunity to encourage operators to use electric vehicles or most fuel efficient vehicles for their fleets. Car share drivers typically plan and book a vehicle in advance. Consequently, those who car share generally make fewer and shorter trips than households that use their private vehicles.
- Use street parking more efficiently: Growing demand for resident parking is impacting on the available kerbside parking space. Car sharing is a more efficient use of parking space, allowing single vehicles to be used frequently by residents in the local neighbourhood/unit complexes. This could result in slowing the demand for private vehicle holdings.
- Support the city's economy: Many businesses, especially small businesses, operate in neighbourhoods with limited off street parking and high parking costs. Use of shared vehicles (including vans) could be a realistic option for businesses.



- Contribute to greener buildings by offering parking requirement offsets for property developments which have a green plan.

It has been demonstrated that car sharing is more viable in denser, inner-city suburbs with good public transport, and short journeys to major centres, particularly where car owners must park in the streets or in nearby parking-garages. It is less viable in lower density, outer-suburbs with poor public transport, longer journeys, and undercover parking with most houses. The challenge for Canberra is that most parts of the city lack the high density residential and business development required to make car sharing viable. The general rule of thumb for car sharing to be viable is 23 members per car living or working within a 250 metre distance of where the vehicles are parked. For example, precincts in and around the City, the Australian National University, University of Canberra and the Belconnen Town Centre may have the potential for a car sharing program.

Option 7 - Carpooling program

Support carpooling businesses to enable people to share their vehicles with others who are travelling to similar destinations at similar times, which will reduce the number of cars on the road and so reduce emissions.

Carpooling can be defined as two or more people, usually heading to the same destination, travelling together by car for all or part of a journey. Carpooling for commuting journeys makes good sense because many people travel between their home locations to common work locations and vice versa, over relatively similar time periods (generally during the peak hours). The decision to participate in a carpooling arrangement is voluntary and the members of a carpool group can choose to pool occasionally or daily. It is usual for the participants to agree on a set of arrangements, which can include sharing the costs of the journey (such as petrol, parking). One person may always be the driver or the driving can be shared.

Carpooling contributes to a decrease in emissions by reducing the number of cars on the road and encouraging higher numbers of people per vehicle. Single occupant vehicle use contributes to increased traffic congestion, extra carbon emissions and demand for parking.

The ACT is the first state or territory government to pilot a whole-of-government carpooling scheme in Australia. Rideshare was a pilot project launched in June 2012. Staff could access a simple online web based system that allowed them to connect with others travelling on similar routes to and from work. A review of the pilot project is currently being undertaken.

Option 8 - Green driving program

Support and promote green driving techniques to encourage motorists to drive efficiently and reduce fuel consumption and emissions.

In recent years, the concept of 'Green driving' (driving in ways that reduces fuel consumption, greenhouse gas emissions and accident rates) has gained popularity. The main elements of Green driving are gear changing or driving at low RPMs (revolutions per minute), maintaining a steady speed, smooth deceleration and acceleration, anticipating traffic flow, frequently monitoring tyre pressure and using air conditioning only when necessary. Where entities have an operational need to provide staff with driver training, consideration should be given to courses containing aspects of Green driving. Green driving could also be included in driver training and road ready programs.



4. Evaluation

Following the consultation period, feedback received from the community along with an analysis of the merits of the options will be evaluated to develop the LEVS.

The options will be evaluated against the following criteria:

- emission reduction potential
- likely cost to government/community
- timeframe
- implementation complexity – level of change and support required to successfully implement the policy, including regulation/legislation changes, process and data systems, resourcing, and synergy with other government objectives.
- level of co-benefits – the level of synergy with other government policies or agendas, and whether the measure results in other non-priced public good benefits (e.g. road safety, public health, energy security).





5. Consultation

The ACT Government encourages members of the public to provide comments on the ideas contained in this discussion paper.

The options included in this paper are not all-inclusive and members of the public are also encouraged to provide any additional ideas for consideration.

To help guide community feedback a series of questions has been posed. You may respond directly to the questions posed or provide other comments you consider relevant. You do not need to address all of the questions. Any proposed options will be subject to government decisions.

5.1 Consultation questions

Option 1 Revised Green Vehicle Duty Scheme

Should the ACT Government continue to use concessions to duties to increase purchase rates for new, low emission vehicles? Please explain your answer.

If you answered yes, how could the Green Vehicle Duty Scheme be modified to make you more likely to buy a low emission vehicle?

Option 2 Green vehicle registration scheme (fee discounts)

Should the ACT Government continue to discount registration costs to increase purchase rates and use of low emission vehicles? Please explain your answer.

Option 3 Travel time and convenience options

Would an incentives program that could cut travel time and increase convenience (for example, use of transit lanes) be effective in promoting the use of low emission vehicles?

What other incentives would you like to see? Please explain your answer.

Option 4 Conversion grants for heavy vehicles

Should the ACT Government offer grants to operators of heavy vehicles in the ACT to convert to low emission fuels? Please explain your answer.

Option 5 ACT Government sustainable fleet strategy

The ACT Government is converting its fleet to low emission vehicles, unless prevented by operational requirements. Is this an effective way to encourage the purchase of low emission vehicles?

Please explain your answer.

Would the ACT's leadership in this field influence you as an individual to buy a low emission vehicle?

Option 6 Car sharing program

How can the ACT Government and businesses support commercial car share (short term rental) in the ACT?

Would car sharing be an attractive alternative to car ownership for you personally?

Option 7 Car pooling program

How can the ACT Government support car pooling in the ACT?

Option 8 'Green driving' program

Would education about 'green driving' initiatives, which help drivers lower their emissions, be effective?

If so, when and how can drivers be supported in learning green driving techniques?

Other

Do you have any other ideas for promoting the purchase and use of low emission vehicles or reducing vehicle emissions in the ACT? Please explain your answer.

Do you have any other comments on this discussion paper?



5.2 How do you make a submission?

Submissions can be provided via:

Email: TransportPlanning@act.gov.au

Post: Low Emission Vehicle Strategy discussion paper
Transport Planning, Environment and
Sustainable Development Directorate
GPO Box 158, Canberra City ACT 2601

It would be appreciated if the following guidelines could be used:

- There is no fixed format or length for your submission.
- You may use your submission to convey facts and opinions or to make arguments or recommendations.
- It would be appreciated where submissions are more than 4 pages that a summary of the issues is raised in the introduction at the start of sections.

The ACT Government is unable to assist with any costs incurred by individuals or organisations in preparing their submission.

5.3 Are submissions authenticated?

Anonymous submissions or comments will not be accepted. To enable your submission to be authenticated you should include details of:

- your name and address and (if available) your email contact
- whose views you are representing. If you are writing on behalf of an organisation, you should clearly identify it and the position of authority within that organisation that you occupy.

A submission may be rejected if it:

- is deemed to fall outside the scope of the LEVS discussion paper
- is purporting to be on behalf of an organisation, the authenticity of which cannot be reasonably established or
- contains potentially defamatory statements about named individuals or organisations.

5.4 What will happen to your submission?

All submissions will, subject to confirmation of authenticity, be considered in preparing the LEVS. All submissions received will be acknowledged. Submissions will be displayed on the Environment and Sustainable Development Directorate website. Submissions will not be returned.

5.5 What if your submission is confidential?

You may indicate in your submission that you consider matters raised within the text to be 'Confidential' or 'Commercial-in-Confidence'. You should clearly mark the top of each page of your submission to this effect. You should also provide a statement or explanation as to why the information may be confidential or why your views should not be subjected to public scrutiny.



6. References

ABS (Australian Bureau of Statistics)

ABS 2012, *Motor vehicle census, Australia*, 31 January 2012, Catalogue no. 9309.0, ABS, Canberra, www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/9309.031%20Jan%202012?OpenDocument

2006, *Australian social trends*, July 2006

2011a, *Household expenditure survey for 2009-10*, September 2011

2011b, *Survey of motor vehicle use*

ACT Green Vehicle Duty Scheme

<http://www.rego.act.gov.au/registrations/regogreenvehschm.htm>

BITRE (Bureau of Infrastructure, Transport and Regional Economics)

2010, *Long-term projections of Australian transport emissions: Base case 2010*, prepared for the Department of Climate Change and Energy, Efficiency, www.climatechange.gov.au/publications/projections/~media/publications/projections/bitre-transport-modelling-pdf.pdf

2012, *Traffic growth in Australia*, Report 127, Canberra

NTC (National Transport Commission)

2012, *Carbon dioxide emissions from new Australian vehicles 2011*, information paper, March 2012, www.ntc.gov.au/filemedia/Reports/C02EmissionsNewAustVeh2011InfoPa.pdf

2013, *Carbon dioxide emissions from new Australian vehicles 2012*, information paper, March 2013, www.ntc.gov.au/filemedia/Reports/C02EmissionsNewAustVeh2012InfoPa.pdf

<http://www.rego.act.gov.au/registrations/regogreenvehschm.htm>

Endnotes

1. www.rego.act.gov.au/aboutus/concessionsinfo.htm
2. *Mitigating transport's climate change impact in Scotland: assessment of policy options*, Atkins, University of Aberdeen Scottish Government Social Research 2009
3. Binns C 2013, *Sustainable Fleet Programs - Just Make it Happen*, presentation at the Cars of tomorrow 2013 conference, 14 March 2013