ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS
REGULATORY IMPACT STATEMENT

ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS

EPA Victoria
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FOREWORD

The motor vehicle is an important part of Victoria’s social and economic landscape. It provides us with a high degree of personal mobility and is critical to the movement of goods and delivery of a variety of services across the State.

However, these benefits come at a cost. The motor vehicle is also a significant source of emissions of air pollutants and noise, which affect the health and lives of many Victorians.

Although motor vehicles are much cleaner and quieter than they once were, reducing emissions of air pollutants and noise from the vehicle fleet remains one of the most important environmental management issues in Victoria. This is particularly so as motor vehicle travel in the State is increasing as population and economic activity increase, and the turnover of trucks and cars in the Australian vehicle fleet is slow compared with other member countries of the Organisation for Economic Cooperation and Development (OECD).

The Environment Protection (Vehicle Emission) Regulations are a key component of Victoria's statutory framework for protecting the community from vehicle emissions and noise. They provide this protection by setting emission and noise standards for vehicles and standards for petrol, and by establishing a series of offences for modifying and tampering with vehicle fuel, emission control and noise control systems. The regulations also provide the basis for important EPA programs such as the public reporting of smoky vehicles.

The regulations have been reviewed and these draft regulations and accompanying draft regulatory impact statement have been developed for public comment. The review has taken into consideration a variety of important developments at the national level, including the introduction of Commonwealth fuel quality standards and the setting of in-service vehicle emission standards for diesel vehicles.

I encourage you to read the draft regulations and regulatory impact statement and make a submission.

Submissions can be made to:

The Project Manager

Vehicle Emissions Regulations Review

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Alternatively, you may wish to send an e-mail to the following address: draftregs.vehicles@epa.vic.gov.au

Closing date for submissions is 13 January 2003.

Mick Bourke

Chairman
EXECUTIVE SUMMARY

The current Environment Protection (Vehicle Emissions) Regulations 1992 (the existing regulations) set the requirements, standards and offences relating to vehicle emissions. They provide the basis for EPA Victoria’s enforcement and testing programs including the smoky vehicle reporting program, and the noisy vehicle testing program.

The existing regulations are due to sunset on 1 February 2003. A review has been undertaken resulting in the development of new draft regulations, which are the subject of this Regulatory Impact Statement (RIS).

The draft regulations take into account many developments in the vehicle emissions and fuels areas that have occurred in Victoria and Australia since 1992. These changes include the introduction of Commonwealth fuel standards, the setting of diesel vehicle in-service (emissions from all vehicles operating on the roads) standards and the setting of summer petrol volatility limits in other jurisdictions.

The draft regulations seek to:

- reflect EPA Victoria’s role with in-service emission control;
- update the stationary noise test procedures;
- update the vertical exhaust requirements for diesel vehicles;
- modify construction and labelling requirements for vehicles;
- update unleaded fuel requirements;
- introduce new summer petrol volatility standards;
- introduce petrol reporting requirements; and
- update the general requirements.

Due to the slow turn-over of the vehicle fleet, the average age of Australian vehicles is relatively high. As such, the impact of new vehicle emission standards is restricted by their penetration into the vehicle fleet. In-service emission controls can therefore have major environmental benefits. The draft regulations include a ‘10-second smoke rule’ as well as setting out anti-tampering requirements on vehicle emission control and fuel systems. The draft regulations also incorporate diesel vehicle in-service emission standards.

The draft regulations introduce the national stationary noise test method. This method is fundamentally the same as the existing test method used by EPA officers, but will provide national consistency and will allow for some minor administrative improvements.

The existing regulations required vertical exhausts to be fitted to all diesel vehicles above 4.5 tonnes, unless specifically exempted. However, no exemption could be granted to individual vehicles or classes of vehicles. For
example, farm trucks carting hay are not exempted in the existing regulations, and must operate with a vertical exhaust despite claims from farmers that this could pose a potential fire risk.

The draft regulations allow individual vehicles and classes of vehicles to be exempted from the requirement as needed. In addition, a number of vehicle classes have been included in the list of exempted classes. These include hay carting vehicles and new diesel vehicles complying with the new ADR 80/01 diesel vehicle emission standard.

While the existing regulations require the labelling of vehicles operating on unleaded petrol, this is no longer required at a Commonwealth level. The draft regulations remove this requirement to ensure consistency with national labelling requirements.

Petrol volatility limits have been used around Australia and the world to help limit emissions of volatile organic compounds. These compounds are precursors to smog formation, particularly in the summer months.

The draft regulations propose the phased introduction of petrol volatility limits that will apply from November to March each year. To allow for sufficient investment time and harmonisation with the investment required for Commonwealth fuel standards, the draft regulations propose a three-step phase-in.

In 2003-04 the volumetric average across petrol grades will be limited to 70kPa, in 2004-05 the volumetric average will be 67kPa and in 2005-06 the limit will be 62kPa. There will be a maximum cap of +2kPa above the volumetric average limit.

Commonwealth fuel standards limit the benzene content of petrol to 1 per cent from 2006. It is recognised that the investment required to meet this standard requires long term planning, and there is little that can be done to bring forward the supply of low benzene petrol from local producers. However, benzene is recognised as a significant pollutant, and the draft regulations require reporting on the average benzene content in each grade of petrol. This will allow EPA to monitor the amount of benzene in fuel and the potential health and environmental issues associated with benzene.

The existing regulations place restrictions on the fitting, interference or modification of vehicle components that result in an increase in the rate of discharge of noise and emissions. These restrictions have been fundamental to EPA’s enforcement program, and are retained, with minor changes, in the draft regulations. The minor changes relate to wording changes to clarify the onus of responsibility onto the people fitting new exhaust systems.

The benefits and costs of the draft regulations have been assessed in this RIS, as well as those of alternative options including remaking the existing regulations with no changes and making the regulations without the summer petrol volatility controls and benzene reporting requirements. The assessment of the benefits and costs have been made against the base case of no regulations (that is, allowing the existing regulations to lapse and not be replaced).
The closing date for submissions on the draft regulations and RIS is 13 January 2003. EPA will be consulting with various stakeholders during the public comment period and welcomes all submissions on the draft regulations and RIS.
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ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS

1. BACKGROUND

1.1. Introduction

The Environment Protection Act 1970 (the Act) establishes the Environment Protection Authority (EPA); defines its powers duties and functions; and contains a range of instruments or tools that are used by EPA to prevent pollution, wastes and risks to the environment. The Act enables regulations to be made prescribing emission and noise standards for vehicles and standards for petrol.

Currently the Environment Protection (Vehicle Emissions) Regulations 1992 (the existing regulations) are the instrument where these standards and test methods are detailed. The existing regulations also establish a series of offences.

The existing regulations will sunset (that is, cease to exist) on 1 February 2003 in accordance with the Subordinate Legislation Act 1994.

Since the development of the existing regulations, a number of significant developments have occurred in the area of vehicle emissions and fuel quality. These include the introduction of Commonwealth fuel standards and the setting of in-service vehicle emission standards for diesel vehicles.

A review of the existing regulations has recently been undertaken resulting in the development of proposed new regulations that are the subject of this RIS. These draft regulations are called the Environment Protection (Vehicle Emissions) Regulations. This Regulatory Impact Statement (RIS) assesses proposed Environment Protection (Vehicle Emissions) Regulations, which set standards and test methods for motor vehicle air and noise emissions and fuel standards that are applicable under the Environment Protection Act 1970.

1.2. Statement of Objectives

The objective of the proposed Environment Protection (Vehicle Emissions) Regulations is to minimise the impact of motor vehicle emissions, noise and fuel quality on Victorians and the Victorian environment.

1.3. The Role of the Existing Environment Protection (Vehicle Emissions) Regulations

The existing regulations aim to limit the impact of motor vehicles in relation to air quality and noise through the use of the following tools:

- prescribing standards for noise and exhaust emissions;
- definition of petrol quality parameters;
- setting construction, maintenance and labelling requirements including the need for vertical exhausts for certain motor vehicle classes and the requirement for suitable maintenance of emission control equipment;
- setting requirements for the sale of and operation of vehicles on unleaded petrol;
- prescribing measurement methods for the noise and vehicle emission standards specified; and
- establishing offences relating to modification and tampering with vehicle...
fuel, emission control and noise control systems.

These tools provide EPA roadside officers with the means to test vehicles for noise, tampering and emission faults. The existing regulations also enable the spotting of smoky vehicles by EPA, VicRoads and police officers via the ‘10 second smoke rule’.

1.4. The Review of the Existing Environment Protection (Vehicle Emissions) Regulations

The existing regulations were originally due to sunset in early 2002, but that date has been extended to early 2003. This extension was necessary to ensure that the results of a number of important national processes, including the development of new fuel standards and the National Environment Protection (Diesel Vehicle Emissions) Measure (the diesel NEPM) could be considered in the development of the proposed regulations.

EPA factored these national developments into the review it conducted of the existing regulations. This review has resulted in the development of new draft regulations. The proposed regulations aim to minimise the impact of vehicle emissions, noise and fuel quality on the environment through the adoption of updated standards and test methods.

EPA also considered changes that were made to the Act over the life of the existing regulations and the development of the State environment protection policy (air quality management).

The review was undertaken in accordance with EPA’s Protocol for the Development of Regulations and the Preparation of Regulatory Impact Statements (the RIS protocol). The process included the release of a draft development plan which proposed the process to be undertaken in the review. This plan was distributed to key stakeholders for comment.

Following feedback, a finalised development plan was released with a background paper, which discussed specific issues for consideration by key stakeholders. In addition to these documents, EPA held a number of face-to-face meetings with stakeholders to discuss issues relating to the existing and proposed regulations.

1.5. The RIS Protocol

The review of the existing regulations is being conducted in accordance with EPA’s RIS protocol. The protocol was developed by EPA in late 1995 in consultation with the Australian Chamber of Manufacturers (now the Australian Industry Group) and representatives from the environment movement, academia and industry.

The RIS protocol is designed to complement the requirements of the Subordinate Legislation Act 1994 and associated guidelines. The RIS protocol sets out processes which EPA will follow in preparing regulations and associated RISs by detailing:

- consultation methods for EPA to obtain the views of industry and community groups;
- impact assessment techniques for EPA to assess the environmental, social and economic benefits and costs of proposed regulations; and
- criteria to help EPA choose which techniques are appropriate in any given case.
In accordance with this protocol, EPA prepared a draft development plan which outlined the proposed impact assessment techniques and consultation program for the review. The draft development plan was distributed for comment in December 2001 to key government, community, industry and environmental representatives.

EPA received 10 comments on the draft development plan. A final development plan was then prepared and distributed to stakeholders, and has been used by EPA to guide the review, including the preparation of this RIS.

1.6. Background Paper

In April 2002, EPA released a background paper as a way of facilitating further stakeholder comment. The background paper outlined some key issues concerning the existing regulations and identified various options, with the aim of facilitating discussion with interested stakeholders prior to the development of draft regulations and this RIS.

Just as with the development plan, the background paper was circulated for comment to key government, community, industry and environmental representatives.

EPA received 11 written responses. During this time, EPA also undertook a number of consultative meetings with various stakeholders, during which further feedback was received.

1.7. Development of the draft Regulations and RIS

Following the close of comments on the background paper, EPA began developing draft regulations. During this time, EPA continued to meet with interested stakeholders to seek their views.

In addition, EPA met with NSW EPA to discuss its approach to a number of issues, particularly vertical exhausts and the control of petrol volatility (measured as Reid Vapour Pressure - RVP).

1.8. Results of Preliminary Consultation

The outcomes of preliminary stakeholder consultation prior to the release of the proposed regulations and this RIS are outlined below. The conclusions drawn from the consultation undertaken have been used to shape the proposed regulations.

General support was expressed for the philosophy of the existing regulations including the need to effectively control the in-service emissions of motor vehicles (that is - emissions from all vehicles operating on the roads), which in turn contribute to broader air quality improvements.

There was also general support expressed for the introduction of a more flexible exemption mechanism from the requirements for a vertical exhaust under certain circumstances. A number of stakeholders also expressed support for a clarification of the legal onus on aftermarket suppliers of vehicle components, including mufflers.

A number of submissions detailed support for the introduction of state based fuel standards where Commonwealth fuel standards are silent on an issue. These submissions also highlighted that any standard introduced should take into account investment lead times and phase in options.
Finally, there was general support for the adoption of national test methods, rather than reproducing them in full in the regulations.

In light of the above stakeholder views, the focus of these regulations is on aligning with national standards where appropriate and addressing areas where these national standards do not adequately address the needs of environment protection in Victoria.

2. A DESCRIPTION OF THE FOUR OPTIONS

Four options were considered during the review. These options were to:

- change the existing regulations - involving the introduction of new requirements (including new petrol standards and reporting requirements) and/or the elimination of some existing ones;
- remake the existing regulations with no changes;
- change the existing regulations - involving the introduction of new requirements (excluding new petrol standards and reporting requirements) and/or the elimination of some existing ones; or
- allow the existing regulations to lapse without replacement.

2.1. The Focus of This Review

Before proceeding, it is worth noting the direction provided in guidelines issued under the Subordinate Legislation Act 1994 that detailed development of policy options that are later shown to be unrealistic should not be undertaken.

As such, EPA has directed most of its resources during this review to assessing the benefits and costs of the proposed regulations.

2.2. Change the Existing Regulations - Introduce New Requirements (Including New Petrol Standards and Reporting Requirements) and/or Eliminate Some Existing Ones

Under the first option (which EPA is recommending as the preferred option), the regulations would be remade. Specifically, the proposed regulations would seek to:

- update vehicle emission standards and test requirements to reflect EPA Victoria’s role with in-service emission control;
- update vehicle stationary noise test procedures in line with the National Stationary Exhaust Noise Test Procedures for In-service Motor Vehicles;
- update vertical exhaust requirements for diesel vehicles to include new classes of exempt vehicles and an exemption application process;
- modify the requirements for vehicles to be constructed and labelled to operate on unleaded petrol;
- update the section dealing with the maintenance of unleaded fuel requirements;
- introduce new petrol standards, offences and reporting requirements; and
- update general requirements.
The proposed regulations would remove the new vehicle emission standards and test methods as these are already covered in other Victorian legislation and enforced by other State and Commonwealth government departments. EPA Victoria has a clear role in ensuring good emissions performance from the in-service vehicle fleet and national in-service standards for diesel vehicles will be introduced in the proposed regulations. These in-service standards were developed through statutory processes that involved extensive consultation across the country.

Unlike the existing regulations, where both the new vehicle test methods and standards are fully reproduced, the proposed regulations would adopt the in-service diesel test method. This test method is widely available and there appears to be little benefit in reproducing it in full in the new regulations. This also allows for the regulations to be updated more easily when new test methods are introduced, allowing for a more up-to-date and therefore useful document.

This option would also take into consideration issues raised by stakeholders during preliminary consultation, such as the value of introducing a case-by-case exemption process for the vertical exhaust requirements, introducing state based controls on certain petrol parameters and clarifying the onus to fit legal equipment on aftermarket vehicle exhaust and engine control system suppliers.

The unleaded petrol standards in the existing regulations will be updated to reflect changes at the Commonwealth level and new Victorian specific standards such as RVP will be introduced. The requirement to construct a vehicle to operate on unleaded fuel will be removed. Since 1 January 2002 leaded fuel has not been available for general sale in Australia and this requirement is no longer relevant.

2.3. Remaking the Regulations with No Changes

Under the second option (Alternative 1), EPA would simply remake the existing regulations. This would maintain the regulatory framework that currently exists and would allow EPA’s activities to continue as they have since 1992.

This option would not allow for feedback received during preliminary consultation on the need to introduce an exemption mechanism for the vertical exhaust requirements, the need for State based controls on certain petrol parameters and clarification of the onus to fit legal equipment on aftermarket suppliers of exhaust and engine control systems.

In addition, the standards and test methods for vehicle emissions and noise would be out of date and the regulations would not reflect EPA Victoria’s role in addressing in-service emissions from vehicles. This would lead to a document that was difficult to understand and use. For these reasons, this option is not preferred.
2.4. Change the Existing Regulations- Introduce New Requirements (Excluding New Petrol Standards and Reporting Requirements) and/or Eliminate Some Existing Ones

Under the third option (Alternative 2), EPA would undertake a similar review to the preferred option, but would not include summer RVP limits. This would allow many administrative changes to be made, but would not include the potential air quality benefits flowing from summer RVP limits.

This review would include a more flexible exemption process from the vertical exhaust requirement (allowed through the Environment Protection (Enforcement and Penalties) Act 2000). This would be in line with some of the feedback received during initial consultation.

In addition, this option would include the updating of standards and test methods to reflect EPA’s role with in-service emission control, the removal of obsolete sections of the existing regulations and would clarify the onus on aftermarket suppliers of exhaust and engine control systems to fit appropriate noise reducing equipment.

This option would not allow the introduction of summer RVP limits, which are expected to provide significant reductions in evaporative emissions of volatile organic compounds (VOC’s). These compounds are pre-cursers to photochemical smog, and as such have the potential to strongly influence air quality, particularly in summer. For this reason, this is not a preferred option.

2.5. Allow the Regulations to Lapse Without Replacement

Under the fourth option (Alternative 3), EPA would allow the existing regulations to sunset and no replacement regulations would be prepared.

Under this option, new national vehicle emission standards will continue to be required, as these are adopted under VicRoads legislation. In addition, the requirement for vertical exhausts to be fitted to diesel vehicles above 4.5 tonnes would be removed.

Under this option there will no longer be any control on in-service vehicles and no means to control tampering and the fitting of illegal engine components. This would result in increased pollution and noise from vehicles on the road.

In addition, the smoky vehicle enforcement program that has successfully run at EPA for many years would no longer be able to operate. The removal of these programs to minimise emissions from in-service vehicles would lead to poorer air quality, leading to increased health and environmental impacts and increased amenity problems through smoky and noisy vehicles.

Finally, motor vehicle owners and operators would still have a general duty to comply with the Environment Protection Act 1970 and to avoid causing pollution. In the absence of any regulations, motor vehicle owners and operators would need to make their own judgements about what constitutes acceptable environmental performance of their vehicles. Allowing the regulations to sunset removes the legal clarity and certainty for people. For these reasons, this option is not preferred.
3. EXPLANATION OF THE PROPOSED REGULATIONS

This chapter provides an explanation of the proposed regulations. The benefits and costs of the proposed regulations are discussed in detail in the following chapter.

3.1. Scope of the proposed regulations

The proposed regulations will replace the existing Environment Protection (Vehicle Emissions) Regulations 1992 (the existing regulations). The existing regulations will be revoked. The proposed regulations prescribe standards for road vehicles and petrol that must be achieved under the Environment Protection Act 1970.

Specifically, the proposed regulations seek to:
- update vehicle emission standards and test requirements to reflect EPA Victoria’s role with in-service emission control;
- update vehicle stationary noise test procedures in line with the National Stationary Exhaust Noise Test Procedures for In-service Motor Vehicles;
- update vertical exhaust requirements for diesel vehicles to include new classes of exempt vehicles and an exemption application process;
- modify the requirements for vehicles to be constructed and labelled to operate on unleaded petrol;
- update the section dealing with the maintenance of unleaded fuel requirements;
- introduce new petrol standards, offences and reporting requirements; and
- update general requirements.

These changes are discussed in more detail in this chapter.

3.2. Update Vehicle Emission Standards and Test Requirements

3.2.1. New Vehicle Standards

The existing regulations detail emission standards and test requirements for new vehicles built between 1972 and 1992. These standards and test methods are effectively a full reproduction of the Australian Design Rule (ADR) emission requirements that existed during this period.

These standards and test methods were used at the time by EPA to audit new vehicles that were being sold in Victoria. This auditing function was designed to ensure that new vehicles entering the market were indeed meeting the standards they claimed to be meeting. EPA carried out this auditing function at its Altona Vehicle Testing Station, which was set up to undertake full ADR compliance tests.

Emission standards for new vehicles are set at a Commonwealth level through the Department of Transport And Regional Services (DOTARS). In Victoria, these Commonwealth requirements are picked up via the Road Safety (Vehicle Standards) Regulations 1999, administered by VicRoads.

To ensure that vehicles meet the required ADRs, DOTARS regularly undertake audits of new vehicles and vehicle construction facilities. Given the Commonwealth activity in this area of new vehicle standards, there is clearly limited need for EPA Victoria to continue to monitor compliance with new vehicle standards. As a result, the proposed
regulations no longer contain standards for new vehicles.

It is important to clarify the role of State and Commonwealth Government and ensure that the full spectrum of vehicles (both new and in-service) receive the necessary attention to ensure environmental impacts from motor vehicle are minimised. EPA Victoria has always had a key role in controlling in-service vehicle emissions, and the effectiveness of the Commonwealth activities on new-vehicles will allow EPA to strengthen its focus in the in-service sphere.

3.2.2. In-service Emissions

As other parties are undertaking the auditing of new vehicles, EPA has been able to concentrate its efforts on the control of in-service vehicle emissions. The local vehicle fleet has an extremely slow turn-over rate compared with other OECD countries. The average age of the local fleet is about 11 years. As a result of this low turn-over rate, new vehicle standards take some time to have a beneficial impact on the air pollution from the fleet. Greater immediate gains in air pollution reduction can be achieved by improving the performance of the in-service fleet.

A study undertaken by the Federal Office of Roads Safety, with help from EPA, provided a graphic demonstration of the importance of controlling in-service emissions from vehicles. The report of this study, *Motor Vehicle Pollution In Australia* published in 1996, noted that tuning the existing in-service fleet would achieve a reduction in hydrocarbon emissions ten times greater than if all new cars sold emitted no pollution what so ever. As a result of this shift in focus to in-service vehicles, it is necessary for the proposed regulations to focus on in-service emission standards, test methods and requirements.

3.2.3. In-service Emission Standards

In June 2001, the National Environment Protection Council passed the diesel NEPM. This NEPM sets out five guidelines that jurisdictions can use to address diesel vehicle in-service emission problems. These guidelines include how to set up a smoky vehicle reporting program using the ‘10 second smoke rule’ (which the existing regulations already contain) and how to utilise in-service emission standards to help improve the performance of the in-service fleet through different auditing programs.

In order to support the diesel NEPM guidelines, in-service emission standards and a new test method for diesel vehicles were developed. These standards and the test method will be important in any future program EPA Victoria introduces to test for poorly maintained diesel vehicles and have been included in proposed regulation nine.

These emission standards are designed to detect vehicles that have been poorly maintained across their life. The test for these standards, known as the DT80 test, is undertaken on a chassis dynamometer and involves a simple series of accelerations to 80km/hour, then braking to standstill and then a period of sustained travel at 80km/hour.

The in-service standards are currently set out in ‘example’ legislation at a national level, and consequently must be reproduced in full to give legislative effect to these standards in Victoria. The proposed regulations provide the most appropriate
instrument in which to reproduce these standards and thereby incorporate them into Victorian law.

3.2.4. Other In-service Controls

The existing regulations currently support EPA’s programs to improve the performance of the in-service fleet. These programs include the smoky vehicle reporting program (using the 10-second smoke rule), education and awareness campaigns and roadside blitzes of the ‘anti-tampering’ requirements.

In recognition of the importance of EPA’s smoky vehicle spotting program, the 10-second smoke rule will be retained in proposed regulation seven. An exemption for two-stroke vehicles built before 1977 that is in the existing regulations will be retained. Vehicles that fit into this category are relatively rare and are often owned by motoring enthusiasts who look after their vehicles and maintain their engines well.

The anti-tampering requirements (proposed regulations 13, 14, 15, 18, 19, 20, 21, 22 and 23) will remain fundamentally the same as the existing regulations. There will be some minor wording modifications to ensure their intent is clear and that the proposed regulations are easier to understand.

3.3. Update Stationary Noise Test Procedures

Vehicle noise is recognised as an issue of high public concern. The existing regulations specify stationary noise standards and test methods for various classes of vehicles. These test methods and standards are used by EPA Victoria roadside officers for enforcement action against excessively noisy vehicles.

In the past, jurisdictions had differing approaches to testing vehicles. This variation between jurisdictions did not provide vehicle manufacturers and owners with certainty. In an attempt to address these variations, the National Stationary Exhaust Noise Test Procedures for In-Service Motor Vehicles were developed in early 2000 following extensive national consultation including government, industry and community stakeholders.

While the national test procedures are essentially the same as the method detailed in the existing regulations there are some differences in wording. As such, proposed regulation 10 adopts these new methods to ensure national consistency in procedures, as other jurisdictions have already adopted the procedures.

There is currently a review underway at the national level into the noise standards for vehicles. This review is investigating the future direction for noise standards, test equipment and has had two rounds of public comment to date in 2001 and 2002. The final standards are not expected to be finalised until early 2003 and will not come into force until 2005 at the earliest. Therefore they cannot be incorporated into the proposed regulations at this time and will have to be introduced at a later stage.

3.4. Update the Vertical Exhaust Requirement for Diesel Vehicles

The existing regulations require diesel vehicles with a gross vehicle mass greater than 4.5 tonnes to have a vertical exhaust pipe unless it is specifically listed in an exempt category. The primary function of the vertical exhaust requirement in proposed regulation 11 is designed to achieve good dispersion of diesel
exhaust emissions, minimising the direct impact of the exhaust on pedestrians and other road users.

When the existing regulations were developed, EPA was unable to grant case-by-case exemptions from the vertical exhaust requirements. However under the Environment Protection Act 1970, as amended by the Environment Protection (Enforcement and Penalties) Act 2000, EPA now has the ability to introduce a flexible exemption granting process. Proposed regulation 12 will introduce this flexible exemption granting process for individual or classes of vehicles and vehicle uses on a case-by-case basis.

In addition to introducing the power to grant case-by-case exemptions from the vertical exhaust requirements, the proposed regulations updates the list of exempt classes. One of the focuses for the update will be the exemption provision in the existing regulations that apply to the State Electricity Commission of Victoria (SECV). The SECV was privatised and disbanded many years ago and this provision is obviously out of date. It will be updated to provide a similar exemption to the companies that now undertake the work of the former SECV.

In addition to these wording changes, the proposed regulations will bring the height requirements of the exhaust in-line with the model national legislation for vertical exhaust systems. This will remove a mandatory exhaust height above ground and instead require the exhaust to be at least 150mm higher than the highest point of the vehicle cab.

3.4.1. Farm Vehicles Carting Hay

Over the years, EPA has regularly received requests from individual farmers and the Victorian Farmers Federation for exemption from the vertical exhaust requirements. This request for exemption relates to the activity of hay transport and the potential fire risk involved.

Some farmers feel that hay is exposed to increased fire risk from sparks emitted from the exhaust of their trucks if they have a vertical exhaust. There is also concern raised about the placement of hay next to a hot vertical exhaust pipe.

While there are a number of ways of minimising the fire risk from vertical exhausts when carting hay, including the proper covering of hay with flame shielding canvas, it is acknowledged that this remains an issue of concern for some farmers. Discussions held with the Victorian Farmers Federation in recent years have resulted in a proposal that there should be an allowance for farm trucks which are used for carting hay to be exempt from this requirement. This exemption is set out in proposed regulation 11.

The exemption will be linked to primary producer registration requirements under the Road Safety (Vehicles) Regulations 1999 to ensure that the trucks exempt are used solely in the business of farming. As the objective of the vertical exhaust requirements are to protect people in built up areas from the impact of diesel exhaust, and trucks predominately used for carting hay are generally used in country areas, such an exemption is reasonable.

However the exemption will only apply to vehicles that are primarily used to cart hay, and will not be a general exemption for any truck owned by a primary producer. This is in recognition of the fact that the exemption is granted because of the risk of hay fires, and that vehicles owned by primary producers...
do come into built up areas including regional centres and metropolitan Melbourne from time to time.

3.4.2. Imported Trucks

New Commonwealth vehicle emission standards introduced in Australia beginning in 2002-03 and continuing in 2006-07 will harmonise with the Europeans ‘EURO’ standards. EPA Victoria has received requests from some truck importers to waive the vertical exhaust requirement for vehicles that meet the EURO 3 and EURO 4 standards (legislated under ADR 80/00 and 80/01 respectively).

The vertical exhaust requirement only exists in Victoria and New South Wales and is not required under the EURO standards. A vertical exhaust requirement was introduced during the 1970s to help improve dispersion of vehicle emissions at a local level. Between the 1970s and the mid to late 1990s, diesel vehicles in Australia had no emission standards beyond a simple smoke test. This relative lack of standards was combined with Australian diesel fuel having high sulfur levels that in turn led to high emissions of particles and smoke. The vertical exhaust was seen in Victoria and New South Wales as an appropriate method of minimising the local impact of these vehicle emissions.

The ‘EURO’ emission standards will see a significant reduction in emissions over the current standards. The ADR 80/00 particle emission standard is about 72 per cent less than the current standard and the ADR 80/01 standard will be a further 80 per cent reduction on top of the ADR 80/00 standard.

While the intent of ADR 80/00 and ADR 80/01 is to harmonise with the EURO standards, flexibility is provided to manufacturers to certify to the US 98 or US 2004 emission standards respectively. It is likely that many heavy truck manufacturers, who are predominately from North America, will follow this path.

Unlike the EURO standards, the particle emission standard does not reduce between US 98 and US 2004. An indicative comparison between the US and EURO standards in Setting National Fuel Quality Standards - Volume 1 show that the US 98 and 2004 particle standards are approximately equivalent to the ADR80/00 standard and are less stringent than the ADR80/01 standard. However, it must be recognised that accurate comparisons between the EURO and US standards are difficult as each use different test cycles.

This lack of improvement between US 98 and US2004 must be weighed against a 57 per cent reduction in NOx (nitrogen oxides) and hydrocarbon emissions between the two standards. Oxides of nitrogen are a direct precursor to photochemical smog formation and are also respiratory irritants. In addition, these heavy-duty vehicles represent only a relatively small proportion of the total fleet, and are likely to be operating most of the time on highways between major cities.

Light to medium rigid trucks are the predominate heavy vehicle operating within cities, and information detailed in the 1999 RIS for the New Australian Design Rules for the Control of Vehicle Emissions suggested that more than 80 per cent of Japanese trucks (the predominate source of light and medium trucks in Australia) were certified to the EURO standards. This is remarkable when it is considered that under ADR 70, certification to the
Japanese emission standard would have been accepted and was widely accepted to be less stringent.

Actual emissions from a vehicle are not solely determined by the emission standards to which it was designed. Other factors, such as maintenance and fuel quality, have a significant impact.

While the ADR 80/00 standards for diesel vehicles to be introduced in 2002-03 represent a significant emissions improvement, the 350 parts per million (ppm) sulfur diesel that is required to meet those standards in Europe is not required in Australia. Instead, the fuel that will be commonly available via Commonwealth standards will be 500ppm sulfur diesel and this will not be commonly available until 2003. As the correct 350ppm sulfur fuel will not be available, the particle emissions improvement expected from ADR 80/00 diesel vehicles will be reduced.

At the time of the introduction of ADR 80/01 emission standards for diesel vehicles in 2006-07, the required 50ppm sulfur diesel will be available across Australia. This will provide certainty that the emission standards listed for these vehicles should be achieved. Proposed regulation 11 sets out the exemption for ADR 80/01 vehicles from the vertical exhaust requirements. This proposal to require ADR 80/00 vehicles to have a vertical exhaust, but to exempt ADR 80/01 vehicles from the requirements is in line with the position legislated in New South Wales subsequent to its regulatory review.

The reduction in fuel sulfur to 50ppm will also have a flow-on particle reduction effect for all vehicles on the road, regardless of their emission standard. This is because fuel sulfur levels have a direct impact on the emission of particles, and a lowering of fuel sulfur from 500ppm to 50ppm is likely to result in a particle emission reduction and will effectively see US 2004 vehicles emitting lower particle levels than US 98 vehicles, despite their identical emission standards.

Vehicle manufacturers have indicated that the vertical exhaust requirement presents an additional cost to vehicles that are imported with horizontal exhausts (generally from Europe and Japan) of between $500 and $750 on light to medium trucks. In addition, vehicle manufacturers claim that the room required for a vertical exhaust can reduce carrying capacity in some circumstances. It has been indicated by truck manufacturers that the European trucks are exported with complete horizontal exhaust and muffler systems that are not used when they arrive in Australia.

These vehicles already undergo significant modification to be sold in Australia including conversion to right hand drive and modifying speedometers. It is understood that truck importers have canvassed the possibility of not having horizontal exhaust systems fitted to the Australian production runs, but this suggestion has not been taken up by overseas manufacturers to date.

If such an agreement did occur, the savings on the horizontal exhaust could help offset the more expensive changes to driver side and speedometers, as well as the cost of the vertical exhaust.

Regardless of any potential off-sets for production costs for ADR 80/00 vehicles, the proposed exemption of ADR 80/01 standard vehicles from the vertical exhaust requirements will provide a saving to the manufacturers over the current situation.
Vehicle manufacturers also indicate that fitting a vertical exhaust will result in poorer engine performance as the engines will need to be detuned, and may still run into heat problems. However, it is understood that Sydney Buses is currently running ADR 80/00 compliant engines with vertical exhausts and is not experiencing significant operating issues from the excessive heat. It would be expected that forward mounted truck engines would experience fewer heat dispersion problems than rear-mounted bus engines.

EPA acknowledges that significant fuel and emission performance improvements have been made since the vertical exhaust requirement was first introduced in the mid to late 1970s. It is felt that the ADR 80/01 diesel emission standard, combined with 50ppm sulfur fuel, provides a high assurance that the emission performance of the vehicles will be maintained and an exemption from the vertical exhaust requirement is appropriate. ADR 80/00 diesel vehicles are unlikely to be able to demonstrate this assurance.

3.5. Modification of the Requirements For Unleaded Fuel

When the existing regulations were made in 1992, both leaded and unleaded fuel was widely available and mis-fuelling was an important issue. Since January 2002 leaded fuel is no longer sold in Australia and therefore this issue is no longer a problem.

The construction of vehicles operating on leaded fuel is not allowed under the Commonwealth emission standards. As a result ADR 41, which required vehicles to be constructed and labelled to run on unleaded fuel, is no longer necessary and has been repealed. As the requirement for construction and labelling under ADR 41 is no longer in existence, the sections in the existing regulations relating to the construction and labelling of vehicles to operate on unleaded petrol are no longer necessary and will be removed.

Proposed regulation 16 details the requirements for pumps dispensing unleaded petrol. This regulation is modified compared with the existing regulations to reflect that leaded petrol is no longer available and lead replacement petrol, or equivalent names, shall be used.

Since the existing regulations were developed in 1992, Commonwealth fuel standards have been developed which specify petrol and diesel fuel standards and their required test methods. The existing regulations define unleaded petrol for the purposes of the Act, and this will be updated in proposed regulation 6 to reflect the Commonwealth fuel standards.

3.6. New Petrol Standards and Reporting Requirements

While many fuel parameters are appropriate to be specified at a national level, the setting of fuel volatility levels is left to individual jurisdictions due to the geographic influence on this parameter. Areas with hotter climates will generally have lower volatility fuels, and the fuel volatility will be increased in the colder seasons to combat problems such as starting cold engines.

While air quality in Melbourne is generally good, there are occasional breaches of ambient air quality standards such as 1 hour and 4-hour ozone...
averages, due to photochemical smog that occurs in summer. Air quality problems such as smog are strongly linked to human health issues such as increased hospital admissions and increases in premature deaths.

High RVP in hotter months leads to higher petrol evaporative losses, which contributes to these summer smog problems. As a result of similar problems, a number of jurisdictions have already legislated to control RVP. Proposed regulation 25 sets limits on RVP to help control summer smog events.

The most obvious way to reduce petrol volatility (which is currently around 70-75 kilopascals (kPa) in summer) is to remove more volatile components from the petrol, generally butane, which has an RVP of around 350 kPa. Butane is one of the main constituents of LPG (Liquefied Petroleum Gas) and can therefore be on-sold, chemically converted to valuable feedstock or used within refineries as an energy source. Victoria has one of the largest LPG vehicle fleets in Australia and is in a good position to utilise this fuel. Selection of appropriate crude supplies can also help in reducing the levels of butane produced, and therefore the RVP of the final petrol product.

In the past, New South Wales set RVP limits via a memorandum of understanding (MOU) with local oil companies. New South Wales is now moving toward regulation due to problems with the effectiveness of the MOU system. There has been strong support from the Australian Institute of Petroleum (AIP), individual oil companies and independent importers on the setting of RVP limits in Victoria via regulation.

Some suppliers have called for a Victorian limit to be immediately set at 62kPa, while others have called for a staged approach. It is recognised that if a change to the petrol RVP is made in one big step, it limits the ability of refineries to find markets for excess butane. Such a move is likely to lead to the wasting of the gas via flaring which in turn creates adverse greenhouse and air quality impacts.

To help avoid this wastage, and allow the further development of LPG markets, the proposed RVP requirements will be introduced in a staged process that will bring the RVP down to 62kPa. This is in line with the RVP reduction that New South Wales undertook with its MOU.

The staged approach will provide sensible lead times to achieve the RVP limits, with the initial steps to 70kPa and then 67kPa being achieved with modest costs (less than 0.1c/L) and operational changes required.

While the third step to 62kPa is recognised as requiring further investment by refiners, it is not proposed until 2005-06 which is in line with the new investments being made to produce fuel to the Commonwealth fuel standards. This harmonisation will minimise any additional costs for RVP reduction as there are economies of scale in investment. In addition, there will be increased efficiencies in the final petrol product by combining the investments as the equipment required to reduce RVP can also assist in achieving other parameters required under the Commonwealth fuel standards and improve product recovery.

It is proposed that the setting of the limits will be via a monthly pool average combined with a cap set at 2kPa higher than the average limit. The cap
provides flexibility for producers and suppliers of petrol as they can have small fluctuations in the RVP levels of different batches.

The average and cap approach also has benefits for the environment as it guarantees that all batches of petrol will have an RVP within a specific range. If the limit was set as an average only, the possibility exists that there may be batches with an RVP much greater than the average. If one of these high RVP batches coincided with a very hot day, the benefits of limiting summertime RVP would be negated. In addition, a cap allows effective random spot checking to be undertaken by EPA.

Breaches of ozone standards are the result of short term (a few days) climatic conditions when temperatures and wind conditions combine to promote the formation of smog. Due to the inherent random nature of these events, and the time lag in producing low volatility fuel and it being generally available on the market, it is necessary to set the RVP limits in months when these smog problems are most likely to occur.

EPA Victoria has a widespread ambient air monitoring network with which it has monitored Melbourne’s air quality for many years. Information from this network demonstrates that while some years may not see a breach in ambient ozone standards, the levels recorded in the summer months are elevated and generally represent a significant percentage of the policy limit.

From the data collected since 1997, it can be concluded that breaches of the ozone standards occur from November to March. These months also represent times where the ambient ozone levels are significantly greater than at other times during the year, and are close to the policy limit. As such, it is proposed that the RVP limits be set from the start of November until the end of March.

Benzene is a known human carcinogen and elevated atmospheric benzene levels are strongly associated with benzene levels in petrol. Neighbourhood monitoring has shown that elevated levels of benzene are associated with busy roads and petrol stations. Personal exposure monitoring has shown that while the levels are below thresholds associated with health concerns, the highest exposure to benzene occurs when people fill their cars or spend long periods in their vehicles. As a result of these concerns, benzene is to be limited to 1 per cent of total volume under Commonwealth legislation from 1 January 2006.

It is recognised that petroleum suppliers are committed to supplying 1 per cent benzene in petrol from 2006 and there are few options to bring their investment programs forward due to the major refinery investment required. The independent importer Trafigura has more flexibility in meeting this level as many refineries in the Asian region, where they buy their fuel, already have the ability to produce 1 per cent benzene in petrol.

While there is little that can be done to bring forward the lower benzene levels in petrol, it is worthwhile to monitor the ongoing levels of benzene in petrol sold in Victoria. Proposed regulation 27 sets out a reporting system for the benzene content in fuels. This information will be valuable for a number of reasons including supporting future EPA Victoria air quality and health studies and providing a foundation of information on which to make future policy decisions.
In addition, this information will assist the petroleum industry by clearly communicating to the public the benzene reduction actions that the industry is taking. The monitoring of benzene levels in petrol will also enable EPA Victoria to monitor companies progress towards the 1 per cent standard in 2006.

The proposed regulations require all petrol producers and suppliers to report to EPA on the average benzene content on each stream of petrol (unleaded, premium unleaded and lead replacement) over the reporting period. It is not expected that this system should add to the operating costs of the petrol companies, as information on petrol quality is routinely kept and stringent tracking programs exist to support the Commonwealth fuel standards.

3.7. Update the General Requirements

This section of the existing regulations places restrictions on the fitting, interference or modification of vehicle components that result in an increase in the rate of discharge of emissions and noise. There are also restrictions on removing or rendering ineffective emissions control equipment, engine, exhaust or fuel system components.

These restrictions have proven to be fundamental to EPA’s enforcement program as modified vehicles are often disproportionately high emitters of air pollution and are a major source of noise complaints. It is not proposed to significantly change these restrictions, however, it is proposed to clarify the responsibility that people and businesses have to ensure that exhaust systems fitted to vehicles meet the noise standards.

Preliminary feedback from exhaust fitters and aftermarket equipment manufacturers has varied. An industry body representing exhaust manufacturers has argued that the existing regulations should not be altered, but rather that more enforcement action should be taken to weed out the minority of noisy vehicles that make the majority of noise.

Another aftermarket equipment manufacturer has argued that the existing regulations should be tightened. They currently produce compliant exhaust systems but find it hard to compete against non-compliant systems that are sold at a cheaper price. Both submissions highlighted that while the majority of the industry is complying with legislation, a group remains that is not ‘playing by the rules’ and is fitting illegal after market systems.

Under the current regulations, liability for interfering with noise reducing equipment exists only for people installing, removing, replacing or repairing noise reducing equipment, when a vehicle is ‘next used on a highway’.

This wording has frustrated the spirit of the regulation by creating enforcement difficulties. For example, in circumstances where a vehicle has had a new exhaust fitted only a few days earlier, but because the vehicle was not tested ‘when next used on a highway’ action cannot be taken against the people who fitted the exhaust. As a result, action can only be taken against the driver of the vehicle.

The proposed regulations rectify this situation by removing the wording ‘when next used on a highway’ from that clause, enabling more targeted enforcement to be undertaken against the fitters of illegal exhausts. Taking action against those
operators who fit illegal exhaust can be more effective than taking action solely against the driver of the vehicle as it removes illegal exhausts at the source.

3.8. Approaches To Vehicle Emissions in Other Jurisdictions

The proposed regulations are in line with approaches taken in other jurisdictions. The diesel NEPM in-service standards (proposed regulation 9) were developed with input from all States and Territories, and will be the basis for any in-service emission testing in Australia.

The 10-second smoke rule (proposed regulation 7) is used widely around the country as a basis for detection of poorly maintained and smoky vehicles. The vertical exhaust control (proposed regulations 11 and 12) is in line with national legislation and New South Wales legislation, including the exemption for ADR 80/01 vehicles.

State based RVP standards (proposed regulation 25) have been regulated in Western Australia and Queensland since 2000, and have been the subject of an MOU in New South Wales since 1998.

The noise standards and test method (proposed regulation 10) reflect national limits and test methods that have been adopted in all States and Territories. Anti-tampering controls (proposed regulations 13, 14, 15, 18, 19, 20, 21, 22 and 23) are common in all jurisdictions as a means to limit polluting and noisy vehicles.

4. Benefits and Costs of the Proposed Regulations

This chapter provides an analysis of the benefits and costs of the proposed regulations. This analysis is conducted against the base case of no regulations (that is, letting the existing regulations sunset without replacing them).

Air pollution is a major issue in the Port Phillip region. Studies undertaken by EPA have shown that air pollution is associated with increased hospital admissions and increased daily mortality, particularly amongst high-risk groups such as the elderly and the very young.

Motor vehicles were identified in those studies as being one of the major sources of the responsible pollutants. In fact motor vehicles contribute 63 per cent of the total emissions of oxides of nitrogen (NOx), 83 per cent of the total emissions of carbon monoxide (CO) and 41 per cent of the total emissions of volatile organic compounds (VOCs), making motor vehicles the largest single contributor to these pollutants. In addition, motor vehicles (primarily diesels) contribute 25 per cent of annual emissions of fine particle matter, and represent the largest source of particles in the summer months.

4.1. Update Vehicle Emission Standards and Test Requirements

Under the Environment Protection Act 1970, Victorians have a responsibility to not pollute the environment. This includes not operating a car in a way that causes air pollution. The proposed regulations are designed to provide a cost-effective way to ensure good in-service vehicle performance and reduce noise and vehicle emissions.
Vehicle emissions can be addressed through new vehicle standards and through programs to ensure good in-service performance. It is not proposed that the standards and test methods for new vehicles be reproduced or picked up in the proposed regulations. In the past these standards were reproduced in full in the existing regulations in order for EPA to undertake a limited auditing role for new vehicle standards.

This approach resulted in the vehicle standards and regulations becoming quickly outdated when new vehicle emission standards and test methods were introduced at a national level. This increased the potential for confusion as the existing regulations did not reflect the most up to date emission standards for new petrol and diesel vehicles.

The new vehicle emission standards are called up in legislation administered by VicRoads, ensuring that they are always up-to-date. The suggestion not to reproduce the new vehicle standards in the proposed regulation will avoid unnecessary duplication and ensure that there is no confusion as to the most up-to-date new vehicle emission standards and the respective roles of Commonwealth and State governments in this sphere.

The Victorian vehicle fleet has very slow turnover, and it takes many years for new vehicle standards to have an impact on overall emissions. As such, the control of in-service vehicles emissions is vital to ensure good air quality outcomes. The aim of the proposed regulations is to provide a cost effective approach to ensure good in-service vehicle performance, reduce noise and vehicle emissions.

The proposed regulations introduce the in-service diesel vehicle standards that were developed to support the diesel NEPM. These standards will allow future vehicle testing and auditing programs to be undertaken, using nationally recognised emission standards. This will ensure consistency with other States and Territories that are undertaking testing of in-service diesel vehicles.

The inclusion of the in-service diesel emission standards, and the removal of the new vehicle emission standards, ensures that people reading the proposed regulations will have clear direction on EPA Victoria’s role in the control of in-service emissions from vehicles.

The test methods for the diesel NEPM standards will be adopted, ensuring that the most up to date test methods and equipment specifications are reflected in the proposed regulations. This will ensure their on-going relevance and consistency with other jurisdictions.

The existing 10-second smoke rule broadly reflects the national rule and provides the benefit of consistency with other States and Territories. An exemption for 2-stroke vehicles manufactured before 1977 was included in the existing regulations and is intended to be continued in the proposed regulations. While this exemption is not reflected in the national rule, these vehicles are relatively rare, and are not driven significant distances. As such it was not thought that an on-going exemption would pose a significant threat to the environment and would provide consistency with the existing Regulations.

The proposed regulations will ensure that the Victorian vehicle fleet has good in-service emissions.
performance. This will ensure a significant reduction in emissions of key air pollutants.

4.2. Update Stationary Noise Test Procedures

There are general requirements under the Environment Protection Act 1970 to ensure noise emissions are not excessive. The inclusion of noise standards and a nationally consistent test method provides certainty for owners, businesses and the community as to the requirements for vehicle noise and maintenance.

Without noise standards, other programs would need to be developed to help address vehicle noise and this would result in less efficient programs, that are unlikely to meet community expectations. The proposed noise standards and test methods are an efficient and practical approach to the control of vehicle noise.

The proposed regulations call up the National Stationary Exhaust Noise Test Procedures for In-service Motor Vehicles. These methods are fundamentally the same as those that are in the existing regulations, with some minor wording changes.

The change in procedure will not result in a change in detection efficiency - a vehicle that passed on the existing testing procedure will pass on the new procedure. The change will however ensure that the Victorian test procedure is in line with the procedures used in other States and Territories. The calling up of the procedure will also ensure that the latest national test procedure will be automatically incorporated into Victorian legislation.

4.3. Update the Vertical Exhaust Requirement for Diesel Vehicles

Vertical exhausts play a key role in dispersion of exhaust emissions from diesel vehicles weighing more than 4.5 tonnes. Up until relatively recently, Australian diesel vehicles have had no emission requirements beyond a simple smoke test. As a result, the vertical exhaust was introduced to help address local air quality issues. In the near future there will be diesel vehicles available on the market that, in conjunction with the correct fuel, are significantly cleaner than any diesel vehicle seen in Australia before. At that stage, the need for cost effective and practical solutions such as vertical exhausts will no longer be necessary.

While vertical exhausts are an efficient means to increase dispersion of exhaust from diesel trucks, in some situations they may be inappropriate. An example is the use of a vertical exhaust when a vehicle is carting hay. In the existing regulations, the lack of a discretionary exemption granting power meant that EPA is unable to grant exemptions to vehicles that did not fall under specific classes of vehicles that were listed as exempt. As such, farmers who requested exemptions from the vertical exhaust requirement when carting hay to avoid truck fires were unable to have their request granted. The proposed regulations include a general exemption for farm vehicles that are primarily used for carting hay.

Information supplied from the VFF in the past indicates that approximately 10 farm vehicles in Victoria catch on fire every year due to the vertical exhausts. Truck fires carry a significant risk of driver injury and death. The introduction of an exemption
for vehicles carting hay will help remove this risk in the future. In addition, if these vehicles were completely destroyed by fire and the insurance payout represented approximately half the value of a new truck, the cost to insurance companies would be at least $200,000 every year (leading to increased premiums).

Farmers who currently operate with a vertical exhaust can choose to leave the truck as it currently is or change to a horizontal exhaust if their vehicle is primarily used for carting hay. The costs of conversion to a horizontal exhaust are expected to be minor, as many of the exhaust components could be recycled for use in the new system.

As already discussed, vertical exhausts have been demonstrated to improve dispersion of exhaust emissions, and this is more important with higher rates of emissions. While ADR 80/00 compliant vehicles have significantly lower exhaust emission standards, the correct 350ppm sulfur fuel will not be available to ensure that these standards are always met. This is because Commonwealth fuel standards only require 500ppm sulfur fuel to be available between 2003 and 2006. The extent to which the excess sulfur in the available fuel will affect emission rates is not clear, however, it is expected to reduce emission performance. As such, vertical exhausts will ensure that exhaust emissions from these vehicles continue to be directed away from pedestrians and other road users, and dispersed through a vertical exhaust.

New South Wales has introduced a vertical exhaust requirement under its Protection of the Environment Operations (Clean Air - Motor vehicles and Motor vehicles Fuels) Regulations 2002. In the RIS for the regulations, NSW discussed the benefit of a vertical exhaust requirement for ADR 80/00 vehicles. This included significant reductions in human exposure to diesel fumes and exhaust emissions (particularly for pedestrians, motorists and cyclists in suburban streets).

In addition, the NSW RIS discussed studies that demonstrated that vertical exhausts reduced ‘breathing zone’ pollutant concentrations at bus stops by eight times over horizontal exhausts. While these benefits are identified as amenity benefits, they may also represent a health benefit. As fine particles are a serious health issue, a reduction in acute exposure is likely to minimise health risks, particularly for sensitive groups such as the elderly, the very young and the sick.

The proposed regulations include an exemption for ADR 80/01 compliant trucks from the vertical exhaust requirements. This is in recognition of the significantly improved emission standards beyond the ADR 80/00 standards, and the widespread availability of the correct 50ppm sulfur fuel, that will ensure that the dispersion benefits from a vertical exhaust are unlikely to be significant.

This approach has already been introduced in New South Wales after a recent regulatory review. Based on their analysis, and our own assessment of the issues surrounding the use of vertical exhaust, it is intended that Victoria follow a similar path.

The proposed regulations only provide this exemption for ADR 80/01 compliant vehicles after 2006, when 50ppm sulfur fuel is required to be on the market through the introduction of Commonwealth fuel standards. This ensures that the horizontal exhausts will only be used in
conjunction with the correct engines and fuels, maximising their benefit.

The removal of the vertical exhaust requirement for ADR 80/01 compliant vehicles will ensure that the regulations will not increase the cost of these modern technology vehicles above base case. This represents a saving of between $500 and $750 per vehicle on light to medium trucks when compared with ADR 80/00 vehicles. This saving will help offset the cost of the more advanced engine technology on these trucks. In addition, ADR 80/01 vehicles will not need to allow space in their cargo area for a vertical exhaust. This is likely to increase carrying capacity of these ADR 80/01 vehicles in some circumstances.

In addition, an application procedure will be introduced to deal with the requests that EPA receives from time to time for exemption from the vertical exhaust requirements. The number of these individual applications is not expected to be large. The proposed regulations indicate a $100 fee that will be charged for each application for exemption from the vertical exhaust requirement. As the complexity of any assessment will vary, this fee is designed to help cover the administrative costs of a baseline case. This is in line with EPA’s criteria for establishing fees set out in the Regulatory Impact Statement for the Environment Protection (Fees) Regulations.

4.4. Modification of the Requirements For Unleaded Vehicles

The requirement to affix a label indicating that a vehicle must only be filled using unleaded fuel is no longer required under the Commonwealth Australian Design Rules for new vehicles. Although this requirement is in the existing regulations, the proposed regulations will remove any requirement for such labels.

4.5. New Petrol Standards and Reporting Requirements

4.5.1. Benzene Reporting

The proposed regulations include limits for RVP and reporting requirements for Benzene levels in petrol. The costs associated with the reporting requirements are expected to be negligible as each refinery and petrol supplier already maintains records on their fuel quality. This requirement simply means that the information on average benzene content and monthly average RVP level is extracted and supplied to EPA Victoria.

The monitoring of benzene levels in petrol will provide EPA Victoria with accurate and up-to-date information on the benzene content of petrol. Benzene is recognised as a major air quality issue, and work is already planned via Commonwealth standards to reduce the benzene content in petrol to 1% from 2006. The investment required to meet the new Commonwealth benzene standards is understood to be in the order of $65 million per refinery.

This provision of information on the average benzene content of petrol provides EPA Victoria with the information needed for the assessment of air quality issues, public health and exposure risks. The costs of assessing data will be borne by EPA Victoria within current budgets. These costs are estimated to be in the order of $1000 per year.
4.5.2. **RVP Standards**

The introduction of summer RVP controls potentially introduces significant investment costs, and as a result the timetable and phase in levels must be considered carefully. Currently, local refineries achieve an RVP of between 70 and 75kPa during the summer months.

The proposed initial steps to 70kPa in 2003-04 and then to 67kPa in 2004-05 are likely to be handled via the removal of butane. It is not expected that refineries will have to undertake large investment to achieve these levels. The document *Setting National Fuel Quality Standards*, prepared by Environment Australia notes that costs to achieve an RVP of 67kPa are less than 0.1c/L. New South Wales estimated the costs of reducing petrol volatility in their *Action For Air* publication at around 0.2c/L to achieve 62kPa.

These estimates are generally supported by information received from the petroleum industry, which indicates that the capital investment needed to achieve RVP levels of 67kPa would be in the order of $3 million per refinery over two years, equating to around 0.07c/L. The additional operational costs once this capital investment had been made would be in the order of $3 million per year or around 0.1c/L. This operating cost estimate assumes that excess butane is burnt as fuel gas in the refinery and also diverted to the LPG market. If the LPG market cannot absorb all of the excess butane, there is potential for some additional disposal costs to be incurred. However, Victoria is the largest LPG market in Australia and is well placed to utilise excess butane.

While the current butane disposal options have been focussed on diversion to the LPG stream or burning as refinery fuel gas, it is understood that refiners are already considering other processes which maximise the economic and environmental benefits from the butane. One such process understood to be under consideration, regardless of the introduction of summer RVP limits, is an upgrade of butane isomerisation capacity feeding into an upgraded alkylation unit. The products from this investment increase a refinery’s capacity to achieve the Commonwealth fuel standards demands for high octane, low benzene and low aromatic fuels. With such an investment, excess butane will be directed into a value adding process that supports new fuel standards, rather than being used as refinery fuel gas or directed into LPG.

*Action for Air* estimates that a reduction of summer petrol volatility from the mid to high 70skPa to 62kPa could reduce the emissions of reactive organic compounds by up to 7,000 tonnes per year. This has a direct impact on the reduction of summer photochemical smog formation. Work by EPA Victoria suggests that RVP reductions in Victoria will see a similar reduction in volatile organic carbon emissions. This represents about 4 per cent of the total annual emissions of volatile organic compounds from all sources in the Port Phillip Region, or 11 per cent of the volatile organic compounds emissions from motor vehicles.

It is noted in *Setting National Fuel Quality Standards* that extra investment is likely to be required to achieve levels of 62kPa. Typically, more intense extraction must be carried out to remove butane and in some cases pentane must be extracted.
The next round of Commonwealth petrol standards are, however, due to come into force from 1 January 2006. Most refineries will need to make much larger investments ahead of that date to achieve these new Commonwealth standards. Setting National Fuel Quality Standards estimates that the investment required to achieve the Commonwealth fuel standards averages $185 million per refinery. These figures are only averages, and the costs for some refineries to achieve the Commonwealth fuel standards may be tens of millions of dollars more.

The proposed phase-in timetable provides an opportunity to ‘piggy-back’ RVP investment on the much larger investment required for reductions in benzene, aromatics and sulfur and an increase in octane. This proposal to harmonise investment timetables with the Commonwealth fuel standards has been supported by the petroleum industry during consultation.

The investment required to achieve an RVP of 62kPa is potentially significant, depending on a refinery’s individual set up and operating situation. Estimates have varied between millions and tens of millions of dollars. However, one company that provided an estimate at the upper end of the range has indicated that this investment is not only for RVP reduction, but will be used to support a number of different processes throughout the refinery.

Investment in RVP reduction equipment can also assist in product recovery efficiency and the removal of olefins (hydrocarbons with a double bond), which are limited under the Commonwealth fuel standards. New investment in RVP reducing equipment also ensures that low RVP fuels could be produced on large scales at the refinery, increasing export options.

Much of the investment required to achieve both RVP and Commonwealth fuel standards sees the replacement of old refinery equipment with modern technology. Due to the relative lack of fuel standards in the past, and the age of the Australia refineries, some equipment has remained in use for up to 50 years. While such equipment would be serviced and overhauled during that time, it would be expected that it is coming to the end of its commercial life.

Replacement with new equipment not only increases total refinery efficiency, reliability and product quality, it also can increase the range of crude oils that can be used by a refinery. This has significant implications as Australian crudes are becoming less available and Australian refineries have to turn to less than ideal overseas crudes to make their products.

The above cost and benefit discussion has focussed on Australian based refineries, however it should be noted that the independent importer Trafigura already achieves an RVP of 62kPa with its fuel throughout the year. As such, there will be no additional cost for Trafigura to achieve these fuel standards.

The setting of standards is of minimal benefit unless there is a monitoring and enforcement program in place to ensure the standards are met. As refineries have their own product quality control programs in place, the best way for EPA to satisfy that such standards are being met is by auditing this system.

This provides benefits to refineries, as there are no additional costs and allows EPA to be assured that
fuel standards are being consistently achieved. Such a system was strongly supported by the petroleum industry in talks with EPA Victoria during the development of the Commonwealth fuel standards. It is estimated that the costs for EPA to undertake such auditing would be in the order of $1500.

While such an audit of quality control systems provides the biggest potential benefits for standards monitoring, it must be backed up by a random sampling program. Feedback from the petroleum industry during consultation has been strongly supportive of EPA carrying out random testing throughout the period when the RVP standards are in place.

The cost of collecting and testing the samples will be borne by EPA Victoria, although the potential does exist to combine RVP testing with the Commonwealth standards testing. Estimates of analysis costs, supplied by local laboratories that are accredited by the National Association of Testing Authorities (NATA) to undertake RVP testing, are in the order of $95 per sample. If EPA undertook a small-scale monitoring program of around 20 samples over summer, costs would be around $3,000 including estimates for EPA staff time. Any costs for enforcement action taken as a result of the monitoring program have not been estimated.

4.6. Update the General Requirements

There are general requirements under the Environment Protection Act 1970 to ensure both noise and air emissions are not excessive. Research has shown that altering emission and noise control equipment from manufacturer’s design can have a deleterious effect on both noise and vehicle emissions. The inclusion of general maintenance and tampering controls provides certainty for owners, businesses and the community as to the requirements for vehicle maintenance and alteration.

The proposed regulations include controls on tampering with emission control equipment and the fitting of noise control systems that do not meet the noise standards. These controls remain fundamentally the same as the existing regulations, with minor wording changes that will not add any cost to businesses that fit appropriate and legal noise reducing equipment to vehicles. The proposed changes clarify the legal onus on businesses and people fitting noise reducing equipment, making for more efficient remediation and enforcement action if necessary.

This modification will benefit those exhaust fitters who are fitting exhausts that meet the vehicle noise standards, and it will also benefit aftermarket exhaust manufacturers who produce exhaust systems that are tested and shown to comply with noise limits, as there will be reduced competition from illegal operators. This will also help protect vehicle owners from operators who have been able to fit illegal exhausts in the past, without having to worry about enforcement action being taken against them.

4.7. Competition Policy Impacts

The Environment Protection (Vehicle Emissions) Regulations (the proposed regulations) set standards and test methods for motor vehicle air and noise emissions and fuel standards that are
ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS

applicable under the Environment Protection Act 1970. A review of these regulations has recently been undertaken resulting in the development of new proposed regulations.

The proposed regulations has undergone a competition policy review and it was concluded that the proposed regulations do not result in any deemed restrictions on competition as they would not:

- allow one company or person to supply a good or service;
- require producers to sell to a single company or person;
- limit the number of producers of goods and services to less than four;
- limit the output of an industry or individual producer; or
- limit the number of people engaged in an occupation.


5. BENEFITS AND COSTS OF THE PROPOSED REGULATIONS VERSUS ALTERNATIVES

This chapter seeks to assess the benefits and costs of the proposed regulations against the three alternatives, outlined in Chapter 2.

5.1. Alternative 1 - Remake the Existing Regulations With No Changes

The review of the existing regulations raised a number of areas that were in need of adjustment to accurately reflect developments in the vehicle emissions area since 1992. This could not be achieved by this alternative, which simply proposed ‘rolling over’ the existing regulations without change.

No option for a case-by-case vertical exhaust exemption would be included which would result in a number of farmers continuing to operate vehicles with vertical exhausts when carting hay, increasing the risk of truck fires. In addition, no exemption would be available for ADR 80/01 compliant diesel trucks.

Alternative 1 would not allow for any introduction of Victorian specific fuel standards such as RVP controls and benzene reporting requirements. This would either require a separate legislative process to be undertaken or would result in no summer controls on RVP, therefore reducing potential gains in air quality and smog reduction.

Finally, Alternative 1 would not allow for test methods and standards to be updated in line with national approaches. This would mean that standards and test methods referred to in the regulations would be out of date, and no in-service diesel standards could be introduced. This would lead to confusion for the users of the regulations and result in a lack of national consistency.

All of these factors would result in a regulation that would still maintain some control on in-service emissions and noise from vehicles, but would not be optimally efficient.
5.2. Alternative 2 - Change the Existing Regulations - Introduce New Requirements (Excluding New Petrol Standards and Reporting Requirements) and/or Eliminate Some Existing Ones

This alternative would allow a number of administrative changes to be made to the existing regulations. These changes would provide flexibility for a case-by-case vertical exhaust exemption process as well as a general exemption for hay carting vehicles and ADR 80/01 vehicles. This would provide farmers with the option to fit a horizontal exhaust to vehicles that are primarily used to cart hay, thereby reducing fire risk.

This alternative would also provide for an exemption from the vertical exhaust requirements to be introduced for ADR 80/01 compliant diesel trucks. This would avoid the cost of fitting a vertical exhaust system to these well performing diesel vehicles, which in turn could help offset any extra cost associated with their improved technology.

This alternative would allow in-service vehicle standards and test methods to be introduced that will help ensure good emissions performance. In addition, this alternative will allow the noise testing method to be updated in line with national test methods, and will allow the general requirements to be updated to clarify the onus for people fitting exhaust systems.

Alternative 2 would not allow for the introduction of new petrol standards and reporting requirements. This would result in no controls on summer RVP levels beyond the current industry practice, which would in turn negate any potential gains in air quality and smog. To address these problems, an alternative legislative process would have to be entered into to achieve the RVP controls and benzene reporting requirements.

5.3. Alternative 3 - Allow the Regulations to Lapse Without Replacement (The Base Case)

This option would result in EPA having no standardised basis for any enforcement action for smoky, noisy or tampered vehicles. Motor vehicle owners and operators would still have a general duty to comply with the Environment Protection Act 1970 and to avoid causing pollution. In the absence of any regulations, motor vehicle owners and operators would need to make their own judgements about what constitutes acceptable environmental performance of their vehicles. This would lead to a detrimental effect on Victoria’s air quality which could in turn impact on human health, amenity and potentially tourism and investment.

While the majority of Victorians would continue to maintain their cars, there would be no set legal approach to address vehicles that are poorly maintained, altered and noisy. Enforcement of the general duties under the Environment Protection Act 1970 would rely on expert opinion and common practice rather than set standards. This would require more complex monitoring and enforcement systems and would remove the legal clarity and certainty for people that are provided by the existing regulations.

This option would also require an alternative legislative process to be undertaken to address local fuel quality standards such as RVP and benzene reporting requirements.
Air quality is consistently ranked as a leading issue of public interest and concern and this option would minimise options to control polluting vehicles, one of the major sources of air pollution. Vehicle noise is another major area of public concern. This option would prevent enforcement action against noisy vehicles, resulting in increases in road and traffic noise. As such, public expectations that polluting, noisy and tampered vehicles are detected and fixed would not be met.

6. SUMMARY OF BENEFITS AND COSTS

This chapter is intended to provide a concise summary of benefits and costs of the preferred option and each of the alternatives.

6.1. Proposed Regulations

Air pollution is a major issue in the Port Phillip region. Studies undertaken by EPA have shown that air pollution is associated with increased hospital admissions and increased daily mortality, particularly amongst high-risk groups such as the elderly and the very young.

Motor vehicles were identified in those studies as being one of the major sources of the responsible pollutants. In fact motor vehicles contribute 63 per cent of the total emissions of oxides of nitrogen (NOx), 83 per cent of the total emissions of carbon monoxide (CO) and 41 per cent of the total emissions of volatile organic compounds (VOCs), making motor vehicles the largest single contributor to these pollutants. In addition, motor vehicles (primarily diesels) contribute 25 per cent of annual emissions of fine particle matter, and represent the largest source of particles in the summer months.

The Victorian vehicle fleet has very slow turnover, and it takes many years for new vehicle standards to have an impact on overall emissions. As such, the control of in-service vehicles emissions is vital to ensure good air quality outcomes. The aim of the proposed regulations is to provide a cost effective approach to ensure good in-service vehicle performance, reduce noise and vehicle emissions. The costs and benefits of the proposed regulations are summarised in the table below.

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensures good in-service emissions performance of the Victorian vehicle</td>
<td>ADR 80/00 compliant diesel trucks continue with vertical exhausts in</td>
</tr>
<tr>
<td>fleet leading to significant reductions (most significant of all</td>
<td>line with current practice. Estimated costs of approximately $500 to</td>
</tr>
<tr>
<td>alternatives) in pollutants such as:</td>
<td>$750 per truck.</td>
</tr>
<tr>
<td>• NOx;</td>
<td>A $100 administrative fee per application for case-by-case exemption</td>
</tr>
<tr>
<td>• Hydrocarbons and VOCs;</td>
<td>from the vertical exhaust requirements.</td>
</tr>
</tbody>
</table>
**ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS**

- Particle matter; and
- CO.

Summer RVP limits are introduced, helping to reduce photochemical smog and improve air quality. This ensures a reduction of up to 7000 tonnes per year of VOCs, resulting in fewer photochemical smog precursors and less likelihood of pollution incidents.

Ensures good in-service noise performance of the Victorian vehicle fleet, leading to significantly reduced noise emissions.

Provides certainty for industry and vehicle owners with regards to in-service emission and noise requirements.

Provide an efficient mechanism to enable Victoria to implement nationally consistent approaches including:
- introducing in-service standards and test methods for diesel vehicles, allowing better control of diesel emissions in the future;
- the 10-second visible smoke rule; and
- introducing noise testing procedures consistent with national test methods.

Allows efficient and practical solutions to environmental, social and safety issues surrounding motor vehicles and fuel use.

Regulations support refining industry programs to improve efficiency and meet Commonwealth fuel requirements.

Information on petrol benzene content collected to support EPA Victoria work on air quality monitoring and policy development.

Australian refineries are currently undertaking a long term upgrading process in order to increase refinery efficiency, flexibility, export options and to meet Commonwealth fuel standards which is likely to cost hundreds of millions of dollars per refinery.

Any additional costs to achieve state based RVP standards, as required by the proposed regulations, are likely to be measured in the tens of millions of dollars. This is a relatively small proportion of the costs to achieve Commonwealth fuel standards.

EPA to undertake monitoring and enforcement of RVP standards. Costs estimated at $3000 per year.

A $1500 EPA staff costs for auditing of RVP quality control systems.

Negligible costs to fuel suppliers of supplying petrol benzene information.

A $1000 EPA staff costs for assessing petrol benzene information.
Obsolete requirements for the labelling of unleaded vehicles no longer required.
Reduces risk to life and property due to hay carting fires.

### 6.2. Alternative 1 - Remake the Existing Regulations With No Changes

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensures good in-service emissions performance of the Victorian vehicle fleet leading to significant reductions in pollutants such as: • NOx; • Hydrocarbons and VOCs; • Particle matter; • CO; Ensures good in-service noise performance of the Victorian vehicle fleet, leading to significantly reduced noise emissions. Provides certainty for industry and vehicle owners with regards to in-service emission and noise requirements. Provide an efficient mechanism to enable Victoria to implement nationally consistent approaches including the 10-second visible smoke rule.</td>
<td>All diesel trucks, including ADR 80/01 vehicles, continue with vertical exhausts in line with current practice. Estimated costs of approximately $500 to $750 per truck. Unless specifically exempted in the existing Regulations, all diesel vehicles &gt;4.5 tonnes must have a vertical exhaust, regardless of circumstances. Fire risk for trucks when carting hay, leading to approximately 10 less truck fires annually (costing at least $200,000) and increasing the risk of personal injury and death. Noise testing procedures are not harmonised with national methods, leading to a lack of clarity for industry, vehicle owners and the community. Fuel standards inconsistent with national standards, leading to a lack of clarity for industry. Continues unleaded labelling requirements on vehicle manufacturers that are no longer required at a national level, potentially increasing costs for vehicle imported into Victoria.</td>
</tr>
</tbody>
</table>

### 6.3. Alternative 2 - Change the Existing Regulations - Introduce New Requirements (Excluding New Petrol Standards and Reporting Requirements) and/or Eliminate Some Existing Ones

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensures good in-service emissions performance of ADR 80/00 diesel trucks continue with vertical</td>
<td></td>
</tr>
</tbody>
</table>
the Victorian vehicle fleet leading to significant reductions (most significant of all alternatives) in pollutants such as:

- NOx;
- Hydrocarbons and VOCs;
- Particle matter;
- CO;

Ensures good in-service noise performance of the Victorian vehicle fleet, leading to significantly reduced noise emissions.

Provides certainty for industry and vehicle owners with regards to in-service emission and noise requirements.

Provide an efficient mechanism to enable Victoria to implement nationally consistent approaches including:

- introducing in-service standards and test methods for diesel vehicles, allowing better control of diesel emissions in the future;
- the 10-second visible smoke rule; and
- introducing noise testing procedures consistent with National test methods.

Allows efficient and practical solutions to environmental, social and safety issues surrounding motor vehicles and fuel use.

Regulations support refining industry programs to improve efficiency and meet Commonwealth fuel requirements.

Obsolete requirements for the labelling of unleaded vehicles no longer required.

Reduces risk to life and property due to hay carting exhausts in line with current practice. Estimated costs of approximately $500 to $750 per truck.

$100 administrative fee per application for case-by-case exemption from the vertical exhaust requirements.
ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS

6.4. **Alternative 3- Allow the Regulations to Lapse Without Replacement (The Base Case)**

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>COSTS</th>
</tr>
</thead>
</table>
| The majority of Victorians will continue to maintain their vehicles, resulting in moderate reductions in pollutants such as:  
  - NOx;  
  - Hydrocarbons and VOCs;  
  - Particle matter;  
  - CO; | Research has shown that a small proportion of poorly maintained vehicles emit the majority of pollution. No detection programs would exist that would allow these vehicles to be identified and their emissions addressed.  
VOC emissions from petrol vehicles and storage tanks (through exhaust and evaporative losses) directly contribute to photochemical smog production. Without summer RVP limits, no reduction in these VOC emissions from petrol can be guaranteed.  
Public expectations that polluting and noisy vehicles are detected and fixed are not met.  
Lack of national consistency on issues including:  
  - in-service standards and test methods for diesel vehicles;  
  - the 10-second visible smoke rule; and  
  - noise standards and test methods.  
Lack of clarity for businesses, vehicle owners and the community on the requirements to comply with the *Environment Protection Act 1970*.  
Would require the development of a highly inefficient enforcement regime based on expert opinion and common practices rather than clear legal standards and requirements. |
ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS

7. APPENDICES

7.1. Appendix 1: Draft Regulations

STATUTORY RULES 2002
S.R. NO.

Environment Protection Act 1970

Environment Protection (Vehicle Emissions) Regulations 2003

The Governor in Council makes the following Regulations:

Dated:

Responsible Minister:

JOHN THWAITES
Minister for Environment and Water

Clerk of the Executive Council

PART 1 – PRELIMINARY

1. Objective

The objective of these Regulations is to minimise the impact of motor vehicle emissions, noise and fuel quality on Victorians and the Victorian environment.

2. Authorising provisions

These Regulations are made under sections 53P and 71 of the Environment Protection Act 1970.

3. Commencement
These Regulations come into operation on 1 February 2003.

4. **Revocations**

The Regulations set out in Schedule 1 are revoked.

5. **Definitions**

In these Regulations-

“**bus**” means any motor vehicle which is constructed principally for the conveyance of passengers and which is designed or equipped to seat more than 9 people (including the driver);

“**diesel engine**” means an internal combustion engine which operates on the compression-ignition principle;

“**forward control passenger vehicle**” means any passenger vehicle, not being an off road passenger vehicle, having a seating capacity for not more than 9 people (including the driver), and in which the centre of the steering wheel is in the forward quarter of the vehicle’s total length;

“**fuel system**” means the combination of fuel tank, fuel pump, fuel lines and carburettor or fuel injection components and includes the petrol filling pipe, all fuel system vents and the components of any system designed to control or reduce the emission of vapourized fuel from the fuel system into the atmosphere;

“**goods vehicle**” means any motor vehicle not being a passenger car or passenger car derivative which is constructed primarily for the carriage of goods and which has at least 4 wheels;

“**motor tricycle**” means any motor vehicle with 3 wheels symmetrically arranged in relation to the longitudinal median axis, with a gross vehicle mass not exceeding 1.0 tonne and that is able to be lawfully used on a highway;

“**off road passenger vehicle**” means any motor vehicle not being a motor cycle, motor tricycle or special purpose vehicle, principally designed for the conveyance of not more than 9 people (including the driver) and which is constructed either on a truck chassis or with special features for off road operation;

“**off road racing motor cycle**” means any motor cycle which is designed or constructed solely for competitive racing and which is not able to be lawfully used on a highway;

“**passenger car**” means any motor vehicle which is not a motor cycle or motor tricycle or off road passenger vehicle or forward control passenger vehicle and which is constructed principally for the conveyance of people and which has a seating capacity for not more than
9 people (including the driver), and includes any motor vehicle of the type known as a station wagon;

“passenger car derivative” means any motor vehicle of the type known as a utility or panel van and of the same make as a factory produced passenger car and in which the greater part of the body form and the greater part of the forward mechanical equipment are the same as those in the passenger car;

“petrol” has the same meaning as in section 42A of the Act;

“recreational motor cycle” means any motor cycle that is not able to be lawfully used on a highway and which is not an off road racing motor cycle but includes any motorised vehicle with the same wheel configuration and mass limits as those specified for a motor tricycle;

“registered” means being registered under the Road Safety Act 1986;

“spark ignition engine” means an internal combustion engine in which the mixture of air and fuel is ignited by means of an electrical spark;

“special purpose vehicle” means any fork-lift truck or any vehicle constructed principally for off-road agricultural use or for use in road or building site construction work, and includes any tractor, harvester, header, thresher, swather, baler, cuber, loader, digger, bulldozer, excavator, grader, scraper, or roller or any mobile crane the engine of which is used for both the lifting of loads and the propulsion of the vehicle but does not include any vehicle constructed on a chassis of a type normally used in the construction of a motor truck;

“summer period” means the period between 1 November and 31 March, both dates inclusive.

PART 2 - CONSTITUENTS OF FUEL

6. Constituents of unleaded petrol for the purposes of section 42B of the Act

(1) For the purposes of this regulation-

“motor octane number” means the motor octane number of petrol as determined by the method described in the American Society for Testing and Materials test procedure which is designated ASTM D2700 as in force from time to time;

“research octane number” means the research octane number of petrol as determined by the method described in the American Society for Testing and Material test procedure which is designated ASTM D2699 as in force from time to time.
(2) For the purposes of section 42B of the Act unleaded petrol must not contain more than the following at a temperature of 15°Celsius –

(a) 0.005 grams of lead per litre; and
(b) 0.0013 grams of phosphorus per litre; and
(c) 500 milligrams of sulphur per kilogram of petrol on or after 1 February 2003 but before 1 January 2005; or
(d) 150 milligrams of sulphur per kilogram of petrol on or after 1 January 2005.

(3) Unleaded petrol must have –

(a) a motor octane number of not less than 81.0; and
(b) a research octane number of not less than 91.0.

(4) For the purposes of this regulation, the mass of an element contained in a volume of petrol may be determined by reference to the mass of the element present as a constituent of any compound contained in that volume.

PART 3 - VEHICLE STANDARDS

7. **Vehicle emissions**

(1) For the purposes of sections 42(1) and 43A of the Act the emission from any motor vehicle which is propelled by an internal combustion engine must not be visible for a continuous period of 10 or more seconds.

(2) This regulation does not apply if –

(a) the emission is visible solely because of the condensation of water vapour; or
(b) the vehicle was manufactured before 1 July 1977 and is propelled by a two-stroke spark-ignition engine.

8. **Carbon monoxide emission from spark ignition engine propelled vehicles**

(1) This regulation applies to vehicles described in the following table that are propelled by a spark ignition engine -

<table>
<thead>
<tr>
<th>Description</th>
<th>Date of Manufacture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Car</td>
<td>On or after 1 January 1972</td>
</tr>
<tr>
<td>Passenger Car Derivative</td>
<td>On or after 1 July 1976</td>
</tr>
<tr>
<td>Motor Cycle</td>
<td>On or after 1 July 1977</td>
</tr>
<tr>
<td>Any Other Motor Vehicle</td>
<td>On or after 1 July 1977</td>
</tr>
</tbody>
</table>
For the purposes of sections 42(1) and 43A of the Act, a vehicle to which this regulation applies must not have a concentration of carbon monoxide in any exhaust pipe exceeding 4.5% by volume.

The concentration of carbon monoxide referred to in sub-regulation (2) is determined by the method described in Schedule 2.

This regulation does not apply to any special purpose vehicle.

9. **Exhaust emissions – diesel-powered vehicles**

For the purposes of this Regulation –

“**DT 80 Test Cycle**” means the in-service test for diesel vehicles as specified in the In-service Diesel Emission Standards published by the National Road Transport Commission as in force from time to time;

“**GVM**” (gross vehicle mass) means the maximum laden mass of a motor vehicle as specified by the manufacturer;

“**GCM**” (gross combination mass) of a motor vehicle means the greatest possible sum of the maximum loaded mass of the motor vehicle and of any vehicles that may lawfully be towed by it at one time;

“**M category vehicle**” means any vehicle with a vehicle category code beginning with M, as detailed in the Australian Design Rules for Road Vehicles: As at Determination 3, 4 & 5 of 2001 published by the Commonwealth Department of Transport and Regional Services as in force from time to time;

“**N category vehicle**” means any vehicle with a vehicle category code beginning with N, as detailed in the Australian Design Rules for Road Vehicles: As at Determination 3, 4 & 5 of 2001 published by the Commonwealth Department of Transport and Regional Services as in force from time to time;

“**tare mass**” means a vehicle’s unladen mass, as specified in its registration document;

“**vehicle test mass**” for a vehicle means-

(a) if the vehicle is a prime mover – half the sum of its tare mass and its GCM;

(b) in any other case – half the sum of its tare mass and its GVM.

This regulation applies to registered passenger vehicles, buses and goods vehicles -

(a) powered by diesel engines; and

(b) meeting the criteria for an M-category or N-category vehicle.
(3) For the purposes of sections 42(1) and 43A of the Act, a vehicle described in the following table must not have rates of emission of exhaust gases or particles exceeding the relevant level specified in the table.

<table>
<thead>
<tr>
<th>Vehicle’s GVM rating (t)</th>
<th>Rate of NO\textsubscript{x} emissions (grams/kilometre/tonne of vehicle test mass)</th>
<th>Rate of particle emission (grams/kilometre/tonne of vehicle test mass)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vehicle manufactured in or before December 1995</td>
<td>Vehicle manufactured in or after January 1996</td>
</tr>
<tr>
<td>Not greater than 3.5</td>
<td>1.5</td>
<td>0.23</td>
</tr>
<tr>
<td>More than 3.5 but not greater than 12</td>
<td>2.0</td>
<td>0.23</td>
</tr>
<tr>
<td>More than 12 but not greater than 25</td>
<td>2.0</td>
<td>0.08</td>
</tr>
<tr>
<td>More than 25</td>
<td>1.5</td>
<td>0.07</td>
</tr>
</tbody>
</table>

(4) The opacity of the exhaust gas emitted by a vehicle to which this regulation applies must not be greater than 25% averaged over a DT 80 test cycle method.

(5) For the purposes of sub-regulations (3) and (4), vehicles are to be tested in accordance with the procedures described in the In-service Diesel Emission Standards published by the National Road Transport Commission as in force from time to time.

**PART 4 NOISE EMISSION STANDARDS**

10. Noise emissions from motor vehicles

(1) In this regulation –

“\text{DB(A)}” means the A-weighted sound pressure level expressed in decibels;

(2) For the purposes of sections 48B and 48D(3A) of the Act, a passenger car, passenger car derivative, off road passenger vehicle or forward control passenger vehicle must not emit noise exceeding the following relevant level -

<table>
<thead>
<tr>
<th>Date of manufacture</th>
<th>Noise Level ([\text{dB(A)}])</th>
</tr>
</thead>
</table>
For the purposes of sections 48B and 48D(3A) of the Act, a goods vehicle or bus must not emit noise exceeding the following relevant level:

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>Gross Vehicle Mass (tonne)</th>
<th>Exhaust Height (millimetres)</th>
<th>Date of Manufacture</th>
<th>Noise Level [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spark ignition</td>
<td>&lt; 3.5</td>
<td>&lt; 1500</td>
<td>&lt; 1/7/83</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 1/7/83</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>&gt; 3.5</td>
<td></td>
<td>&lt; 1/7/83</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 1/7/83</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>&lt; 3.5</td>
<td>&gt; 1500</td>
<td>&lt; 1/7/83</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 1/7/83</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>&gt; 3.5</td>
<td></td>
<td>&lt; 1/7/83</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 1/7/83</td>
<td>91</td>
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<td>&lt; 1/7/80</td>
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<td>&gt; 1/7/80 and &lt; 1/7/83</td>
<td>102</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>&gt; 1/7/83</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>&gt; 3.5 and &lt; 12.0</td>
<td></td>
<td>&lt; 1/7/80</td>
<td>107</td>
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<tr>
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<td></td>
<td></td>
<td>&gt; 1/7/80 and &lt; 1/7/83</td>
<td>104</td>
</tr>
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<td></td>
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<td>&gt; 1/7/80 and &lt; 1/7/83</td>
<td>106</td>
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<tr>
<td></td>
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<td>&gt; 1/7/83</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>&lt; 3.5</td>
<td>&gt; 1500</td>
<td>&lt; 1/7/80</td>
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<td>&gt; 1/7/83</td>
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<tr>
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<td>&gt; 3.5 and &lt; 12.0</td>
<td></td>
<td>&lt; 1/7/80</td>
<td>103</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 1/7/80 and &lt; 1/7/83</td>
<td>100</td>
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<td>&gt; 1/7/80 and &lt; 1/7/83</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 1/7/83</td>
<td>99</td>
</tr>
</tbody>
</table>

Note: the symbols in the above table have the following meaning:
A: In the columns Gross Vehicle Mass and Exhaust Height -
< less than
> greater than or equal to
B: In the column Date of Manufacture –
< before
> on or after

(4) For the purposes of sections 48B and 48D(3A) of the Act, a vehicle described in the following table must not emit noise exceeding the relevant level in the table -

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Date of Manufacture</th>
<th>Noise Level [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor cycle or motor tricycle, other than a new recreational motor cycle</td>
<td>Before 1 March 1985</td>
<td>100</td>
</tr>
<tr>
<td>Motor cycle or motor tricycle, other than a new recreational motor cycle</td>
<td>On or after 1 March 1985</td>
<td>94</td>
</tr>
<tr>
<td>New recreational motor cycle</td>
<td>On or after 1 January 1994</td>
<td>94</td>
</tr>
</tbody>
</table>

(5) For the purposes of sections 48B and 48D(3A) of the Act, a new off road racing motor cycle designed or constructed solely for use in one of the categories described in the table below must not emit noise exceeding the noise level applying to that category -

<table>
<thead>
<tr>
<th>Category of Use</th>
<th>Noise Level [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motocross</td>
<td>102</td>
</tr>
<tr>
<td>Speedway (All track Racing)</td>
<td>102</td>
</tr>
<tr>
<td>Trial</td>
<td>94</td>
</tr>
<tr>
<td>Any Other Competition Event</td>
<td>96</td>
</tr>
</tbody>
</table>

(6) For the purposes of this regulation, the noise emitted by a motor vehicle is to be determined by the methods described in the National Stationary Exhaust Noise Test Procedures for In-Service Motor Vehicles – April 2000 published by the National Road Transport Commission as in force from time to time.

PART 5 – VERTICAL EXHAUST PIPES FOR COMPRESSION IGNITION ENGINED VEHICLES

11. **Vertical pipes for diesel engined vehicles with a gross vehicle mass of 4.5 tonnes or more**

(1) This regulation applies to a motor vehicle that –
(a) is propelled by a diesel engine; and
(b) was manufactured on or after 1 January 1977; and
(c) is registered in Victoria.
(2) For the purposes of section 42(2A) and 43A of the Act, the vehicle must be fitted with a vertical exhaust pipe (or pipes) —

(a) that has a discharge point the lowest part of which is at least 150 millimetres above the intersection of the pipe with a notional horizontal plane passing through the highest point of the vehicle’s cab; and

(b) that discharges the engine exhaust matter into the atmosphere in an upward direction of not more than 30 degrees from the vertical.

(3) This regulation does not apply if the vehicle —

(a) has a gross vehicle mass of less than 4.5 tonnes; or

(b) was manufactured to order and the order was given before 1 July 1974; or

(c) is a bus; or

(d) is a special purpose vehicle or was constructed principally for use in forests, bushlands or other undeveloped areas or for use in roadside maintenance adjacent to freeways or dual highways; or

(e) was constructed principally for use —
   (i) in fire-fighting work; or
   (ii) for the carriage of prisoners; or
   (iii) as a mobile crane; or
   (iv) as an elevated platform vehicle; or
   (v) in agriculture; or

(f) was constructed principally for or in connection with the erection, installation, repair or maintenance of any electrical power supply or transmission system; or

(g) is used after 1 January 2006 and is certified to meet the vehicle emission standards specified in Australian Design Rules 80/01 and has a horizontal exhaust that discharges on the driver’s side of the vehicle towards the centre of the road; or

(h) is registered as a primary producer vehicle and is used predominantly to transport hay.

(4) For the purposes of this regulation —

“primary producer vehicle” has the same meaning as under Schedule 4 to the Road Safety (Vehicles) Regulations 1999.

12. Authority may exempt vehicles from regulation 11

(1) The Authority may exempt a vehicle or a class of vehicle from the need to comply with regulation 11.

(2) The Authority may grant the exemption on the application of a person or on its own initiative.
(3) An application for exemption by a person must-

(a) be made in writing; and

(b) be accompanied by the following information –

(i) a description of the vehicle or class of vehicle in respect of which the application is made;

(ii) the reasons for the exemption request;

(iii) a description of the proposed alternative method of fitting the exhaust pipe or pipes;

(iv) a description of the measures that it is proposed be taken to ensure that the alternative method is not likely to result in an unacceptable risk of damage to the environment; and

(c) in the case of an application in respect of a single vehicle, be accompanied by the following additional information –

(i) registration details of the vehicle;

(ii) the address of location where vehicle is to be garaged;

(iii) the average distance proposed to be travelled by the vehicle in kilometres per year;

(iv) the geographic location of the area in which it is intended that the vehicle is predominantly to operate; and

(d) be accompanied by a fee of 10 fee units.

(4) The Authority may request the applicant to provide further information that the Authority considers necessary in order to determine the application.

(5) An exemption granted under this regulation may be granted unconditionally or subject to conditions.

(6) The Authority must publish a notice of any exemption granted in respect of a class of vehicle under this regulation, and any condition imposed under sub-regulation (5) in respect of that class of vehicle, in the Government Gazette and in a newspaper circulating generally throughout Victoria.

(7) A person must not knowingly contravene any condition imposed in relation to an exemption granted under this regulation.

Penalty applying to this sub-regulation: 20 penalty units.
PART 6 – CONSTRUCTION, MAINTENANCE AND LABELLING

13. **Exhaust system construction**

For the purposes of sections 42(2A) and 42(2B) of the Act, the exhaust system of a motor vehicle must be constructed to ensure that exhaust gases are only emitted from a place designed to emit such gases.

14. **Device or mechanism for idle mixture control**

For the purposes of section 42(2A) of the Act, a motor vehicle in a class described in the following table that is propelled by a spark ignition engine must be constructed so that any device or mechanism provided for the adjustment of the mixture of air and fuel supplied to the engine when it is idling cannot be altered, modified or tampered with.

<table>
<thead>
<tr>
<th>Description</th>
<th>Date of Manufacture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Car</td>
<td>On or after 1 February 1986</td>
</tr>
<tr>
<td>Passenger Car Derivative</td>
<td>On or after 1 February 1986</td>
</tr>
<tr>
<td>Any Other Motor Vehicle</td>
<td>On or after 1 July 1988</td>
</tr>
</tbody>
</table>

15. **Maintenance of emission control equipment**

For the purposes of section 42(2B) of the Act, a motor vehicle must be kept, maintained and repaired in such a way that any emission control equipment or device, or component of the engine, exhaust or fuel system, which is designed, or installed in or on the vehicle, by the manufacturer of the vehicle, to control emissions from the vehicle –

(a) continues to operate in accordance with the manufacturer’s design; and

(b) decreases the rate of discharge of any of the constituent parts of the emission; and

(c) (if applicable) discharges and disperses exhaust matter in an upward direction as intended by the exhaust system; and

(d) remains effective to control emissions from the vehicle.

16. **Pumps dispensing unleaded petrol to be labelled**

(1) For the purposes of this regulation, “anti-valve seat recession additive” means a substance added to unleaded petrol to prevent damage to engine valves that were originally designed to operate with leaded petrol.

(2) A person who sells petrol by retail must ensure that –
ENVIRONMENT PROTECTION (VEHICLE EMISSIONS) REGULATIONS

(a) any petrol pump which is used to dispense unleaded petrol is securely labelled in a durable manner with the word ‘UNLEADED’ or the words ‘UNLEADED PETROL’ in letters which are not less than 20 millimetres in height; and

(b) any petrol pump which is used to dispense petrol that contains an anti-valve seat recession additive and that is designed to replace leaded petrol is securely labelled in a durable manner with the words “LEAD REPLACEMENT” or the words “LEAD REPLACEMENT PETROL” in letters that are no less than 20 millimetres in height; and

(c) any petrol pump which is used to dispense unleaded petrol is fitted with a dispensing nozzle spout which has an outside diameter of not more than 21.3 millimetres; and

(d) any petrol pump which is used to dispense petrol other than unleaded petrol is fitted with a dispensing nozzle spout which has an outside diameter of not less than 23.6 millimetres.

Penalty: 20 penalty units

17. **Labelling of motor cycle or motor tricycle**

(1) For the purposes of this regulation, “**engine speed at maximum power**” means the engine speed, expressed in revolutions per minute, at which maximum power is developed by an engine.

(2) A person who constructs, manufactures, assembles or sells motor cycles or motor tricycles, the manufacture of which was completed on or after 1 March 1988, must ensure that they have the following information affixed –

   (a) a heading comprised of the words “STATIONARY NOISE TEST INFORMATION”; and

   (b) a statement containing the recorded stationary sound level value and the 50% “engine speed at maximum power” value in the following format –

   “Tested …..dB(A) at …..r/min
   Silencing System: (manufacturer)
   Identification: (trade description)”.

(3) The information must -

   (a) be embossed or etched in a readily visible position or carried on a label of plastic or metal which is welded, riveted or otherwise permanently attached in a similarly visible position; and

   (b) be in the English language in block letters and numerals of a height not less than 3 millimetres and of a colour contrasting with their background; and

   (c) be affixed so that it cannot be removed without being destroyed or defaced.

Penalty: 20 penalty units

18. **Maintenance of labelling of motor cycle or motor tricycle**
A person must not, without just cause, remove, alter or obliterate information or a label affixed under regulation 17.

Penalty: 20 penalty units

19. **Penalty for using a vehicle which does not meet the provisions of this Part**

A person must not, without just cause –

(a) being the registered owner of a vehicle, cause or permit that vehicle to be used; or

(b) use a vehicle –

that does not comply with any provision of this Part.

Penalty: 20 penalty units

**PART 7 – GENERAL**

20. **Penalty for unlawful interference with the engine, exhaust, fuel system or emission control device of a vehicle.**

A person must not, without just cause, alter, replace, interfere with, render ineffective or render less effective, or modify the engine, exhaust system, fuel system or emission control device of any motor vehicle in a way that–

(a) departs from the manufacturer’s design; or

(b) increases the rate of discharge, or defeats the intended means of discharge or dispersion, of any emission from the vehicle.

Penalty: 20 penalty units

21. **Penalty for interfering with noise reducing equipment**

(1) For the purposes of this regulation, “noise reducing equipment” means any absorbing material, shielding panel, device or other equipment of any kind whatever for the purpose of reducing the emission of noise from a motor vehicle, and includes, but is not restricted to, the exhaust manifold, the exhaust piping, the expansion chamber and the silencer proper.

(2) A person who installs, removes, replaces or repairs noise reducing equipment on a motor vehicle must ensure that the vehicle meets the requirements of regulation 10 when the installation, removal, replacement or repair is complete.
Penalty: 20 penalty units.

22. Penalty for using a motor vehicle fitted with a temporary defeat device.

A person must not own or use a motor vehicle whilst any temporary defeat device, inlet port restrictor, exhaust port restrictor, or temporary noise reduction device is fitted to the vehicle.

Penalty: 20 penalty units.

23. Maintenance of unleaded requirements

A person must not, without just cause, place petrol which is not unleaded petrol in the fuel tank of any motor vehicle designed to operate on unleaded petrol.

Penalty: 20 penalty units.

PART 8 – FUEL STANDARDS

24. Definition
In this Part, “petrol supplier” means a person –

(a) who manufacturers petrol; or
(b) who imports petrol.

25. Application of this Part
The requirements of this Part apply to the following grades of petrol:

(a) unleaded;
(b) premium unleaded;
(c) lead replacement.

26. Permitted Reid Vapour Pressure

(1) A petrol supplier must ensure that the petrol supplied by him, her or it during the summer period starting 1 November 2003 for sale to petrol consumers does not have –

(a) a monthly volumetric average Reid Vapour Pressure of more than 70 kPa; or
(b) a maximum Reid Vapour Pressure of more than 72 kPa.

Penalty: 20 penalty units.

(2) A petrol supplier must ensure that the petrol supplied by him, her or it during the summer period starting 1 November 2004 for sale to petrol consumers does not have –
(a) a monthly volumetric average Reid Vapour Pressure of more than 67 kPa; or
(b) a maximum Reid Vapour Pressure of more than 69 kPa.

Penalty: 20 penalty units.

(3) A petrol supplier must ensure that the petrol supplied by him, her or it during the summer period starting 1 November 2005, and during all subsequent summer periods, for sale to petrol consumers does not have –
(a) a monthly volumetric average Reid Vapour Pressure of more than 62 kPa; or
(b) a maximum Reid Vapour Pressure of more than 64 kPa.

Penalty: 20 penalty units.

(4) For the purposes of this regulation, the monthly volumetric average Reid Vapour Pressure of the petrol supplied by a petrol supplier is to be calculated as follows –
(a) the average Reid Vapour Pressure of the samples of a grade of petrol taken as required by regulation 27(1) in a month is to be taken to be the Reid Vapour Pressure of all petrol of that grade supplied by the petrol supplier in that month;
(b) that average Reid Vapour Pressure is to be multiplied by the following fraction –

\[
\frac{\text{Volume of that grade of petrol supplied in the month by the petrol supplier}}{\text{Volume of all petrol to which this Part applies supplied in the month by the petrol supplier}}
\]

(c) the calculations required by paragraphs (a) and (b) are to be repeated for each grade of petrol to which this Part applies that was supplied by the petrol supplier in the month;
(d) the results derived under paragraph (b) for each grade of petrol are to be added together to derive a single figure;
(e) that single figure is the monthly volumetric average Reid Vapour Pressure of the petrol supplied by the petrol supplier.

Penalty: 20 penalty units.

27. **Petrol suppliers must take samples**

(1) For the purposes of this Part, a petrol supplier must –
(a) take at least 4 samples of each grade of petrol supplied by him, her or it every month during the summer period for sale to petrol consumers; and
(b) take the samples on separate days and at regular intervals; and
(c) measure and record the Reid Vapour Pressure of each sample; and
(d) measure and record the volume of each grade of the petrol supplied during the month.

Penalty: 20 penalty units.

(2) A petrol supplier must keep any record he, she or it is required to make under this regulation for at least 24 months after the date the record was made.

Penalty: 20 penalty units.

28. **Recording of information concerning petrol**

(1) A petrol supplier must keep a record of the following details of all petrol supplied by him, her or it for sale to petrol consumers -

(a) the type of petrol;
(b) the total volume of the petrol;
(c) the average benzene content of the petrol; and
(d) any other information needed to assess the benzene content of the petrol and its potential impacts.

Penalty: 20 penalty units.

(2) A person who is a petrol supplier must keep the information required under this regulation for a period of at least 24 months after the day the petrol is supplied.

Penalty: 20 penalty units.

29. **Authority may require records**

(1) The Authority may require a petrol supplier to give it a copy of any record that the petrol supplier is required to make under regulation 27(1) or of any information the petrol supplier is required to keep under regulation 28(1).

(2) A requirement must be made in writing and must specify -

(a) the records or information required, either by direct identification of the record or information or by reference to a time period; and
(b) the date by which the requirement must be complied with.

(3) A petrol supplier must comply with any requirement imposed on him, her or it under this regulation.

Penalty applying to this sub-regulation: 20 penalty units.
30. **Information must be correct**

A person who must comply with regulation 29 must ensure that any record or information supplied to the Authority is correct.

Penalty: 20 penalty units
SCHEDULES

SCHEDULE 1

REGULATIONS REVOKED

<table>
<thead>
<tr>
<th>S.R No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>293/1992</td>
<td>Environment Protection (Vehicle Emissions) (Amendment)</td>
</tr>
<tr>
<td></td>
<td>Regulations 1992</td>
</tr>
</tbody>
</table>
SCHEDULE 2

METHOD OF MEASUREMENT OF THE CONCENTRATION OF CARBON MONOXIDE IN THE EXHAUST GASES OF A MOTOR VEHICLE WITH ENGINE IDLING (REGULATION 8)

The concentration of carbon monoxide in the exhaust gases of the motor vehicle must be measured with a non-dispersive infrared carbon monoxide analyser. The analyser must be calibrated within the preceding 30 days by being zeroed with dry nitrogen which contains less than 10 p.p.m. carbon monoxide and spanned with a carbon monoxide mixture which will result in a response equivalent to not less than 70% of the full scale deflection. The instrument must be zeroed and spanned using a secondary electronic or mechanical system prior to each measurement. If the motor vehicle is equipped with more than one exhaust pipe, the concentration must be measured in each exhaust pipe. The inlet end of a sampling probe must be positioned in the exhaust pipe at any point between 0.35 metres and 0.50 metres from the discharge end of the exhaust pipe, which may for the purpose of the test be temporarily extended by an extension piece connected to the designed discharge outlet by means of a suitable connection which does not allow dilution of the exhaust gases by air. The test must be conducted as follows:

(a) Immediately before the test, the engine must be brought to normal operating temperature.

(b) During the test--

   (i)  the engine must be kept running; and

   (ii) the accelerator pedal must not be depressed; and

   (iii) a motor vehicle equipped with manual transmission must be kept in neutral gear with the clutch engaged; and

   (iv) a motor vehicle equipped with automatic or semi-automatic transmission must be kept with the gear selector engaged in the 'drive' position and the handbrake placed in the fully 'on' position; and

   (v) if the motor vehicle is equipped with a manual choke, the choke must be off.

(c) The measurement must be taken by noting the maximum value of the concentration of carbon monoxide as determined by the analyser over a period of between 30 and 60 seconds beginning not earlier than 60 seconds after the probe has been inserted in the exhaust pipe.
ENDNOTES

Table of Applied, Adopted or Incorporated Matter Required by Subordinate Legislation Regulations 1994

Note that the following table of applied, adopted or incorporated matter is included in accordance with the requirements of regulation 6 of the Subordinate Legislation Regulations 1994.

<table>
<thead>
<tr>
<th>STATUTORY RULE PROVISION</th>
<th>Title of applied, adopted or incorporated document</th>
<th>Matter in applied, adopted or incorporated document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation 9</td>
<td>In-service Diesel Emission Standards published by the National Road Transport Commission.</td>
<td>Entire Document</td>
</tr>
<tr>
<td>Regulation 10</td>
<td>National Stationary Exhaust Noise Test Procedures for In-Service Motor Vehicles published by the National Road Transport Commission.</td>
<td>Entire Document</td>
</tr>
<tr>
<td>Regulation 12</td>
<td>Australian Design Rule</td>
<td>Entire document</td>
</tr>
<tr>
<td>Draft Regulations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80/01 published by the Commonwealth Department of Transport and Regional Services.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.2. Appendix 2: Consultation

In conducting this review, EPA actively sought input from stakeholders at key stages of the process and has welcomed comments throughout.

EPA has developed the Protocol for the development of Regulations and the Preparation of Regulatory Impact Statements, in consultation with industry and environmental stakeholder, for the development of regulations. This protocol supplements the requirements of the Subordinate Legislation Act by outlining processes which EPA follows in preparing regulations and associated Regulatory Impact Statements (RISs). The protocol also sets out a range of consultation and impact assessment techniques as well as criteria to guide decisions about which of these techniques should be used in any individual RIS.

In accordance with the protocol, the starting point for the consultative program was the preparation of a draft development plan for the review. The purpose of the development plan was to explain the process EPA would follow in the review, including the making of new regulations. The development plan is designed to help stakeholders contribute to the regulation making process.

The draft development plan was distributed to key stakeholders (approximately 50 in total) including industry representatives, community and environment groups, government representatives and interested individuals for comment in December 2001. A total of 10 comments were received. The development plan was then finalised based on this stakeholder feedback.

As the development plan focussed primarily on process issues, a background paper was then developed as a preliminary identifier of the key issues concerning the regulations and to present some options to stakeholders for debate. The idea was to offer a number of options for possible inclusion in the draft regulations and pose a handful of simple questions aimed to encourage stakeholder input.

Since the review process began in December 2001, the vehicle emissions project team has provided briefings on the review to those stakeholders who have requested them. This includes face-to-face meetings with the Victorian Farmers Federation, the Truck Industry Council and representatives of the Australian petroleum industry including the Australian Institute of Petroleum, Shell, Mobil, Caltex, BP and the independent importer Trafigura.

In addition, EPA Victoria met with representatives of the New South Wales EPA to discuss their approach to issues such as vertical exhausts and RVP controls.

A 'working draft' of the proposed regulations was circulated to representatives of the Australia petroleum industry. These stakeholders were invited to provide comment on specific proposals for petrol standards in the regulations, based on the working draft.

The final stage in the public consultation process involves the public release of the draft regulations and this RIS for public comment. EPA are inviting comment from a wide range of stakeholders including the automotive industry, the petroleum industry, peak environmental and community groups, local government, farmers groups, interested individuals and other government agencies.
During this public comment phase, members of the project team will be arranging a number of meetings and presentations, with the intention of speaking to interested key stakeholders. Staff will be available for discussions with all stakeholders about the draft regulations and/or any issues arising from the RIS.

When the public comment period has closed on 13 January 2003, and EPA has finished considering submissions, EPA will provide a formal written response to public submissions before final recommendations are made to Governor-in-Council.
7.3. Appendix 3: List of References


National Road Transport Commission, 2000 *National Stationary Exhaust Noise Test Procedures for In-Service Motor Vehicles*


EPA Victoria, 2001 *Ambient Air Pollution and Daily Hospital Admissions in Melbourne 1994-1997*, EPA Victoria


Department of Transport and Regional Services, 1999 *Regulatory Impact Statement - New Australian Design Rules for Control of Vehicle Emission*