

Regulatory Impact Statement

Proposed Protection of the Environment Operations (Noise Control) Regulation 2007

Department of **Environment & Climate Change** NSW



Submissions

We welcome written comments on the draft Regulation and Regulatory Impact Statement. The closing date for submissions is **Friday 13 July 2007**. Send your submission to:

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This Regulatory Impact Statement is available on the Department of Environment and Climate Change website at www.environment.nsw.gov.au/consult or from Environment Line, telephone 131 555.

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Published by:

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In April 2007 the name of the Department of Environment and Conservation NSW changed to the Department of Environment and Climate Change NSW.

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ISBN 978 1 74122 431 3
DECC 2007/186
June 2007

Printed on recycled paper

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SUMMARY

In April 2007 the name of the Department of Environment and Conservation NSW changed to the Department of Environment and Climate Change NSW.

The Protection of the Environment Operations (Noise Control) Regulation 2000 (hereafter called the Noise Control Regulation) plays an integral part in managing noise pollution in NSW. The main objective of the Regulation is to limit the amount of community noise in neighbourhoods. It applies to typical noise sources in residential areas, such as appliances, power tools, garden equipment, sound systems, musical instruments, motor vehicles and motor vessels. The Regulation is enforced by a number of agencies, including councils, NSW Police, the NSW Department of Environment and Climate Change (DECC) and NSW Maritime.

The review of the Noise Control Regulation provides an opportunity to improve the alignment between the legislation and current community expectations for noise control. The review has highlighted a number of areas for improvement. The proposed amendments are principally aimed at addressing noise from motor vehicles, domestic articles and vessels through the application of noise abatement technologies and also by effecting behavioural change. The proposed amendments were derived from preliminary consultation with residents in NSW, consumers, industry, affected community groups, individuals and regulators.

The main proposed changes to the Noise Control Regulation are:

Motor vehicles

- incorporating the recommended maximum noise levels for vehicles certified to the new Australian Design Rule 83/00. This aligns with recent changes to national requirements for motor vehicles.
- applying maximum noise level limits to motor vehicles used on road-related areas such as public car parking areas. This permits noise testing of modified motor vehicles located in these areas.
- adding the qualification that the opinion of an authorised officer must be reasonable when determining whether noise control equipment on motor vehicles is defective. This provides a more balanced and equitable approach.
- making it an offence to use temporary noise-reduction devices on motor vehicles used on roads and related areas. This is to address the practice of temporarily modifying vehicles to pass noise tests.
- aligning the requirements for building alarms and motor vehicle alarms by removing the defence provisions for excessive sounding of a motor vehicle intruder alarm when triggered by theft, accidental damage or vandalism. This improves consistency and clarity.
- clarifying that statutory warnings can only be issued by authorised officers such as council and police officers by removing the ability for members of the public to issue a statutory warning to persons causing noise from vehicles during restricted hours. This is to remove an unused provision not supported by councils.
- replacing the motor vehicle testing procedures in the Regulation with the National Road Transport Commission's (2000) National Stationary Exhaust Noise Testing Procedures. This is to improve clarity and consistency and meet obligations to apply national standards for motor vehicles wherever possible.
- adjusting the time periods associated with penalties for the sounding of motor vehicle or building intruder alarms in excess of the limit. This provides a more usable control for alarms that sound for long periods.

Miscellaneous articles

- adjusting the weekday hours for the use of musical instruments and sound systems on residential premises by further restricting night-time use where the sound can be heard by neighbours. This better aligns with current community standards.
- adjusting the time periods associated with penalties for the sounding of motor vehicle or building intruder alarms in excess of the limit. This provides a more usable control for alarms that sound for long periods.
- Clarifying the fact that statutory warnings may be issued only by authorised officers such as council and police officers, by removing the ability for members of the public to issue statutory warnings to persons causing noise from equipment during restricted hours. This is to remove an unused provision not supported by councils.
- adding a new category of equipment (heat pump water heaters) to the list of items that may not be used where neighbours can hear them at night within prescribed times. This addresses recent changes to water heating equipment.

Marine vessels

- extending controls on vessels that emit offensive noise to cover all vessels, not just engine-powered vessels. This is a response to advice from NSW Maritime that the provision was not effective for vessels without engines.
- simplifying controls on the maintenance of noise control equipment on vessels. This addresses the range of equipment designs on marine vessels.
- removing reference to the restricted times of use for musical instruments and sound systems on vessels (where the noise can be heard inside a residence) and replacing it with the requirement that the noise must not be offensive at any time. The provision for warning before an offence occurs will also be removed. This is to facilitate a more effective enforcement regime that is consistent with the approach currently used for motor vehicles.

Appendix 1 presents a clause comparison of the existing Noise Control Regulation and the proposed Noise Control Regulation.

The total cost to Government, industry and the community of the proposed Noise Control Regulation is estimated at \$8 million a year. It is likely that, if the Regulation were not remade, State and local governments would need to commit substantially the same level of resources to dealing with noise complaints but less efficient measures would be available to address neighbourhood noise problems, reducing the benefits for the community. The number of noise complaints would probably rise, as more people will be exposed to offensive noise. There would be an increase in physical noise-mitigation measures, as the absence of effective regulation would force some individuals to invest in insulation or other measures that would reduce their exposure to excessive noise. Psychological and physiological impacts would also result, together with behavioural changes caused by increased noise. In effect, there would be a diminution in community wellbeing (Bergland et al., 1999).

Overall, the proposed Noise Control Regulation carries forward provisions that provide an effective way of managing neighbourhood noise. The main benefits derived from managing and reducing noise levels are improved neighbourhood amenity, avoided human health impacts, and improved lifestyle opportunities. The benefits to the community (in terms of improved amenity and health) of lowering noise levels are difficult to quantify. However, the analysis indicates that there are significant unquantifiable benefits associated with the existing regulation. The proposed amendments are not expected to add significantly to compliance, administration or enforcement costs. The actual costs of introducing the proposed amendments are expected to be small in comparison with the benefits.

INTRODUCTION

In April 2007 the name of the Department of Environment and Conservation NSW changed to the Department of Environment and Climate Change NSW.

The Protection of the Environment Operations (Noise Control) Regulation 2000 is due to lapse on 1 September 2007. As required by the *Subordinate Legislation Act 1989*, a review of the existing Regulation has been carried out to ensure that the most appropriate legislative approach is applied to the current noise issues and problems confronting neighbourhoods.

This report is a Regulatory Impact Statement (RIS) for the making of the proposed Noise Control Regulation, being the Protection of the Environment (Noise Control) Regulation 2007.

The Regulatory Impact Statement

The *Subordinate Legislation Act 1989* provides for the staged repeal of statutory rules, including Regulations, every 5 years. The aim of the Act is to improve the quality of regulatory proposals and to assess the economic and social impacts of the Regulations and alternative options before they are introduced. This process helps to ensure that Regulations have continuing relevance and that they provide the best approach to meet the objectives proposed.

Permission may be sought for extensions of time for the remaking of Regulations. In this case, permission was granted to extend the existing Noise Control Regulation to 1 September 2007 so that more time could be devoted to consultation with stakeholders, particularly NSW councils and NSW Police.

Before another Noise Control Regulation can be made, a RIS must be prepared and public consultation undertaken. The purpose of the RIS is to ensure that the new Regulation provides the best approach for achieving the desired objective. The RIS must provide justification for a proposed Regulation by showing that it provides the greatest net benefit or least cost to the community compared with its alternatives.

A RIS generally contains the following matters:

- a statement of the objectives of the Regulations and the reasons for them
- an identification of alternative regulatory options
- an assessment of the costs and benefits of the alternatives (including the option of doing nothing)
- an evaluation as to which option provides the most cost-effective outcome
- a statement of the public consultation process undertaken.

Where possible, quantification of costs and benefits should be attempted. Where quantification is not possible, the anticipated impacts of the proposed Regulation and the alternative options should be described to facilitate a clear comparison of costs and benefits.

Structure of this report

This RIS has been prepared for stakeholders in the management of neighbourhood noise and other interested parties. The first section of the RIS, the 'Introduction' discusses what constitutes neighbourhood noise; outlines community complaints to the Police, DECC (formerly the Department of Environment and Conservation NSW (DEC)) and councils about noise; presents enforcement, penalties and offences under the Noise Control Regulation; discusses the social costs of noise pollution; and states the objective of the proposed Regulation. The next section describes the 'Base Case', that is, the situation that would arise if the Regulation were not

remade. There are three main sections that focus on the proposed Regulation as it relates to motor vehicles, miscellaneous articles and marine vessels. These sections include a cost–benefit assessment of the proposed Regulation and justification for the amendments, continuation or repeal of clauses. These sections are followed by the ‘Summary of Costs and Benefits’ and ‘Conclusion’. The ‘References’ and ‘Appendixes’ provide additional relevant data. Finally, the proposed Noise Control Regulation itself is included at the end of this RIS.

There are shaded discussion boxes in the body of this RIS that highlight future directions, trends, actions coordinated at various levels of government and anticipated new technologies that could be raised in future Noise Control Regulation reviews. The issues raised in the discussion boxes relate directly to neighbourhood noise concerns, i.e. motor vehicle noise and noisy residential activities.

Consultation

The objective of the consultation process is to provide stakeholders with an opportunity for direct input into the proposed Noise Control Regulation. It is important to gain a wide range of comments and suggestions early in the regulatory review process to ensure that relevant new issues have been introduced into the RIS for debate. The department aimed to ensure that the views of residents, consumers, industry, affected community groups, individuals and regulators were sought in the preliminary informal consultation phase of the regulatory review. The organisations that provided advice in the review are listed in Appendix 2. DECC thanks all the people and organisations that have contributed their time and resources to the review.

As the Noise Control Regulation is enforced principally by councils and the police, and deals with community noise issues, extensive consultation with these organisations has been undertaken to improve and clarify procedures and controls with a view to making enforcement more effective. The enforcement function of councils and the NSW Police was recognised by providing an opportunity for each to take a full role in framing the proposed Regulation.

Accordingly, a steering committee for the review of the Noise Control Regulation was formed with both NSW Police and local government representation. The Committee’s role was to oversee the review and provide advice on changes and improvements, as well as to endorse the RIS and the proposed Regulation.

The Noise Control Regulation essentially sets community standards on what degree of noise intrusion is acceptable for specified neighbourhood activities such as alarms, amplified music, lawn cutting equipment, motor vehicles etc. The regulatory review presents an opportunity to improve the alignment between the Regulation and current community expectations for noise control. The Regulation attempts to provide a balance of legitimate neighbourhood activities against unacceptable noise impacts.

A State-wide social survey was carried out (referred to as the 2004 NSW Neighbourhood Noise Survey; DEC 2004) to obtain community views on neighbourhood noise and what is right and wrong with the current Regulation. The survey had four primary research objectives:

- 1 Identify the nature and extent of neighbourhood noise impacts experienced by the NSW community.
- 2 Identify community awareness of, and attitudes to, neighbourhood noise problems.
- 3 Identify community preferences concerning potential solutions to noise problems, and in particular views concerning the appropriate level of restriction on legitimate noise activities such as lawn mowing and using power tools.
- 4 Gauge the level of public awareness and understanding of current legislation and enforcement options, including what works, what does not work, and what is missing, and to explore aspects of current knowledge, attitudes and behaviours regarding noise.

A copy of the 2004 NSW Neighbourhood Noise Survey report can be accessed through DECC's website at www.environment.nsw.gov.au/noise/nnresearch/index.htm.

The review of the Regulation also provides an opportunity to discuss with councils, NSW Police and NSW Maritime the issues that are considered important by the community. These are the main agencies implementing the Regulation.

All councils in NSW were approached directly in May 2005 and invited to nominate issues of concern relating to neighbourhood and motor vehicle noise. DEC also distributed a discussion paper to councils, outlining potential amendments to the Regulation. DEC received responses from 46 (30%) NSW councils. Comments from these councils are incorporated into the relevant sections of this RIS as an indication of support or otherwise for regulatory change. Appendix 3 sets out the summary responses from these councils.

On behalf of DEC, NSW Police carried out a survey of neighbourhood noise concerns in 22 NSW Local Area Commands. Comments from the NSW Police survey are presented in the relevant sections of this RIS as an indication of support or otherwise for regulatory change.

In June 2005, DEC wrote to key industry representatives to inform them of the review of the Noise Control Regulation. In the letter, DEC invited initial comments or suggestions as to how the Regulation might be improved and indicated that there will be a further opportunity to comment when the RIS is released.

Similarly, in June 2005, DEC wrote to the heads of other government departments, including the NSW Department of Infrastructure Planning and Natural Resources (now the Department of Planning), NSW Office of Fair Trading, National Environment Protection Council Service Corporation, National Transport Commission (NTC), Roads and Traffic Authority (RTA), Community Justice Centres Directorate and NSW Department of Health. Initial comments or suggestions were sought as to how the Regulation might be improved.

This RIS represents the formal consultation phase on the proposed Noise Control Regulation and is available for public examination during this phase. Public submissions may be made to DECC during this time and will be taken into account in finalising the proposed Noise Control Regulation.

DEC maintained ongoing dialogue with stakeholders, and this provided valuable information on the effectiveness of the Noise Control Regulation. The department receives feedback from councils on the operation of the Regulation on an ongoing basis when it responds to council noise enquiries. An important source of ongoing information from the community is through the department's Environment Line telephone service on 131 555, where approximately 15% of all complaints and queries received are related to noise.

Responsibility for noise control

The principal noises or noise sources that are regulated in NSW are:

- community noise
- motor vehicle noise
- industrial and commercial sites
- railway noise
- marine vessels
- animals.

Essentially, local councils are the regulators of:

- noise from commercial and industrial operations that are not required by the Environment Protection Authority (EPA)¹ to hold licences (and that are not carried out by public authorities)
- neighbourhood noise from residences, vehicles used off-road, vehicle alarms, and sound systems.

Barking dogs are also regulated by councils under the *Companion Animals Act 1998*.

The police have powers to deal with neighbourhood noise and are typically the main agency for the control of noise from late-night parties, or where safety may be a concern or where council officers are not available.

DECC handles noise from activities that are licensed or carried out by public authorities. Activities that require environment protection licences are listed in Schedule 1 of the *Protection of the Environment Operations (POEO) Act 1997* and are typically large-scale industrial operations. DECC also regulates outdoor concerts held on lands specified in section 67 of the POEO (General) Regulation 1998.

DECC, NSW Police and the RTA all have roles in controlling noise from motor vehicles. These agencies periodically conduct joint campaigns that include targeting noisy motor vehicles. The RTA is primarily responsible for regulating noise from heavy vehicles. Councils can also deal with offensive noise from motor vehicle sound systems and noise from motor vehicles on private property.

NSW Maritime regulates noise from motor vessels in navigable waters and premises used in conjunction with vessels that are situated adjacent to, or partly or wholly over, navigable waters.

The Liquor Administration Board (LAB) administers the operation of liquor-licensed premises. In 2005, the Department of Gaming and Racing invited public comment on associated Regulations and processes for managing noise from licensed premises, among other things. The outcome of this review may affect the role of the LAB and how licensed premises address noise. Further advice about the proposed new laws is expected to be available during the second half of 2007.

The Federal Government is responsible for managing aircraft noise and seeks to control noise from its own sites, such as Sydney Airport and various defence facilities.

Sources of noise

Noise is unwanted sound. What constitutes noise may therefore be largely a subjective judgment. Whilst there are undoubtedly sounds that the vast majority of the population would describe as noise, any perceptible sound might be considered noise by one person but not another. Sound is measured in units called decibels, represented on a logarithmic scale. This means that a 10-decibel increase represents an effective doubling of noise levels. The threshold of hearing is 0 decibels. The threshold of pain is typically taken as 140 decibels.

The range of potential noises or noise sources that can have an impact on neighbourhoods generally includes:

- machinery and equipment commonly used on residential premises, such as amplified musical equipment, intruder alarms, pool pumps, air conditioners and power tools
- transport noise, such as that from road traffic, aircraft, marine vessels and trains
- industrial noise from nearby factories and workshops

¹ The EPA is part of DECC.

- commercial premises such as restaurants and marinas
- animals such as dogs and some birds.

What is neighbourhood noise?

The Noise Control Regulation focuses on neighbourhood noise. Neighbourhood noise is generally taken to be noise that results from activities normally conducted in residential areas.

Typical neighbourhood noise sources covered by the Noise Control Regulation include:

- machinery and equipment commonly used on residential premises, such as televisions, radios, CD players and other sound equipment, musical instruments, intruder alarms, pool pumps, air conditioners and power tools
- individual motor vehicles and motor vessels.

Noise from industrial and commercial sites, aircraft noise, overall road traffic noise not pertaining to individual motor vehicles, and animal noise are not subject to the Noise Control Regulation, but are controlled by the agencies mentioned above in 'Responsibility for noise control'.

Impact of neighbourhood noise

The 2004 NSW Neighbourhood Noise Survey found that one in three people considered themselves affected by neighbourhood noise and one in eight people were very annoyed or disturbed by it. For flat, unit or apartment dwellers this impact rate almost doubled.

In residential areas there are two ways in which noise pollution may disturb. The first way is the volume and duration of noise. Loud noise and noise that continues for some period of time (such as amplified music or continuously sounding intruder alarms) are commonly regarded as the main sources of noise pollution. The second way in which noise may be a disturbance is by the fact that it can be heard at all. This applies during the sensitive night-time hours, when sleep disturbance is more likely.

Neighbourhood noise can also be categorised into stationary sources such as air conditioners and mobile sources such as motor vehicles and vessels. The impacts of neighbourhood noise may include annoyance and sleep disturbance. Other impacts include disturbance of listening and concentration activities such as watching television, reading, study, conversation and music appreciation. Noise pollution may impair social relationships, academic development and work performance.

The *Guidelines for Community Noise* published by the World Health Organization (1999) contain a large amount of information on the health effects of noise. The report can be accessed via the internet at the website <http://www.who.int/docstore/peh/noise/guidelines2.html>.

The *Health Effects of Environmental Noise—Other than Hearing Loss*, published by the enHealth Council (2004) also presents a review of the health effects of environmental noise. The review focused on research that highlighted linkages between exposure to environmental noise and its effects on health and well-being. The review also considered the measures (national and international) directed at management of environmental noise, and makes recommendations on this aspect. This document can be accessed via the internet at the website http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pubhlth-publicat-document-metadata-env_noise.htm.

The enHealth Council (2004) identified the main health outcomes for which there was sufficient evidence, together with the populations most at risk. They concluded that the effects of noise on health probably operated through a number of different pathways, including direct effects, interference with cognitive processes, and people's reactions to interference in daily activities and communication. The report concluded that there was sufficient evidence that community

noise results in increased annoyance and sleep disturbance and adversely affects cardiovascular health and children's school performance.

The following paragraphs are taken directly from the enHealth Council (2004) review:

Individual experience of annoyance to noise varies, depending on personal characteristics and factors such as the ability to control the living environment and psychological stressors. It is not clear whether a long duration of noise exposure increases the vulnerability to serious health impairment.

Undoubtedly, people who are already stressed (for example, already have a high level of depression or anxiety) are more likely to develop higher annoyance levels when exposed to environmental noise, than those who are not affected.

Noise affects people's ability to gain the appropriate amount and type of sleep needed for maintenance of good health and there are suggestions of disturbed sleep leading to more serious health problems.

There is sufficient evidence supporting a conclusion that chronic noise exposure at schools affects child health and performance.

The results of community studies provide little evidence that noise is related to hypertension, but may be a risk for cardiovascular disease for those who live in highly exposed areas (65–70 decibels A-weighted (dB(A)) although the magnitude of the effect is likely to be small.

Although there is no strong evidence that noise causes mental ill-health, it is possible that some vulnerable groups, who are exposed to noise over which they have no control, may be vulnerable to mental health problems. What is more certain is that those with existing mental health problems, usually either depression or anxiety, are more prone to be annoyed and disturbed by environmental noise exposure than the general population.

Complaints about noise

The 2004 NSW Neighbourhood Noise Survey found that about one in seven people have made complaints either to neighbours or regulatory authorities about neighbourhood noise.

Local councils, DECC and NSW Police all receive complaints about noise. Local councils are thought to receive the most noise complaints, but collective data for all NSW councils is not available.

Noise complaints are not necessarily regarded as an accurate measure of the impact of noise. Information on noise exposure can be obtained through other best practice methods. For example, the European Noise Directive, which became European law in May 2002, requires all large communities and major transportation routes to be noise mapped every 5 years (enHealth Council, 2004), for the purpose of providing information on noise exposure to decision-makers and the public (WG-AEN, 2003). Nevertheless, complaints provide a source of data that helps in identifying the noise sources that generate concern in the community. Complaints data can also help to determine noise 'hot-spots' and provide an insight into the effects of noise at an individual level.

For the purposes of this RIS, the impact of neighbourhood noise on the community was assessed in relative terms by comparing the number of administrative actions resulting from noise with the number of administrative actions resulting from other environmental or social issues. Administrative actions in this sense include attendance by enforcement officers to a particular incident, complaints by phone and letter, and information requests. The following analysis indicates that noise is a major social and environmental concern to the community.

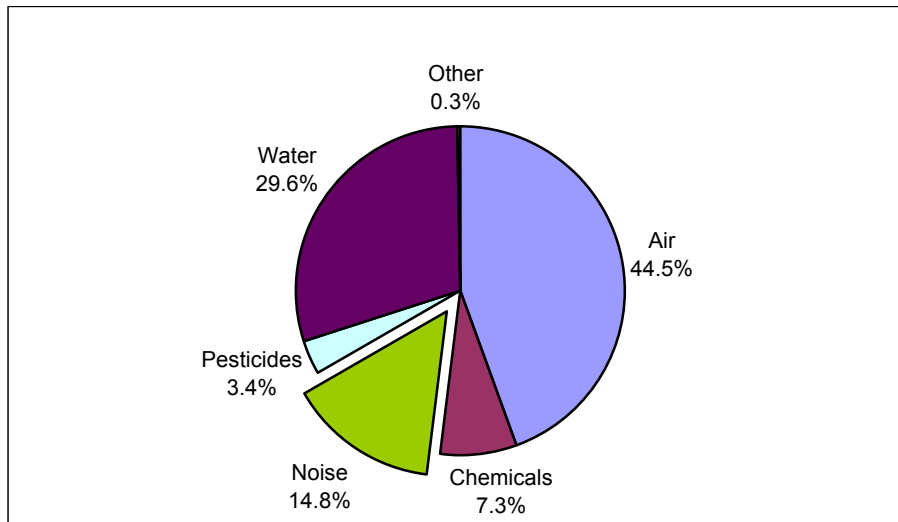
Department of Environment and Climate Change NSW

The Department of Environment and Climate Change NSW (DECC) operates a telephone service called Environment Line (131 555) that offers information on a wide variety of environmental topics. Incoming calls are recorded into one of three categories: 'Information

Calls', 'Incident Reports' and 'Motor Vehicle-related calls'. If the call to Environment Line is related to noise pollution, and DECC is the regulatory authority, then the call is recorded as an Incident Report. However, if the council or another body is the regulatory authority, the call is recorded as an Information Call and (in the case of councils), the call is referred for further action.

Figure 1 shows that 15% of total² 'Incident Reports' made to DEC during 2004–05 were related to noise issues.

Figure 1: 'Incident Reports' to DEC's Environment Line 2004–05

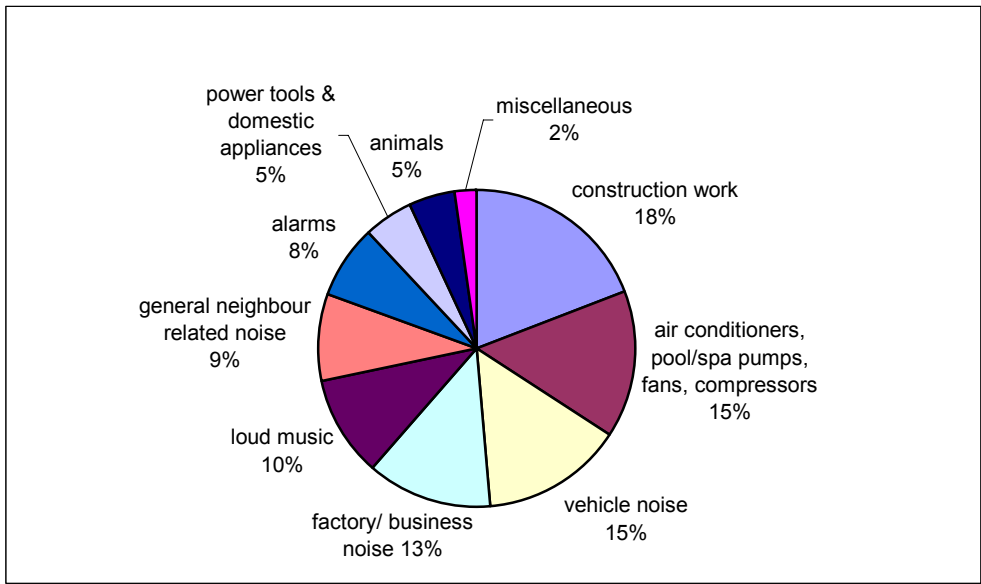


During 2004–05, the department received 6193 'Information Calls' related to noise; these comprised approximately 16% of the total³ requests for information that financial year. This percentage has been relatively stable over a number of years. This equals an average of 516 calls a month or 23 calls a day. This is the largest category of 'Information Calls', followed by waste (15%) and air (14%). Approximately 75% of all noise 'Information Calls' are referred to councils for action, and most of these are in the Sydney region. Figure 2 shows the types of noise calls (by percentage) that were referred to council between September 2004 and February 2005. The main types of noise sources referred back to councils were construction site work, air conditioners, pool and spa pumps, fans, compressors and pools, vehicle noise and factory or business noise, and loud music.

2 DEC Environment Line data: 9696 'Incident Reports' from the public between July 2004 and June 2005.

3 DEC Environment Line data: 38 898 'Information Calls' from the public between July 2004 and June 2005.

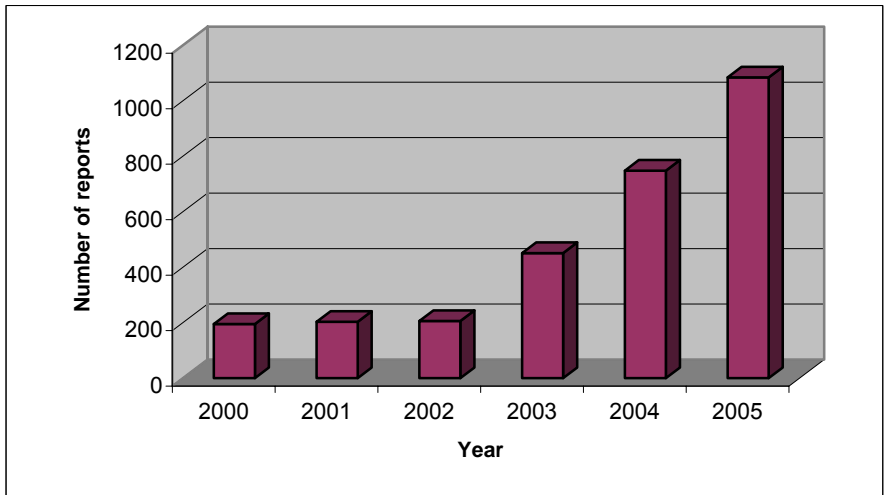
Figure 2: Types of noise related 'Information Calls' referred to councils



Source: DEC's Environment Line

The increased effect of noise on NSW communities is evident in Figure 3, which shows the number of reports to DEC's Environment Line by the public of excessive noise from modified exhausts and engines. In 2005, 1084 reports were received. There has been a progressive increase in the number of motor vehicle noise reports over the past 4 years.

Figure 3: Number of 'Motor Vehicle related calls' to DEC's Environment Line



Increasing population, particularly where it involves greater urbanisation and urban consolidation, and increasing volumes of road, rail and air traffic are factors that contribute to problems with high noise levels (EPA, 2003). Studies have shown that environmental noise is having an increasing effect on residents because of higher residential densities and traffic volumes and the advent of the 24-hour city (Newton et al., 2001). It is estimated that 1.5 million residents in Sydney are exposed to outdoor noise levels that may affect sleep and amenity. As defined by the Organisation for Economic Co-Operation and Development (OECD), this is noise between 55 and 65 dB(A). An estimated 350 000 of these residents experience unacceptable noise levels where behaviour patterns may be constrained and health effects demonstrable; this is noise greater than 65 dB(A) (ABS, 1997).

Residences in Sydney fronting arterial roads and rail corridors have been shown to experience elevated noise levels, with an associated reduction in amenity (Read et al., 1995). A study by Brown and Bullen (2003) revealed that around 12% of people in Sydney are exposed to acute noise levels of road traffic, and around 25% of Sydney's people are exposed to noise levels above the NSW criterion for new roads and World Health Organization (WHO) noise targets. Jurisdictional analysis confirmed that the responsibility for management of this problem must be accepted by both local and State authorities responsible for roadways, land-use controls and building controls (Brown and Bullen, 2003).

These factors, together with community expectation for government action, contribute to the consistently high number of noise-related calls to DECC's Environment Line.

Regulation, education and land-use planning are key factors necessary to address neighbourhood noise issues. The Noise Control Regulation is but one approach to control noise and is unlikely to cause a significant reduction in noise impacts in isolation. However, there is a clear case for making the regulatory approach more efficient and effective wherever possible.

NSW Police

Table 1 shows the numbers of crime and non-crime incidents reported to NSW Police in 1999 and 2004. As shown in Table 2, the police attended 123 313 noise incidents (approximately 70% of the reported noise incidents) during 2004. Approximately half (51%) of these were related to sounding alarms. The total number of noise incidents (general noise and alarms) reported to the police accounted for almost 7% of the total reported incidents in 2004 (approximately 2.6 million).

Table 1: Number of incidents reported to NSW Police in 1999 and 2004

Police incident category	1999	2004
Crime incidents (e.g. assault, robbery)	515 316	566 324
Non-crime incidents (including, but not limited to, general noise and alarms)	2 100 000	1 994 121
Total incidents	2 615 316	2 560 445

Source: Police Computerised Incident Dispatch System (CIDS) database.

Table 2: Number of noise incidents reported and attended by NSW Police in 2004

Type of noise incident	Reported	Attended
General noise incidents	90 716	59 757
Alarm noise (buildings and cars) incidents	85 895	63 556
Total	176 611	123 313

Source: Police Computerised Incident Dispatch System (CIDS) database.

Councils

Local councils have primary responsibility for regulating residential noise, and it is likely that most noise complaints are directed to them. Most councils maintain databases of complaints, but there is no single method for categorising complaints nor a central database covering all NSW councils. Furthermore, all NSW councils do not maintain data in a uniform manner. In general, it is difficult to classify complaints on the basis of particular provisions of the Regulation.

From a review of several 2004–05 State of the Environment Reports for councils in the Sydney region it is apparent that noise from barking dogs is the most significant source of noise complaints. In most cases, barking dogs accounted for more than 50% of the total noise incident reports received. Noise from dogs is subject to the *Companion Animals Act 1998* and therefore has not been considered in this review of the Noise Control Regulation. Other significant sources of noise complaints reported by councils were loud music, machinery and construction, alarms, trail bikes, air conditioners, swimming pool pumps, mechanical exhaust systems and commercial garbage collection.

During preliminary consultation on the proposed Noise Control Regulation, councils commented that neighbourhood noise issues in their Local Governments Areas (LGAs) depended on demographics, land development and increased urbanisation, emerging noise sources such as water heaters fitted with heat pumps, and land-use conflicts. The role of councils in resolving ongoing neighbourhood disputes was identified as challenging. Non-metropolitan councils generally received fewer noise complaints because of the more scattered distribution of residents in their LGAs.

Enforcement, penalties and offences

The existing Regulation is largely enforced by local councils, NSW Police, DECC and NSW Maritime. Officers with delegated powers are referred to as authorised officers or enforcement officers. It is proposed that these agencies will continue to enforce the Regulation. The principal means of enforcement and related enforcement issues are discussed below.

Protection of the Environment Operations (POEO) Act 1997

The POEO Act is the key piece of environment protection legislation administered by DECC.

The Act defines the agency responsibilities for environmental regulation in NSW and allocates the main regulatory powers between DECC, local councils, NSW Police and NSW Maritime. DECC is the appropriate regulatory authority for premises which conduct activities specified in Schedule 1 of the Act (scheduled activities) and activities carried out by other public authorities. Local councils are generally the appropriate regulatory authorities for non-scheduled activities in their LGAs. NSW Police and NSW Maritime are generally responsible for activities for which it is not practical for DECC or council to regulate.

One of the key objectives of the Act is to reduce risks to human health and prevent degradation of the environment by using mechanisms that promote pollution prevention.

The main provisions within the Act related to noise are listed below:

(1) The Act prohibits:

- the sale of articles emitting more than the prescribed noise (section 136). Articles and limits are prescribed in the Noise Control Regulation.
- the sale of articles not fitted with the prescribed noise control equipment (section 137). Articles and limits are prescribed in the Noise Control Regulation.

- emission of noise through the operation of plant, unless the plant is maintained in an efficient condition and operated in a proper and efficient manner (section 139).
 - emission of noise through processing or otherwise dealing with materials (including raw materials), except where those materials are dealt with in a proper and efficient manner (section 140).
- (2) The Act enables regulations to be made in order to give effect to the Act providing these regulations are not inconsistent with the Act (section 323). For noise, this is the Noise Control Regulation.
- (3) The Act defines offensive noise as noise:
- (a) that, by reason of its level, nature, character or quality, or the time at which it is made or any other circumstances:
 - (i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or
 - (ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or
 - (b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in any other circumstances prescribed by the regulations.
- (4) The Act provides for the appointment of authorised officers who may apply a number of regulatory tools provided within the Act (listed in point 5 below) to activities for which they are the appropriate regulatory authority. Authorised officers also have: powers of investigation and the power to issue penalty infringement notices and to undertake a court prosecution for breaches of the Act, the Noise Control Regulation or conditions on a Licence, Notice or Direction.
- (5) The Act provides a set of regulatory tools to facilitate the management of noise by authorised officers, including:
- *Environment Protection Licences* – The activities listed in Schedule 1 of the POEO Act are required to be undertaken under Environment Protection Licences issued by DECC. These licences are usually issued with conditions that can, among other things, prescribe noise limits and other noise conditions such as hours of operation. Criteria specified in the conditions may be determined by reference to DECC noise control policies.
 - *Noise Control Notices* – Authorised officers (excluding the Police) may issue notices prohibiting noise from an activity or a piece of equipment from being emitted above a specified level when measured at a specified point. These notices may also specify the hours during which the noise limit applies. A noise control notice may be applied to a wide range of premises, including industrial, commercial or residential sites. Noise levels and hours of operation that are specified in the notice may be determined by reference to local council or DECC noise control policies or guidelines.
 - *Prevention Notices* – Prevention notices may be issued by authorised officers (excluding the Police) to control activities that have been, or are being, carried out in an ‘environmentally unsatisfactory manner’, and should specify the action to be taken to remedy the problem. Section 95 of the Act defines ‘Environmentally unsatisfactory manner’ as where an activity is ‘not carried on by such practicable means as may be necessary to prevent, control or minimise pollution’ or where an activity ‘is not carried out in accordance with good environmental practice’. The definition of ‘pollution’ within the Act includes ‘offensive noise’. ‘Good environmental practice’ is generally where an activity is undertaken in accordance with local council or DECC noise control policies or guidelines or in accordance with relevant standards. Fees (currently \$320) are payable for the issuing of prevention notices. Also, compliance cost notices may be issued to the

recipient of a prevention notice to recover the reasonable costs and expenses incurred by the authority in monitoring and ensuring that the action required by the prevention notice is carried out.

- *Noise Abatement Directions* – An authorised officer may issue a direction to warn that if the emission of offensive noise continues this will constitute an offence that may result in a fine or court action. These directions are designed for ‘one-off’ problems such as loud music, where the noise can be reasonably reduced or stopped. A direction may be issued verbally or in writing and lasts for up to 28 days. Under section 282 of the POEO Act the Police may confiscate offending equipment if a noise abatement direction is in force and the direction is being contravened.
- (6) The Act enables an individual to independently seek a *Noise Abatement Order* from the local court. The local court may direct a person to cease the emission of offensive noise if it is satisfied that the noise is offensive.

Noise Control Policies and Guidelines

The department has published a number of policy documents which provide guidance on what are considered to be the acceptable noise levels and times of operation for a range of activities. These documents cover areas such as road traffic noise, industrial noise, construction noise and rail noise. The criteria within the documents are generally used to inform the process when determining appropriate conditions to be placed on a Development Consent, Environment Protection Licence, Noise Control Notice or a Prevention Notice.

The department has also published a *Noise Guide for Local Government* to assist local council officers apply the appropriate regulatory tools in a variety of situations and determine whether noise is ‘offensive noise’.

Penalty levels

The maximum penalties provided under the Noise Control Regulation for a Court prosecution are currently \$16,500 for individuals and \$33,000 for corporations. These penalty levels are below the maximum penalty for Regulation offences provided under Section 323 of the POEO Act, that is, \$22,000 for individuals and \$44,000 for corporations.

Most penalties issued are ‘on the spot’ penalty infringement notices (or fines). On-the-spot fine levels for these currently range from \$150 to \$600 for individuals and double this for corporations. These are comparable to the level of fines issued for other Regulations under the POEO Act.

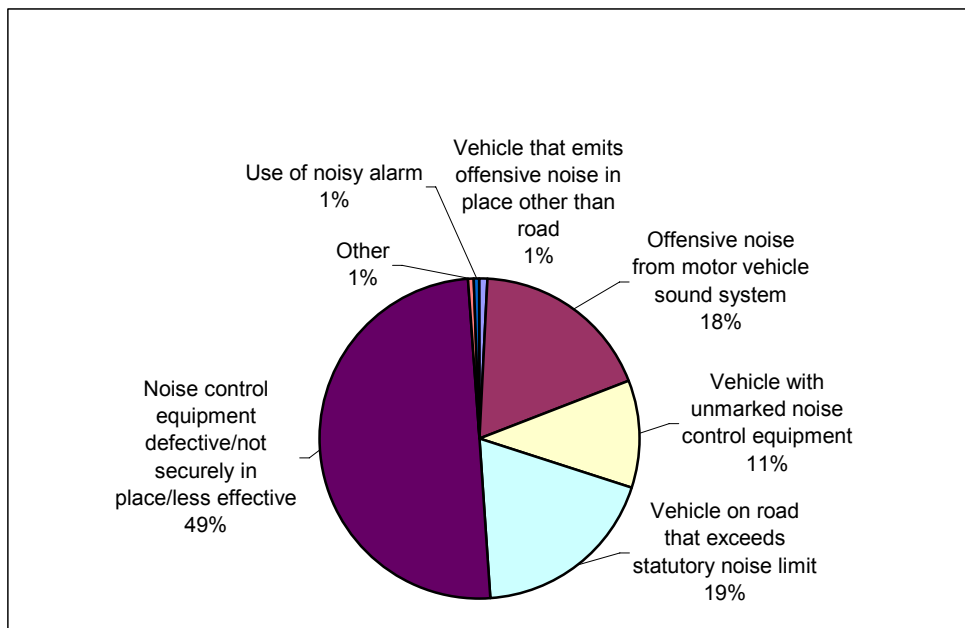
Table A5.1 in Appendix 5 shows the various provisions of the Noise Control Regulation, together with the existing and proposed penalty levels.

Noise offences 2000–2005

Between July 2002 and June 2005, 4771 on-the-spot fines were issued by DEC, councils and NSW Police for breaches of the principal Noise Control Regulation. Of these, 4474 fines were related to motor vehicles, 294 to noise from miscellaneous articles, and 3 to noise from marine vessels. Noise from musical instruments or sound equipment noise was the main category of miscellaneous articles offences (97%). Figure 4 shows the proportions of major offences under the motor vehicles category.

Between July 2000 and June 2005, DEC issued 1224 fines for vehicles that were being used on road and exceeded statutory noise limits, and 1439 fines for noise control equipment that was defective, not securely in place or rendered less effective (including being less effective than the original).

Figure 4: Major categories of fines issued for motor vehicle offences, 2002–03 to 2004–05



Source: Infringement Processing Bureau

Social costs of noise pollution

The concept of 'social cost' refers to the adverse environmental impacts of noise on human health and economic activity. These impacts manifest as damage in terms of productivity losses, health care costs, effects on property values and loss of psychological wellbeing (Bergland and Lindvall, 1995). Willingness to pay (WTP) approaches to value noise reductions have been used internationally. They generally find a relationship between the proportion of Gross Domestic Product (GDP) or per capita income that would be paid to alleviate noise levels. Close and Apelbaum (2001) noted a Swedish study suggesting a willingness to pay A\$2500 per window for soundproofing and a 1% to 3% increase in rent for a fully soundproofed building.

As previously mentioned (under 'Impact of neighbourhood noise') the key health effects of environmental noise (excluding hearing loss) have been reviewed by enHealth Council (2004). The conclusion was that the health effects of noise probably operated through a number of different pathways, including direct effects, interference with cognitive processes, and people's reactions to interference with daily activities and communication. It was generally agreed that there is sufficient evidence that noise adversely affects annoyance, sleep disturbance, children's school performance and cardiovascular health. Children, people with existing physical and mental illness, and the elderly were considered most susceptible to noise on the basis of current limited evidence (enHealth Council, 2004).

Measuring the economic and social costs of noise pollution is a difficult task. Most studies to date have focused on road traffic noise and aircraft noise rather than comprehensive assessment of all noise sources. The most common indicators used to estimate the social costs of noise are:

- differences in market values of properties (hedonic pricing)
- expenditure on abatement measures
- expenditure on avoidance and prevention
- costs of health care and production losses
- willingness-to-pay estimates based on surveys.

Noise generated by road traffic has been demonstrated to affect property values adversely. A study by Ableson (1996) estimated that a 1 decibel (A-weighted) increase in traffic noise resulted in property values in Sydney decreasing by between 0.14% and 1.26%. For an average priced house in Sydney this would represent a decrease of between \$725 and \$6,527.⁴

Quinet (1993) summarised the social costs of various studies and estimated that the costs of noise pollution ranged between 0.2% and 2% of GDP. For NSW the cost of noise pollution would be between \$610 million and \$6,100 million (ABS, 2005a)⁵.

These studies demonstrate that noise pollution imposes a serious and significant effect on the community. They also suggest a clear role for regulation to correct market failure,⁶ as cost impacts are not usually borne by those creating them.

A reliable measure of these impacts in dollar terms continues to be difficult to determine. In lieu of firm dollar estimates of impacts, every effort has been made to describe in physical terms the benefits of particular noise reductions.

Objective of the proposed Regulation

The objective of the proposed Noise Control Regulation is to provide equitable and cost-effective management of community, motor vehicle and marine vessel noise.

The existing Regulation is directed primarily at managing nuisance from neighbourhood noise, and this will continue to be the principal focus of the proposed Regulation. The Regulation seeks to establish an appropriate balance between the community's right to peace and quiet and the community's right to carry out legitimate, although potentially noisy, activities. The proposed Regulation aims to achieve the objective by the following measures:

Supplementing other statutory controls

The POEO Act provides for the use of notices to address neighbourhood noise. Notices can be useful but are not appropriate in all circumstances. The Noise Control Regulation provides enforcement agencies with supplementary control options.

Streamlining noise control enforcement

The existing Noise Control Regulation is largely enforced by councils, police, DECC and NSW Maritime. DECC proposes to continue enforcement of the Regulation by these agencies. Several amendments are proposed, and these should make enforcement easier and more cost-effective. Additionally, the amendments should protect the community from unreasonable noise impacts from neighbourhood noise sources.

Maintain a consumer role in noise reduction

The current noise labelling requirements allow consumers to distinguish between articles or products on the basis of noise. It is proposed to continue these to provide an incentive for manufacturers to supply products with lower noise levels into the NSW market.

4 Based on a median Sydney house price of \$518,000 as at December Quarter 2005 (Australian Property Monitors, 2006)

5 Based on NSW Gross State Product of \$305,437 million as at June 2005 (ABS, 2005a).

6 Market failure refers to a situation where the market system results in a socially undesirable outcome such as noise pollution. Market failure is often cited as a reason for government intervention to bring about outcomes more in line with community preferences (Quinet, 1993).

Continuing the focus on specific items

Most of the existing Noise Control Regulation relates to specific items. The proposed Regulation continues this focus. This approach is supported by survey evidence and anecdotal information from community complaints, police and council sources. These sources suggest that neighbourhood noise impacts continue to be attributed largely to specific noise sources such as alarms, air conditioners and individual motor vehicles.

THE BASE CASE: NO NOISE REGULATION

The discussion below outlines the implications of allowing the Noise Control Regulation to lapse without being remade. This provides a baseline from which the existing and proposed Regulation can be assessed.

The repeal of the Noise Control Regulation would have little or no impact on the control of industrial noise, which is presently regulated by Environment Protection Licences or POEO Act notices. However, in the case of neighbourhood noise (e.g. times of use of air conditioners, power tools, sound systems), council and police officers would have to rely on POEO Act notices and directions and on negotiation or mediation efforts to resolve noise impacts. This may result in more pressure on members of the community to resolve noise disputes themselves through community justice centres or the local court.

The POEO Act would also be the only significant statutory instrument for directly controlling motor vehicle and vessel noise. Under this scenario, DECC's responsibilities for regulating noise from motor vehicles (currently specified in the Noise Control Regulation) would fall to councils and the police. Motor vehicle and vessel noise, such as that from sound systems and defective noise control equipment, would have to be regulated by using POEO Act notices and directions. The inherent limitations and problems of notices and the resulting implications for neighbourhood noise are discussed below.

This situation would create a layer of complication and inefficiency. There are over 152 councils in NSW, and individual approaches to regulate noise from motor vehicles would create cross-jurisdictional inconsistencies. It would add pressure to councils to devise their own policies in this area and would also result in uncertainty in the public's mind as to what the local rules were for neighbourhood noise control. Furthermore, the probability of recognition of Federal Government intentions for in-service vehicles under the Australian Vehicle Standards Rules would be difficult at a local government level, given the number of councils in NSW. Furthermore, council officers are not equipped to pull over suspected non-compliant vehicles and conduct noise tests. Police policy is not to conduct quantified noise testing. Thus in-service testing of motor vehicles would likely not occur.

Coverage of noise problems

Noise abatement directions apply immediately but may be issued only if an authorised officer deems the noise 'offensive'. Noise may not always be deemed 'offensive noise' as defined in the POEO Act. Repealing the Regulation could result in undesirable situations where no action could be taken to address a continuing noise problem, such as a continually sounding building intruder alarm. The inability to stop excessive noise within a short period of time may increase annoyance and sleep disturbance and potentially exacerbate health problems. Assessment of the costs and benefits associated with the Noise Control Regulation is difficult, because excessive noise affects people differently and it may not be possible to attribute excessive noise to any one particular source, as noise can have a cumulative effect.

Difficulties with noise control notices for vehicles

A noise control notice may be used to require a person not to exceed a specified noise level at a specified place and time. Notices may be issued to occupiers of premises (note that premises include vehicles). In theory, a noise control notice could be issued to drivers of motor vehicles as the occupiers of premises. A driver would then have to ensure that they did not permit the motor vehicle to emit noise in contravention of the notice.

However, a noise control notice must include a specified noise level that must not be exceeded at a particular location. For this reason, it would be difficult and ineffective to use such notices to regulate mobile noise sources such as motor vehicles with loud sound systems or defective

noise control equipment. Council officers do not have the power to stop a vehicle and perform a noise measurement. The police would require additional training to perform this task and are not currently authorised to issue notices. There would be increased social costs associated with excessive noise, as outlined on page 13.

Difficulties with noise abatement directions for vehicles

Noise abatement directions may be issued to drivers (occupiers) of motor vehicles or marine vessels when the vehicle or vessel emits offensive noise and only stays in force for 28 days from the issue date. As with noise control notices, noise abatement directions must be issued to the occupier, and the vehicle or vessel must be stopped so that the occupier can be identified. The issue of the direction does not require any substantial noise-measuring expertise.

In most circumstances noise abatement directions served on motor vehicles would not be effective due to the mobile nature of the premises. For instance, an authorised officer in one jurisdiction may issue a verbal or written direction to a driver of a noisy vehicle. Should the driver move to another jurisdiction and breach the direction, it would be logistically difficult for another enforcement agency to track the offence and carry out the follow-up enforcement action.

Noise levels over time

The absence of the Noise Control Regulation would probably result in an increase in noise levels over time, as importers and manufacturers of motor vehicles, vessels and articles (such as grass-cutting machines, chainsaws, domestic air conditioners, mobile air compressors, pavement breakers, mobile garbage compactors and building intruder alarms) would no longer be required to meet prescribed noise limits. For example, edge cutters manufactured or imported between 1982 and 1984 were permitted a maximum noise level of 78 dB(A), whereas under the existing Noise Control Regulation this has been reduced to 75 dB(A). The Regulation effectively prohibits the sale of vehicles and products that emit excessive noise. Without the Regulation in place, articles with the potential for extensive noise disturbance are likely to make their way into the marketplace. For example, vehicle sirens and horns as components of alarm systems imported from overseas may not comply with present maximum noise limits.

Although manufacturing processes are unlikely to change immediately, the absence of the Regulation would mean that there is no incentive in place to encourage manufacturers to produce quieter vehicles and products. Regulatory prescriptions can add impetus to technological developments that reduce noise. Regular reviews of the prescribed levels of noise limits for vehicles and articles are likely to require manufacturers to consider noise emissions when designing new models of vehicles and products.

In addition, the absence of noise controls would mean that there would no longer be direct controls on the use of vehicles and vehicle accessories such as horns and alarms, or on the use of articles such as lawn-mowers and brush-cutters. The effect of the current Noise Control Regulation is to control the anti-social behaviour of operators of potentially noisy machinery and vehicles. Reliance on POEO Act notices to control such behaviour would be inefficient and onerous on enforcement agencies such as councils and the police when compared with the scale of the noise issues.

Base case summary

The repeal of the Noise Control Regulation would result in a reduction in overall effectiveness of neighbourhood noise controls, as enforcement measures would be less effective even if state and local government agencies committed the same resources to enforcement. Removal of the Regulation would therefore impose increased health and social costs associated with higher levels of neighbourhood noise.

Furthermore, if the Regulation were repealed, there would be nothing in the POEO Act to control the sale of motor vehicles, motor vehicle accessories and miscellaneous articles in the same manner. Section 136 of the Act prohibits the sale of articles emitting more noise than prescribed by the Regulation, but it is left to the Regulation to define the articles and prescribe the noise level. The Regulation is also the key instrument for specifying community standards for restricted times of use of articles such as lawn-mowers, leaf-blowers and air conditioners in residential areas. It is likely that DECC, the Police and councils would continue to be called upon to deal with community complaints about noise but would have more cumbersome and inefficient legislative powers to deal with the community's concerns in the absence of the regulation.

PROPOSED REGULATION—NOISE CONTROLS: MOTOR VEHICLES AND MOTOR VEHICLE ACCESSORIES

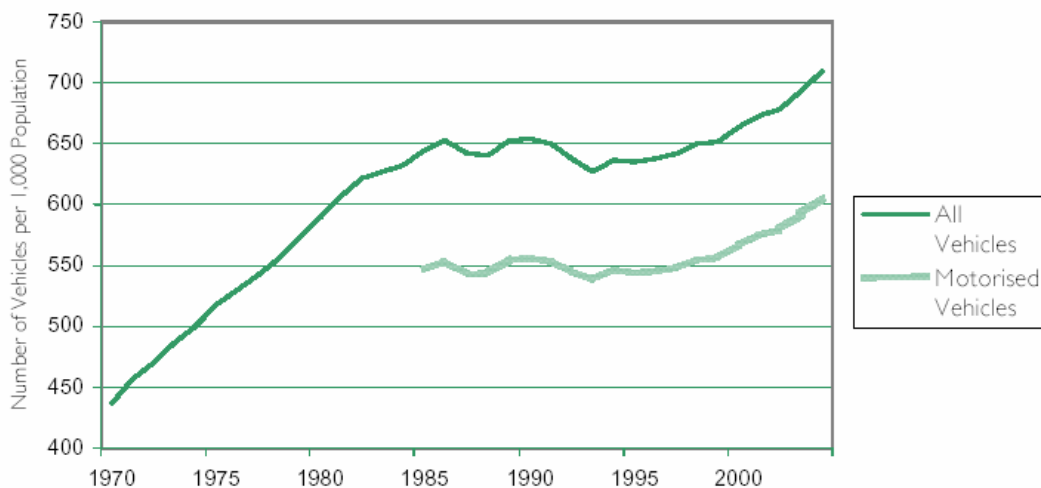
This section deals with the sale and use of motor vehicles and motor vehicle accessories. It is divided into the following categories:

- sale of motor vehicles
- use of motor vehicles
- sale and use of motor vehicle horns
- sale and use of motor vehicle intruder alarms
- inspection and testing of motor vehicles.

The sale provisions of the Noise Control Regulation prevent noisy vehicles and accessories from being available for sale. The use provisions addresses the noise nuisance resulting from improper or unreasonable use of vehicles and accessories once they are in service. The Regulation aims to address the form of misuse that affects the community most, and to provide a basis for regulatory agencies to control noise from mobile sources. It also aims to provide a clear basis for people using vehicles and accessories to understand their responsibilities in relation to noise impacts.

As shown in Figure 5, in NSW registered motor vehicle ownership relative to population has grown significantly in two stages: rapid growth to about 1986, and then from 2000 onward. As at 30 June 2004 there were 2 822 435 motor passenger vehicles and 105 289 motorcycles registered in NSW (RTA, 2005). Figure 6 shows a steady increase in the sale of new vehicles in Australia.

Figure 5: Number of vehicles per 1000 population in NSW⁷



Source: RTA (2005)

⁷ Note: Vehicles in the process of being transferred to another registered operator (i.e. outstanding registrations) were not included in vehicle fleet figures from 1995 to 2000 (RTA, 2005). 'Motorised vehicles' means all vehicle types except trailers.

Figure 6: Sales of new motor vehicles in Australia



Source: ABS (2005b)

The growth in the number of cars on the road is likely to be correlated with increases in the number of offences arising out of the use of those vehicles, such as parking, driving and pollution offences. The effects of vehicle emissions on the atmosphere and the acoustic environment are recognised hazards in their own right and are consequently regulated by the NSW Government.

The proposed Noise Control Regulation prevents the sale and use of motor vehicles and accessories (such as horns and alarms) that exceed noise limits, exceed set times or produce offensive noise. It also provides for testing and inspection procedures to facilitate compliance and enforcement. The existing Regulation includes Schedule 1, which prescribes limits for different classes of motor vehicles, and Schedule 2, which describes the noise-testing procedures.

Noise from motor vehicles is a major contributor to neighbourhood noise. Noisy compression brakes on heavy vehicles and excessive noise from car stereos, modified cars and motorcycles cause particular concern in the community. The 2004 NSW Neighbourhood Noise Survey of a wide cross-section of the NSW community revealed that noise from traffic was the most prevalent problem experienced in local areas. Half of the respondents identified noise from motor vehicles generally as a noise source that they were aware of inside their homes. Approximately 30% of respondents also identified motorcycles and modified cars as a neighbourhood noise source, by which 1 in 3 respondents felt very or extremely affected.

Sale of motor vehicles

The POEO Act makes it an offence to sell a motor vehicle that:

- exceeds the prescribed noise levels (section 136)
- is not fitted with the required noise control equipment (section 137).

Under the base case these provisions would apply. However, the POEO Act makes reference to noise levels and the fitting of noise control equipment as prescribed by the Regulation. As noted earlier, a repeal of the Noise Control Regulation would result in ineffective control of the sale of noisy vehicles.

In the 2000 RIS for the Noise Control Regulation, it was estimated that approximately 1 in 20 of the existing motor vehicle fleet in NSW is likely to exceed the prescribed noise levels. This means that they will cause a significant noise nuisance or offence when they are used. Although

many of these vehicles become noisy as a result of inadequate maintenance or modification by the purchaser, significant numbers of used vehicles are noisy at the time of sale.

It is estimated that approximately 10% of drivers of non-compliant vehicles identified through DEC enforcement work (noise tests and inspections) claimed that their vehicles were modified or noisy at the time of purchase⁸. If non-compliance is detected during the warranty of sale for the vehicle (usually 3 months for used vehicles), drivers have the option of returning the vehicle to the seller for repairs to bring it into compliance with the Regulation. The Regulation supports drivers in their endeavours to get sellers to fix non-compliant vehicles under the warranty of sale. The Regulation sends a message to sellers that they must not perpetuate the distribution of noisy motor vehicles into the NSW fleet. It is therefore proposed that the existing regulatory controls over sale of motor vehicles continue.

Existing Regulation

Clause 5 (Sale of motor vehicles generally). This clause creates an offence where a person sells a motor vehicle that emits more noise than prescribed in Schedule 1 of the Noise Control Regulation. The prescribed noise level limit varies depending on the type of vehicle, e.g. petrol or diesel vehicles, and cars or trucks. This approach is supported by the community, as demonstrated by the results of the 2004 NSW Neighbourhood Noise Survey. The survey showed that the community considered it appropriate or highly appropriate to regulate motorcycles and modified motor cars by specifying a maximum noise level.

To establish whether an offence has been committed under this clause, enforcement officers must carry out a noise test. Noise tests can be time consuming and difficult to carry out, particularly where location and time constraints are not conducive. In these circumstances, clause 6 of the existing Regulation provides alternative means for detecting noisy vehicles for sale, such as carrying out a visual inspection of the noise control equipment for defects.

Clause 6 (Sale of used motor vehicles with defective noise control equipment). This clause creates an offence to offer a motor vehicle for sale with defective or unsecured noise control equipment. Noise control equipment can be considered defective where it:

- allows the emission of more noise than did the original noise control equipment fitted by the vehicle manufacturer; or
- has, in the opinion of an authorised officer, been modified in any way that makes it less effective than it would have been if not for the modification; or
- allows gas to escape from a place other than the intended exhaust outlet; or
- contains fewer mufflers than the original system fitted by the manufacturer (if the equipment comprises a system of mufflers).

It is generally the case that vehicles missing key noise control components such as mufflers, or with modified mufflers, will exceed the prescribed noise limits. Clause 6 of the existing Regulation requires that noise control equipment is securely in place and not defective. In most cases, this removes the need for a noise test. However, in cases where noise control equipment is modified and the officer is unsure whether the noise control equipment is less effective, a noise test should be carried out. Noise tests are often carried out by DECC authorised officers to support the finding of defective noise control equipment. Labour costs associated with noise testing motor vehicles are approximately double that of carrying out a visual inspection.⁹ The intent of this provision is to allow a visual inspection of noise control equipment as an alternative where circumstances are not favourable for a field noise test.

8 From DEC's motor vehicle compliance activities. DEC carried out approximately 1500 noise tests and inspections on vehicles in 2004–05.

9 A visual inspection takes approximately 15 minutes, whereas a noise test takes approximately 30 minutes (from DEC's motor vehicle compliance activities).

DECC is the only enforcement agency in NSW that can issue fines for offences related to the sale of motor vehicles in the Regulation. For the years between July 2000 and June 2005 DECC issued five on-the-spot fines for offences under the sale provisions of the Noise Control Regulation. These were for the sale of used motor vehicles with defective noise control equipment (clause 6) rather than for exceeding the prescribed noise limits (clause 5).

Although the number of fines issued under the sale provisions of the Regulation was not high, the Regulation serves to help drivers seek repair services from the seller under the warranty of sale when they unwittingly buy a non-compliant vehicle. Where a warranty is no longer valid or the evidence of sale of a non-compliant vehicle is not sufficient, DECC officers generally issue a fine to the owner under the 'use' provisions of the Regulation instead.

Proposed Regulation

Clause 4 (Sale of motor vehicles generally). DECC proposes to amend clause 5 of the existing Regulation to incorporate the maximum noise levels for vehicles certified to *ADR 83/00 – External Noise*. This is further described under the heading 'Accommodating ADR 83/00 – External Noise'.

Clause 5 (Sale of used motor vehicles with defective noise control equipment). DECC proposes to amend clause 6 of the existing Regulation in the same manner as clause 18 (see details on page 26). In summary this includes:

- adding the qualification that the opinion of an authorised officer must be reasonable when determining whether noise control equipment on motor vehicles is defective; and
- clarifying the fact that the internal components of muffler assemblies on motor vehicles must be permanently secured in place when the vehicles are used on roads and related areas.

Cost–benefit assessment

Costs. For vehicle manufacturers, additional compliance costs relating to the 'Sale of motor vehicles' provisions, such as the costs of noise tests and visual inspections, are minimal, as they simply mirror national standards that must be complied with. New vehicles sold through retail car yards generally comply with the Regulation because they are fitted with the original noise control equipment in place.

Used vehicles that have been modified to produce a different or louder exhaust noise may not comply with the existing or proposed Noise Control Regulation. The original noise control equipment on modified vehicles is likely to have been replaced with devices that increase the noise level of the vehicle's exhaust system.

The cost impact of this provision will depend on whether the owner or seller of the used vehicle has retained the original noise control equipment. If they have disposed of the original muffler, then they will be required under the Regulation to replace the illegal muffler with a new one that meets the prescribed standards.

The cost of replacing (supply and fitting) a rear muffler for a standard four-door sedan is \$235 to \$350, depending on the make and model. If the owner or seller has retained the original muffler, then there would be a small cost in replacing it. The compliance costs estimated in Table 3 assume that all owners would be required to fit new mufflers. This may therefore overestimate compliance costs, as many car enthusiasts would probably have kept their original mufflers.

Benefits. The benefits of preventing noisy vehicles from being available for sale include improved neighbourhood amenity and lower health impacts. It is difficult to measure these benefits overall or the contribution made by different provisions of the Regulation.

Although the number of on-the-spot fines issued under the sale provisions of the existing Regulation was very low, the Regulation serves to help the driver seek repair services from the

seller under the warranty of sale when they unwittingly buy a non-compliant vehicle. Where a warranty is no longer valid or the evidence of sale of a non-compliant vehicle is not sufficient, DECC officers may issue a fine under the 'use' provisions of the Regulation instead. Sellers must not perpetuate the sale of noisy vehicles into the NSW fleet or profit from selling non-compliant vehicles.

Inspections and noise tests are targeted towards vehicles that appear modified or are likely to emit excessive noise. If we assume that, under the proposed Regulation and with equivalent enforcement resources, about 10% of in-service vehicles inspected or tested were non-compliant at the time of sale, then the benefit of this Regulation compared with the base case is a reduction in the numbers of noisy cars on the road each year. In most cases, removing the need for a noise test will result in enforcement resources being used more cost-effectively.

Table 3. Prevention of sale of noisy vehicles: costs and benefits per year

Item	Proposed regulation
Compliance costs	\$242–\$363 per vehicle if muffler not fitted Total: \$45,000 p.a.*
Enforcement costs	\$3,682 p.a.**
Indicator of benefits	Fewer noisy cars p.a.

* 150 cars at an average cost of \$300 per muffler

** 11.4 days, one officer at \$323 a day

Assessment. The sale provisions help to prevent excessively noisy cars being available for sale and entering the car fleet in NSW. The noise limits set by the Regulation reflect national standards and community expectations. Noise limits set at the national level become fully enforceable when adopted into the NSW Regulations.

The proposed Noise Control Regulation is likely to remove more of the noisiest cars from the road each year, compared with the base case. There is likely to be a flow-on effect that occurs from these provisions, such that the presence of the Regulation, and relatively small enforcement efforts, provide leverage to prevent a much larger number of defective vehicles being offered for sale. The benefits of removing these cars are difficult to quantify, but, in combination with the other provisions of the Regulation, there is likely to be a lower impact on neighbourhood amenity and health than under the base case.

The proposed amendments provide additional noise benefits compared with the base case and existing Regulation and are a cost-effective way of achieving those benefits.

Use of motor vehicles

Whereas the sale provisions limit the potential for noisy vehicles to make their way into the NSW fleet, the use provisions aim to regulate noisy vehicles that are already in service. This section summarises the existing Noise Control Regulation relating to the use of motor vehicles and the proposed amendments. A consolidated assessment of the costs and benefits follows.

Under the base case, without the Noise Control Regulation, the POEO Act would be ineffective in preventing offensive or excessive noise from the use of motor vehicles, as there are no relevant provisions controlling use. As with the sale provisions, ADR (Australian Design Rule) requirements would still apply to in-service vehicles but would not be enforceable without the Regulation.

Existing Regulation

Clause 13 (Use of motor vehicles on road). Clause 13 currently states that a person must not cause or permit a motor vehicle to be used on a road if the motor vehicle is capable of emitting noise at a level in excess of the maximum noise level prescribed in Schedule 1.

This clause performs a major role in limiting the operation of highly noisy motor vehicles on the roads. A noisy motor vehicle can cause widespread noise nuisance in neighbourhoods because of its mobility and potential for use at night, when background noise levels are low. The 2004 NSW Neighbourhood Noise Survey showed that the vast majority of community respondents thought it was appropriate or highly appropriate to regulate motorcycles and modified motor cars by specifying a maximum noise level.

To prove an offence under this clause, enforcement officers must carry out a noise test on suspected noisy vehicles to show that the prescribed noise levels in the Regulation are exceeded. Because the Department's officers are trained in noise-testing, DECC is the only agency that currently enforces this clause.

Between July 2000 and June 2005 DEC issued 1224 on-the-spot fines for motor vehicles that exceeded the maximum noise limits prescribed in the Regulation. The majority (83%) of these fines were issued to individuals whose motor vehicles were found to be between 5 and 15 dB(A) louder than the maximum noise level. These fines were issued as a result of enforcement campaigns and routine regulatory operations.

Clause 14 (Use of motor vehicles in places other than roads). This clause makes it an offence to use a motor vehicle in a place other than a road in a manner that causes offensive noise. It is designed to stop neighbourhood noise impacts caused by vehicles such as trail bikes and off-road vehicles when used on private property and other off-road areas.

The 2004 NSW Neighbourhood Noise Survey of a wide cross-section of the NSW community revealed that, despite the level of claimed awareness of current laws, large portions (48%) of the respondents thought that noise regulations did not apply to vehicles travelling off-road. However, the vast majority of respondents believed that it was appropriate or highly appropriate to regulate offensive noise generated by off-road use of trail bikes.

In practice, this clause enables enforcement officers to use the offensive noise test instead of requiring a noise test for vehicles used in places other than roads. As the normal road rules do not apply to off-road situations, it is often the way a vehicle is used that creates a noise nuisance (for example, doing continuous circuits in a small area), and it is more reasonable to rely on the results of an offensive noise test. Additionally, it is often impractical to conduct the technical and complex noise measurements required under the Regulation in off-road situations. Furthermore, the application of the offensive noise test instead of a maximum noise level accounts for whether the noise is affecting people. In circumstances where noise is not affecting people, off-road riding can still occur.

As part of the review process DEC surveyed 15 councils in NSW to determine the extent of this problem in LGAs. Non-metropolitan councils reportedly received the greatest number of complaints about off-road vehicle noise. For instance, Port Macquarie-Hastings Council estimated that it received more than 50 complaints in 2004–05, mostly during school holidays periods. It found a direct correlation between the increasing number of complaints and the reduction in land size (i.e. by subdivision), particularly in rural and rural-residential areas. Metropolitan councils received between three and 45 complaints each during this period. The use of trail bikes on private property was the most significant problem, with one council also experiencing problems with trail bikes in nature reserves.

DECC is aware that enforcement of the Noise Control Regulation can be difficult for regulators in off-road situations. For instance, offending vehicles are often very mobile, and many trail bikes are unregistered. The difficulty lies in apprehending drivers of unregistered vehicles, as the

person must be pursued and apprehended, a process that can present a high level of occupational health and safety risk.

In 2005, DEC consulted with NSW councils about potentially simplifying the way offensive noise is determined under the Regulation for trail bikes used on private property. DEC proposed a minimum distance for the operation of trail bikes from property boundaries. Thirty-one councils responded to the proposal and 60% raised concerns with the approach, such as: the specified distance will not suit all properties and circumstances; it may legitimise the activity by default on residential properties; other controls should be considered, such as time restrictions; and offensiveness also depends on the loudness of the bike, number of bikes, duration, time and frequency of use. As a result of these divergent views and apparent lack of support for the proposal, the minimum distance option is not included in the proposed Regulation.

DECC considers that the solution rests with improved enforcement methods and non-regulatory approaches, rather than in striving for revised regulatory controls. Complementary programs to support the existing Regulation could be pursued by councils and include:

- Develop a policy that provides the community with guidelines on the times, durations and distances for recreational trail bike use that may be imposed by council through a Notice. Port Macquarie-Hastings Council pursued this approach. They have also developed a related brochure explaining council's policy and concerns about noise.
- Determine the needs of local off-road operators and seek, where possible, to meet these needs; e.g. provide designated areas for legitimate off-road activities away from noise-sensitive receivers.
- Work collaboratively with relevant land managers such as the Department of Primary Industries (incorporating the former State Forests) to develop strategies that address local offensive noise concerns over the use of motor vehicles on public fire trails or other bushland trails on public land.
- Use targeted education campaigns to encourage off-road vehicle operators to ride or drive in designated areas and ride in a socially and environmentally responsible manner.
- Pursue joint enforcement campaigns with the police through a Memorandum of Understanding or similar agreement.

Clause 15 (Use of vehicles on residential premises). Clause 15 requires that a motor vehicle used on residential premises (except when entering or leaving) is not heard inside a habitable room of another residential premise during sensitive hours, e.g. at night. This clause aims to limit excessive neighbourhood noise and prevents motorists from running their vehicles for extended periods at any hour of the night. The time restriction applies before 8:00 am or after 8:00 pm on any Saturday, Sunday or public holiday, or before 7:00 am or after 8:00 pm on any other day.

As part of the regulatory review, DEC surveyed five metropolitan and 10 non-metropolitan councils in NSW to determine the extent of this problem in neighbourhoods. Metropolitan councils reportedly receive up to 10 complaints each about noise from motor vehicles on residential premises each year. This is more than double the number of complaints received by non-metropolitan councils (complaints of up to five each year). Although the number of complaints in each LGA is small, these issues can be resource-intensive for regulatory authorities to resolve. Clause 15 provides council and the community with clear guidance on the times when noise from idling vehicles on residential premises is not acceptable.

Clause 16 (Use of refrigeration units fitted to motor vehicles). Refrigeration units can cause disturbance when trucks are parked overnight in residential streets. The purpose of this clause is to stop drivers from running the refrigeration units on their vehicles unnecessarily in residential areas during sensitive night-time hours. Refrigeration units fitted to vehicles such as trucks should not be audible inside neighbour's residences before 8:00 am or after 8:00 pm on any Saturday, Sunday or public holiday, or before 7:00 am or after 8:00 pm on any other day.

Each year the department receives approximately six complaints to its Environment Line about noise from refrigeration units on vehicles. However, it is likely that complaints are also made directly to councils or the police. As part of the regulatory review, DEC surveyed 15 councils in NSW to determine the extent of this problem in neighbourhoods. Councils reportedly receive up to six complaints each year about refrigeration units on vehicles. As with the idling of vehicles on residential properties, resolution of these complaints can be resource-intensive for regulatory authorities. Clause 16 provides councils and the community with clear guidance on appropriate times when noise from refrigeration units should be controlled.

Clause 17 (Use of motor vehicle sound systems). Sound systems fitted to vehicles are capable of producing very high levels of sound and are subject to operator control. Of particular concern are the levels of low-frequency noise generated when music is played. Low-frequency noise (or booming bass noise) can penetrate buildings more easily than high-frequency or mid-frequency noise and can disturb surrounding residents, vehicle drivers and pedestrians. High-volume stereo noise can also reduce a driver's ability to hear emergency sirens and horns from other motor vehicles.

The existing Noise Control Regulation prohibits a person from using a motor vehicle's sound system in a manner that causes offensive noise. It provides the only practical statutory control on the inappropriate use of car stereos. The extent of the problem in neighbourhoods is evident through the high number of recorded offences between July 2003 and June 2005. DEC, councils and the Police issued 828 on-the spot fines for offensive noise from vehicle sound systems during this period.

Clause 17A (Drive or use motor vehicle on road and road related area if vehicle's sound system emits offensive noise). Clause 17A came into effect on 1 July 2002. It allows Police Officers to issue an on-the-spot fine and record demerit points against the licence of a driver who is fined for causing offensive noise from their vehicle's sound system. The purpose of the demerit point provision is to act as a further deterrent to drivers of vehicles emitting offensive noise from sound systems on roads or road-related areas. DECC officers may also issue fines for offences under this clause.

Clause 17A differs from clause 17 in two respects: 1) Under clause 17A, only the driver of the vehicle can be guilty of an offence, whereas any person can be guilty of an offence under clause 17 (e.g. a passenger); and 2) Clause 17A applies where the motor vehicle is being driven or used on a road or road-related area, whereas clause 17 applies to any location (e.g. private property). These differences allow noise from sound systems to be treated as a driving offence rather than a stand-alone noise issue. Over the past 3 years (between July 2002 and June 2005) approximately 30% of the drivers fined for motor vehicle sound system offences also had demerit points recorded against their licences.

Clause 18 (Noise control equipment to be properly maintained). The existing Regulation makes it an offence to use a vehicle on a road or road-related area if its noise control equipment is defective or not securely in place.

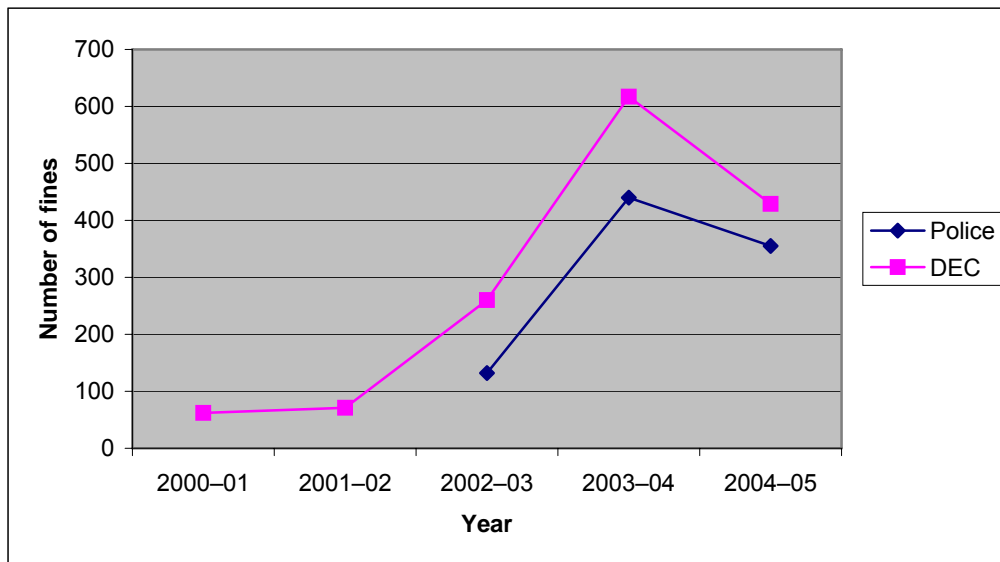
The aim of clause 18 is to provide a means of detecting noisy vehicles that avoids the cost and time associated with noise testing where it is not strictly needed. Noise testing is often not required to identify the fact that a motor vehicle's noise control equipment is defective, and a simple visual test and aural check is all that is needed. However, in cases where noise control equipment is modified and the officer is unsure whether the noise control equipment is less effective, a noise test should be carried out. Noise tests are often carried out by DECC authorised officers to support the finding of defective noise control equipment. In practice, a Police Officer's ability to carry out noise testing is limited by the cost of the equipment, lack of trained personnel, and competing priorities.

Use of informed subjective assessment to decide a noise offence is central to NSW noise legislation. The concept of offensive noise underpins the legislation. Powers under the POEO

Act and existing Noise Control Regulation enable officers to exercise judgement in deciding whether noise is an issue.

A total of 1439 on-the-spot fines were issued by DEC alone over the past 5 financial years for offences relating to vehicles with defective noise control equipment or equipment not securely in place (clause 18). Figure 7 shows the number of fines issued under clause 18 on an annual basis. Clause 18 is a strong deterrent to those who deliberately modify their vehicles to produce excessive noise.

Figure 7: Fines issued under clause 18 (Noise control equipment to be properly maintained)



Source: Infringement Processing Bureau

DISCUSSION BOX: Education about defective noise control equipment and modifications

In 2004, DEC published a brochure called ‘Managing Vehicle Noise’ that explains ways in which drivers can avoid having a noisy vehicle and what the law says when noise becomes offensive. The brochure warns that non-standard gears and belts can emit an annoying high-pitched whine. It also includes advice that the certain devices should not be fitted to motor vehicles including pod-type air filters, blow off valves that vent to atmosphere and non-standard pressure release valves such as waste gate valves that vent to atmosphere.

DECC anticipates enhancing this brochure to better describe the devices that could make noise control equipment defective or exceed the maximum noise levels in the regulation. DECC has identified a list of non-standard equipment that, by design or installation, increases the noise level of a motor vehicle or renders noise control equipment less effective, particularly whilst the vehicle is in motion. These include:

- Non-standard or non-genuine air cleaner assemblies or air intakes that increase the motor vehicle’s induction noise from standard or factory configuration.
- Devices that are capable of by-passing or reducing the effectiveness of any muffler, resonator or noise control equipment on a motor vehicle’s exhaust or air intake system.
- Turbo pressure relief valves that vent to atmosphere.
- Turbo waste gate valves where the exhaust gases from the valve vent to atmosphere.
- Aftermarket superchargers where the vehicle’s engine bay noise is noticeably increased from what it would have been from standard or factory configuration, and where the vehicle did not come fitted with a supercharger.

This education material will aim to clarify for motor vehicle users, aftermarket equipment sellers and enforcement officers that these modifications are not permitted and are considered defective noise control equipment under the existing Noise Control Regulation when used on NSW roads and road related areas.

This educative approach has merit in informing drivers of the types of products that are considered illegal due to noise and will contribute to motor vehicle compliance.

Clause 19 (Motor cycle noise control equipment labelled). This clause was repealed on 17 March 2006.

Clause 20 (Repairs and modifications). Clause 20 requires that any repair or modification to an engine, air intake or exhaust system must not result in the vehicle's maximum noise level exceeding the level prescribed in Schedule 1 for that vehicle type. The owner or the person repairing or modifying the vehicle can be liable under this provision.

This clause sends a clear message to mechanics and muffler repairers that the maximum noise levels in the Noise Control Regulation for motor vehicles must not be exceeded, and that they can be held personally liable for carrying out non-compliant work. It is estimated that approximately 20% to 30% of non-compliant vehicles identified through DEC enforcement work (noise tests and inspections) have received modifications from third parties such as mechanical repair shops or persons other than the vehicle owner.¹⁰

Clause 20A (Owners and drivers of motor vehicles involved in excess noise offences).

Clause 20A concerns the ability of the registered owner of a vehicle to pass on the responsibility for an offence under existing clauses 14 or 17 to the driver of the vehicle at the time the offence occurred. This clause allows for improved enforcement efficiencies, as the vehicles do not necessarily need to be stopped for an on-the-spot fine to be issued. Fines may be issued by mail.

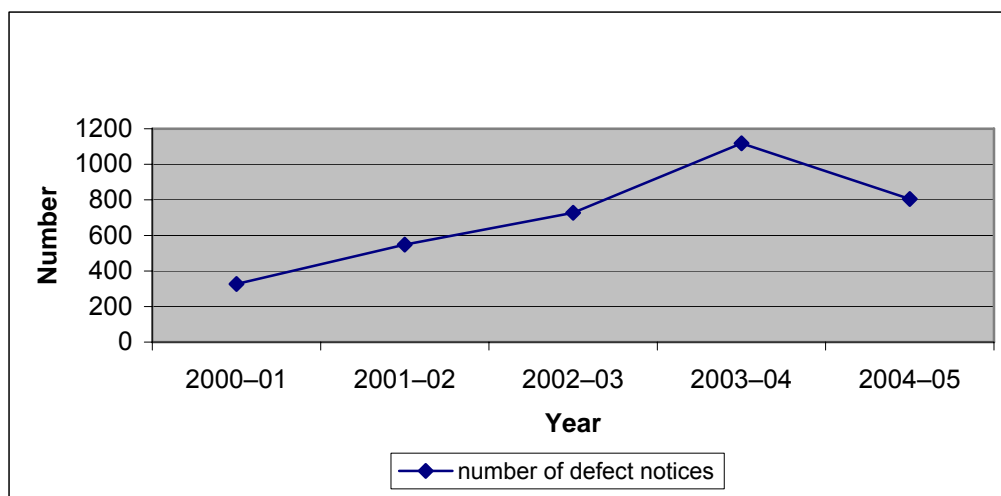
Clause 26 (Defective vehicle notices). Clause 26 outlines the way that defective vehicle notices are issued. The Regulation specifies that an authorised officer may issue a defective vehicle notice if a motor vehicle emits noise in excess of Schedule 1 limits, or has no noise control equipment or the noise control equipment is defective.

The notice must be in the prescribed form. An authorised officer may withdraw a defective vehicle notice once the vehicle complies with the Regulation. It is a defence to use a defective vehicle if it is being taken directly to a place for repairs to remedy the defect.

Figure 8 shows the number of defective vehicle notices issued by DEC for noisy vehicles. The trend shows an increase in the number of notices issued for the years between July 2000 and June 2005 by DEC. In the 2004–05 financial year, DEC issued 805 notices. In 2004–05, 424 vehicle registrations were suspended owing to non-clearance of EPA defects (defect numbers include either noise or air pollution offences). Of these, 70 were cancelled.

¹⁰ From DEC's motor vehicle compliance activities.

Figure 8: Number of defective vehicle notices issued by DEC



Source: DEC's motor vehicle compliance activities

Clause 27 (Defective vehicle labels). Clause 27 outlines the manner of issuing defective vehicle labels. The Regulation specifies that an authorised officer may affix a defective vehicle label if a motor vehicle emits noise in excess of Schedule 1 limits, or does not have effective or complying noise control equipment. The label must be in the prescribed form and accompanied by a defective vehicle notice. An authorised officer may remove or direct the removal of the label when the defective vehicle notice is withdrawn. The purpose of this Regulation is to display the defective status of the vehicle so that other regulators can enforce the restrictions imposed by the defective vehicle notice.

Given the significant number of defective vehicle notices issued annually (see Figure 8), as well as the dual enforcement role of the Police and DECC in regard to noisy motor vehicles, it is proposed that this clause will be carried forward into the new Regulation unchanged.

Proposed Regulation

DECC proposes to carry forward clauses 14, 17, 17A, 20A and 27 of the existing Regulation unchanged. Changes to clauses 13, 15, 16, 18, 20 and 26 of the existing regulation are proposed as outlined below.

Clause 12 (Use of motor vehicles on road or road-related area). DECC proposes to amend clause 13 of the existing Regulation to incorporate the maximum noise levels for vehicles certified to *ADR 83/00 – External Noise*. This is further described under the heading 'Accommodating ADR 83/00 – External Noise'.

In addition, DECC proposes to extend the maximum noise level provisions of clause 13 of the existing Regulation to road-related areas. Road-related areas, particularly car parks, are used as meeting and gathering places for drivers of noisy vehicles. Such areas are often located in sensitive neighbourhoods where noise from modified vehicles can cause significant impacts, particularly as the evening and night periods are likely to be favoured for these activities. The proposed amendment allows noise testing of vehicles to be carried out in road-related areas to establish compliance with the prescribed maximum noise levels in the Regulation.

DECC is aware that public car parks are used occasionally as meeting areas for lawful racing events—particularly 4WD off-road events. Restricting public access to such meeting areas, with the approval of the relevant land manager, would enable this activity to continue under the proposed amendment.

Clause 14 (Use of vehicles on residential premises) and Clause 15 (Use of refrigeration units fitted to motor vehicles).

DECC proposes to amend clauses 15 and 16 of the existing Regulation in relation to warnings. Under these clauses, a statutory warning must be issued to the noise-maker before an offence can occur. It is an offence if the noise occurs within 28 days after the warning has been issued. The reason for the warning is that the noise-maker may not be aware that their noise can be heard inside a neighbour's residence. Currently a statutory warning may be given by authorised officers of councils, the police, or individuals, including persons affected by the noise.

Feedback on the use of statutory warnings by individuals was sought from NSW councils in 2005. DEC received responses from 34 councils on this issue, many of which advised that they do not rely on statutory warnings issued by individuals as such warnings may not have been issued in a clear and understandable manner to the noise-maker. Instead, councils rely on warnings issued by their own officers, who are knowledgeable in collecting evidence for offences. All responding councils were in favour of removing the provision allowing statutory warnings to be issued by individuals.

Therefore, DECC proposes to remove the provision for individuals to make statutory warnings, as in practice it is not effective. Individuals will still be able to inform the noise-maker that they are affected by the noise, or take the matter up with the regulatory authorities.

Clause 18 (Noise control equipment to be properly maintained). The amendments to this clause principally involve changes to the definitions of 'defective noise control equipment' and 'securely in place'.

Motor vehicle exhaust modifications are fairly common for two reasons: drivers seek vehicle performance or want to be noticed. The impacts of these modifications often include an increase in the noise level and/or resonance of the exhaust and an increase in the emission levels of harmful exhaust gases.

DECC proposes to amend clause 18 of the existing Regulation to add the qualification that the opinion of an authorised officer must be reasonable when determining whether noise control equipment on motor vehicles is defective. The relevant test will be whether the equipment has, 'in the **reasonable opinion** of an authorised officer, been modified in a way that makes it less effective than it would have been if not for the modification'.

The relevant test of defectiveness will still be the authorised officer's opinion, but any prosecution under this provision would have to prove the basis on which the opinion was formed and that it was reasonable. In effect, this clause will remain a strong deterrent to those who deliberately modify their vehicles to produce excessive noise.

The aim of this amendment is to strike the right balance between equity and having provisions that can be practically enforced and avoiding the cost and time associated with noise testing when it is not strictly needed. Noise testing is often not required to identify that a motor vehicle's noise control equipment is defective: a simple visual test and aural check may be all that are needed. In practice, noise testing is limited by the cost of equipment, lack of trained personnel, and competing priorities. If an officer is unsure whether the noise control equipment is defective, a noise test needs to be carried out.

The use of an informed subjective assessment to decide a noise offence is central to NSW noise legislation. The concept of offensive noise underpins the legislation and powers under the POEO Act. The existing Noise Control Regulation requires regulators to exercise judgement when deciding if noise is offensive.

In addition to the introduction of the concept of 'reasonable opinion', DECC proposes to amend Clause 18 with respect to the definition of defective noise control equipment. Clause 18 of the existing Noise Control Regulation defines noise control equipment as defective on motor

vehicles when the system of mufflers contains fewer mufflers than originally fitted by the vehicle manufacturer. However, the department has been advised that many recent large motorcycles have only one large muffler, yet meet more stringent noise standards (when new) than older bikes with multiple mufflers. The most important aspect of motorcycle noise control relates to the design of the muffler system (involving a compromise between noise control, power output, cost and appearance) rather than the number of mufflers. Therefore, the new definition of defective noise control equipment will exclude reference to the number of mufflers.

This is an administrative change aimed at clarifying that a reasonable basis needs to underpin any opinion that an exhaust system is defective and must not impose significant costs or benefits.

The term '**securely in place**' under clause 18 of the existing Regulation has been interpreted and debated by regulators and offenders. The term is not separately defined within the Regulation and has reportedly been the subject of debate for some members of the public during enforcement. In response to this, more clarity may be achieved by specifying a meaning for 'securely in place'.

The regulator's concern relates to (a) the temporary addition of baffles, adjustable baffles, plates or silencers to the muffler assembly, resonator assembly or exhaust pipe; and (b) the jamming of steel wool tightly into the exhaust pipe for the purpose of circumventing compliance noise testing. Once the vehicle has passed the noise test the temporary modification can be removed and consequently the vehicle may no longer comply with the legal noise level limit.

It is estimated that 5% to 10% of all vehicles inspected and tested by DEC at its Motor Vehicle Testing Facility have temporary devices installed to defeat noise tests.¹¹ This amounts to approximately 70 of the vehicles tested that are likely to be involved in re-offences under the Regulation.

Instead of further defining the term 'securely in place', the department proposes to make it an offence to use temporary noise reduction devices on motor vehicles. The term 'temporary' will be defined as including (but not limited to) components of the muffler assembly, resonator assembly or exhaust pipe, such as baffles, adjustable baffles, plates and other silencing devices, that are not substantially welded or riveted in place. The department considers that anything short of permanent fixing of components will not be effective in addressing the practice of circumventing noise compliance testing.

The new definition will apply only to motor vehicles used on roads and related areas. It is acknowledged that drivers involved in legitimate amateur racing activities may currently use products with removable noise control equipment. Drivers that wish to use their vehicles for lawful amateur racing activities will still have the option of replacing the muffler for racing rather than removing internal components.

To allow users of non-compliant equipment time to comply, DECC proposes to introduce this requirement within 12 months of the gazettal of the new Regulation. During the delayed commencement period, the provisions of the existing Regulation will remain in force.

Clause 19 (Repairs and modifications). DECC proposes to amend clause 20 of the existing Regulation to incorporate the prescribed noise levels for vehicles certified under *ADR 83/00 – External Noise*. This is further described under the heading 'Accommodating ADR 83/00 – External Noise'.

Clause 26 (Defective vehicle notices). DECC proposes to amend clause 26 of the existing Regulation to incorporate the maximum noise levels for vehicles certified under *ADR 83/00 – External Noise*. This is further described under the heading 'Accommodating ADR 83/00 – External Noise'.

¹¹ From DEC's motor vehicle compliance activities

DISCUSSION BOX: Noise from heavy vehicle engine brakes

Engine compression brakes are designed to assist the normal service brakes of large freight vehicles when travelling on long downhill stretches of road as service brakes can overheat and become ineffective from overuse. Compression brakes are significantly cheaper to maintain than service brakes and are sometimes used in situations where service brakes would be more than adequate (e.g. when trucks on flat or minimal gradients brake in traffic or at traffic lights and roundabouts).

Engine compression brakes can produce an annoying, staccato 'bark' and have been a significant source of community annoyance in Australia for many years. Inadequate and poorly maintained mufflers exacerbate the problem and one of the main sources of complaints from new road projects is engine compression brake noise. Noise barriers have proved to be relatively ineffective against noise from engine compression brakes because of the height of the source and character of the noise. Implementing alternative noise mitigation measures at residential premises is a prohibitively expensive option for government, except for where only isolated residences are affected.

It has become quite common to use engine compression brakes where their use is not necessary as this extends the life of the vehicle's service brakes and saves the truck operator money. This has become a way of maximising economic benefits to truck operators with the costs externalised to the affected community. Investigations into noise and the use of engine compression brakes conducted in Australia in the past show that savings to the wear and tear of a vehicle's service brakes are substantial (*Heavy Vehicle Noise Reduction Study 1997* by Renzo Tonin & Associates for the RTA and *Review of Noise Generated by Heavy Vehicle Exhaust/Engine Brakes 1993* by VIPAC for AUSTRROADS).

In NSW DECC has a role in addressing heavy vehicle noise, however the RTA is the primary agency for this issue. DECC has a limited roadside testing ability for heavy vehicles and therefore the RTA typically tests and enforces the exhaust noise limits set in the Noise Control Regulation for heavy vehicles. The RTA tests heavy vehicles for faulty noise emission control equipment during periodic inspections and when investigating complaints. RTA enforcement officers conduct noise testing at heavy vehicle inspection stations (HVISs), but this is not done at all HVIS locations as some are not suitable for testing. Additionally vehicles are only tested if a preliminary inspection of the vehicle's exhaust system by a testing officer indicates testing is necessary. The RTA issues defect notices where warranted.

The RTA, in conjunction with the trucking industry, has been involved in the education of operators to discourage the inappropriate use of engine compression brakes. Signs requesting operators limit the use of engine compression brakes in noise-sensitive areas can be seen in a number of locations across NSW and the RTA administers the placement of these signs. However the signs have no legal force and have generally not proven effective.

The National Transport Commission (NTC) and the Federal Department of Transport and Regional Services (DOTARS) set noise emission limits for motor vehicles at a national level. These national noise limits are contained in Australian Design Rules (ADRs) that form the basis for State Regulations on noise emission limits. There are currently no statutory noise level limits for noise from heavy vehicle engine compression brakes.

The NTC has been looking into how to manage noise from heavy vehicle engine compression brakes over a number of years. Two unsuccessful attempts were made to develop a noise test for engine compression brakes that could in turn be developed into an ADR. In the last five years the NTC has released a number of reports that re-examined how to manage noise from heavy vehicle engine brakes (*A Review of the Noise Related ADRs & Engine Brake Noise, 2001* and *Engine Brake Noise: Development of a Roadside Test Procedure, 2003* (Sonus, 2003) – available on-line from www.ntc.gov.au).

Complaints about the use of noisy engine compression brakes have been about both their high noise levels and their unnecessary use. The department has strongly promoted the need to address engine brake noise with the RTA and NTC during development of the NTC's Regulatory Impact Statement (RIS) on engine brake noise. DEC advocated for both a limit on engine brake noise and a mechanism to prevent the use of engine brakes with audible noise emission in defined areas (exclusion zones).

In June 2006, the NTC released a draft RIS which contained DEC's preferred two-part response. However in late 2006, the NTC indicated it was not proceeding with exclusion zones and was implementing only the engine brake noise limit. It is understood that this is due to potential safety concerns and lack of data on the exact causes, location and extent of community impacts.

The NTC has continued to consult with industry and relevant State agencies. It is expected to release its final RIS on engine brake noise by mid 2007 and that the RIS will provide a noise limit for engine compression brakes. The department considers this to be a major step forward. However DECC is seeking a commitment from the NTC that it will facilitate and coordinate analysis of the data collected from enforcement of the noise limit in the various jurisdictions and assess the need to further lower the limit and reassess the need for exclusion zones as soon as practicable.

Once the NTC regulation is proclaimed it will be adopted by NSW. DECC intends to liaise closely with the RTA to monitor the effectiveness of the noise limit once it is in force. As a national approach is greatly preferable to an individual State approach, DECC will continue to work with the NTC and will continue to raise the need for exclusion zones with the NTC if the noise limit approach does not prove to be effective.

Alternatives considered

Restrict times for idling of motor vehicles when audible inside a residential premises.

DECC considered extending the requirements of clause 15 of the existing Regulation to control the impacts of noise from motor vehicles used on roads adjacent to residential premises. This would provide restrictions on times of use similar to those that apply under the Noise Control Regulation to refrigeration units fitted to motor vehicles.

The concern relates to the idling of vehicles such as trucks and buses on roadways adjacent to residential premises. DECC understands that some buses, particularly tourist buses, are left to idle for long periods so that the air conditioning operates continuously. Drivers of older heavy vehicles may start up their vehicles and leave them idling to 'warm' the engine for safe operation. This can cause a significant noise disturbance to residents, particularly when the activity occurs in the early hours of the morning or late in the evening.

The proposed change was scoped with NSW councils. Thirty councils responded to DEC on this issue and the majority indicated support for the proposal. However, further consultation with half of these councils indicated that the extent of the problem in neighbourhoods was low. Therefore, DECC decided not to carry forward this proposal into the new Regulation. Furthermore, regulatory control already exists for this activity. Clause 42 of the Road Transport (Safety and Traffic Management) (Road Rules) Regulation 1999 requires that the driver of a motor vehicle on a road must, wherever the vehicle is stationary, stop its engine. This excludes stoppage owing to the necessities of traffic. This offence attracts an on-the-spot fine of \$125, which can be issued by council officers that are authorised to take action under the road transport legislation, and also by Police Officers and RTA Enforcement Officers.

Control the sale of non-compliant exhausts. DEC considered creating a new offence for the sale of aftermarket exhaust systems that do not comply with the Noise Control Regulation. DECC is aware that motor vehicle exhaust shops and automotive spare parts outlets are selling exhaust system components that do not comply with vehicle standards and the Noise Control Regulation when fitted to the motor vehicle. The department decided not to carry forward this proposal into the new Regulation, as this issue requires a national response and DECC is promoting the need to address the sale and use of aftermarket mufflers with the NTC.

Cost-benefit assessment

Assessment of the costs and benefits associated with each of these clauses is difficult, because it is not always possible to separate the cumulative enforcement costs and social benefits of noise mitigation activities for each clause. Data were not available in sufficient detail to estimate the costs of enforcing specific noise provisions in the proposed Regulation, such as the defective noise control equipment provisions. Estimates of the benefits of noise mitigation strategies are often not quantified, partly because there has been little empirical work in this area.

Notwithstanding this, there are substantial benefits in maintaining or strengthening existing clauses that limit excessive noise from the use of motor vehicles. The existing clauses provide

the principal control over motor vehicle noise. The current provisions relating to offensive noise from vehicle sound systems have operated reasonably well to reduce offensive noise caused by unreasonable use of car stereos. They have played important roles in the broader package aimed at reducing the impact of noise on neighbourhood amenity.

The large number of noise incidents reported to the Police in 2004 (see Table 2) highlights the significant disturbance to the community from excessive noise (including from motor vehicles). Excessive noise from motor vehicle use is likely to increase substantially in the absence of the provisions of the Noise Control Regulation, such as clause 13, which prescribes maximum noise levels.

A number of existing clauses, such as those relating to defective vehicle notices and the use of motor vehicles in places other than roads, are of a machinery nature and enable cost-effective compliance and enforcement of mitigating excessive noise levels. For instance, the proposed amended clause 18 provides a cost-effective means for detecting excessively noisy vehicles, as it will be easier to identify motor vehicles whose noise control equipment is defective. A simple visual and aural check is less time consuming and does not require noise testing equipment (except in some circumstances) and has been incorporated into the proposed Regulation.

The benefits to the community of minimising excessive noise from motor vehicle use are likely to outweigh the impost on motor vehicle users. The cost of compliance with existing clauses is expected to be minimal, as noise from motor vehicle use can often be minimised by making minor behavioural changes. For instance, offensive noise from a sound system can be simply corrected by turning down the volume.

Costs. The proposed provisions relating to (a) the use of motor vehicles on residential premises and (b) the use of refrigeration units are not likely to affect neighbourhood noise impacts or increase social benefits. Rather, these amendments remove provisions that are not effective in practice. The proposed provisions relating to maintenance of noise control equipment, together with (a) and (b), aim to simplify and enhance the ease of enforcement without affecting the overall cost of enforcement. These provisions are of a machinery nature and therefore do not require further economic analysis.

Therefore, DECC proposes to remove the provision for individuals to make statutory warnings as it stands. Individuals will still be able to inform the noise-maker that they are affected by the noise, or take the matter up with regulatory authorities.

Extending the maximum noise level provisions of clause 13 of the existing Regulation to road-related areas would enhance the scope for authorities to undertake noise testing. It will ensure that enforcement of the legislation against offensive noise from motor vehicles is consistent, regardless of where the offence occurs. It is not expected that there will be significant additional enforcement costs from extending the noise level provisions of clause 13.

Proposed changes to clause 18—that temporary noise reduction devices not be fitted to noise control equipment on motor vehicles—may increase manufacturing costs. A very small percentage (up to 5%) of the aftermarket non-original sports exhaust systems may contain temporary components. However, these sport systems make up a small percentage of the market relative to total exhaust system component sales in Australia. Car owners who do not comply with clause 18 will likely incur minimal costs, if any, in removing temporary additions to exhaust systems.

The department spends about 123 days a year enforcing the existing provisions of the Noise Control Regulation relating to the use of motor vehicles. This translates into an annual enforcement cost of about \$156,000. Concurrent with this Regulation review DECC is setting up a network of authorised noise testing stations for motor vehicles. This system will enable more targeted use of DECC resources in the future.

The Police are also active in enforcing the key provisions relating to motor vehicle use. It was not possible to obtain data to identify Police enforcement costs for each individual clause of the Regulation. Rather, enforcement costs are estimated below for all the motor vehicle use provisions in aggregate.

It was noted in the Introduction to this RIS that the police attended about 123 000 noise incidents in 2004. This represents about 4.8% of all incidents that the police attend (crime and non-crime). Each noise incident takes, on average, half an hour of police time, with two officers attending the incident. Taking the average wage¹² of a police officer, together with the total number of noise incidents, the total police noise-enforcement costs can be estimated in relation to motor vehicles and neighbourhood noise incidents at around \$3.9 million a year.

The number of incident reports made to DEC's Environment Line about noisy vehicles over the past 6 years has increased five-fold from 195 (in 2000) to 1084 (in 2005) (see Figure 3).

Benefits. The benefits of having fewer noisy vehicles include improved neighbourhood amenity, improvements in psychological wellbeing (by reducing annoyance) and lower health impacts. It has not been possible to quantify the impact of the proposed provisions on noise levels and associated benefits, partly because of the cumulative characteristics of noise from different sources.

The proposed amendments are estimated to result in fewer noisy cars being on the road over the next 5 years than would otherwise occur.

Assessment. The amended provisions for reducing noise from motor vehicles aim to improve enforcement efficiency, promote compliance with existing noise limits, and introduce new national road requirements contained in ADR83/00. The primary benefits from this Regulation involve the matching of provisions with the industries' and vehicle owner's capacities to comply and a reduction in the capacity for noise control equipment to be removed and repeat offences committed as a result.

The proposed changes will help to clarify the fact that the use of temporary noise reduction devices is not permitted on motor vehicles that are used on roads and related areas. This will reduce the number of repeat offenders, as they will not be able to easily remove the noise control components on their vehicles. The Regulation will continue to encourage enforcement by all relevant authorities by offering alternative subjective testing where noise control equipment is defective or temporary noise reduction devices are being used. However, in cases where noise control equipment is modified and the officer is unsure whether the noise control equipment is less effective, a noise test should be carried out.

The proposed Regulation is expected to result in fewer noisy cars. The benefits of removing these cars are difficult to quantify but, in combination with the other provisions of the Regulation, there is likely to be a significantly lower impact on neighbourhood amenity and health than under the base case.

Total enforcement costs are estimated at about \$7 million a year under the proposed Regulation. Police and councils will undertake the majority of the enforcement.

The proposed Regulation will provide additional noise benefits compared with the base case, and in a cost-effective way. The actual costs of maintaining the proposed Regulation are expected to be small in comparison with the benefits.

¹² The average wage of officers between Level 1 Constable and Senior Sergeant is approximately \$62,000, allowing for a 20% pay increase over the past 5 years (personal communications with Paul Nolan, NSW Police Service).

Sale and use of motor vehicle horns

Horns are classified as motor vehicle accessories and are primarily used as warning devices. Clauses 7 and 8 of the existing Regulation control the retail sale of motor vehicle horns by prescribing the type of sound and maximum noise level for different types of horns. The provision (clause 21) controlling the use of horns aims to limit the use of horns to safety or warning purposes, and to prevent the use of inappropriate horns (such as musical horns) that have the potential to be confused with those on emergency vehicles or generate noise nuisance. The noise limit for horns is set lower than for emergency vehicle sirens so as to minimise any confusion and to ensure that motorists in traffic areas are alerted.

High noise impacts over long distances can result from the use of musical or novelty horns and loud air horns on motor vehicles. The source of the noise is also mobile and easily able to access residential areas. Musical and novelty car horns are particularly problematic, as they can run on a cycle over several seconds after being triggered. Some of these products have adjustable volumes and can be excessively loud. They can also be operated to mimic police sirens, musical tunes and animal sounds. Noises of this nature in residential neighbourhoods could cause distress and confusion to listeners.

DECC officers enforce the provisions relating to the sale of new motor vehicle horns and the use of motor vehicle horns. For the years between July 2003 and June 2005 DEC received 20 calls from the public about noise from motor vehicle horns.¹³ The majority of these complaints were related to the inappropriate use of horns by drivers, rather than the loudness or pitch. The inappropriate use of horns is regulated by the police under the Australian Road Rules (Nos. 224 and 291). It is likely that complaints were also made to the police and councils.

For the years between July 2002 and June 2005 only one on-the-spot fine was issued for using a motor vehicle horn contrary to the Noise Control Regulation. During 1998–99, 34 fines were issued by NSW Police and DEC for horn offences. The reduction in the number of fines may be due to a reduction in the sale and use of non-complying horns as a result of the Regulation or decreased enforcement.

Alternative legislation may provide effective means of controlling motor vehicle horns. The Australian Road Rules and Road Transport (Vehicle Registration) Regulation 1998 in NSW includes requirements for car horns. However, no noise limits for horns are currently included in these sets of legislation. The existing Noise Control Regulation is desirable from this perspective, as it sets out both when and what noise level limits must be met.

If the Regulation were to be repealed, there would be nothing in the POEO Act to control the sale of horns in the same manner. Section 136 of the Act prohibits the sale of articles of a prescribed class, but it is left to the Regulation to define the prescribed class. Without the Regulation, the prohibition on sale in NSW would be inoperative. The controls on use of these articles effectively discourage the purchase of these articles from other countries and States, i.e. via internet purchasing and international shipping, as they cannot be used on NSW roads or road-related areas.

Existing Regulation

Clause 7 (Applies only to the sale of new motor vehicle horns). This clause specifies that the sale provisions of the Regulation apply only to the sale of new motor vehicle horns by retail. This clause will be carried forward into the new Regulation unchanged.

Clause 8 (Sale of motor vehicles generally). Clause 8 regulates the retail sale of new motor vehicle horns by prescribing the type of sound and maximum noise level for different types of horns. This clause will be carried forward into the new Regulation unchanged.

¹³ Source: DEC's Environment Line

Clause 21 (Motor vehicle horns generally). Clause 21 makes it an offence, on roads or road-related areas, to install or use motor vehicle horns that are louder than the noise limits prescribed in the clause. The prescribed noise limits are 120 dB(A) for single-tone horns and 85 dB(A) for musical horns. This clause will be carried forward into the new Regulation unchanged.

Cost–benefit assessment

Costs. Under the proposed Regulation, DECC will spend about 5 days a year (about \$1,500¹⁴ a year) enforcing provisions relating to horns. Costs to other agencies are expected to be minor under the proposed Regulation, as DECC has the primary enforcement role for motor vehicle horns under the Noise Control Regulation.

Compliance costs to vehicle owners are also expected to be minimal, as all new and used vehicles are required under RTA inspection rules to have a working horn installed that does not sound like a siren, exhaust whistle, compression whistle or repeater horn. This is believed to have reduced the numbers of musical and novelty horns installed in vehicles.

Benefits. The aim of the sale clause is to limit the potential for noisy horns to be installed in vehicles, whereas the use clause aims to limit excessive noise from in-service vehicle horns. Restricting the sale and use of noisy horns is expected to aid in developing a quieter community. The noise limit for horns is set lower than for emergency vehicle sirens so as to minimise any confusion and to help motorists in traffic areas to clearly identify approaching emergency vehicles.

Assessment. The existing Noise Control Regulation minimises noise nuisance in residential areas and provides public safety benefits by minimising situations where sirens and car horns could be confused with emergency signals. Enforcement costs to DECC are expected to remain relatively low.

Under the existing Regulation, the noise levels of vehicle horns are controlled at the point of sale, installation, and use on roads and related areas. Under the base case, a similar degree of control could not be provided under the POEO Act. Alternative sources of legislation operate in this area, but they provide no control over noise levels. The existing Regulation provides greater benefits of noise reduction than in the base case.

Under the existing Regulation there are no specific administrative and enforcement costs associated with the control of noise from motor vehicle horns. Any enforcement is part of the other enforcement duties of DECC authorised officers. It is not possible to separate the administrative and enforcement costs associated with motor vehicle horns. Because of compliance with the existing Regulation, noise from horns is not a major source of community complaint to DECC. The major benefits of the existing Regulation are in maintaining the present status of low noise impacts on the community from motor vehicle horns.

Sale and use of motor vehicle intruder alarms

Audible car alarms can cause considerable community disturbance. Residential areas adjacent to commuter and shopping centre car parks are often exposed to noise nuisance from car alarms. In particular, car alarms sounding continuously can cause sleep disturbance and can have a significant impact on neighbourhood amenity.

The objective of this part of the proposed Regulation is to minimise noise from audible alarms by controlling the:

- noise levels of alarms

¹⁴ One officer at \$323 a day for 4.75 days

- sound characteristics of alarms
- operation of alarms while vehicles are in use.

An audible alarm is used to deter theft and vandalism of a motor vehicle and its contents. Theft of a vehicle's contents generally occurs very quickly (in between 30 seconds and 5 minutes, depending on the item being stolen). The aim of an audible alarm is to provide a signal that the vehicle is being broken into. This signal is most helpful when car owners are close enough to hear the alarm sounding. Car alarms also have a psychological impact on car thieves by drawing attention to their actions. It is estimated that about 30% of all vehicles in Australia are equipped with audible alarm systems, with the majority fitted aftermarket.

Alarms manufactured in Australia that are certified under Australian Standard AS/NZS 3749 *Intruder Alarms – Road Vehicles* comply with the noise limit of 115 dB(A). Compliance with this standard is voluntary. The NRMA suggests that there is a lot of product sold in NSW (particularly imported products and components) that does not meet this Standard and therefore may be non-compliant with the Noise Control Regulation and also prone to false alarms, creating considerable noise pollution.

The volume and acoustic character of audible car alarms, even for relatively short periods at night (or for more prolonged periods during the day) can cause considerable community disturbance. The degree of disturbance experienced is exacerbated by the perception that the noise is usually associated with false alarms and that no intervention will occur. False alarms are caused by something other than an attempted intrusion to the vehicle, such as malicious tampering (including hitting windows or rocking the vehicle), faulty wiring or faulty system due to poor installation, poor product quality, or design flaws.

Initiatives have been instituted to improve car alarm performance. These include:

- the *Security Industry Act 1997*, which makes it compulsory for car alarm companies and installers to be licensed. The Act is administered by NSW Police and involves character checks and technical competency assessments of installers. It includes a requirement that all companies must retain membership of an industry association approved by the Police Commissioner.
- an Australian Standard for car alarms (which is now complemented by an Australian Standard for vehicle immobilisers)
- improvements in technology and improved competence in installation and the natural attrition of older car alarms. These have reportedly reduced the incidence of false car alarms over the past 5 years. However, false alarms and uncontrolled sounding of alarms remain problems for the community.
- a consumer hotline phone service operated by the Australian Car Alarm Traders Association, whereby the community can access information and register complaints about false alarm situations.

Despite the above initiatives, police records indicate that noise complaints about alarms are frequent. In 2004, the police received 85 895 reports of alarm noise (building and vehicles) in NSW. This is an average of 235 incidents reported each day.

DEC surveyed 15 NSW councils as part of the Regulation review in relation to community complaints about noise from alarms. Metropolitan councils reported that they each received between four and 20 complaints about vehicle and building alarms in 2004–05. Non-metropolitan councils reported up to three complaints each for the same period and indicated that this was not a significant concern in their LGAs.

DEC received 21 noise complaints to its Environment Line about sounding car alarms over a 2-year period (2004 and 2005). Most complaints were made directly to councils or the police as the appropriate regulatory authorities for this issue.

Under the *Protection of the Environment Operations Amendment Act 2005*, authorised officers may turn off building intruder and motor vehicle intruder alarms that are sounding in breach of the Noise Control Regulation, although a search warrant will still be required to enter residential premises.

DECC is of the view that there are other technological ways of reducing vehicle theft besides using audible car alarms. According to the NRMA (2004) and the National Motor Vehicle Theft Reduction Council (NMVTRC) (2006) an engine immobiliser is the best form of vehicle security available, as it basically disables at least two of the three systems required to get a car started: the ignition, fuel system and starter motor. Statistical analysis by the NMVTRC found that the rate of theft of registered passenger or light commercial vehicles in Australia was significantly higher for non-immobilised vehicles (NMVTRC, 2006). A market research report prepared for the NMVTRC (2005) showed that three-quarters of Australian motorists expressed the highest level of confidence in engine immobilisers.

Other security devices that do not involve audible alarms include bonnet, door, transmission, wheel and steering wheel locks, ignition shields, vehicle monitoring and tracking devices, wheel clamps and window etching. On a practical level, car owners can place valuables out of sight or remove them from vehicles, or park in well-lit areas to help reduce the incidence of theft (NRMA, 2005).

Given the significance of this noise issue in neighbourhoods, DECC proposes to carry forward the existing requirements of the Regulation.

Existing Regulation

Clauses 9, 10, 11 and 12 (Sale of motor vehicle intruder alarms). Clauses 9, 10, 11 and 12 regulate the retail sale of new motor vehicle intruder alarms to ensure that they:

- comply with Section 136 of the POEO Act
- do not exceed the prescribed noise level of 115 dB(A)
- do not have alarms whose sounding devices can be triggered by a panic or override switch while the engine is running or the ignition is on
- adhere to specific acoustic restrictions that are designed to avoid confusion with other alarms, and in particular emergency alarms and sirens.

Clause 22 (Interpretation). This clause provides interpretation of the meaning of 'continuous sounding of alarms' and 'causing an alarm to sound' for the purposes of the offences under clauses 23, 24 and 25.

Clause 23 (Use of motor vehicle intruder alarms triggered by panic switches). Clause 23 requires that a panic or override switch is inoperable when a vehicle's engine is running or the ignition is on.

Clause 24 (Use of motor vehicle alarms generally). Clause 24 prescribes sounding periods for car alarms of 90 seconds (for vehicles manufactured before September 1997) and 45 seconds (for vehicles manufactured after this date). The clause also provides for a tiered regime of penalties according to the duration of the alarm, with penalties increasing as the period of ringing lengthens.

Clause 25 (Design and construction of vehicle intruder alarms). Clause 25 prescribes a 115-dB(A) maximum noise level for alarms and requires that the alarm cannot be re-armed, except through a manual reset provision.

Proposed Regulation

DECC proposes to carry forward clauses 9, 10, 11, 12, 22, 23 and 25 of the existing Regulation unchanged into the new Regulation. Changes to clause 24 of the existing Regulation are proposed as outlined below.

Clause 24 (Use of motor vehicle alarms generally). In addition to the existing provisions being brought forward, DECC proposes to change the tiered penalty system under clause 24 of the existing Regulation, which is linked to the sounding duration of vehicle intruder alarms.

The penalty level for sounding vehicle intruder alarms currently relates to the length of time for which the alarm sounds beyond the permitted time limits in the Noise Control Regulation. Although the penalty levels will remain unchanged, DECC proposes to reduce the sounding duration, as shown in Table 5. Details of the penalty levels are given in Appendix 5.

Table 5: Sounding durations of vehicle intruder alarms beyond the permitted time limit: comparison of different penalty levels under the existing and proposed Regulations

Existing Regulation	Proposed Regulation
Up to 24 hours	Up to 4 hours
More than 24 hours and up to 48 hours	More than 4 hours and up to 8 hours
More than 48 hours	More than 8 hours

From the number of reports each year to the police and councils, DECC considers the incidence of problems with inappropriately sounding alarms to be significant. Reducing sounding durations (which are linked to the tiered penalty levels and have been in place since 1997) will mean that existing penalty levels would apply for a shorter sounding duration of an alarm than under the existing Regulation. This is intended to act as a further incentive to users to correct faulty systems and better reflects the level of impact caused during the sounding period.

DECC also proposes to remove the defence provision from the clause that allows excessive sounding of motor vehicle alarms in circumstances of attempted theft, accident or vandalism. Alarm systems do not have the ability to determine what is a false alarm or what is a genuine attempt of theft. Therefore, as with building alarms, motor vehicle intruder alarms need to be set to turn off after the permitted time period no matter what caused the alarm to sound. The objective of this amendment is to (a) achieve consistency with the regulatory approach for building intruder alarms; and (b) prevent alarms from sounding excessively. This amendment will improve enforcement efficiency with regard to faulty alarms, as councils and the police will not have to establish the circumstances that caused the alarm to sound before they take regulatory action. Where a genuine loss has been suffered and an alarm sounds for an excessive period, council and police will be able to exercise discretion and not necessarily impose a fine for a faulty alarm.

Currently, *AS/NZS 3749.1:2003 Intruder Alarm Systems – Road Vehicles* requires that self-powered acoustic warning devices be triggered automatically if the main power supply is interrupted, and that they be capable of operating for at least 5 minutes. The main power supply can be interrupted by attempted theft, human error (such as leaving the lights on) or general faultiness. However, to comply with the Regulation, the sounding duration of the intruder alarm must be limited to a specific period (45 seconds or 90 seconds, depending on the age of the alarm) after activation. Activation of alarms can be triggered by attempted theft; vandalism or other damage; general faultiness; or loss of the main power supply by, for example, the leaving lights on.

The defence provision will remain in place for users of alarms manufactured before the commencement date of the amendment. To allow manufacturers and owners of non-compliant

products to comply, the commencement date is proposed to be within 12 months of the gazettal of the new Regulation. During the delayed commencement period, the provisions of the existing Regulation will remain in force.

Alternatives considered

Reference to the Australian Standard for motor vehicle intruder alarms. One way to ensure that all car alarm products sold in NSW comply with the requirements of the Noise Control Regulation relating to loudness and pitch would be to require compliance with *AS/NZS 3749 Intruder Alarm Systems – Road Vehicles*. Mandating the Australian Standard in NSW would ensure not only that the department was satisfied that noise Regulations were adhered to but would also provide consumer confidence that the alarm purchased has been designed to comply with the Noise Control Regulation. However the issue of time differences between the standard and the regulation would need to be addressed. Additionally, although this regulatory approach is expected to reduce the number of faulty or unsuitable products sold, any such imposition on the sale of particular goods should be approached nationally rather than at a State level.

Cost–benefit assessment

Costs. Actions to address the sale of car alarms are a small part of broader enforcement activities. The costs of enforcement at sale are minimal under the existing Regulation and will remain unchanged under the proposed Regulation. As the provisions will remain unchanged, there will be no additional requirement on manufacturers to control the maximum sound level, the frequency of the sound, or other sound-operating characteristics of car alarms.

The primary costs of the provisions controlling the use of car alarms are enforcement costs. As with horns, the department enforces alarm offences where opportunities arise. Councils and the police are the primary agencies undertaking enforcement of alarm offences. Police attended 63 556 noisy alarm incidents in 2004. NSW councils combined received approximately 600 complaints regarding noisy alarms in 2005. Data are not available on the split of incidents between noisy car alarms or building alarms. If we assume that around half of all incidents are from noisy car alarms, then the cost of enforcement for police in dealing with noisy car alarms amounts to approximately \$1 million a year.¹⁵

In addition, NSW councils also received around 600 complaints about noisy vehicle and building alarms in 2004–05. DEC surveyed 15 NSW councils as part of the Regulation review in relation to community complaints about noise from alarms. Metropolitan councils reported that they each received between four and 20 complaints about vehicle and building alarms in 2004–05. Non-metropolitan councils reported up to three complaints each for the same period and indicated that this was not a significant concern in their LGAs.

Benefits. Limiting the sale of excessively noisy alarm systems lessens the chance of such systems being installed in vehicles and subsequently reduces noise nuisance to the community. The provisions help to limit the potential misuse of panic or override switches by prohibiting the sale of alarms that operate while the vehicle's engine is operating. If the alarm were operated in this manner, the noise could be startling or offensive to nearby individuals and other drivers.

The sale provisions also provide a safety benefit to the community by prohibiting the installation of alarms with rising, variable or dual tones that have the potential to be confused with those of sirens from emergency vehicles such as ambulances.

¹⁵ Based on average hourly salary of \$31.50. Each incident requires two police officers for around 30 minutes (personal communication, Paul Nolan, NSW Police Service).

The main benefit of the controls on the use of car alarms is a reduction in noise nuisance from false alarms sounding continuously. Regulating the duration and level of sound from car alarms limits the amount of noise generated in built-up areas and helps to protect community amenity.

The controls on the use of car alarms reinforce the benefits of the controls on sale and reduce the risk of confusion with emergency sirens. The provisions also address, to some extent, the problems of aftermarket modifications to alarms and illegally imported alarms that may exceed the prescribed noise level.

Assessment. As part of the broader package of Regulations, the provisions relating to car alarms help to reduce the impacts of noise on neighbourhood amenity and health by minimising the incidence of false alarms and by controlling the duration and sound level of alarms. Continuing these provisions also provides public safety benefits by minimising potential confusion with emergency sirens. The cost of enforcement for noisy car alarms is likely to exceed \$1 million.

Inspection and testing of motor vehicles

The inspection and testing provisions provide standard procedures for determining noise levels. This provides certainty for industry and consumers and improved compliance and enforcement efficiency for regulators.

Existing Regulation

Schedule 1 (Prescribed noise levels for classes of vehicles). Schedule 1 specifies maximum noise levels for motor cars, motorcycles designed or manufactured for use on roads, any other motorcycles, and motor lorries or motor buses. These noise levels are consistent with the national ADR limits applied to the sale of new motor vehicles (excluding ADR83/00).

Schedule 2 (Testing procedures). The noise levels of motor vehicles and related accessories must be determined in accordance with the procedures prescribed in Parts 1 to 5 of Schedule 2. These procedures reflect national testing standards and procedures, where they exist. Procedures are prescribed for the following categories:

- motor cars and motorcycles
- motor lorries and motor buses
- motor vehicle intruder alarms that are not attached to motor vehicles
- motor vehicle alarms that are attached to motor vehicles
- motor vehicle horns that are not attached to motor vehicles
- motor vehicle horns that are attached to motor vehicles.

The procedures give details of the site requirements, the position of the microphone, the operation of the device or engine speed at maximum power, and the determination of noise levels. Instruments for testing are prescribed with reference to the relevant Australian Standards. Requirements for calibrating instruments are also prescribed.

Proposed Regulation

Schedule 1 (Prescribed noise levels for classes of vehicles). The principal proposed changes relate to the **accommodation of ADR83/00 – External Noise**.

Australian Design Rules (ADRs), made under the Federal Government's *Motor Vehicle Standards Act 1989*, impose noise limits on new motor vehicles. The ADRs support a national scheme for regulating the noise levels of new motor vehicles sold in Australia. Many ADRs are harmonised with international regulations adopted by the United Nations Economic Commission

for Europe. Noise limits for motor vehicles have historically been less restrictive in Australia than those in force in Europe.

ADR 83/00 – External Noise defines limits on external noise generated by new motor vehicles, motorcycles and mopeds in order to limit the contribution of motor traffic to community noise. This ADR was first gazetted in March 2003 and was declared on 8 November 2005. It applies to most new model motorcycles, mopeds and most cars from 1 January 2005; all new motorcycles from 1 January 2006; and all new cars from 1 January 2007. This ADR consolidated the external noise requirements of ADR 28/01 (cars, trucks and buses), ADR 39/00 (motorcycles) and ADR 56/00 (mopeds) into one standard. The introduction of *ADR 83/00 – External Noise* brings Australian standards closer into line with relevant European standards.

ADR 83/00 – External Noise requires that the noise be measured for each vehicle model while the vehicle is in motion (sometimes called a ‘drive-by’ noise level) and stationary (sometimes referred to as a ‘signature’ noise level). The ADR refers only to a ‘drive-by’ noise level limit, so the measured stationary noise levels may vary for each make and model of vehicle certified. The stationary noise level is intended to provide a reference value for regulators to use to check in-service vehicles. It is designed to minimise excessive noise caused by poorly maintained or modified exhaust systems. Under ADR 83/00, a vehicle must maintain the stationary noise level produced when in its original state.

Once a vehicle is in use (‘in-service’) it becomes the State’s responsibility to enforce environmental standards such as stationary noise limits. The noise limits in the ADRs are given legal effect for in-service vehicles by their adoption into State Regulations. In NSW, the stationary noise levels in previous ADRs have been adopted as noise limits for enforcement purposes. The noise limits are contained in Schedule 1 of the existing Noise Control Regulation. Schedule 1 levels are appropriate for pre-ADR 83/00 vehicles. For ADR 83/00-certified vehicles in the proposed Regulation, the stationary level for each make and model of motor vehicle will apply.

Unlike Australia, the Europeans regulate their aftermarket exhaust industry. There, aftermarket exhausts are required to be certified to meet the drive-by limit for the particular vehicle. This aspect of the regulatory framework was not adopted by Australia. DECC has raised this issue with the relevant national agencies (DOTARS and NTC) and will continue to promote the need for this to be resolved.

The Federal Government has drafted legislation for the States to facilitate the implementation of *ADR 83/00 – External Noise* for in-service vehicles. It has been recommended that the States adopt the stationary noise levels for certified vehicles, plus a 5-dB(A) allowance for wear-and-tear and measurement error. DECC proposes to adopt this level for ADR 83/00-certified vehicles, including those with aftermarket parts. This affects clauses 5 (Sale of motor vehicles generally), 13 (Use of motor vehicles on road), 20 (Repairs and modifications) and 26 (Defective vehicle notices) of the existing Noise Control Regulation.

The benefits of this approach are that vehicles that are relatively quiet when new will be kept quiet, and enforcement will be more efficient as there will be no need to identify aftermarket systems. The disadvantage will be that vehicles with aftermarket exhausts get a 5-dB(A) allowance on the stationary noise level and do not have to meet the drive-by limit. As previously mentioned, DECC will pursue full harmonisation with the approach in Europe to aftermarket mufflers with the NTC.

The penalties in the existing Noise Control Regulation for exceeding the maximum noise levels for motor vehicles (prescribed in Schedule 1) are staged to reflect the level of impact. The same staged approach is proposed for vehicles certified to ADR 83/00 where there is an exceedance of the maximum noise level (stationary noise level plus 5 dB(A)).

Schedule 2 (Testing procedures). In 1999, the Motor Vehicle Environment Committee (MVEC) prepared the NSENTP to introduce a national approach to measuring exhaust noise. Before this,

some jurisdictions had developed their own approaches, and the differences between these approaches had led to inconsistencies in test results. In NSW, Schedule 2 essentially mirrors the NSENTP, with some minor differences.

DECC acknowledges that a nationally uniform approach would ensure that vehicle owners get an accurate assessment of whether their vehicles comply with national noise standards. In order to achieve this, the testing procedures in the existing Noise Control Regulation will be replaced by reference to the NSENTP for In-Service Motor Vehicles. This approach also positions the Regulation well to include changes to the NSENTP to accommodate ADR 83/00 that are currently being considered by the NTC.

Cost–benefit assessment

A cost-benefit assessment of ADR 83/00 was carried out by the National Road Transport Commission (2002) as part of the External Noise from Motor Vehicles Regulatory Impact Statement. The sections detailing the costs, benefits and evaluation are presented in Appendix 4. DECC considers this to be applicable to the proposal for accommodating ADR 83/00 in the Noise Control Regulation.

DISCUSSION BOX: Vehicle testing network

Noisy vehicle compliance activities are carried out by DECC, predominantly in the Sydney metropolitan area and on occasions in regional areas in NSW. Vehicles are noise tested and inspected for the correct installation of anti-pollution control devices. Vehicles that fail to meet the legal requirements may be issued a Defective Vehicle Notice or a penalty. In order for the Defective Vehicle Notice to be cleared, repairs must be carried out and the vehicle presented for inspection at DECC's Motor Vehicle Testing Facility at Lidcombe. Considerable time and effort is required by DECC to manage the administrative and technical aspects of this approach.

Under the current approach, approximately 1000 vehicles are inspected and tested at Lidcombe each year. At times, vehicle owners come from regional areas and travel long distances to have their vehicles inspected. The volume of work can result in lengthy delays for vehicle owners to have their vehicles tested, and it also limits the proportion of time that DECC officers can allocate to compliance and enforcement action for noisy and polluting motor vehicles.

As a result, DECC has investigated alternative compliance approaches to address the issue. It was determined that the effective approach would be to introduce an accredited external vehicle noise testing and inspection station scheme to increase the availability of vehicle testing facilities across NSW.

The implementation and operation of this type of scheme will require new legislative provisions and amendments to some current provisions. A pilot of the scheme commenced on 1 March 2006. DECC has introduced the scheme through amendments to the POEO General Regulation. An impact analysis will be prepared and targeted consultation conducted with affected stakeholders in due course.

The proposed scheme will allow DECC to grant authorisations to individuals and facilities to conduct noise testing and inspections of anti-pollution control devices. Before they are granted authorisations, applicants will be expected to demonstrate the necessary competencies and undertake testing in a manner specified, using suitable noise measuring equipment. Authorised facilities will be strategically located in metropolitan Sydney and across NSW. A robust auditing program will be developed to ensure the quality of inspections and testing. A similar scheme run by the Victorian EPA has been operating for around 20 years.

DECC aims to link the scheme with the RTA's existing Authorised Inspection Station infrastructure by approving a sub-set of suitably qualified individuals/stations that are also authorised by the RTA.

Cost–benefit assessment

The inspection and testing provisions are specified in a number of provisions of the Regulation. They provide a sound evidentiary basis for enforcing those provisions. Without the inspection and testing provisions a number of other provisions of the Regulation would be inoperative in their current form.

Costs. The department spends about 123 days each year inspecting and testing vehicles for compliance with the Noise Control Regulation. It carried out approximately 1500 noise tests/inspections in 2004–05. These tests were carried out on the roadside and at the department’s motor vehicle testing facility at Lidcombe. Each noise test takes approximately 30 minutes, whereas an inspection takes 15 minutes. Noise tests also incur costs associated with equipment and calibration. In the past 5 years, the department has spent approximately \$30,000 on equipment (purchase and maintenance) for noise testing of motor vehicles. This cost relates to the enforcement of existing clauses 5, 6 13, 18 and 26 where a noise test or inspection is required. The costs are expected to remain at the same level under the proposed Noise Control Regulation, although they would change if an alternative scheme were to be enacted.

Offenders are currently required to travel to Lidcombe to have defective vehicle notices cleared, and they may have to travel, on average, up to 45 minutes each way. Assuming that the number of noise tests undertaken at the Lidcombe motor vehicle testing facility each year (at around 900¹⁶) is representative, then compliance costs for offenders under the current Regulation will range up to \$33,000¹⁷ a year. The majority of these costs would be avoided if owners did not modify their vehicles such that they did not comply with the Noise Control Regulation.

Benefits. Specifying noise-testing requirements provides a consistent methodology for determining noise levels in NSW, as well as certainty for industry and consumers and improved enforcement efficiency for regulators.

Assessment. Inspection and testing procedures provide an essential function in the operation of the Regulation by confirming whether or not a noise offence has occurred. Tests provide clear evidence of breaches in cases where noise control equipment may be missing and a visual inspection is unable to confirm compliance.

Compliance costs for offenders under the current Regulation are estimated by DECC at \$33,000 a year.

16 From DEC’s motor vehicle compliance activities

17 Based on 900 vehicle inspections at Lidcombe, an average value for urban travel time of \$18.25 per vehicle hour (in 2006 dollars) and total travel time, including inspection, of up to 2 hours (RTA Economic Analysis Manual – Economic Parameters, Agency Submission for Torrens Road Upgrade)

PROPOSED REGULATION—NOISE CONTROLS: MISCELLANEOUS ARTICLES

A major objective of the Noise Control Regulation is to control noise from articles identified as significant contributors to noise in residential areas. These types of noise or noise sources include domestic power tools such as lawn-mowers, as well as air conditioners, amplified music and emerging sources of noise such as heat pumps. The Regulation controls noise from these articles by controls on both their sale and use.

The number of complaints is a limited measure of the impact of noise pollution but provides some indication of the extent and nature of noise problems in residential areas. NSW councils have primary jurisdiction in relation to residential noise control, and most noise complaints are directed to them. Councils were approached early in 2005 by DEC seeking general opinions on how the existing Regulations were working. A letter followed this to all councils seeking more detailed information on problems and issues and raising a number of particular issues for comment. A detailed report of these consultations appears in Appendix 3.

For neighbourhood noise issues, councils indicated support for:

- further restricting the times at which sound equipment and instruments can be heard at night
- restricting the times of use of heat pumps fitted to water heaters where they create noise at night (this proposal had limited support, as use of external heat pumps is not yet widespread)
- removing the ability of individuals to give statutory warnings to noise-makers.

Councils did not indicate significant support for further restrictions on the operation of leaf blowers. Responses from councils are further presented in this RIS under the relevant sections of concern.

The 2004 NSW Neighbourhood Noise Survey indicated the extent of impact of common noisy articles. High to very high levels of impact were experienced by about one person in five for loud music and about one person in seven for each of air conditioners/pool pumps, powered garden tools and building alarms. Over 90% of respondents said that Regulations controlling neighbourhood noise were appropriate for controlling the length of time for which, and the time of day at which, noise occurs. The survey did not identify leaf blowers specifically, but under the category of 'powered garden tools' 13% of respondents experienced a significant impact. This level of impact was indicated as less than that from other neighbourhood noise sources, i.e. vehicles, dogs and licensed premises (see page 53 for details on the consideration of leaf blowers).

Sale of miscellaneous articles

Under the existing Noise Control Regulation, specified potentially noisy articles are required to have noise labels attached at the point of sale. There are currently no other statutory requirements for noise labels on goods. The department is not aware of noise labelling being adopted voluntarily by manufacturers of articles, such as leaf blowers and pool pumps, that are not required by Regulation to have labels.

Existing Regulation

Clauses 35 to 48 (Sale of articles). The current provisions generally prohibit the sale of a specified articles without the prescribed noise label attached. The provisions also provide maximum noise levels for the sale of some articles. They are covered in clauses 35 to 48 of the existing Regulation.

The Regulation requires the following articles to have noise labels attached:

- lawn-mowers with cutting widths of between 620 mm and 950 mm
- ride-on mowers
- edge-cutters
- string-trimmers
- brush-cutters
- other grass-cutting machines
- chainsaws
- domestic air conditioners
- mobile air compressors
- pavement breakers
- mobile garbage compactors.

The objective of the labelling requirement is to provide consumers with information about the noise character of articles that are common sources of neighbourhood noise. Where consumers select lower noise articles, suppliers have an incentive to manufacture or import quieter articles. By facilitating the assessment of noise levels from known sources, noise labels can also be useful for councils wishing to regulate to limit noise in neighbourhoods.

Clauses 35 to 48 of the existing Regulation will be carried forward unchanged.

Alternatives considered

Adding to labelling requirements. The current list of articles is not inclusive of all garden equipment that has the potential to emit noise. Although it is important for a noise-labelling scheme to include all significantly noisy domestic articles, it is not desirable for expansion of this scheme to be conducted at a State level when essentially the domestic market for these articles is Australia-wide. Further development is best done at a national level (see 'Discussion Box: The Future of Noise Labelling' below).

The Australian Consumers' Association (ACA) has advised that product labelling provides the consumer with more information on which to base an informed choice and sees that noise is an important area of impact that consumers need to be made aware of. The ACA supports efforts to expand the scheme nationally.

Expansion of air conditioning labelling. Only domestic air conditioning systems require noise labels. The definition of domestic air conditioners includes a 12-kW limit that represented the upper level for residential systems at the time the existing Regulation was developed in 2000. A survey of the air conditioning industry carried out by the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH) found that domestic systems can now be more powerful, and that a more appropriate power rating limit that more realistically differentiates domestic units from commercially used ones would be 20 kW.

Definition of air conditioners

The Noise Control Regulation refers to both 'air conditioners' and 'domestic air conditioners'.

Time limits on the use of 'air conditioners' apply under clause 52 of the existing Regulation. This includes all types of air conditioners.

The Regulation includes noise-labelling requirements for 'domestic air conditioners'. 'Domestic air conditioner' is defined in the existing Regulation under clause 4.

Air-conditioning labelling and the associated technical basis for measurement of air conditioner noise was originally the responsibility of the Australian Environment Council, a predecessor organisation to the current Environment Protection and Heritage Council (EPHC). Their requirements were picked up by NSW with the earlier Noise Control Regulation (see 'Discussion Box: The Future of Noise Labelling'). Although it is proposed for this to continue, any change to either the definitions or measurement procedures for air conditioning needs to be made through the EPHC. A national approach is preferable to a State-based approach as it fosters consistency of approach to the problems and regards the country as one market. The industry recommendation of a 20-kW limit may consequently be considered by DECC in any future approaches to the EPHC for change.

DISCUSSION BOX: The future of noise labelling

Product noise labelling, like the energy rating on whitegoods, is most effective in driving down noise levels from potentially noisy articles when there is high consumer awareness of the scheme and community motivation to choose quieter tools. As the market for these products is essentially a national one, a national approach to product labelling is the most appropriate. A national approach supports the level playing field and adheres to the constitutional requirement of promoting economic integration and increased trade between States.

The noise labelling of equipment ensures that manufacturers can then opt to include the identified noise levels as part of equipment specifications. This information is useful to inform the purchasing requirements of buyers and noise conditions set by regulators.

Equipment typically requiring noise labelling includes new chain saws, domestic air conditioners, mobile air compressors, pavement breakers, mobile garbage compactors and grass-cutting machines sold by retail. An extensive noise-labelling scheme has been operating in Europe for some time. For more details of the European requirements see the European Union website at www.dti.gov.uk/innovation/strd/ecdirect/page12562.html.

Although there is potential to widen the scope of the current labelling provisions in NSW to include additional articles such as leaf blower-vacs, noise limits for articles are best set at the national level, recognising that realistically Australia, rather than each State, is one market.

Currently the scheme is not well known by consumers and retail outlets and is therefore not generating any significant pressure on industry for quieter products. NSW is therefore considering an approach to Federal Government regulators to re-establish a scheme with new impetus at the national level. With this development in mind, making changes to the current labelling scheme in NSW at this time would not be warranted. DECC will investigate a national approach to labelling through the EPHC. Guidelines on domestic air conditioner labelling and testing are currently national ones.

Cost–benefit assessment

Costs. The Noise Control Regulation requires manufacturers to produce and attach noise labels. Manufacturers would also need to undertake tests to determine noise levels. The labelling requirement will impose minimal costs on manufacturers of specified noisy articles. Typically the cost of labelling ranges from \$0.30 to \$0.56 per label.

The total compliance cost for noise labelling in NSW is about \$313,000 a year.¹⁸

Enforcement costs for these provisions are a small part of the broader enforcement activity by councils and are included in the following section of this RIS, 'Use of miscellaneous articles'.

Benefits. The primary benefit of having labels that specify noise levels is that it gives consumers information for purchasing decisions that can play a role in reducing noise. Labels provide the

¹⁸ Number of articles requiring labelling estimated at around 700,000

opportunity to discriminate against articles that have the potential for louder noise emissions. It also provides an incentive for manufacturers to design, develop and market products that improve community noise levels.

Retailers may also discriminate in favour of suppliers of products that emit lower noise levels. Reducing the potential for the sale of noisy articles also has an indirect influence on reducing noise nuisance.

Assessment. The current scheme remains useful in providing consumers with information for purchasing decisions that play a role in reducing noise. This information is unlikely to be available under the base case of voluntary labelling, which would remove the opportunity for consumers to compare listed articles on the basis of noise emissions; also, the incentive to supply quieter goods would be reduced. Voluntary labelling would also make it easier for grass-cutting appliances to exceed the prescribed maximum noise levels, leading to noisier neighbourhoods.

Labelling may also provide an incentive to manufacturers to develop alternative products that improve community noise levels. The costs of labelling are a small fraction of the overall cost of articles. The legislation also serves as a nucleus on which to build a national scheme. Compliance costs to manufacturers are estimated to be about \$313,000 a year under the Regulations.

It is likely that, where consumers and organisations discriminate between specified noise articles on the base of a noise label, the benefits in terms of lower community noise levels outweigh the costs of noise labelling.

Use of miscellaneous articles

Noise impacts are typically more directly linked to the use, rather than sale, of noisy articles. The provisions relating to the use of noisy articles aim to minimise the impact of specific noise sources in residential premises and public places in a cost-effective manner. The 2004 Neighbourhood Noise Survey indicated that 20% of people are very affected by loud music, 14% by air conditioners and pool pumps, and 13% by powered garden tools and house alarms. All of these items are addressed in this part of the Noise Control Regulation.

Existing Regulation

Clause 50 to 52 (Time limits on the use of certain articles). The existing Regulation specifies times at which articles operated on residential premises are not permitted to be audible inside habitable rooms in other residential premises. 'Habitable room' excludes the garage, storage area, laundry, pantry, toilet and bathroom. This means that specified items could be used within the limited hours provided that the articles cannot be heard by the neighbours inside their residences. These provisions are designed primarily to protect the community during the more sensitive night hours, most importantly during sleep.

The articles subject to time limits on use are:

- garden equipment and power tools, including: lawn-mowers, electric power tools, swimming/spa pool pumps, chainsaws, circular saws, gas or air compressors, pneumatic power tools (clause 50)
- musical instruments and sound equipment (clause 51)
- domestic air conditioners (clause 52).

The limited times of use are the part of the Noise Control Regulation that is most recognised and understood by the community. The NSW Neighbourhood Noise Survey found that, of those people who were aware of the existence of the Noise Control Regulation, 33% (one in three) were aware of restrictions around the time of day noise is made.

Apart from the use of Noise Abatement Directions (POEO Act) this Regulation is the main instrument used by local government and the police to control noise from residential premises at night. The time periods specified above are generally understood within the community. The main advantage of the ‘time of use’ controls compared with the use of Noise Abatement Directions is the simpler test for compliance (audibility compared with the offensive noise test) and the fact that the set times make the provision relatively easy to understand and apply.

Proposed Regulation

The current articles subject to limited times of use are proposed to be brought forward into the new Regulation unchanged, but with the exceptions below.

Clause 51 (Musical instruments and sound equipment). The main change in this clause relates to **altering the restricted hours of use of electrically amplified musical instruments.**

As well as bringing forward the existing provisions, it is proposed that this Regulation be changed to alter the restricted hours for musical instruments and amplified music, as shown in Table 6.

Table 6: Comparison of restricted times of use for musical instruments and sound equipment under the existing and proposed Regulations

Existing Regulation	Proposed Regulation
On any day: 12 midnight to 8 am	Sunday to Thursday: 10 pm to 8 am Friday and Saturday night, and any other night that is followed by a public holiday: 12 midnight to 8am

Relationship of ‘times of use’ restriction to restrictions at other times

Articles that are restricted by the ‘times of use’ provisions in terms of the noise that they make are not free to produce unfettered noise at other times. Outside the prescribed period these articles are still subject to the offensive noise provisions of the POEO Act, including the issue of noise abatement directions and noise control notices.

This means that an external offensive noise test replaces the test of audibility within the neighbour’s residence outside the restricted times of use. DEC’s (2004) Noise Guide for Local Government describes how to apply the test for offensive noise.

The 2004 NSW Neighbourhood Noise Survey results support a change to the Regulation in recognition of different expectations for peace and quiet during week nights than at weekends, probably because the next day is a normal work day for many people; this should be reflected in the times when this type of noise should not be heard. The Survey showed that 85% of the community support earlier finishing times—9 pm (or earlier) to 11 pm—for noisy activities (e.g. amplified music) from parties on weekdays. The greatest support was shown for 9 pm to 10 pm finishing times. Sixty-nine per cent of the community considered that, on weekends, an 11 pm to 1 am or later finishing time was appropriate. The greatest support (33%) was for a 12 am (midnight) finish. This proposal does not mean that the music at parties must cease after these times, only that it should not be audible inside the neighbours’ residences.

Consultation with 34 NSW councils on this proposal also showed majority (94%) support for the amendment.

Clause 52 (Air conditioners and heat pump water heaters). Heat pumps have traditionally been used for space conditioning, but they are now also being used for electric water heating. They are usually three times more efficient than electric resistance water heaters, meaning that they can produce the same amount of hot water for one-third the amount of electricity (PATH,

undated). Both DECC and councils support the use of these energy-efficient devices, and councils have been active in promoting their use.

Heat pump water heaters are generally fitted outside residences. A heat pump works by transferring heat rather than by converting electrical energy into heat. A heat pump water heater removes energy from a low-temperature source (ambient air or waste water) and moves it to a high-temperature hot water tank. Electricity is used to upgrade the quality (temperature) of heat energy but not to generate heat energy (Morrison, undated). Refrigerators and air conditioners are devices that incorporate heat pumps.

A mechanical compressor and water pump is required for heat pump water heaters. Possible noise from the compressor is an issue (Morrison, undated) if the compressor is automatically activated when the water temperature falls, which can occur during the night and in the early morning. Although quieter models are typically rated at approximately 50 dB(A) at 1.5 m, noisier types may be heard by neighbours at night. The problems can largely be addressed by careful selection of an appropriate location in relation to neighbours' residences. Situations where these devices are poorly located require regulatory control to provide protection to neighbours.

Outdoor heat pump water heaters are similar to air conditioning units in terms of their potential to disturb neighbours, as both can be external devices. In these circumstances heat pumps should be restricted in a similar way to air conditioners, i.e. by a requirement not to be audible in neighbours' residences between the same hours, and with the same time prescriptions regarding audibility.

A definition for heat pumps is to be included in the Definitions clause in the Regulation and will read as follows:

- 'heat pump water heater' means a device that uses the energy generated from the compression of a gas to heat water.

Some councils that have been involved with noise control for these systems advise that this is a growing problem, as these units become more popular.

To allow time for the community to be informed, it is proposed that restriction of the time of use of heat pump water heaters would commence 6 months after gazettal.

The proposed restricted 'times of use' provisions are shown in Table 7 below.

Table 7: Proposed restricted times for use of articles

Article	Day	Restricted times of use
Garden equipment and power tools, including lawn-mowers, electric power tools, swimming/spa pool pumps, leaf blowers, chainsaws, circular saws, gas or air compressors, pneumatic power tools	Monday to Saturday (except public holidays)	8 pm to 7 am
	Sunday and public holidays	8 pm to 8 am
Musical instruments (including electrically amplified musical instruments) and electrically amplified sound equipment	Sunday night to Thursday night	10 pm to 8 am
	Friday and Saturday nights and nights preceding a public holiday	12 midnight to 8 am
Domestic air conditioners and heat pump water heaters	Saturday, Sunday and public holidays	10 pm to 8 am
	Any other day	10 pm to 7 am

DISCUSSION BOX: Installation of domestic air conditioners and heat pump water heaters

Noise problems with externally fitted split system air conditioners and heat pump water heaters can occur through poor installation, where the siting of the unit does not take into account the proximity of neighbours. Guidelines produced by the former Australian Environment Council (AEC) (1984) and reproduced in the *NSW Noise Guide for Local Government, 2004* (DEC 2004) provide detailed explanation of the noise control principles to be followed in siting air conditioning units.

Poor location of units can occur if installers do not have regard to, or lack expertise in, the application of these noise control principles. This problem can be significant in housing estates with large dwellings on small blocks so that neighbour-to-neighbour distances are short, particularly where dwellings are designed so as to require air conditioning. Councils administering these new estate areas, such as councils in western Sydney, are experiencing an upsurge in complaints from residents about the air conditioning noise.

Solutions

- 1** Educational material could be given to consumers and to installers emphasising the importance of correct installation, the noise control principles that should be observed for installation, and the difficulties and costs that might be borne by the owner of the unit if noise mitigation is required by the council after installation is complete. Organisations well placed to provide educational material are DECC and the Australian Institute for Refrigeration, Air conditioning and Heating (AIRAH).
- 2** Installers should have an appreciation of the potential for noise impact and the means to minimise it during installation. A system might be considered that ensures a basic level of expertise by commercial installers regarding noise control sufficient for them to understand and have regard to the AEC (1984) Noise Control Guidelines on air conditioning installation. Currently the Australian Government facilitates a registration system for commercial air conditioning installers. The registration requires training and includes a test that must be passed in order to obtain registration. This is to ensure competency in handling ozone-depleting substances. Within NSW, all installers are required to observe a standard for occupational health and safety. The same infrastructure that supports existing competency schemes could also be applied to similar scheme for environmental noise.

Clauses 50 to 52 Personal warnings. For all 'times of use' provisions (clauses 50 to 52 of the existing Regulation) a warning needs to be given to the person responsible for the noise. It is the warning not being heeded, rather than the noise itself, that causes an offence. The reason for this is that it may be unreasonable for the noise-maker to know whether the noise can be heard inside a neighbour's residence. Currently a statutory warning may be given by authorised officers of councils and police officers, and also by citizens, including persons affected by the noise.

Enforcement authorities (councils and police) rely on their own officers to give this warning and collect evidence. As the provision for individuals to make statutory warnings is never relied on by enforcement agencies, the process to be followed would be clarified if the provision to give personal warnings were abolished. There was general support for this proposal from councils and from police (all councils that responded to this issue supported it, as did several police Local Area Commands).

Alternatives considered

Remove the times of use provisions. Removal of the 'times of use' Regulation is an alternative. Without this Regulation, neighbourhood noise at night could be controlled by the use of Noise Abatement Directions (POEO Act sections 275–279), which involves a more complicated test (the offensive noise test, rather than the straightforward audibility test in the Regulation). Protecting the community from sleep disturbance is one of the most important roles of the Regulation. Sleep disturbance has now been linked to health effects (see 'Social costs of noise pollution' on page 13), so the removal of a provision that focuses on this type of protection and prescribes the times when this protection should prevail is an undesirable outcome. If the

provision were removed, we would also lose the ability to specify particular noise sources that have the potential to cause disturbance at night.

Personal warnings. The alternative is to retain the provision for personal warnings. However, this would mean continuing with a provision that is not used.

Further restriction on the use of leaf blowers. Leaf blowers are included in the definition of power garden tools and therefore are subject to the 'times of use' restrictions for all such tools, including lawn-mowers, mulchers, edge-trimmers and chippers/shredders. These restrictions are for leaf blowers not to be audible in a neighbour's residence between the times of 8 pm and 7 am on weekdays and Saturdays and 8 pm and 8 am on Sundays and public holidays.

Leaf blowers can emit a shrill tonal noise that is annoying and increases the impact of leaf blower noise beyond what might be expected from the noise level alone. There is also anecdotal evidence of at least a section of the community who see noise from leaf blowers as a particular problem. Some cities in the United States, including Sacramento in California and Albany in New York State, have banned their use. In most areas, however, less strict conditions apply.

In NSW tighter restrictions (if justified) might take the form of a longer period of restriction under the 'times of use' when these tools must be inaudible to neighbours or the introduction of respite periods during the day. However, both the Neighbourhood Noise Survey results and local government consultations indicated that the support base was not large enough to warrant restrictions tighter than those currently existing. DEC consulted with 29 NSW councils on this issue, and only four supported further restrictions on use.

Quieter leaf blower models are now entering the market with designs that mitigate for the four main noise sources: (1) the high-frequency noise of rushing air; (2) the whine of the fan; (3) the induction noise; and (4) noise from the exhaust.

Typical noise levels from earlier design models are 70 to 80 dB(A) at 15 m. The latest quieter models have reduced this to 64 dB(A) at 15 m, with an associated reduction in the tonal characteristics; which used during the day these tools may not be considered to unduly affect amenity. Comparisons with many models operating at around 74 dB(A) at 15 m reveals that these new designs would be perceived as half as loud.

Consequently, it is proposed not to change current 'times of use restrictions' for leaf blowers.

Cost–benefit assessment

Costs. The cost of compliance with this clause is likely to be minimal, as offensive noise from sound systems, air conditioning units, garden power tools or amplified music can be minimised by minor behavioural changes. For instance, individuals can turn down the level of sound or consider the need for the use of appliances such as garden power tools during 'sensitive times'. Minor compliance cost may arise in considering the installation of air conditioners, water heaters and heat pumps to ensure that noise doesn't affect neighbours—either by relocating these units away from neighbours' fence lines or by enclosing or otherwise controlling the source. These additional installation costs will vary, as they depend on the potential impact on neighbours, i.e. they are site-dependent.

Enforcement costs are greatest for local councils, as the listed articles are primarily used on or around residential premises. Non-metropolitan councils are estimated to spend an average of \$7,800 a year on noise control, whereas metropolitan councils will likely spend an average of \$90,000 a year. Those that provided estimates were assumed to be more active in enforcement activities. Assuming that the remaining councils that did not provide data were half as active with enforcement, and extrapolating data to all 152 councils across NSW, it was estimated that councils spend about \$3 million a year on neighbourhood and vehicle noise control enforcement.

Benefits. The main benefit that this Regulation provides is the prevention of noise nuisance during night-time hours, thus minimising sleep disturbance and providing respite for noise-affected residents. Assessment of the benefits associated with these amendments is difficult, because it is hard to separate out the noise impacts of these provisions.

Assessment. The times of use specified in the Regulation are reported by councils to be working reasonably well in containing neighbourhood noise nuisance.

Consumers can mitigate the impact of the proposed Regulation by purchasing quieter noisy articles or through behavioural change. The Regulations do not prohibit the use of specified noisy articles; rather, they ensure that householders consider the impact of noise on neighbours when they operate noisy articles.

The actual costs of introducing the proposed amendments are expected to be small in comparison to the benefits, given the potential for behavioural changes and the small incremental cost of purchasing less noisy articles. These provisions would complement other noise Regulations that aim to reduce the cost of noise pollution to the NSW community.

DISCUSSION BOX: Simplifying the offensive noise test

One of the functions of a Regulation is to provide simplified enforcement approaches that can be customised to the circumstances of specific problems in a way that the more general POEO Act cannot. The Noise Control Regulation currently provides a simplified approach for selected noise sources at night: an audibility test for 'times of use' articles. Also, there is a duration test for alarms.

The offensive noise test as it stands in the POEO Act requires the application of judgement by authorised officers, as the test is subjective. Consequently, this area of enforcement benefits from guidance from DECC to assist in maintaining consistency and rigorous application of judgement. This guidance is given in DECC's (2004) *Noise Guide for Local Government*. To further assist enforcement officers, a number of proposals were put to councils for inclusion in the Regulation; the aim was to simplify the process of establishing offensive noise in particular situations. However, councils generally did not support these propositions, which are described below. Consequently they have not been proposed in this review.

Proposals from DECC originating from previous council consultations

1 Detecting a noise source at a specified distance away from it

Noise that is offensive to people located near the source will of course be heard at a lower level at greater distances from the noise source. If the distance away from the source is increased, a particular distance is reached away from the source where the noise will be barely audible. Whether a noise can be heard or not is easier to determine than whether it is offensive or not (when heard close to the source, usually at the complainant's residence). Therefore, an alternative test for offensiveness may be to test for audibility of the subject noise at a specified distance away from it.

Therefore, the rationale here is that if a particular noise source can be heard at a particular distance (e.g. 200 m) then it may be assumed to be offensive to a resident 20 m away from the noise source. This approach is currently used by a number of jurisdictions in the USA and is being considered by New York City as part of its revised 'Noise Code'. It should be noted, however, that this approach might not be as simple in some locations with difficult terrain, line of sight problems between the noise source and receiver, or intervening sources of noise.

This method provides for two variables that are easily determined: audibility and a set distance. It does not require the measurement of noise levels. Of the 78% of councils responding to this issue (36 councils) 64% saw difficulties in determining and measuring a set distance.

2 Applying a maximum noise level to selected domestic power tools

During the day, the noise from domestic noise sources is controlled by using the normal offensive noise test. However, this test may be made less subjective by specifying that selected power tools should not exceed particular noise levels at set distances from the boundary fence. This would introduce certainty to the process, but the disadvantage is that noise levels from the subject noise source would have to be measured. The particular tools subject to this provision would need to be identified, and both the noise

levels and the distance from the boundary fence where that noise level is measured would have to be specified in the Regulation. Of the 74% of councils responding to this issue (34 councils) 75% saw difficulties in a requirement to take noise level measurements, in variation in noise output between models, and in resource implications for councils. They preferred the existing Regulation approach.

3 Offensive noise test for trail bikes on private property

Currently control of trail bikes on private property derives from the noise being offensive to the neighbour, so the normal offensive noise test is involved. A simplification of the offensive noise test in this situation could be to impose a distance from the neighbour's boundary within which trail bikes cannot operate. This means that offensive noise is established by evidence showing that trail bikes (or any specified vehicle type) are operating within the minimum distance prescribed (e.g. 15 m). This could simplify having to establish offensive noise and could also indicate what properties are too small to reasonably accommodate this type of activity. Sixty-seven per cent of councils responded to this issue (31 councils) of which 61% raised concerns that that this approach may not work for all bike types. They indicated difficulties in determining a set distance and difficulties in gathering evidence indicating activity within the set distance. Some councils also thought that this approach might affect farms that routinely use motorcycles and that it did not address the cumulative effect of several bike types used on the one property.

Proposal from the community: Making the offensive noise test less subjective and streamlining the complaint procedure

In line with DECC's desire to make the assessment of noise impact a practical and workable tool for authorised officers who may not be expert in this area of assessment, this proposal from a community member seeks the same outcome. The proposal is to remove subjectivity as much as possible by establishing that offensive noise exists when certain behavioural characteristics are present, such as the use of ear muffs by neighbours, the level of mitigation that individuals are prepared to make (measures to be specified) and the proportion of rooms in a dwelling that are affected. These indicators could be included in a Regulation that defined the new concept of offensive noise and differentiated from the current definition of offensive noise by using another name, such as 'Unreasonable Interference'

This level of objectivity could be backed up by councils and police, adopting a uniform and comprehensive method of processing complaints with published procedures for identified stages in the process: (1) identifying the validity of the complaint, (2) applying the control strategy, (3) resolving the complaint. Of the 76% of councils that responded to the need for guidance on a uniform system for handling noise complaints 86% supported the proposition. This guidance may be in the form of a non-mandatory guidance document that could be developed by a body such as the Local Government and Shires Association with input from DECC.

Unlike the previous options, this proposal concerns the removal of the current offensive noise test. This is not likely to be a consideration while there is evidence that the current offensive noise test is understood and applied correctly and has positive administrative and enforcement outcomes.

Sale and use of building intruder alarms

The Noise Control Regulation imposes noise controls on the sale and use of building intruder alarms. The sale provisions apply only to alarms sold on or after 1 September 1997 and restrict the sounding duration after detection to no more than 5 minutes. The use provisions restrict alarms to sounding for no more than 10 minutes if installed before 1 December 1997, or no more than 5 minutes if installed on or after 1 December 1997. Police records indicate that noise complaints about alarms are a frequent occurrence. In 2004, for both buildings and vehicles in NSW, the police received 85 896 reports of alarm noise. This is an average of 235 incidents reported each day.

DEC surveyed 15 NSW councils as part of the Regulation review in relation to community complaints about noise from alarms. Metropolitan councils reported that they each received between four and 20 complaints about vehicle and building alarms in 2004–05. Non-metropolitan councils reported up to three complaints each for the same period and indicated that it was not a significant concern in their LGAs.

Existing Regulation

Clause 49 (Sale of building intruder alarms). A building intruder alarm sold after 1 September 1997 must be made so that it stops sounding within 5 minutes of being activated by a detection device. It cannot be re-activated (except by a different detection device) unless it has been manually reset.

This mirrors the 'in use' restrictions and ensures a product standard on the market that facilitates compliance with the use requirements of the Regulation for intruder alarms. If this requirement did not exist, the 'in use' building intruder alarm Regulation would provide protection to the community. However, when purchasing a new alarm, the consumer would have less protection than before that it would meet the statutory usage requirements, and this would lead to potentially higher levels of non-compliance and increased noise impacts.

Clause 53 (Use of building intruder alarms). This clause prescribes conditions relating to the use of alarms that can be heard in a room in any other residential premises. Alarms installed before 1 December 1997 must automatically stop sounding within 10 minutes and cannot be reactivated until manually reset. Alarms installed after 1 December 1997 must automatically stop sounding within 5 minutes and must not be capable of reactivation (except by a different detection device) until manually reset.

These clauses aim to minimise noise nuisance by stopping the entry into the market, and use of, inappropriate alarm equipment that has the potential for continuing noise nuisance during sensitive night-time sleep hours. The rationale for restricting the sounding of alarms to 5 minutes is to reduce the noise impact without reducing the deterrent value of the alarm system. Police, insurance groups and the NRMA report that the effect of the alarm is greatest in the first few minutes, and that most burglaries are over within 5 minutes. The requirement for manual reset provides for the need for personal intervention, guaranteeing that the resetting process does not result in a repeat alarm for that circuit.

The NSW Neighbourhood Noise Survey showed that over 90% of people considered that it was appropriate for noise to be controlled by limiting the length of time the noise can be made.

Proposed Regulation

DECC proposes to carry forward clause 49 of the existing Regulation into the new Regulation unchanged. Changes to the existing clause 53 are proposed, as follows.

Clause 53 (Use of building intruder alarms). As well as bringing forward the existing provisions, DECC proposes to change the tiered penalty system under clause 53 of the existing Regulation that is linked to the sounding duration of building intruder alarms.

The penalty level for sounding building intruder alarms currently relates to the length of time for which the alarm sounds beyond the permitted time limit in the Noise Control Regulation. Although the penalty levels will remain unchanged, DECC proposes to reduce the sounding duration, as shown in Table 8. Details of the penalty levels are given in Appendix 5.

Table 8: Sounding durations of building intruder alarms beyond the permitted time limit: comparison of different penalty levels under the existing and proposed Regulations

Existing Regulation	Proposed Regulation
Up to 24 hours	Up to 4 hours
More than 24 hours and up to 48 hours	More than 4 hours and up to 8 hours
More than 48 hours	More than 8 hours

The high number of police responses to faulty alarms is not reflected in the level of penalty notices issued, suggesting that the current times for tiered penalties are not capturing typical durations for faulty alarm incidents. Also, the time categories need to reflect significant levels of impact that are likely to occur in practice. It is therefore appropriate to tighten the times from the more lenient ones that have applied over the past 5 years.

To allow time for the community to be informed it is proposed that this change will commence 6 months after gazettal. During the delayed commencement period, the provisions of the existing Regulation will remain in force.

Alternatives considered

The police and councils have reported problems with continuously ringing burglar alarms in buildings. In most cases alarms ring in unoccupied residences.

Police may not enter premises for the purposes of stopping alarms and have requested that they not have this power. The POEO Act has given explicit powers to councils for their officers to enter residential premises with a warrant so as to turn off a faulty alarm, although individual councils may have their own policies dictating their actions in circumstances where an alarm rings for a long period.

There are non-regulatory options that may be developed to help address noisy alarms. These include:

Register alarm systems. A system could be set up to register alarm systems with police or councils; there would be details of a contact person who would be available to enter the premises to turn the alarm off (or a contact to security personnel for back-to-base alarm systems).

Memorandum of understanding between councils and police. This is explained on page 67.

Cost–benefit assessment

Costs. Alarm manufacturers will not experience any additional compliance costs with the proposed Regulation, as no change is proposed to the sounding time or maximum sound level of intruder alarms. The police will continue to incur existing enforcement costs as a part of broader enforcement of noise Regulations. Individual households may incur additional expenditure as they replace non-compliant alarm systems with new alarm systems that automatically stop sounding within 5 minutes. However, it is not expected that all homeowners will be required to replace existing non-compliant alarm systems, as the current requirements have applied since 1997. Only in those circumstances where non-compliant alarm systems impose noise nuisance on neighbours during sensitive night-time sleep hours will extra expenditure be likely. The overall cost to households of installing compliant intruder alarms in order to reduce noise nuisance should be minimal. The proposed reduction in the sounding duration of alarms under the tiered penalty system should act as a greater deterrent to non-compliance and reduce enforcement costs in the long term.

Benefits. Assessment of the benefits associated with this amendment is difficult, because it is hard to separate out the noise impacts of these provisions.

Assessment. Proposed changes to the penalty structure for exceeding the alarm-sounding limit should provide a more usable control for enforcement agencies and deter non-compliance. Existing restrictions on the sounding duration of alarms after activation (5 or 10 minutes, depending on the age of the alarm) potentially restrict the noise impact from alarms. The prescribed time period should not reduce the deterrent value of a house alarm, as most burglaries are over within a few minutes of the intruder first entering the premises. Existing requirements for a manual-reset facility limit the impact of faulty alarms that would otherwise have the potential to sound continuously.

The provisions play an important role in minimising neighbourhood noise, especially during sensitive night-time hours. They limit the potential for continuous noise nuisance, without the need to significantly compromise home security measures. Noisy home-intruder alarms have the potential to cause sleep disturbance and widespread annoyance if there are no appropriate controls in place to limit the duration and frequency of sound.

Inspection and testing of certain articles

The labelling requirements provide for maximum noise levels and the attachment of labels indicating the noise levels of particular articles. The inspection and testing requirements provide a consistent methodology for determining noise levels. This gives more certainty for industry and consumers and facilitates improved enforcement efficiency for regulators.

Existing Regulation

Clauses 54 to 57 and Clauses 35 to 52 of Schedule 2. Clause 54 sets out the procedures for determining the noise level of an article. Clause 55 describes the noise measurement instrumentation needed to conduct measurements. Clause 56 sets out procedures for instrument calibration. Clause 57 deals with the treatment of extraneous noise in measurement procedure.

Clauses 35 to 52 of Schedule 2 deal with the noise-testing requirements of grass-cutting machines, chainsaws and mobile garbage compactors.

All of these clauses establish the process for determining the noise levels that must be shown on noise labels. The Regulations require these labels to be placed on certain articles so that they can be legally sold by retailers.

These clauses will be carried forward unchanged into the new Regulation.

Alternatives considered

No additional or reduced testing requirements were identified as viable or necessary. However, a measurement procedure is necessary to ensure that accurate information appears on labels.

Cost-benefit assessment

These are provisions of a machinery nature that provide a consistent methodology for determining noise levels. The inspection and testing procedures provide a scientific and consistent basis for enforcing noise limits under both the current and proposed Regulations. The absence of inspection and testing provisions would make it extremely difficult to enforce the sale and use provisions relating to articles. Testing requirements are needed to enforce the prescribed noise limits in some situations. As these are provisions of a machinery nature, further economic analysis is not required under the *Subordinate Legislation Act 1989*.

PROPOSED REGULATION—NOISE CONTROLS: MARINE VESSELS

The Regulation also controls noise from marine vessels, including recreational boats and charter vessels.

Late-night charter operations and personal watercraft such as jet skis are noise sources that can have a substantial impact in waterside residential areas. Boat registrations have increased by one-third over the last 10 years, and there are now 203 000 registered vessels on NSW waterways. There are many more unregistered vessels that would be capable of generating noise, such as small tenders with noisy outboard motors.

Recreational areas in National Parks are also affected by noise from powerboats. As an example of the significance of their impacts, the Plan of Management for Ku-ring-gai Chase National Park proposes to investigate the option of prohibiting power boats in Smiths Creek, in order to provide an area of quiet, natural waterway within the park.

NSW Maritime is the appropriate regulatory authority for controlling noise from vessels in NSW navigable waterways. The authority adopts a range of strategies to manage noise from recreational vessels. Its focus, at least in the first instance, is to inform and educate noisy vessel operators to resolve issues. Although this approach is generally sufficient, some cases require reference to the requirements of the Noise Control Regulation to reinforce the information. NSW Maritime has reported considerable success in the use of the Regulation in this way, resulting in no Penalty Notices being issued for any of the marine offences in the Noise Control Regulation.

Although the focus of noise control is recreational vessels, commercial vessels have the potential to create significant noise impact through vibration from engine noise; boat machinery noise; docking, loading and unloading activities; and vehicle movement on dock areas.

Sirens and offensive noise

Sirens and other audible warning devices are analogous to motor vehicle horns. They provide a warning of imminent danger, particularly in the case of a potential collision. They also have a safety role during periods of low visibility, such as in heavy rain and fog. Radar and radio communications support mariners in avoiding navigational hazards but are not a substitute for audible warning devices in all circumstances.

Existing Regulation

Clause 29 (Sounding of sirens from vessels). Clause 29 of the Noise Control Regulation prohibits the use of sirens, hooters and other warning devices, except for the purposes of navigation.

Audible warning devices have a legitimate navigation purpose. Serious noise nuisance from marine vessels, whether it be engine noise or noise from a siren, is not reasonable, as it has the potential to have an adverse effect on a wide range of people in adjacent areas.

No alternatives have been considered. If the Regulation were removed the use of horns for non-navigational purposes could have undesirable implications for safe navigation.

Clause 30 (Vessels not to emit offensive noise). Clause 30 of the Noise Control Regulation prohibits offensive noise from engine-powered vessels.

Powered vessels emit noise. In some circumstances, that noise can create a noise nuisance and disturb a range of on-shore activities, including conversation, viewing television, reading and sleep.

The notion of offensive noise applies to the engines and exhausts of powered vessels

Clause 30A (Liability of owner of vessel). This provision provides for an owner to nominate the operator of a vessel if that is a different person to the owner at the time an offence is committed. The existing Regulation is to be carried forward unchanged. No alternatives were considered. The provision facilitates efficiencies in enforcement.

Proposed Regulation

DECC proposes to carry forward clauses 29 and 30A of the existing Regulation unchanged. Proposed changes to existing clause 30 is as follows.

Clause 30 (Vessels not to emit offensive noise). NSW Maritime has requested that the offensive noise provisions of existing clause 30 be extended to include all vessels, including sail vessels. This is because both sail and powered vessels can generate noise from ancillary gear such as rigging drives and generators. As with the current provision, the proposal provides that no warning need be given before an offence occurs.

To allow time for NSW Maritime to inform the boating community it is proposed to bring this change into force 6 months after gazettal. During the delayed commencement period, the provisions of the existing Regulation will remain in force.

Alternatives considered

The current provision (clause 30) could continue, but it would not capture all noisy vessels and thus would offer inferior protection to the community compared with the proposed provision.

Prescribing set noise levels for vessels is not viable, as compliance may involve measuring noise from moving vessels and involve considerable resource investment from training and equipping enforcement officers. The offensive noise test that is part of this provision is designed to avoid technical and logistical complications associated with measurement.

Cost–benefit assessment

Costs. Remaking the provisions will not impose any new enforcement or compliance costs. Enforcement officers from NSW Maritime use the statutory powers of the Regulation as a strong negotiating point with offenders. NSW Maritime estimates that Boating Service officers spend about 2% of their time on noise-related matters. This equates to about \$127,000 for the enforcement of all noise provisions under both the current and proposed noise Regulations.

Benefits. The existing clauses 30 and 30A provide the principal control over boat engine noise. Excessive boat noise can cause significant disturbance to residents, recreational areas and commercial districts near waterways. Prohibiting offensive boat noise is one way of reducing the impact of noise. Other ways include reducing speed limits near sensitive areas and prohibiting particular vessels (such as ski boats) from recreational swimming areas and specified waterways.

For the control of sirens, regulating for the potential misuse of audible warning devices provides a way of reducing noise and therefore will result in less noise nuisance to residents.

Assessment. Serious noise nuisance from marine vessels, whether it be engine noise or noise from a siren, is not reasonable, as it has the potential to have an adverse effect on large populated areas and parks. Behavioural changes can greatly mitigate noise impacts at little or no cost to boat owners. For instance, reducing speed near foreshore residences will reduce noise nuisance from marine vessels. The appropriate use of audible warning devices does not preclude their operation when it is required. As such, the actual cost of maintaining the proposed Regulation is expected to be small in comparison with the benefits.

Noise control equipment on vessels

Existing Regulation

Clause 31 (Noise control equipment to be properly maintained). Clause 31 of the Noise Control Regulation imposes requirements in relation to the maintenance and modification of noise control equipment on vessels. This approach is similar to the existing clause 18 for vehicles. The objective of the provision is to ensure that noise emissions from vessels do not increase as a result of poor maintenance of noise control equipment, or as a result of its inappropriate modification.

Proposed Regulation

Clause 32 (Noise control equipment to be properly maintained). There is a larger range of noise control equipment available on the market for vessels than for vehicles. This is largely due to the absence of equivalent national emission-control standards affecting the sale of new vessels, unlike the case with motor vehicles. Previously, the clause addressing the need for adequate maintenance of this equipment was identical to the controls on motor vehicles (i.e. existing clause 18 for motor vehicles). Recognising that marine systems and vessel types represent a much greater range of design for noise control equipment, some changes to the Regulation to reflect this are appropriate.

These changes to existing clause 31 reflect the situation that, for vessels, the performance of original equipment compared with existing equipment is generally not known to enforcement officers. This leaves this clause with a definition of 'defective' that retains two provisions that (1) prevent tampering with noise control equipment that would result in the equipment being less effective; and (2) prevent gas from escaping from a place other than the intended exhaust outlet.

The changes are:

- 1 Omitting the requirement for noise control equipment to be 'securely in place' (sub-clause 31(1)(a) of the existing Regulation). This has little useful meaning on vessels, given the lack of standards in this area, the range of vessel and engine designs, and the difficulties in knowing what constitutes the original design.
- 2 Omitting the provision that a person must not replace a vessel's noise control equipment with equipment that is less effective than the original noise control equipment fitted by the vessel's manufacturer (sub-clause 31(2)(b) of the existing Regulation). NSW Maritime has advised that the lack of standards leads to the use of a wide variety of systems on vessels.
- 3 Omitting from the definition of 'defective' the condition that the equipment allows more noise than the original equipment. The reason for this omission is the same as for (2) above.
- 4 Omitting from the definition of 'defective' the condition that the equipment comprises a system of mufflers containing fewer mufflers than the original system (sub-clause 31(3)(d) of the existing Regulation). The reason for this omission is also the same as for (2) and (3) above.
- 5 Changing the phrase in sub-clause 31(3)(b) of the existing Regulation from '... in the opinion of the authorised officer ...' to '... in the reasonable opinion of the authorised officer...'. The reason is the same as applies to the proposed changes to clause 6 and 18 of the existing Regulation (see pages 21 and 26 respectively).

Alternatives considered

An alternative was to prohibit particular components of noise control equipment. NSW Maritime advised that this approach was not practicable because of the large and ill-defined range of components that might increase noise levels and the difficulty of identification by enforcement officers.

Cost–benefit assessment

Assessment. This amendment is administrative and imposes no additional cost on government or industry.

Sound systems on vessels

Music from vessels, particularly at night, can be a problem for shoreline residents. This activity is prevalent along some waterways, particularly those in metropolitan Sydney where there are high levels of commercial activity. A code of practice has been established by NSW Maritime in consultation with the charter vessel industry, which conducts party functions and tourist-related activities on Sydney Harbour and other navigable waters. The objective of the code of practice is to minimise noise impact on residents from recreational activities and tourism-related businesses, especially at night.

Existing Regulation

Clause 32 (Use of sound systems on vessels). Clause 32 of the current Noise Control Regulation prohibits the playing of music on marine vessels at levels that can be heard in residential premises between midnight and early morning. An offence is committed if the person causing or permitting the noise has been warned within the past 28 days not to play music in that manner. The offence is in not heeding the warning.

Proposed Regulation

Clause 33 (Use of sound systems on vessels). It is proposed to change the way this activity is controlled under clause 32 of the existing Regulation. Currently a warning is required to be issued to the vessel operator when the vessel's music can be heard inside a residence. An offence is caused when this warning is not heeded. Enforcement is difficult, first because giving a warning for a mobile source requires good enforcement coordination to later identify a noisy vessel (possibly operating in a different location) as the one previously issued with a warning. Second, it could be difficult for a water-based enforcement officer to establish audibility of the subject noise within a land-based residence.

The proposed new approach mirrors the current provision for motor vehicles (i.e. clauses 17 and 17A of the existing Regulation), whereby the offence is to emit offensive noise from the vehicle's sound system. DECC proposes to replace the current restrictions on the times of use of musical instruments and sound systems on vessels (where the noise can be heard inside a residence) with the requirement that the noise must not be offensive at any time. Offensiveness will be determined by using the offensive noise test. Similar to clauses 30 (offensive noise from vessel's engine) and clause 17 (offensive noise from vehicle sound system), there will be no provision for warning before an offence occurs. This is the usual approach for mobile noise sources.

This approach provides effective noise control for this activity while facilitating a more straightforward enforcement regime that is consistent with the approach currently used for motor vehicles.

DECC proposes to introduce this provision from 6 months following the date of gazettal of the new Regulation, to allow vessel owners and operators time to be informed and to understand the

new requirements. During the delayed commencement period, the provisions of the existing Regulation will remain in force.

Alternatives considered

Retaining the current provision was an alternative; it would have meant that enforcement would continue to experience problems in establishing grounds for a warning and then having to repeat the process to establish an offence.

Cost–benefit assessment

Costs. No additional enforcement or compliance costs are anticipated as a consequence of the amendment.

In respect of sound systems, charter vessels generally comply with the provisions of the code of conduct, which encourages commercial boats to limit the output of excessive noise and to avoid sensitive foreshore areas where residents may be affected.

Marine vessels can mitigate the impact of these provisions through behavioural change. The Regulations do not prohibit the playing of music on marine vessels, but seek to minimise the impact of excessive noise during the sensitive night-time hours. Therefore, there is likely to be a minimal cost to marine vessels in complying with these provisions.

Enforcement costs for NSW Maritime were estimated above at about \$127,000 for the enforcement of all noise provisions.

Benefits. The change relating to noise control equipment will improve enforcement efficiency, as it will be easier to identify vessels without noise control equipment or with non-compliant noise control equipment in place. The Regulation provides an appropriate way of reducing noise from marine vessel sources and improving the amenity of foreshores.

The restriction on the use of sound systems on vessels provides important protection for residents, as sound systems have the potential to create significant sleep disturbance.

This provision provides a basis for NSW Maritime officers to negotiate an informal settlement of a particular noise complaint and thereby to quickly reduce noise nuisance. The Regulation also provides an important regulatory backing to the code of conduct developed for charter boat operators.

Assessment. The regulatory provisions provide an effective means of ensuring that vessels refrain from creating offensive noise. The provision does not impose any additional compliance costs, and at the same time it protects residents from excessive boat noise. The Regulation provides a solid back-up to the code of conduct to limit sound-system noise. The benefits of minimising sleep disturbance of foreshore residents are likely to outweigh the impost on marine vessel users of not creating offensive noise from sound systems.

Inspection, testing and defect notices for vessels

These administrative powers facilitate enforcement of the marine vessel noise controls.

Existing Regulation

Clause 33 (Defective vessel notices) and clause 34 (Defective vessel labels). Clause 33 provides authorised officers with the power and the process to issue a defective vessel notice, whose function is defined. An offence occurs when the vessel is operated in contravention of the notice.

Clause 34 provides the process for issuing defective vessel labels for vessels that are issued with defective vessel notices. An offence is committed by unauthorised removal or alteration of the label.

These provisions are proposed to be carried forward unchanged.

Alternatives considered

No viable alternatives were identified.

Cost–benefit assessment

Assessment. These provisions are of a machinery nature that makes the enforcement of the other provisions of the Noise Control Regulation more effective, thereby reducing noise nuisance from marine vessels. As these provisions are of a machinery nature, further economic analysis is not required under the *Subordinate Legislation Assessment Act 1989*.

PROPOSED REGULATION—SUMMARY OF COSTS AND BENEFITS

Table 9 is a brief summary of the costs and benefits associated with the introduction of the proposed regulation compared with the base case of no regulation. The impacts below are based on the assumptions described in the main text of this RIS. These estimates should be interpreted as indicative orders of magnitude, rather than precise figures.

Table 9. Costs and benefits of noise regulations

	Annual costs (\$)	Annual costs (\$)
COSTS	Proposed regulation	Base case
To Government		
DECC	183,000	183,000
Police	3,900,000	3,900,000
Local councils	2,900,000	2,900,000
NSW Maritime	164,000	164,000
To industry		
Labelling of articles	313,000	nil
Vehicles and motorcycles	309,000	nil
Vehicle testing	6,500	nil
To community		
Compliance cost for offenders	33,000	Court action may involve higher costs for offenders
Noise mitigation costs		Not quantifiable
Total costs (approx.)	7,808,500	7,180,000
BENEFITS		
To industry		
Savings in compliance costs		628,500
To community		
Significantly reduced community noise resulting in improved community amenity, human health, recreation/lifestyle opportunities, and consumer information about noise	Benefits not quantifiable	
More effective processes to manage community noise	Benefits not quantifiable	

The Noise Control Regulation is estimated to cost the whole community about \$8 million a year. The main costs of the proposed Regulation are the costs of enforcement by the Police and council officers. Most of the police resources are directed towards the motor vehicle provisions of the Regulations. Council resources are directed primarily at the provisions relating to the use of noisy articles. Enforcement costs for DECC, the Police, councils and NSW Maritime would be substantially the same under the base case as the community would still want their complaints about noise addressed by regulatory authorities.

However, it is likely that if the Regulation was not remade, alternative but less efficient measures would need to be used to address noise problems, such as POEO Act notices or continuation of negotiations where there is little prospect of resolution. Also, the incidence of excessive noise would be likely to rise because the alternative measures would not be as effective in achieving appropriate noise control. It is therefore likely that repealing the Noise Control Regulation would lead to a small savings in costs to industry associated with the labelling of articles, vehicle testing etc but would substantially reduce amenity for the community. Earlier it was noted that the social costs of noise pollution are estimated to range between 0.2% and 2% of GDP or between \$610 m and \$6,100 m in NSW. To the extent that the Noise Control Regulation helps to substantially reduce community noise through effective noise control measures there are significant benefits for the community in remaking the regulation.

The analysis has indicated that noise is a major social and environmental concern for the community. The impacts of neighbourhood noise include sleep disturbance and annoyance and can lead to reduced amenity, adverse impacts on health, productivity losses, impaired social relationships and loss of psychological wellbeing. Those subject to unacceptable levels of noise incur a financial cost if they invest in noise abatement technologies such as window insulation. Despite the difficulties in measuring and valuing these impacts, many studies have demonstrated that noise pollution does have significant impacts. The analysis indicates that a significant increase in benefits is expected under the proposed Regulation for little additional cost to industry and little net change in enforcement costs for state and local government, whether or not the regulation is repealed.

DISCUSSION BOX: Non-regulatory tools

Memorandum of understanding between police and councils

In addition to the Noise Control Regulation, a memorandum of understanding (MoU) could be drawn up between council and police. An MoU could contain agreements relating to the operation of a registration scheme for alarm systems. It could also contain agreements for other issues, such as complaint handling, whose administration and enforcement overlap between council and police.

DEC considers that the MoU is probably the most practical and effective next step to improve management of noisy alarms.

Both councils and police deal with neighbourhood noise issues and have common enforcement powers for many of the neighbourhood noise provisions in the Noise Control Regulation. There is a likelihood that occasions will arise when both organisations are involved in the same incident or where one organisation has information that would assist the other organisation regarding noise incidents.

An MoU is a way of clearly defining roles and responsibilities and co-operative actions for councils and police and can be used to set out procedures to cover all types of neighbourhood noise issues. The arrangements between each Local Area Command (LAC) and each council within the LAC may be customised to accommodate local conditions. The material here encompasses the main principles that each MoU could contain and can act to guide development. DEC will assist interested councils and LACs in preparing MoUs.

The inclusion of guidance on MoUs in this RIS is not reflected in a Regulation i.e. development of an MoU would be a voluntary action designed to increase the efficiency of the enforcement activities of both organisations.

An MoU could contain:

- a description of issues that council would be responsible for, e.g. day-time offensive noise incidents and ongoing noise matters such as air conditioning
- a description of issues that police would be responsible for e.g. night-time offensive noise incidents, 'times of use' warnings and enforcement, building and car alarms, vehicle noise
- identification of shared areas where there are opportunities for both organisations to coordinate or possibly pool resources to increase the efficiency of the enforcement activities of each. Examples are:
 - information on warnings given under 'times of use' provisions or as a prerequisite to issuing Noise Abatement Directions, so that the other organisation is aware that a warning has already been issued
 - information on complaints to facilitate coordination of noise incidents in which both organisations are likely to be involved, or to develop strategic responses such as the use of campaigns to target 'hot' noise issues
 - information on building and vehicle ownership details for premises with continuously ringing alarms to help contact a key holder who may be able to turn off the alarm
 - information to the police on the hours council rangers are on duty, so as to refer incidents to council as part of this MoU
 - police involvement in ongoing noise impacts, such as regular band practices using amplified musical instruments or sound equipment, where councils have access to more appropriate control instruments such as noise control notices and prevention notices
 - information on the prosecution policies of both organisations to ensure consistency wherever possible.

An MoU agreement could also extend to:

- councils with shared boundaries to reach agreements on how noise incidents that cross local government boundaries can be handled
- NSW Maritime and the water police
- NSW Maritime and shoreline councils, because there are overlapping jurisdictions along the shoreline e.g. at marinas.

Some councils have informal MoUs with their LACs now. Support for MoUs was high, with 86% of councils responding to this issue supporting it. Several LACs currently run informal MoUs.

DECC invites comment on the MoU approach. If there is sufficient support, DECC intends to develop a model MoU that can be used or amended by individual councils and police LACs.

CONCLUSION

The proposed Noise Control Regulation is designed to protect the community from unnecessary or unjustifiable noise nuisance. It sets common standards that can be applied across NSW and empower regulatory agencies to manage noise impacts. DECC believes that the Regulation will continue to provide a reasonable level of protection from noise in residential areas in line with current community attitudes, and that the proposed changes will improve the efficiency of the Noise Control Regulation.

The major regulatory amendments to the control of noise from **motor vehicles** include: aligning the requirements with national design rules for external noise from motor vehicles and procedures for noise testing; prescribing noise level limits for motor vehicles used in public car parking areas; and measures to prevent the circumvention of noise testing through the use of temporary noise reduction devices on motor vehicles used on roads and related areas.

The major regulatory amendments to the control of noise from **neighbourhood activities** include: limiting the times when musical instruments and sound equipment can be used in residential premises (where they can be heard by neighbours) to better align with current community standards; and regulating the allowable times when heat pump water heaters may be used in the same manner as for air conditioners.

The major regulatory amendments to the control of noise from **marine vessels** include: requiring that noise from musical instruments or sound systems used on marine vessels (where the noise can be heard inside a residence) must not be offensive at any time, to facilitate an enforcement regime that is consistent with the approach currently used for motor vehicles; and simplifying controls on the maintenance of noise control equipment on vessels to address the range of equipment designs on marine vessels.

The cost–benefit assessment estimated the net cost of the proposed noise Regulation to be about \$630,000 a year for a substantial improvement to the community in environmental amenity. If the Regulation were not remade, alternative and less efficient measures would have to be used to address noise problems—such as POEO Act notices or continuation of negotiations where there is little prospect of resolution. As a result, the incidence of neighbourhood noise would rise and, with it, the associated detrimental effects on amenity, sleep and wellbeing. It is therefore expected that any savings to industry from repealing the Noise Control Regulation would be substantially outweighed by the costs to the community associated with less efficient and effective neighbourhood noise management.

Many studies have indicated that noise pollution can be linked to health effects, and that regulators need to guard against growing noise levels and noise exposure within the community. In most developed countries there are standards that require noise levels in urban areas to preserve amenity. These noise levels are generally more stringent than those required to protect against health effects.

The main benefits derived from managing and reducing noise levels include improved neighbourhood amenity, avoided human health impacts and improved lifestyle opportunities. The benefits to the community (in terms of improved amenity and health) of lowering noise levels or the incidence of noise are difficult to quantify. However, the analysis indicates that there are a number of unquantified benefits associated with the existing Regulation. The analysis also demonstrates that an increase in benefits is expected under the proposed Regulation.

APPENDIX 1: CLAUSE COMPARISON

Table A1.1: POEO (*Noise Control*) Regulation clause comparison

Section of old Regulation (2000)	Description	Section of proposed Regulation (2007)
1	Name of the Regulation	1
2	Commencement	2
3	Notes	Removed
4	Definitions	3
5	Sale of motor vehicles generally	4
6	Sale of used motor vehicles with defective noise equipment	5
7	Retail sale of new motor vehicle horns	6
8	Sale of motor vehicle horns generally	7
9	Retail sale of new motor vehicle intruder alarms	8
10	Sale of motor vehicle intruder alarms generally	9
11	Sale of motor vehicle intruder alarms with a panic or override switch	10
12	Sale of motor vehicle intruder alarms having certain sound characteristics	11
13	Use of motor vehicles on road	12
14	Use of motor vehicles in places other than roads	13
15	Use of motor vehicles on residential premises	14
16	Use of refrigeration units fitted to motor vehicles	15
17	Use of motor vehicle sound systems	16
17A	Drive or use motor vehicle on road and road-related area if vehicle's sound system emits offensive noise	17
18	Noise control equipment to be properly maintained	18
19	Motorcycle noise control equipment to be labelled	Repealed
20	Repairs and modifications	19
20A	Owners and drivers of motor vehicles involved in excess noise offences	20
21	Motor vehicle horns generally	21
22	Interpretation	22
23	Use of motor vehicle intruder alarms triggered by panic switches	23
24	Use of motor vehicle intruder alarms generally	24
25	Design and construction of motor vehicle intruder alarms	25
26	Defective vehicle notices	26
27	Defective vehicle labels	27
28	Interpretation	28
29	Sounding of sirens from vessels	29

Section of old Regulation (2000)	Description	Section of proposed Regulation (2007)
30	Vessels not to emit offensive noise	30
30A	Liability of owner of vessel	31
31	Noise control equipment to be properly maintained	32
32	Use of sound systems on vessels	33
33	Defective vessel notices	34
34	Defective vessel labels	35
35	Division applies only to retail sale of new articles	36
36	Size, design, format and construction of noise labels	37
37	Application of Subdivision	Removed
38	Lawn-mowers with cutting width between 620 mm and 950 mm	38
39	Ride-on mowers	39
40	Edge-cutters	40
41	String-trimmers	41
42	Brush cutters	42
43	Other grass-cutting machines	43
44	Labelling of chainsaws	44
45	Labelling of domestic air conditioners	45
46	Labelling of mobile air compressors	46
47	Labelling of pavement breakers	47
48	Labelling of mobile garbage compactors	48
49	Sale of building intruder alarms	49
50	Power tools and equipment	50
51	Musical instruments and sound equipment	51
52	Air conditioners	52
53	Use of building intruder alarms	53
54	Determining the noise level of an article	54
55	Instruments	55
56	Testing the calibration of instruments	55
57	Measurements may be disregarded on account of extraneous noise	56
58	Repeal and savings	57
59	Amendment of POEO (Penalty Notices) Regulation 1999	58
Schedule 1	Prescribed noise levels of classes of motor vehicles	Schedule 1
Schedule 2	Testing procedures	Schedule 2
Schedule 3	Amendment of POEO (Penalty Notices) Regulation 1999	Schedule 3

APPENDIX 2: PARTICIPANTS IN PRELIMINARY CONSULTATION

Preliminary consultation was conducted with the following agencies:

NSW councils

Albury City Council
Armidale Dumaresq Council
Ballina Shire Council
Bankstown City Council
Bathurst Regional Council
Baulkham Hills Shire Council
Bega Valley Shire Council
Blacktown City Council
Botany Bay City Council
Bourke Shire Council
Broken Hill City Council
Cessnock City Council
Clarence Valley Council
Coffs Harbour City Council
Council of the City of Sydney
Council of the Shire of Hornsby
Cowra Shire Council
Fairfield City Council
Gloucester Shire Council
Gosford City Council
Goulburn Mulwaree Council
Griffith City Council
Harden Shire Council
Hawkesbury City Council
Holroyd City Council
Junee Shire Council
Ku-ring-gai Council
Kyogle Council
Lake Macquarie City Council
Leichhardt Municipal Council
Mosman Municipal Council
Newcastle City Council
North Sydney Council
Penrith City Council
Port Macquarie-Hastings Council
Port Stephens Council
Queanbeyan City Council
Richmond Valley Council
Rockdale City Council
Shoalhaven City Council
Tamworth Regional Council
Tumut Shire Council

Tweed Shire Council
Wagga Wagga City Council
Warringah Council
Wollondilly Shire Council
Woollahra Municipal Council
Wyong Shire Council
Yass Valley Council

Other government agencies

Infringement Processing Bureau (data only)
New South Wales Police Service
NSW Maritime
NSW TAFE
Department of Fair Trading
Road and Traffic Authority
National Transport Commission
Department of Transport and Regional Services
Victorian Environment Protection Authority
South Australian Environment Protection Authority
WorkCover NSW
Worksafe Division, WA Dept of Consumer and Employment Protection

Industry Groups

Motoline Products
Motorcycle Council of NSW
Australian Securities Industry Association Ltd
Local Government and Shires Association
Australian Automotive Aftermarket Association
NRMA
Standards Australia
Motor Vehicle Repair Industry Association
Husqvarna Corporation
Rinnai Corporation Australian Refrigeration Equipment Manufacturers Association
Air Conditioning and Mechanical Contractors Association of NSW
Australian Institute of Refrigeration, Air-conditioning and Heating
Australian Consumers Association
GE Infrastructure Security P/L

APPENDIX 3: SUMMARY OF PRELIMINARY CONSULTATION WITH NSW COUNCILS IN 2005

Table A3.1: Summary of preliminary consultation with NSW councils in 2005

DECC's proposed amendment to the Regulation	Summary of comments by percentage
General response data	<p>46 councils out of 152 councils in NSW (30%) responded to DEC's letter. This comprised:</p> <ul style="list-style-type: none"> • 27 (59% of total respondents) out of 109 non-metropolitan councils in NSW. This means that 25% of councils responded. • 19 (41% of total respondents) out of the 43 metropolitan councils in NSW. This means that 44% of all metropolitan councils responded.
Measuring offensive noise at a prescribed distance	<p>36 (78%) councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 23 (64%) councils raised concerns with the proposal, such as: too simplistic, not practical in all instances, has problems as a stand-alone measure, potential errors in measuring distances, doesn't account for variables (such as buildings, topography, level of the noise, line of sight, noise characteristics), may conflict with intrusive criteria and 30-dB(A) minimum background, and offensive noise provisions are sufficient. • 13 (36%) councils supported the proposal.
Applying a maximum noise level for selected domestic power tools	<p>34 (74%) councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 25 (74%) of councils raised concerns with the approach, such as: product variation, public confusion, resource implications, could complicate the situation, difficult to enforce, doesn't account for building attenuation, doesn't suit all situations, existing offensive provisions are sufficient, duration is the issue, and noise limits should be set by manufacturers. • 9 (26%) of councils supported the proposal.
Offensive noise test for trail bikes based on the distance from the property boundary at which the bike is used	<p>31 (67%) councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 19 (61%) councils raised concerns with the approach, such as recommended distance is insufficient, may legitimise activity by default on residential properties, offensive noise test is sufficient and allows merit assessment, not suitable distance for all situations, may affect farms that use motorcycles, duration, time and frequency is the issue, need to consider cumulative impacts of several bikes, and size of the bike • 12 (39%) councils supported the proposal.
Further restricting the times of use of sound equipment and instruments in residential areas	<p>34 (74%) commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 32 (94%) councils supported the proposal • 2 (6%) councils raised concerns over the approach.

Table A3.1: Summary of preliminary consultation with NSW councils in 2005 (cont)

DECC's proposed amendment to the Regulation	Summary of comments by percentage
Other sources of noise to restrict under times of use in residential areas	<p>16 (35%) councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 6 councils supported the proposal • 4 councils said this was not an issue in their LGAs • 1 council thought it was inappropriate to regulate heat pumps/gas flares. <p>The following sources were identified (each by one council) for possible inclusion as new sources of concern:</p> <ul style="list-style-type: none"> • chainsaws and petrol edgers • river and dam irrigation pumps • farm machinery and plant • fans, pumps and motors generally • heating and air handling equipment (e.g. furnaces) • pumps on water tanks • clothes dryers in apartments • pool heaters • security grilles and electrical gates.
Further restricting times of use for leaf blowers in residential areas	<p>29 (63%) out of 46 councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 10 (35%) councils indicated general support of all proposals, with no specific reference to leaf blowers • 7 (24%) of councils did not support the proposal • 5 (17%) councils supported restricted times of use (but lacked awareness of current restrictions) • 4 (14%) councils supported further restrictions on use and duration • 3 (10%) councils said leaf blowers were an issue but didn't indicate level of support for the proposal.
Removing ability for citizens to issue statutory warnings to neighbours for noise	<p>34 (74%) of the 46 councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • all supported removal of personal warnings in favour of warnings issued only by authorised officers.
Extend existing provisions of clause 15 to roads adjoining residential premises	<p>30 (65%) of the 46 councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 28 (93%) councils indicated support for the proposal; 4 of these asked for running times to be specified and 1 asked that the requirement apply only to heavy vehicles • 1 council did not support the proposal, on the basis of vehicle road enforcement being the police's responsibility • 1 council indicated support for refrigerated vehicles (but lacked awareness of current restrictions).
Remove the defence provisions from the sounding duration of vehicle intruder alarms	<p>27 (58%) of the 46 councils commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 26 (96%) councils supported the proposal • 1 (4%) council did not support the proposal and advised that it would not pursue a breach if the alarm were triggered by wilful damage.

Table A3.1: Summary of preliminary consultation with NSW councils in 2005 (cont)

DECC's proposed amendment to the Regulation	Summary of comments by percentage
Regulation of noise from engine brakes	<p>33 (72%) of the 46 councils commented on this proposal. Extent of problem:</p> <ul style="list-style-type: none"> • 14 (42%) councils didn't mention whether or not it was a problem • 9 (27%) councils indicated that engine brakes were a problem • 7 (21%) councils indicated no problem or complaints about issue • 2 (6%) councils were not sure whether it was a problem in their LGAs • 1 council lacked awareness of issue. <p>Support for regulation of the issue by council:</p> <ul style="list-style-type: none"> • 20 (61%) councils did not support the proposal • 6 (18%) councils offered general support for all proposals (no specific mention of engine brakes) • 4 (12%) councils supported the proposal • 2 councils did not indicate support or not • 1 council did not understand the issue.
Standardised complaints handling	<p>35 (76%) councils out of 46 commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 29 (83%) councils supported the development of guidance • 6 (17%) councils did not support this proposal.
Model memorandum of understanding to help police and councils deal with noise complaints	<p>36 (78%) councils out of 46 commented on this proposal. Of these:</p> <ul style="list-style-type: none"> • 31 (86%) councils indicated support for the proposal • 4 (11%) councils indicated their support but also raised concerns about police devolving their responsibilities to local government or administrative complications • 1 (3%) council did not address the issue of support.

APPENDIX 4: EXTRACT FROM NATIONAL ROAD TRANSPORT COMMISSION (NRTC) & ALROSS P/L 2002 EXTERNAL NOISE FROM MOTOR VEHICLES REGULATORY IMPACT STATEMENT

4. COSTS AND BENEFITS

Before undertaking a detailed analysis of costs and benefits it is worthwhile summarizing the differences between the three options under discussion to better understand the relative strengths and weaknesses of each option. The table below provides a snapshot of the key strengths and weaknesses:

Table 4: Strengths and weaknesses of options considered

Option	Costs	Benefits
Full harmonisation with United Nations Economic Commission for Europe(UNECE) standards	High. Manufacturers need to change design and build requirements for all vehicles. With some vehicles this will be very difficult, possibly leading to reduced productivity from heavy vehicles.	High. Noise reductions from all classes of vehicles will produce the maximum potential benefit of all options.
Full harmonisation with limited exceptions that recognise unique features of the Australian market	Moderate. Most vehicles will require design and build changes, but none will be very onerous as concessions would be allowed for difficult challenges like cooling for high power vehicles.	High. While noise reductions from some high powered vehicles won't be as great as for option 1, those vehicles travel vast distances in sparsely populated areas where noise is not such a sensitive issue.
Retain Status Quo	Low. No design and build changes required.	Low. The only noise reduction would be provided by market pressure to reduce noise.

Below is an attempt to quantify the costs and benefits of the 3 options. It should be noted at the outset that the assessment contains a range of assumptions, estimates and roundings. Cumulatively, these can have a significant effect on the outcome, so the figures should be treated as indicative only, and not as proof that benefits outweigh costs, or vice versa.

4.1 Costs

4.1.1 Costs to manufacturers

Options one and two will impose some cost on vehicle manufacturers. Manufacturers are likely to pass on these costs to vehicle purchasers. Those costs will primarily comprise:

- design costs associated with altering each model to comply with UNECE standards (e.g. design of new mufflers, engine encapsulation, etc);
- costs of noise abatement equipment (e.g. increased cost of muffler and cost of new encapsulation devices); and
- costs of fitting any noise abatement equipment not previously fitted.

Once the vehicle is in-service there may be some ongoing cost relating to maintaining the noise abatement equipment, or additional maintenance costs associated with removing and replacing noise encapsulation components to access the engine.

4.1.2 Costs to the aftermarket industry

In its response to the draft RIS the Exhaust Systems Professionals Association argued that there would be a cost to the aftermarket industry as a result of introducing a smaller margin for deterioration through the amendment to the Australian Vehicle Standard Rules (refer section 3.4). The ESPA did not quantify these costs. ESPA argues that the smaller margin for deterioration will mean that small muffler manufacturers will face increased design costs, making them less competitive against the original equipment manufacturer. ESPA made these comments on the basis of the draft RIS which recommended a deterioration allowance of 2 dB(A). NRTC's revised position is that this should be increased to 5 dB(A). This offers the aftermarket industry significantly more flexibility.

It is likely the smaller tolerance will lead to better quality aftermarket mufflers, at a slightly increased cost. This may give motorists somewhat less choice in selecting an aftermarket muffler.

A second criticism of the draft RIS raised by the aftermarket industry was that the RIS did not adequately describe the potential benefits from increased exports due to full harmonisation. This issue has been discussed in section 3. NRTC is unable to quantify such a benefit, but to improve transparency, has noted it below, in the comparison of costs and benefits.

4.1.3 Sources of cost estimates

In order to identify likely costs, the draft RIS investigated the costs overseas manufacturers incurred in meeting UNECE standards. The UNECE did not formally quantify costs and benefits in developing 1996 regulations, rather the decisions were made on a more technical basis, where manufacturers and member countries agree that the change is technically feasible. The weighing up of benefits to the community and costs to manufacturers is done by parliaments. The present UNECE noise limits have been in force since 1996. It is expected that the costs (in real terms) of the available technology to meet these standards would be lower today than they were in 1996, due to widespread availability and improved materials.

The Director General of the Enterprise Automotive Unit at the European Commission offered the following points in regard to the European approach to noise standard setting:

- technology is widely available to meet the (current UNECE) limits. It is therefore assumed that compliance costs for manufacturers would be quite limited;
- there are likely to be (trade) benefits associated with full or partial harmonisation of Australian standards with the UNECE standards;
- the European Commission is currently setting up a working group for a more integrated approach in further noise reduction measures; and
- the EC is just starting this investigation so doesn't have any results as yet and no articles or web pages specifically regarding costs.

Correspondence with Swedish National Road and Transport Research has elicited some estimates of costs for lowering the noise of trucks and cars. They were offered as indicative figures only and reflect costs in Europe. The estimates from Sweden are:

- all exterior noise abatement on a large truck represents about 1–2% of the purchase cost; and
- to reduce car noise by 1dB (below about 74dB), there is a cost of about \$180 per vehicle or about 0.5% of the car price per dB.

Responses to the draft RIS drew some responses from local manufacturers, but as manufacturing costs are a sensitive, commercial in confidence issue, Australian manufacturers were reluctant to provide detail. One heavy truck manufacturer indicated that the proposed standard could add \$5,300 to the cost of a heavy truck.

It should be noted that costs increase significantly when noise limits are set below certain threshold levels. The figure used for cars is based on reductions beyond 74 dB, where every extra dB reduction becomes quite expensive. As Australia is currently at 77 dB, the cost figure is likely to be less than indicated above, but the above estimate is used as a worst case measure.

In the absence of any information on buses, motorcycles and mopeds it is assumed that:

- the cost to motorcycle and moped manufacturers will amount to (as for cars) about 0.5% of the value of the vehicle per dB; and
- the total noise abatement cost to bus manufacturers will amount to (as for trucks) about 1%–2% of the value of the vehicle.

As discussed above, there may also be some marginal increase in maintenance costs associated with servicing noise reduction components and extra time spent removing and replacing components to access an engine.

The draft RIS provided appendices that submitted a range of assumptions and estimates about the likely increased costs given current sales figures. Some stakeholders criticized these estimates and provided alternative figures. In particular, the original estimates did not adequately distinguish between light medium and heavy vehicles, where costs and volumes vary considerably. NRTC has taken the advice of stakeholders in recalculating costs.

Appendix 1 submits a range of assumptions and estimates based on stakeholder advice, which enable the following annual costs to be calculated.¹⁹

Costs to light truck purchasers		\$143 m
Cost to heavy truck purchasers	Option 1	\$68 m
	Option 2	\$34 m
Costs to bus purchasers		\$5 m
Costs to car purchasers		\$82 m
Costs to motorcycle purchasers		\$1 m
Other costs to consumers (increased cost of testing, maintenance, aftermarket mufflers, etc.)		\$1 m

4.2 Benefits

In terms of personal amenity and health, there are clearly benefits in reducing roadside noise levels. The challenge for this assessment is to try to isolate the benefits caused solely by imposing new noise ADRs that reduce drive-by noise levels.

¹⁹ Where one data source gives a higher estimate than another, the higher figure is used. For example, use of VFACTS figures generally gave higher cost estimates than ABS figures.

Imposing new ADR limits will have little effect on freeway noise, as vehicles are moving at high speed. At high speeds, most of the noise that is audible is the noise of the tyres on the road surface. The ADR drive-by test is measured using an unloaded vehicle under acceleration at relatively low speed, and therefore has the effect of forcing better acoustic design of the engine and drive train. Even if the test were undertaken at a higher speed, there is little manufacturers could do to improve noise levels other than experiment with tyre design. The benefits of new ADRs will therefore primarily be felt at speeds below about 80 km/h and where a vehicle is accelerating.

International research provides us with an indication of the benefits likely to accrue from the proposed regulation. The International Institute of Noise Control Engineering recently released *Noise Emissions of Road Vehicles: Effect of Regulation. Final Report*. Importantly, this report provides an in-depth analysis of the European experience in tightening design standards. It concludes that the 1996 lowering of limits for heavy trucks resulted in 50%–75% of the benefit being realised over 5 years. That is, while the noise levels were reduced by 4 dB, only 2 or 3 dB was realised in the traffic stream. A European Commission Green Paper (<http://www.nonoise.org/library/eunoise/greenpr.htm>) notes that despite significant reductions in new vehicle noise levels, road traffic noise has fallen only 1–2 dB. The reasons put forward are manifold and include increases in traffic flow, slow turnover of the fleet and the lack of impact on high speed (tyre) noise.

4.2.1 Cumulative effect of noise reductions

It can be expected that the Australian experience will be similar to that of Europe. Even with quite significant reductions in vehicle noise, the ‘ambient’ noise levels will reduce by a lesser amount initially, but could lead to a more significant improvement over time as a greater proportion of the vehicle fleet meets the new standards. With the current proposal to reduce the ADR noise levels, it is likely the maximum benefits will be felt where:

- trucks are prevalent in the traffic stream (this proposal will significantly reduce truck noise, more so than light vehicle noise);
- vehicles are travelling at relatively low speed as in most urban areas or regional cities (the higher the speed, the more tyre noise will dominate); and
- vehicles are accelerating frequently (the ADR test is done under acceleration, the noise reduction at constant speed is likely to be less noticeable).

These conditions are common in urban environments (refer section 2.1.2), where the population densities are highest. Some stakeholders questioned the benefits put forward in the draft RIS because of the effect of tyre noise at high speed. NRTC notes these concerns, but it is clear the maximum benefits will be realised in the urban areas, where they will have most benefit. It should be further noted that the ADR drive-by test is undertaken with no load, at less than maximum engine speed and on a flat surface. The engine noise of loaded vehicles and vehicles on an incline is likely to be significantly more than the proposed ADR limits, and will therefore be far more prevalent in the traffic stream than the estimates provided by truck manufacturers.

4.2.2 Quantifying Benefits

Willingness to pay (WTP) approaches to noise reduction have been used internationally (INFRAS, EC). They generally find a relationship between the proportion of GDP or per capita income that would be paid to alleviate noise levels. This data is difficult to transfer to Australia and does not focus on the benefits of improving ambient noise, as the ADR reduction would achieve. Rather the WTP studies tend to focus on problem areas such as busy intersections and consider the willingness to pay of the people affected by the problem noise.

A study by INFRAS (2000) provides us with a WTP estimate per person for each 1 dB improvement in noise levels of 5 categories. Close and Apelbaum (2001) noted a Swedish study suggesting a willingness to pay of \$2000A per window for soundproofing and 1%–1.3% increase

in rent for a fully soundproofed building. A German study was also noted, suggesting a willingness to pay of \$16A per decibel (A-weighted) reduction in noise levels if noise levels exceed 43 dB(A).

Another approach to estimating the costs of noise is to look at the costs of using devices such as sound barriers to alleviate noise. As discussed above, this approach is also more suited to dealing with particular problems such as freeways. The approach is not well suited to addressing broad reductions in ambient noise, such as would be achieved by introducing tighter noise limits in the ADRs.

The willingness to pay approach and the cost of noise reduction treatments have not been used to estimate benefits for this analysis.

Hedonic pricing appears to offer the most practical approach to estimating the costs of transport noise. The Resource Assessment Commission (1990) notes that hedonic pricing can be interpreted in economic terms as the utility (satisfaction) derived through an action such as consuming goods and services.

For environmental goods it is often possible for individuals to choose their level of consumption through their choice of residential location or selection of market good. For example living in a quieter area might be reflected in a willingness to pay money for a house that is not subject to traffic noise. It should be noted that hedonic pricing is often assumed to underestimate the benefit of noise reduction as it assumes the purchaser of a house takes into account all market failure information.

In this case, estimates of benefits are based on the likelihood that house prices are diminished by transport noise. The extent to which dwellings are affected by transport noise can be approximated using two indicators:

- the Noise Depreciation Index (NDI), and
- any change in the average noise levels.

Once these indicators are known, an estimate of [the] Australia-wide benefit of reducing the ADRs can be made by multiplying them by the number of houses and the average house price. A threshold level at which noise ceases to be an annoyance then needs to be factored in.

4.2.3 The Noise Depreciation Index

The noise depreciation index (NDI) simply indicates the extent to which a dwelling is devalued by noise. It gives a reduction in house prices per decibel (A-weighted) noise exposure above a certain threshold. Below the threshold it is implied noise is not disturbing. For example at a typical threshold of 50 dB(A) and an NDI of say 0.5%, exposure to a noise level of 60 dB(A) would reduce house prices by $(60-50) \times 0.5\% = 5\%$.

As NDI simply indicates the likely depreciation of property values due to noise, it varies little across countries and cultures. The extent to which people are sufficiently annoyed by noise to seek quiet houses is unlikely to vary a great deal. Overseas studies (Komanoff and Shaw 2000 *Drowning in Noise* Report of the Noise Pollution Clearinghouse) shows NDI values of around 3%, but a recent Australian study (Segal 1999 Review of Health Costs of Road Vehicle Emissions) draws on a range of previous studies to estimate an NDI of between 0.5% and 1%. The two values from the Australian study are considered relevant for this analysis. It should be noted recent British studies (DETR 1998) are favouring an NDI of around 0.67%, with a lower bound of 0.2%.

For the purposes of this study, an NDI of 1% was assumed. A very conservative sensitivity test at an NDI of 0.2% was also carried out (refer Appendix 3).

4.2.4 The reduction in average noise levels

The extent to which noise is reduced as a direct result of regulating new Australian Design Rules is not easily estimated. The noise audible at roadside has two key components:

- the drive train noise (primarily engine noise); and
- the tyre/pavement noise (the noise caused by the tyres rolling on the pavement surface).

Given that the ADR noise levels are measured under acceleration at low speed, any reduction in ADR levels are likely to require reductions in drive train noise, rather than tyre noise. The feedback during consultation confirms this theory. Therefore, if the effect of tyre/pavement noise can be isolated, the benefits of reduced vehicle noise levels across the fleet (i.e. for light, medium and heavy vehicles) can be estimated.

In order to identify the changes in noise levels resulting from different pavement (road surface) materials, a Statistical Pass-by Index (SPBI) has been developed by the International Organisation for Standardisation (ISO 11819–1). Importantly, SPBI allows a range of variables such as vehicle tyres and pavement surfaces to be taken into account during road design.

It is possible to use the approach underpinning SPBI to estimate the ‘real world’ noise reductions from reducing ADR noise levels, because it allows us to isolate the tyre/pavement noise contribution. The total noise of light, medium and heavy vehicles at roadside was measured during NSW RTA research. This data has been normalised for the type of road surface (refer appendix 3, attachment A, table 1). The contribution of tyre noise was then estimated from international literature (refer Appendix 3, Attachment A, Table 2).

Knowing the contribution of tyre noise and the total measured noise enables a calculation of the likely contribution of drive-train noise (refer Appendix 3, Attachment A, Table 3). Reducing the ADR drive-by noise levels will primarily affect the drive-train noise. Therefore, by knowing tyre/pavement noise (fixed) and the reduction in drive train noise caused by changing the ADRs, we can calculate the total noise reduction likely to be measured at roadside.

The estimated changes (from Attachment A to Appendix 3) in total noise due to the proposed reduced ADR limits, for vehicles travelling at about 80km/h is:

Table 5: Estimated Noise Reductions

	Option 1 (full harmonisation) dB	Option 2 (harmonisation with exceptions) dB
Light vehicles	-1.43	-1.43
Medium vehicles	-3.57	-3.57
Heavy vehicles	-6.0	-3.5

As pointed out by some stakeholders responding to the RIS, it is important to note that the figures in table 5 compare roadside measurement of the existing fleet with the theoretical noise from a fleet that was fully compliant with the ADRs. This would take a considerable time – at least 10 years given average vehicle life.

Other factors to note include:

- the comparison assumes that tyre noise from the current fleet would be about the same from an ADR83 fleet;
- the level of maintenance of the current fleet would be about the same from an ADR83 fleet; and

- the extent the benefit would actually be felt at roadside would vary with the vehicle types in the traffic stream, vehicle load, speed, acceleration and the surface and grade of the road.

4.2.5 Estimates for a 'typical' traffic stream

Taking a simple average of the figures in table 5 is not meaningful, as the traffic stream comprises a range of light, medium and heavy vehicles in differing proportions. Taking a typical weighting of:

- heavy vehicles (multi-axle) 5%;
- medium vehicles (dual-axle) 5%; and
- light vehicles (everything else) 90%.

Then the effect of reducing the noise ADRs by the values estimated in Table 5 would give a weighted average of:

Option 1 = 1.765 dB

Option 2 = 1.645 dB.

A key variable is the extent to which vehicles in the fleet from which the original roadside data was taken already comply with the levels proposed in ADR83. As the measurements were taken in 2000, some proportion of the light vehicle fleet could have been compliant, though very few heavy vehicles would have complied. These figures have therefore been reduced to account for the fact that vehicles already complied. If we discount the figures above by 20% we get:

Option 1 = 1.412 dB

Option 2 = 1.316 dB

As stated above, these figures apply to a traffic stream of 90% light vehicles travelling at about 80 km/h. The figures would vary significantly depending on factors such as the mix of vehicles in the traffic stream, the road surface, the speed, the load on heavy vehicles, the grade of the road and whether vehicles were accelerating, cruising or decelerating.

However, in order to make a comparison with the costs, we can use the above information to calculate a theoretical dollar figure representing the benefit to Australia of reducing the noise ADRs. The formula would be:

Average house price x NDI x reduction in average noise levels x total houses affected

The following table sets out the main results of the analysis.

Table 6: Comparison of Costs and Benefits

	Vehicle modification costs	Other costs (maintenance, etc.)	Year 1	Year 10
Option 1 (reduce ADRs by 7dB for Heavy Vehicles)	\$299 m	\$1 m	\$31 m	\$3,014 m
Option 2 (reduce ADRs by 4dB for Heavy Vehicles)	\$265 m	\$1 m	\$43 m	\$2,823 m

Sensitivity tests (refer appendices) were carried out for a change in NDI from 1% to 0.2% and for a reduction in the number of houses affected from 20% to 10%. In each case, the benefits in year 10 exceeded the vehicle modification costs. The combined effect of reducing the NDI from 1% to 0.2% and the households affected from 20% to 10% led to:

- under option 1 – negative benefits until year 10 when the benefit amounts to approximately \$31m;
- under option 2 – negative benefits until year 10 when the benefit amounts to approximately \$43m.

The details of the sensitivity test are set out in Appendix 3.

4.2.6 Comments on costs and benefits

Regardless of the method of analysis and assumptions used by NRTC, the valuation of socio-environmental issues such as noise will be questioned by stakeholders. Stakeholders responding to the draft RIS provided a number of comments on the estimate of costs and benefits. Many of these comments have been reflected in the revised calculation, or where possible have been discussed in the text. Some respondents argued the costs would be lower and the benefits higher, others argued the opposite. In the interests of making the comments made by stakeholders transparent, the following summary of points raised through the consultation process is provided for information.

- The benefits do not reflect the reduction in learning and task execution effectiveness and communication difficulties. The existence of such factors, the effect of which is not quantified, makes the NDI approach likely to be conservative.
- The methodology does not consider that traffic noise can also reduce the amenity enjoyed by casual or occasional users of roadside amenities e.g. visitors to parks and scenic lookouts.
- Little benefit will be received by people living close to highways and freeways because tyre noise will dominate at high speed.
- The method of weighting the traffic stream is questionable – the mix of vehicles can be very different to that estimated.
- The ADR test is conducted under controlled conditions. It may not be representative of truck noise in Australia, so the benefits are overstated.
- Some heavy vehicles may need to be de-rated to meet the standard. This will adversely affect productivity and will have an associated cost.
- The potential export opportunities arising from UN harmonisation have not been estimated and would add to the benefit.
- The cost of damage to engine componentry due to increased operating temperatures should be taken into account. This would increase the costs.
- The effect of requiring higher quality mufflers will increase the cost of aftermarket mufflers and make small businesses less competitive. This will have an economic cost.
- Australia's sparse population means that the effects of improved noise levels will be minimal compared with highly populated countries. The benefits are therefore overstated.
- The report makes no attempt to value health costs, or the benefits of a quieter driving environment and its safety benefit from reduced driver fatigue. The benefits are therefore understated.
- The analysis assumes static market share. If the manufacturers of already complying vehicles increased their market share (because their competitors increase prices due to this reform), the cost to consumers could be substantially less.

Key Points

- Option 2, harmonisation with UNECE standards with a 3 dB concession for trucks over 320 kW, is the preferred option. It provides very substantial net benefits in the longer term, but ensures manufacturing costs are significantly lower, and net benefits are achieved more quickly, than under option 1.
- Based on mid-range estimates of benefits, the preferred approach will realise a long term (10 year) net benefit over \$2 billion.
- Based on a sensitivity test of benefits, the preferred approach will realise a long term (10 year) net benefit of around \$43 million.
- Benefits will continue to accrue beyond the 10 year timeframe used to estimate benefits.
- Responses to the draft RIS put forward a range of issues, some arguing the benefits should be higher, others arguing they should be lower.

6. EVALUATION

Has the need for action been demonstrated and does the preferred option represent the best way to deal with the problem?

Through feedback to consultation and complaints to authorities, the public has indicated a clear dissatisfaction with the noise levels from the Australian vehicle fleet. Several submissions advocate going beyond international noise standards to address the noise problem in Australia. Government agencies that have developed or are developing traffic noise strategies consistently identify the need to reduce noise at the source through tighter design and in-service standards. Manufacturers recognise that Australian standards are significantly less stringent than the international standards and generally support harmonisation provided there is discussion of costs and benefits and specific policy issues are addressed.

While it is not clear exactly how many vehicles are already achieving the proposed standards due to a confidentiality arrangement, every manufacturer that has commented has indicated the need to make design changes and incur costs. This shows that market demand is not leading to improved exterior noise levels.

A range of ways of dealing with the problem has been canvassed in this document. The discussion indicates that no one single measure, regulatory or non-regulatory will solve the transport noise problems in Australia. Several of the potential solutions including improving in-service regulation and encouraging industry accreditation are already being addressed by MVEC. Solutions such as freeway noise barriers and better road surfaces will continue to be used to resolve tyre noise problems at high speed, but are not legitimate alternatives to quieter engines.

The preferred option represents the best way to deal with the problem of manufacturers not taking up the design options to reduce external noise.

6.1 Do the benefits outweigh the costs?

The appendices set out the methodology used to estimate the community benefits flowing from the proposed reduction in ADR vehicle noise requirements. Appendix 1 sets out the basis for estimating the costs of vehicle modification to meet the new standards. Figures provided by manufacturers were used wherever possible. Appendix 3 seeks to factor the effect of tyre noise out of the equation so that a reasonable estimate of the noise benefits from the change can be made.

On the basis of the analysis set out in the attachments, there is a clear community gain from the introduction of the new noise requirements for vehicles. It has to be acknowledged that the analysis is based on limited information and significant assumptions and can only give

approximate estimates of costs and benefits. Wherever possible, conservative assumptions have been used and a number of sensitivity tests were carried out. In all cases, benefits outweighed costs for the proposed standards over the long term.

6.2 Are there any restrictions on competition?

There are no restrictions on competition introduced by the proposed regulation. Consistency with international standards ensures no restrictive effects. The small deviations from international standards will not require overseas suppliers to re-engineer the vehicles that already comply with the international standards (the proposed deviations are more lax, rather than more stringent). The standards are performance based and therefore do not favour any particular technology.

6.3 Consistency with international approaches

The proposed approach is entirely consistent with the international standards, except for very high powered trucks. This exception is appropriate given Australia's unique transport task and the need for vehicles with gross combination mass over 60 tonnes.

6.4 Feedback from stakeholders

Stakeholders are overwhelmingly in favour of international harmonisation. Several stakeholders argue that Australia should introduce standards more stringent than the international standards if it can be demonstrated to have a benefit, and some argue that no change should be made until a full assessment has been undertaken. This RIS and the feedback that will be received from its circulation provide that assessment.

Issues raised by stakeholders have been examined in this RIS and through numerous meetings prior to the release of this RIS. It is likely many stakeholders will be dissatisfied with the proposed outcome, some arguing it is too tough, others arguing it is too lenient. Given stakeholder feedback, NRTC has found it difficult to strike a balance between the legitimate practical issues that face manufacturers, and the demands of everyone else who want world's best practice in noise standards. While some stakeholders have argued in favour of option 1 (full harmonisation), NRTC has considered the engineering difficulties and costs associated with bringing high productivity vehicles (B-doubles and roadtrains) into line with international best practice and has proposed that the matter of the 3 dB concession be reviewed within 3 years.

APPENDIX 5: PENALTIES FOR OFFENCES

The penalties for offences against the existing and proposed Noise Control Regulations are presented below in Table A5.1.

Table A5.1. Penalties for offences against the existing and proposed POEO (Noise Control) Regulations

Provision of existing Regulation	Existing penalties	Proposed penalties
Sale of used motor vehicles with defective noise control equipment (cl. 6); sale of motor vehicle intruder alarms with a panic or override switch (cl. 11); sale of motor vehicle intruder alarms having certain sound characteristics (cl. 12)	Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations. If dealt with by way of penalty notice: \$300 (individuals) and \$600 (corporations)	No change to existing penalty levels
Use of motor vehicles on road (cl. 13)	Penalty based on level of exceedance of maximum noise level: Up to 5 dB(A) the maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations. If dealt with by way of penalty notice: \$150 (individuals) and \$300 (corporations). Between 5 and 15 dB(A) the maximum penalty if prosecuted: 75 penalty units (\$8,250) for individuals or 150 penalty units (\$16,500) for corporations. If dealt with by way of penalty notice: \$250 (individuals) and \$500 (corporations) By more than 15 dB(A) the maximum penalty if prosecuted: 150 penalty units (\$16,500) for individuals or 300 penalty units (\$33,000) for corporations If dealt with by way of penalty notice: \$500 (individuals) and \$1000 (corporations)	No change to existing penalty levels
Use of motor vehicles in places other than roads (cl. 14); Use of motor vehicles on residential premises (cl. 15); Use of refrigeration units fitted to motor vehicles (cl. 16)	Maximum penalty if prosecuted: 50 penalty units (\$5 500) for individuals or 100 penalty units (\$11,000) for corporations If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)	No change to existing penalty levels

Provision of existing Regulation	Existing penalties	Proposed penalties
Clause 17 (use of motor vehicle sound systems)	<p>Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations</p> <p>If dealt with by way of penalty notice: \$150 (individuals) and \$300 (corporations)</p>	No change to existing penalty levels
Clause 17A (drive or use motor vehicle on road and road-related area if vehicle's sound system emits offensive noise)	<p>Maximum penalty if prosecuted: 50 penalty units</p> <p>If dealt with by way of penalty notice: \$150</p> <p>Loss of two points from driver's licence also applies.</p>	No change to existing penalty levels
Noise control equipment properly maintained (cl. 18); motorcycle noise equipment to be labelled (cl. 19); Repairs and modifications (cl. 20); Motor vehicle horns generally (cl. 21); Use of motor vehicle alarms triggered by panic switches (cl. 23)	<p>Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations</p> <p>If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)</p>	No change to existing penalty levels
Use of motor vehicle intruder alarms generally (cl. 24)	<p>Penalty based on duration of exceedance of time limit:</p> <p>Up to 24 hours the maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations. If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)</p> <p>More than 24 hours and up to 48 hours the maximum penalty if prosecuted: 100 penalty units (\$11,000) for individuals or 200 penalty units (\$22,000) for corporations. If dealt with by way of penalty notice: \$400 (individuals) and \$800 (corporations)</p> <p>More than 48 hours the maximum penalty if prosecuted: 150 penalty units (\$16,500) for individuals or 300 penalty units (\$33,000) for corporations. If dealt with by way of penalty notice: \$600 (individuals) and \$1,200 (corporations)</p>	<p>Penalty based on duration of exceedance of time limit:</p> <p>Up to 4 hours the maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations. If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)</p> <p>More than 4 hours and up to 8 hours the maximum penalty if prosecuted: 100 penalty units (\$11,000) for individuals or 200 penalty units (\$22,000) for corporations. If dealt with by way of penalty notice: \$400 (individuals) and \$800 (corporations)</p> <p>More than 8 hours the maximum penalty if prosecuted: 150 penalty units (\$16,500) for individuals or 300 penalty units (\$33,000) for corporations. If dealt with by way of penalty notice: \$600 (individuals) and \$1200 (corporations)</p>

Provision of existing Regulation	Existing penalties	Proposed penalties
Design and construction of motor vehicle intruder alarms (cl. 25)	Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)	No change to existing penalty levels
Defective vehicle notices (cl. 26); Defective vehicle labels (cl. 27)	Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations If dealt with by way of penalty notice: \$300 (individuals) and \$600 (corporations)	No change to existing penalty levels
Sounding of sirens from vessels (cl. 29)	Maximum penalty if prosecuted: 10 penalty units (\$1,100) for individuals or 20 penalty units (\$2,200) for corporations If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)	No change to existing penalty levels
Vessels not to emit offensive noise (cl. 30); Use of sound system on vessels (cl. 32); Defective vessel notices (cl. 33); Defective vessel labels (cl. 34)	Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations If dealt with by way of penalty notice: \$300 (individuals) and \$600 (corporations)	No change to existing penalty levels
Liability of vessel owner (cl. 30A)	Maximum penalty if prosecuted: 10 penalty units (\$1,100) Cannot be dealt with by way of penalty notice	No change to existing penalty levels
Noise control equipment to be properly maintained – vessels (cl. 31)	Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)	No change to existing penalty levels
Part 4 Miscellaneous Articles, Subdivision 2 Grass Cutting Machines (cls 38, 39, 40, 41, 42, 43); Labelling of chainsaws (cl. 44); Labelling of domestic air conditioners (cl. 45); Labelling of mobile air compressors (cl. 46); Labelling of pavement breakers (cl. 47); Labelling of mobile garbage compactors (cl. 48); Sale of building intruder alarms (cl. 49)	Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations Cannot be dealt with by way of penalty notice	No change to existing penalty levels

Provision of existing Regulation	Existing penalties	Proposed penalties
Power tools and equipment (cl. 50); Musical instruments and sound equipment (cl. 51); Air conditioners (cl. 52)	<p>Maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations</p> <p>If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)</p>	<p>No change to existing penalty levels.</p> <p>New offences created relating to the restricted times of use of heat pump water heaters and electrically amplified musical instruments.</p>
Use of building intruder alarms (cl. 53)	<p>Penalty based on duration of exceedance of time limit:</p> <p>Up to 24 hours the maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations. If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)</p> <p>More than 24 hours and up to 48 hours the maximum penalty if prosecuted: 100 penalty units (\$11,000) for individuals or 200 penalty units (\$22,000) for corporations. If dealt with by way of penalty notice: \$400 (individuals) and \$800 (corporations)</p> <p>More than 48 hours the maximum penalty if prosecuted: 150 penalty units (\$16,500) for individuals or 300 penalty units (\$33,000) for corporations. If dealt with by way of penalty notice: \$600 (individuals) and \$1,200 (corporations)</p>	<p>Penalty based on duration of exceedance of time limit:</p> <p>Up to 4 hours the maximum penalty if prosecuted: 50 penalty units (\$5,500) for individuals or 100 penalty units (\$11,000) for corporations. If dealt with by way of penalty notice: \$200 (individuals) and \$400 (corporations)</p> <p>More than 4 hours and up to 8 hours the maximum penalty if prosecuted: 100 penalty units (\$11,000) for individuals or 200 penalty units (\$22,000) for corporations. If dealt with by way of penalty notice: \$400 (individuals) and \$800 (corporations)</p> <p>More than 8 hours the maximum penalty if prosecuted: 150 penalty units (\$16,500) for individuals or 300 penalty units (\$33,000) for corporations. If dealt with by way of penalty notice: \$600 (individuals) and \$1,200 (corporations)</p>

APPENDIX 6: NATIONAL VEHICLE STANDARDS

Current environmental and safety Regulations governing the use of vehicles are a mixture of Commonwealth and State legislation. The principal legislation is the *Motor Vehicle Standards Act 1989* (Commonwealth). The aim of this Act is to 'achieve uniform vehicle standards to apply to road vehicles when they begin to be used in transport in Australia'. The Act imposes uniform national standards—Australian Design Rules (ADRs)—on all vehicles when they are first supplied to the market. The States determine the regulatory standards for in-service (or beyond first supply) vehicles.

The ADRs set out design standards for vehicle safety and emissions. They are developed through a consultative process involving government, industry, employee and consumer representatives. Many ADRs are harmonised with the international Regulations adopted by the United Nations Economic Commission for Europe (DOTARS, 2005).

Although the ADRs establish the levels of acceptability for newly manufactured vehicles, they do not impose any requirements upon vehicle owners after the vehicles are registered and in use. As components of vehicles deteriorate or are tampered with, the vehicles will no longer comply with ADR performance requirements. In order to prevent unsafe or environmentally unacceptable vehicle performance, uniform national Regulations have been established in the Roadworthiness Guidelines and the Australian Vehicle Standards Rules (AVSRs) (Close and Apelbaum, 2001).

The AVSRs provide a nationally uniform set of in-service standards for the construction and performance of motor vehicles, trailers and combinations of vehicles throughout Australia. Matters prescribed include those to do with steering, propulsion, seating, engines, wheels and tyres, vehicle marking, vehicle configuration and dimensions, lights and reflectors, braking systems, fuel systems, noise and emissions and mechanical connections between vehicles. The AVSRs were approved in January 1999 by the Australian Transport Council and rely on implementation by States and Territories via their own legislation (NTC, 2005).

The AVSRs refer to the Roadworthiness Guidelines for test procedures. The Roadworthiness Guidelines were prepared by the National Road Transport Commission to give practical information about wear, damage or change to the more important systems of a vehicle in service so as to enable consistent criteria to be applied in enforcement throughout Australia. The Roadworthiness Guidelines reference the ADRs, National Stationary Exhaust Noise Testing Procedures for In-Service Vehicles (NSENTP) and AVSRs (Close and Apelbaum, 2001).

The NSENTP, which was approved by the Australian Transport Council and the National Environment Protection Council, provides a stationary test procedure for State environmental and/or transport agencies to use when testing for compliance with AVSRs and, together with the ADRs, provide the legal bases for enforcement (Close and Apelbaum, 2001).

The process for the making of national standards in Australia has three broad components. These components are:

- settling the technical content of a proposed new or amended national standard
- determining the proposed standard as a national standard
- scrutiny by the Parliament of the new and amended national standards.

In the case of standards dealing with motor vehicle noise emissions, the major steps in the first of these components (that is, the settling of the technical content of a proposed new or amended standard) are usually:

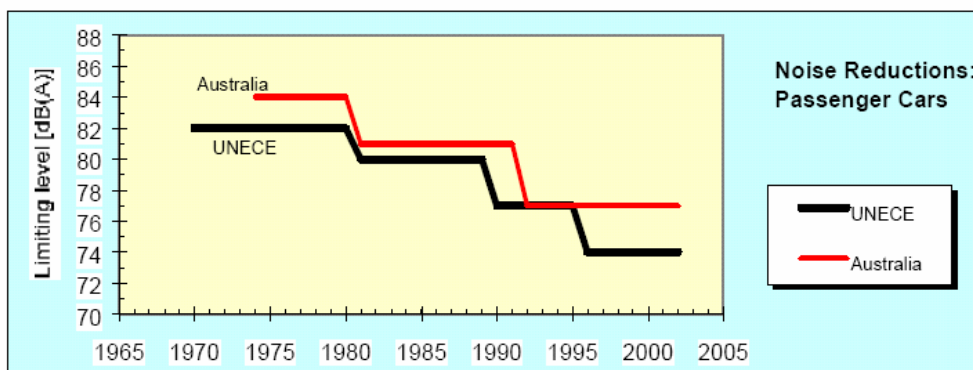
- development of a detailed proposal by the Land Transport Environment Committee (LTEC)
- examination of relevant international standards (particularly European and US standards) in the interests of international harmonisation

- consultation with regulatory authorities, the industry, environment groups and vehicle users
- in the case of new or significantly amended standards for road vehicles, consideration of a formal proposal by Ministers of the National Environment Protection Council and the Australian Transport Council.

A memorandum of understanding (MoU) between the National Transport Commission (NTC) (formerly the National Road Transport Commission) and the National Environment Protection Council (NEPC) sets out the consultative arrangements governing the development of vehicle noise standards and other vehicle/environmental issues. The MoU established the LTEC (formerly the Motor Vehicle Environment Committee), which reports to NTC and NEPC on matters referred to it by the respective bodies.

In 2002 a review of the national standards for external noise from vehicles was coordinated by the Federal Office of Road Safety within the Department of Transport and Regional Services (DOTARS), in consultation with other agencies and stakeholders. The noise standards of the day (*ADR 39 – External Noise of Motor Cycles*, *ADR 28 – External Noise of Motor Vehicles* and *ADR 56 – Moped Noise*) were found to be lagging well behind international best practice. Figure A6.1 compares Australian and European Union noise standards over the last 30 years.

Figure A6.1: Noise reduction—passenger cars



Source: NRTC and Aloss P/L, 2002

As a result, these standards were consolidated into one new ADR called ADR 83/00 *External Noise* (ADR 83/00). ADR 83/00 was gazetted in March 2003 and is compulsory from:

1 January 2005:	1 January 2006:	1 January 2007:
<ul style="list-style-type: none"> • new models of petrol operated cars produced on or after 1 January 2005 	<ul style="list-style-type: none"> • new models of diesel operated cars produced on or after 1 January 2006 	<ul style="list-style-type: none"> • cars produced on or after 1 January 2007, other than new models
<ul style="list-style-type: none"> • new models of LPG- or natural gas-operated cars with Gross Vehicle Mass less than or equal to 3.5 t and produced on or after 1 January 2005 	<ul style="list-style-type: none"> • new models of LPG- or natural gas- operated cars with GVM greater than 3.5 t and produced on or after 1 January 2006 	
<ul style="list-style-type: none"> • new models of motorcycles and mopeds produced on or after 1 January 2005 	<ul style="list-style-type: none"> • motorcycles and mopeds produced on or after 1 January 2006, other than new models 	

Compliance with the new ADR before those dates is also acceptable. ADR 83/00 includes drive-by limits for new vehicles that are consistent with the United Nations Economic Commission for Europe (UNECE). Adoption of lower noise limits for motor vehicles has the potential to reduce neighbourhood noise substantially as the existing fleet is retired.

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DRAFT NOISE CONTROL REGULATION



New South Wales

Protection of the Environment Operations (Noise Control) Regulation 2007

under the

Protection of the Environment Operations Act 1997

[The following enacting formula will be included if this Regulation is made]

Her Excellency the Governor, with the advice of the Executive Council, has made the following Regulation under the *Protection of the Environment Operations Act 1997*.

Minister for the Environment

Explanatory note

The object of this Regulation is to remake, with minor amendment, the provisions of the *Protection of the Environment Operations (Noise Control) Regulation 2000*. The new Regulation makes provision for the following matters:

- (a) the selling or using of certain classes of motor vehicles and motor vehicle accessories that are capable of emitting noise levels above a prescribed level,
- (b) the use of motor vehicle horns and motor vehicle intruder alarms,
- (c) the times during which it is not permissible to use certain motor vehicles if they emit noise that can be heard in other residential premises,
- (d) the sounding of sirens and similar devices and the use of sound systems on vessels,
- (e) the emission of noise from the engines or exhausts of motor vehicles and vessels,
- (f) the maintenance of noise control equipment on motor vehicles and vessels,
- (g) the issue of defective vehicle notices and defective vessel notices,
- (h) the prohibition on selling certain articles that are capable of emitting noise levels above a prescribed level,
- (i) the obligation to label certain articles,
- (j) the times during which it is not permissible to use certain articles (including musical instruments) if they emit noise that can be heard in any residential premises,

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Protection of the Environment Operations (Noise Control) Regulation 2007

Explanatory note

- (k) the inspection and testing procedures for the purpose of determining noise emission levels of certain motor vehicles, motor vehicle accessories, vessels, articles or equipment.

This Regulation is made under the *Protection of the Environment Operations Act 1997*, including sections 136 and 323 (the general regulation-making power) and clauses 3 and 4 (6) of Schedule 2.

This Regulation is made in connection with the staged repeal of subordinate legislation under the *Subordinate Legislation Act 1989*.

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Protection of the Environment Operations (Noise Control) Regulation 2007

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Clause 1	Protection of the Environment Operations (Noise Control) Regulation 2007
Part 1	Preliminary

Protection of the Environment Operations (Noise Control) Regulation 2007

under the

Protection of the Environment Operations Act 1997

Part 1 Preliminary

1 Name of Regulation

This Regulation is the *Protection of the Environment Operations (Noise Control) Regulation 2007*.

2 Commencement

This Regulation commences on 1 September 2007.

Note. This Regulation replaces the *Protection of the Environment Operations (Noise Control) Regulation 2000* which is repealed on 1 September 2007 under section 10 (2) of the *Subordinate Legislation Act 1989*.

3 Definitions

(1) In this Regulation:

ADR 83/00 means the national standard made under section 7 of the *Motor Vehicle Standards Act 1989* of the Commonwealth entitled *Australian Design Rule 83/00—External Noise*.

approved (except in Part 3) means approved by the EPA.

building intruder alarm means a device used or intended to be used as an intruder alarm for a building that:

- (a) incorporates or connects to a sounding device, and
- (b) on being triggered, causes the sounding device to emit sound.

certified to ADR 83/00 means, in relation to a motor vehicle, that approval has been given, under section 10A of the *Motor Vehicle Standards Act 1989* of the Commonwealth, to place identification plates on vehicles of that type showing compliance with ADR 83/00.

defective vehicle notice means a notice issued under clause 26.

defective vessel notice means a notice issued under clause 34.

domestic air conditioner means a split or packaged mechanical system:

- (a) that is capable of controlling air temperature and distribution and that may also control the humidity and cleanliness of the air, and

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 3

Preliminary

Part 1

- (b) the nominal cooling capacity of which does not exceed 12 kilowatts,

but does not include a device of the kind that is commonly known as an evaporative system, and does not include a device that is designed exclusively for heating.

emergency vehicle means a vehicle that is used by, or on behalf of, one of the following organisations, for the purposes of that organisation:

- (a) the NSW Police Force, Fire Brigades, Rural Fire Brigades, Ambulance Service, State Emergency Service, Volunteer Rescue Association or any other agency which manages or controls an accredited rescue unit (within the meaning of the *State Emergency and Rescue Management Act 1989*), or
- (b) an organisation of the Commonwealth or a State or Territory that exercises similar functions to an organisation specified in paragraph (a), or
- (c) the Australian Protective Service, or
- (d) the Australian Customs Service, or
- (e) Airservices Australia.

engine, in relation to a vessel, includes the whole of the machinery involved in the propulsion and operation of the vessel.

grass-cutting machine means a machine that:

- (a) is designed principally for the purpose of cutting grass or other soft undergrowth, and
- (b) is powered by a motor,

but does not include electrically powered shears with a cutting width of less than 120 millimetres.

habitable room means any room other than a garage, storage area, bathroom, laundry, toilet or pantry.

manufacturer's gross vehicle mass, in relation to a vehicle, means the maximum laden mass at which the manufacturer recommends the vehicle be operated.

master of a vessel means the person having the command or charge of the vessel, but does not include a pilot.

mobile air compressor means an air compressor that is mounted on a trailer, or other vehicle, capable of being registered under the *Road Transport (Vehicle Registration) Act 1997*.

mobile garbage compactor means a motor lorry that is comprised of a garbage compactor mounted on a truck cab-chassis.

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Clause 3 Protection of the Environment Operations (Noise Control) Regulation 2007
Part 1 Preliminary

motor bus means a motor vehicle constructed primarily for the carriage of persons and equipped to seat more than 8 adult persons (counting the driver).

motor car means:

- (a) a motor vehicle constructed primarily for the carriage of persons, or
- (b) a motor car derivative, being a motor vehicle:
 - (i) that is of the type known as a utility, station wagon or panel van, and
 - (ii) that is of the same make as a factory produced motor car, and
 - (iii) in which that part of the body form that is forward of the windscreen, and the greater part of the mechanical equipment, are the same or substantially the same as in a factory produced motor car,

but does not include a motor bus, a motor cycle or a motor lorry.

motor cycle means any 2 or 3 wheeled motor vehicle constructed primarily for the carriage of persons.

motor lorry means a motor vehicle constructed primarily for the conveyance of goods or for use otherwise than for the carriage of persons, and includes the separate components (the prime mover and semi-trailer) of an articulated vehicle, but does not include a special purpose motor vehicle.

motor vehicle accessory includes:

- (a) a motor vehicle horn, and
- (b) a motor vehicle intruder alarm, and
- (c) a motor vehicle sound system, and
- (d) any other device that is attached to or forms part of, or is intended to be attached to or form part of, a motor vehicle.

motor vehicle horn means a sounding device designed to be attached to or form part of a motor vehicle, but does not include a sounding device designed solely for use in connection with a motor vehicle intruder alarm.

motor vehicle intruder alarm means a device that:

- (a) incorporates or connects to a sounding device, and
- (b) on being triggered, causes the sounding device to emit sound,

being a device that is attached to or forms part of a motor vehicle for use as an intruder alarm, whether or not the device is also designed to be used for any other purpose.

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 3

Preliminary

Part 1

noise control equipment means any apparatus or device used or designed:

- (a) to prevent, limit or regulate the emission of noise, or
- (b) to monitor or to give warning of the emission of noise, or
- (c) to give warning of the excessive emission of noise,

and includes any apparatus or device that, though not so used, is or would, if properly maintained and operated, be capable (without modification) of being so used, but does not include any apparatus or device prescribed as excluded from the definition of **control equipment** in the Act. An apparatus or device can be noise control equipment whether or not it is used for additional purposes or designed for other or additional purposes.

pavement breaker means a pneumatic device:

- (a) capable of being manually lifted and manoeuvred by a single operator, and
- (b) designed for the purpose of breaking up rock, concrete and similar materials.

road means a road within the meaning of the *Road Transport (General) Act 2005* (other than a road that is the subject of a declaration made under section 15 (1) (b) of that Act relating to all of the provisions of that Act).

Note. The definition in the *Road Transport (General) Act 2005* is as follows:

road means an area that is open to or used by the public and is developed for, or has as one of its main uses, the driving or riding of motor vehicles.

road related area means a road related area within the meaning of the *Road Transport (General) Act 2005* (other than a road related area that is the subject of a declaration made under section 15 (1) (b) of that Act relating to all of the provisions of that Act).

Note. The definition in the *Road Transport (General) Act 2005* is as follows:

road related area means:

- (a) an area that divides a road, or
- (b) a footpath or nature strip adjacent to a road, or
- (c) an area that is open to the public and is designated for use by cyclists or animals, or
- (d) an area that is not a road and that is open to or used by the public for driving, riding or parking vehicles, or
- (e) a shoulder of a road, or
- (f) any other area that is open to or used by the public and that has been declared under section 15 to be an area to which specified provisions of this Act or the regulations apply.

special purpose motor vehicle means a fork lift truck or motor vehicle constructed principally for off-road agricultural use or for use in road or

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Clause 3	Protection of the Environment Operations (Noise Control) Regulation 2007
Part 1	Preliminary

building site construction work, and includes a tractor, harvester, header, thresher, swather, baler, cuber, loader, digger, bulldozer, excavator, grader, scraper, roller, or a mobile crane the engine of which is used for the purpose of both lifting loads and propelling the vehicle, but not does not include any vehicle constructed on a chassis of a type normally used in the construction of a motor lorry.

temporary noise reduction device includes any component of, or matter introduced into, the muffler assembly, resonator assembly or exhaust pipe of a motor vehicle that serves to reduce noise (such as a baffle, adjustable baffle, plate or other silencing matter or device) that is not substantially welded or riveted into place.

the Act means the *Protection of the Environment Operations Act 1997*.

- (2) In Part 2, a reference to the noise level or noise emission characteristics of a motor vehicle or other article is a reference to the noise level or noise emission characteristics of the motor vehicle or article when tested in accordance with the provisions of Part 5 and the relevant Parts of Schedule 2.
- (3) In Part 4, a reference to the noise level of an article is a reference to the noise level of the article when tested in accordance with the provisions of Part 4 and the relevant Parts of Schedule 2.
- (4) Notes in this Regulation do not form part of this Regulation.

Public consultation draft

Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 4

Motor vehicle and motor vehicle accessories Part 2

Part 2 Motor vehicle and motor vehicle accessories

Division 1 Sale of motor vehicles and motor vehicle accessories

Note. Section 136 of the Act creates an offence of selling any article of a class prescribed by the regulations if, when in use or operation, the article emits noise in excess of a prescribed level.

A person who is guilty of an offence under section 136 of the Act is liable, on conviction:

- (a) in the case of a corporation—to a penalty not exceeding \$1,000,000 and, in the case of a continuing offence, to a further penalty not exceeding \$120,000 for each day the offence continues, or
- (b) in the case of an individual—to a penalty not exceeding \$250,000 and, in the case of a continuing offence, to a further penalty not exceeding \$60,000 for each day the offence continues. (Section 141 of the Act).

Subdivision 1 Motor vehicles and related articles

4 Sale of motor vehicles generally

- (1) For the purposes of section 136 of the Act:
 - (a) motor vehicles are a prescribed class of articles, and
 - (b) the prescribed level for a motor vehicle of a particular type is:
 - (i) if the motor vehicle is certified to ADR 83/00—the noise level established by ADR 83/00 for a motor vehicle of that type when stationary plus 5 dB(A), or
 - (ii) in the case of any other motor vehicle—the noise level specified in Schedule 1 for a motor vehicle of that type.
- (2) However, special purpose motor vehicles are excluded from the class of articles prescribed by subclause (1).

5 Sale of used motor vehicles with defective noise control equipment

- (1) A person must not sell a used motor vehicle if:
 - (a) the motor vehicle's noise control equipment is defective, or
 - (b) the motor vehicle's noise control equipment is not securely in place, or
 - (c) a temporary noise reduction device is fitted to the vehicle.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (2) For the purposes of subclause (1) (a), noise control equipment is defective:

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Clause 6 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 2 Motor vehicle and motor vehicle accessories

- (a) if the equipment allows the emission of more noise than the original noise control equipment fitted by the vehicle manufacturer, or
 - (b) if an authorised officer reasonably believes the equipment has been modified in a way that makes it less effective than it would have been if the modification had not been made, or
 - (c) if the equipment allows gas to escape from a place other than the intended exhaust outlet.
- (3) A person is not guilty of an offence under subclause (1) (c) if the conduct alleged to give rise to the offence occurs before 1 September 2008.
- (4) Subclause (1) (b) is repealed on 1 September 2008.

Subdivision 2 Motor vehicle horns

6 Subdivision applies only to retail sale of new motor vehicle horns

This Subdivision applies to the sale of new motor vehicle horns by retail, but does not apply to the sale of motor vehicle horns otherwise than by retail or to the sale of second-hand motor vehicle horns.

7 Sale of motor vehicle horns generally

- (1) For the purposes of section 136 of the Act:
- (a) motor vehicle horns that emit noise at a single non-varying loudness and pitch are a prescribed class of articles, and
 - (b) 120 dB(A) is the prescribed level for such motor vehicle horns.
- (2) For the purposes of section 136 of the Act:
- (a) motor vehicle horns that emit noise otherwise than at a single non-varying loudness and pitch are a prescribed class of articles, and
 - (b) 85 dB(A) is the prescribed level for such motor vehicle horns.
- (3) Motor vehicle horns that are sold for the express purpose of being attached to or forming part of any of the following motor vehicles are excluded from the classes of articles prescribed by subclauses (1) and (2):
- (a) an emergency vehicle,
 - (b) a vehicle that is at least 25 years old that is fitted as an emergency vehicle if the vehicle:
 - (i) is used for exhibition purposes, or
 - (ii) is part of a collection of former emergency vehicles.

Public consultation draft

Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 8

Motor vehicle and motor vehicle accessories Part 2

- (4) In this clause, a reference to a motor vehicle horn that is designed to emit noise at a single non-varying loudness and pitch is a reference to a device designed to emit noise that:
- (a) remains at a constant noise level, and
 - (b) consists of one or more sounds that each remain at a constant frequency,
- while the device is being operated.

Subdivision 3 Motor vehicle intruder alarms

8 Subdivision applies only to retail sale of new motor vehicle intruder alarms

This Subdivision applies to the sale of new motor vehicle intruder alarms by retail, but does not apply to the sale of motor vehicle intruder alarms otherwise than by retail or to the sale of second-hand motor vehicle intruder alarms.

9 Sale of motor vehicle intruder alarms generally

For the purposes of section 136 of the Act:

- (a) motor vehicle intruder alarms are a prescribed class of articles, and
- (b) 115 dB(A) is the prescribed level for motor vehicle intruder alarms.

10 Sale of motor vehicle intruder alarms with a panic or override switch

A person must not sell a motor vehicle intruder alarm whose sounding device is operable (while the engine of the motor vehicle is running or the ignition of the motor vehicle is turned on) by means of a panic or override switch.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

11 Sale of motor vehicle intruder alarms having certain sound characteristics

- (1) A person must not sell a motor vehicle intruder alarm (including any component of a motor vehicle intruder alarm) that consists of:
- (a) a dual tone horn:
 - (i) that has a lower frequency tone of 1,000 Hertz or less, and
 - (ii) that has a higher frequency tone of 2,000 Hertz or less, and

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Clause 12 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 2 Motor vehicle and motor vehicle accessories

- (iii) that emits between 40 and 100 cycles of sound per minute (each cycle consisting of a lower pitched sound followed by a higher pitched sound), or
- (b) a variable tone horn:
 - (i) that has a lower frequency tone of 1,000 Hertz or less, and
 - (ii) that has a higher frequency tone of 2,000 Hertz or less, and
 - (iii) that emits between 5 and 20 cycles of sound per minute (each cycle consisting of a sound that moves from the lower frequency to the higher frequency and then returns to the lower frequency), or
- (c) a rising tone horn:
 - (i) that has a lower frequency tone of 100 Hertz or less, and
 - (ii) that has a higher frequency tone of 2,600 Hertz or less, and
 - (iii) that emits between 100 and 200 cycles of sound per minute (each cycle consisting of an ascending tone followed by a brief interval of either descending tone or lower frequency tone before the cycle is repeated).

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

(2) In this clause:

dual tone horn means a horn that emits a continuous sound composed of the alternating emission of two predominant tones of approximately equal duration.

rising tone horn means a horn that emits a continuous sound composed of the emission of a variable frequency tone that is predominantly characterised by an ascending tone.

variable tone horn means a horn that emits a continuous sound composed of the emission of a variable frequency tone that ascends and then descends between a lower and higher frequency in a repetitive and approximately uniform manner.

Division 2 Use of motor vehicles and motor vehicle accessories

Subdivision 1 Motor vehicles

12 Use of motor vehicles on road or road related area

- (1) A person must not cause or permit a motor vehicle to be used on a road or road related area if the motor vehicle is capable of emitting noise at a level in excess of the level prescribed by clause 4 (1) (b) for that type of motor vehicle (the ***prescribed noise level***).

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 13

Motor vehicle and motor vehicle accessories Part 2

Maximum penalty:

- (a) if the vehicle is capable of emitting noise at a level that exceeds the prescribed noise level for that type of motor vehicle but does not exceed that prescribed noise level by 5 dB(A)—100 penalty units in the case of a corporation, 50 penalty units in the case of an individual, or
 - (b) if the vehicle is capable of emitting noise at a level that exceeds the prescribed noise level for that type of motor vehicle by 5 dB(A) but does not exceed that prescribed noise level by 15 dB(A)—150 penalty units in the case of a corporation, 75 penalty units in the case of an individual, or
 - (c) if the vehicle is capable of emitting noise at a level that exceeds the prescribed noise level for that type of motor vehicle by 15 dB(A) or more—300 penalty units in the case of a corporation, 150 penalty units in the case of an individual.
- (2) A person is not guilty of an offence under this clause arising because the motor vehicle is being taken directly to a place where:
- (a) repairs or other work required to reduce the noise level of the vehicle are to be carried out, or
 - (b) an authorised officer may inspect or test the vehicle, or is being taken directly from any such place to the place where the vehicle is usually kept.
- (3) A person is not guilty of an offence under this clause in relation to the use of a special purpose motor vehicle.

13 Use of motor vehicles in places other than on road or road related area

A person must not cause a motor vehicle to be used in a place (other than on a road or road related area) in such a manner that it emits offensive noise.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

14 Use of motor vehicles on residential premises

- (1) A person must not cause or permit a motor vehicle to be used on residential premises in such a manner that it emits noise that can be heard within a habitable room in any other residential premises (regardless of whether any door or window to that room is open):
- (a) before 8 am or after 8 pm on any Saturday, Sunday or public holiday, or
 - (b) before 7 am or after 8 pm on any other day.

Public consultation draft

Clause 15 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 2 Motor vehicle and motor vehicle accessories

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (2) A person is not guilty of an offence under this clause unless:
 - (a) the person has, within 7 days after causing or permitting a motor vehicle to be used in such a manner, been warned by an authorised officer not to cause or permit the motor vehicle to be used in that manner, and
 - (b) the person causes or permits the motor vehicle to be used in that manner within 28 days after the warning has been given.
- (3) A person is not guilty of an offence under this clause merely because noise is emitted from the motor vehicle while the motor vehicle is entering or leaving residential premises.

15 Use of refrigeration units fitted to motor vehicles

- (1) A person must not cause or permit a refrigeration unit fitted to a motor vehicle to be used in such a manner that it emits noise that can be heard within a habitable room in any residential premises (regardless of whether any door or window to that room is open):
 - (a) before 8 am or after 8 pm on any Saturday, Sunday or public holiday, or
 - (b) before 7 am or after 8 pm on any other day.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (2) A person is not guilty of an offence under this clause unless:
 - (a) the person has, within 7 days after causing or permitting a refrigeration unit to be used in such a manner, been warned by an authorised officer not to cause or permit the refrigeration unit to be used in that manner, and
 - (b) the person causes or permits the refrigeration unit to be used in that manner within 28 days after the warning has been given.

16 Use of motor vehicle sound systems

A person must not cause the sound system of a motor vehicle to be used in such a manner that it emits offensive noise.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

17 Drive or use motor vehicle on road or road related area if vehicle's sound system emits offensive noise

- (1) A person must not drive or use a motor vehicle on a road or road related area if the sound system of the motor vehicle emits offensive noise.

Public consultation draft

Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 18

Motor vehicle and motor vehicle accessories Part 2

Maximum penalty: 50 penalty units.

- (2) If an act or omission constitutes an offence under this clause and clause 16, the offender is not liable to be punished twice in respect of the offence.
- (3) In subclause (1), *drive* and *use* have the same meanings as in the *Road Transport (General) Act 2005*.

18 Noise control equipment to be properly maintained

- (1) A person must not cause or permit a motor vehicle to be used on a road or road related area if:
 - (a) the motor vehicle's noise control equipment is defective, or
 - (b) the motor vehicle's noise control equipment is not securely in place, or
 - (c) a temporary noise reduction device is fitted to the vehicle.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (2) A person must not:
 - (a) remove, or render less effective, a motor vehicle's noise control equipment, otherwise than for the purpose of repairing or replacing it, or
 - (b) replace a motor vehicle's noise control equipment with noise control equipment that is less effective than the original noise control equipment fitted by the vehicle manufacturer.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (3) For the purposes of subclause (1) (a), noise control equipment is defective:
 - (a) if the equipment allows the emission of more noise than the original noise control equipment fitted by the vehicle manufacturer, or
 - (b) if an authorised officer reasonably believes the equipment has been modified in a way that makes it less effective than it would have been if the modification had not been made, or
 - (c) if the equipment allows gas to escape from a place other than the intended exhaust outlet.
- (4) A person is not guilty of an offence under subclause (1) (c) if the conduct alleged to give rise to the offence occurs before 1 September 2008.
- (5) Subclause (1) (b) is repealed on 1 September 2008.

Public consultation draft

Clause 19 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 2 Motor vehicle and motor vehicle accessories

19 Repairs and modifications

- (1) A person must not cause or permit a motor vehicle's engine, or its air intake or exhaust system, to be modified or repaired in such a manner that the maximum noise level of the motor vehicle after the repair or modification (regardless of the noise level of the motor vehicle before the repair or modification) exceeds the level prescribed by clause 4 (1) (b) for that type of motor vehicle.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (2) A person is not guilty of an offence under this clause in relation to the use of a special purpose motor vehicle.

20 Owners and drivers of motor vehicles involved in excess noise offences

- (1) If a motor vehicle or the sound system of a motor vehicle is used contrary to clause 13 or 16, the driver and owner of the motor vehicle are each taken to be guilty of an offence under that provision.

- (2) Subclause (1) does not affect the liability of the actual offender but, if a penalty has been imposed or recovered from any person in relation to the offence (whether the actual offender, the driver or the owner), no further penalty may be imposed on or recovered from any other person. In this subclause, *penalty* includes a penalty under a penalty notice.

- (3) Subclause (1) does not apply to the owner of a motor vehicle if the motor vehicle was at the time of the commission of the offence a stolen motor vehicle or a motor vehicle illegally taken or used.

- (4) Subclause (1) does not apply to the owner of a motor vehicle if the owner was not in the motor vehicle at the relevant time and:

(a) gives notice in accordance with subclause (5) of the name and address of the person who was in charge of the motor vehicle at the relevant time, or

(b) satisfies the officer who gave the penalty notice for the offence or the court dealing with the offence (as the case requires) that the owner did not know, and could not with reasonable diligence have ascertained, that name and address.

- (5) The notice must be verified by statutory declaration and:

(a) if a penalty notice has been given for the offence—the notice must be given to an officer specified in the penalty notice for the purpose within 28 days after service of the penalty notice, and

(b) if a court is dealing with the offence—the notice must be given to the informant within 28 days after service of the summons for the offence.

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 21

Motor vehicle and motor vehicle accessories Part 2

Note. Sections 307B and 307C of the *Crimes Act 1900* provide a maximum penalty of imprisonment for 2 years, or a fine of \$22,000, or both for giving false or misleading information, or providing false or misleading documents, in compliance, or purported compliance, with a law of the State.

Subdivision 2 Motor vehicle horns

21 Motor vehicle horns generally

- (1) A person must not attach a motor vehicle horn to a motor vehicle if that horn:
- (a) is capable of emitting noise at a single non-varying loudness and pitch at a noise level of more than 120 dB(A), or
 - (b) is capable of emitting noise otherwise than at a single non-varying loudness and pitch at a noise level of more than 85 dB(A).

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (2) A person must not, on a road or road related area, cause or permit a motor vehicle to be used if the motor vehicle is fitted with a horn that:
- (a) is capable of emitting noise at a single non-varying loudness and pitch at a noise level of more than 120 dB(A), or
 - (b) is capable of emitting noise otherwise than at a single non-varying loudness and pitch at a noise level of more than 85 dB(A).

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (3) This clause does not apply to a motor vehicle horn fitted to:
- (a) an emergency vehicle, or
 - (b) a vehicle that is at least 25 years old that is fitted as an emergency vehicle if the vehicle:
 - (i) is used for exhibition purposes, or
 - (ii) is part of a collection of former emergency vehicles.

- (4) In this clause, a reference to a motor vehicle horn that is designed to emit noise at a single non-varying loudness and pitch is a reference to a device designed to emit noise that:
- (a) remains at a constant noise level, and
 - (b) consists of one or more sounds that each remain at a constant frequency,
- while the device is being operated.

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Clause 22 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 2 Motor vehicle and motor vehicle accessories

Subdivision 3 Motor vehicle intruder alarms

22 Interpretation

- (1) For the purposes of this Subdivision, a person is taken to cause a motor vehicle intruder alarm to be sounded if the person leaves the motor vehicle unattended while the motor vehicle intruder alarm is turned on and the alarm subsequently sounds.
- (2) A motor vehicle intruder alarm that sounds intermittently is taken to sound continuously for the purpose of measuring the period of time for which it sounds.

23 Use of motor vehicle intruder alarms triggered by panic switches

A person must not, in connection with the use of a motor vehicle, cause or permit to be used a motor vehicle intruder alarm that is capable of being triggered (while the engine of the motor vehicle is running or the ignition of the motor vehicle is turned on) by means of a panic or override switch.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

24 Use of motor vehicle intruder alarms generally

- (1) A person must not, in connection with the use of a motor vehicle, cause or permit a motor vehicle intruder alarm to be sounded, whether continuously or intermittently:
 - (a) in the case of a motor vehicle manufactured before 1 September 1997—for more than 90 seconds after the alarm first sounds, or
 - (b) in the case of a motor vehicle manufactured on or after 1 September 1997—for more than 45 seconds after the alarm first sounds.

Maximum penalty:

- (a) if the alarm is sounded, whether continuously or intermittently, for a period that does not exceed 4 hours—100 penalty units in the case of a corporation, 50 penalty units in the case of an individual, or
- (b) if the alarm is sounded, whether continuously or intermittently, for a period that exceeds 4 hours but does not exceed 8 hours—200 penalty units in the case of a corporation, 100 penalty units in the case of an individual, or
- (c) if the alarm is sounded, whether continuously or intermittently, for a period that exceeds 8 hours—300 penalty units in the case of a corporation, 150 penalty units in the case of an individual.

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 25

Motor vehicle and motor vehicle accessories Part 2

- (2) A person is not guilty of an offence under this clause in the case of a motor vehicle manufactured before 1 September 2008, if the motor vehicle intruder alarm sounds for longer than 90 or 45 seconds, as the case may be, because:
- (a) a window or windscreen in the motor vehicle is broken or removed, or
 - (b) the motor vehicle is involved in an accident, or
 - (c) the motor vehicle is illegally broken into or there is an illegal attempt to break into the motor vehicle.

25 Design and construction of motor vehicle intruder alarms

- (1) A person must not, in connection with the use of a motor vehicle, cause or permit a motor vehicle intruder alarm to be sounded unless the alarm is so constructed and regulated that:
- (a) it has a maximum noise level of not more than 115 dB(A), and
 - (b) it cannot be reactivated until it has been manually reset.
- Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (2) This clause applies only to motor vehicles manufactured on or after 1 September 1997.

Division 3 Defective vehicle notices

26 Defective vehicle notices

- (1) An authorised officer who is satisfied that a motor vehicle:
- (a) emits noise at a level in excess of the level prescribed by clause 4 (1) (b) for that type of motor vehicle, or
 - (b) has no noise control equipment or has defective noise control equipment, or
 - (c) has installed in it a motor vehicle accessory that does not comply with the Act or this Regulation,
- may issue a defective vehicle notice to the owner of the vehicle.
- (2) A defective vehicle notice is to be in the approved form and must include the following particulars:
- (a) the defect on the basis of which it is issued,
 - (b) where the motor vehicle should be taken for inspection or testing for the purpose of having the notice withdrawn.
- (3) A defective vehicle notice may indicate:
- (a) what needs to be done to remedy the defect, and

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Clause 27 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 2 Motor vehicle and motor vehicle accessories

- (b) a date after which the motor vehicle must not be used on a road or road related area if the defect has not been remedied, and
 - (c) a date after which the motor vehicle's registration under the *Road Transport (Vehicle Registration) Act 1997* may be suspended if the defect has not been remedied.
- (4) An authorised officer may withdraw a defective vehicle notice if satisfied that the motor vehicle in respect of which the notice has been issued no longer has the defect on the basis of which the notice was issued.
- (5) If a defective vehicle notice indicates a date after which the motor vehicle must not be used on a road or road related area, a person must not cause or permit the motor vehicle to be used on a road or road related area after that date unless the notice has been withdrawn.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (6) A person is not guilty of an offence under this clause arising because the motor vehicle is being taken directly to a place where:
- (a) repairs or other work required to remedy the defect are to be carried out, or
 - (b) an authorised officer may inspect or test the vehicle, or is being taken directly from any such place to the place where the vehicle is usually kept.

27 Defective vehicle labels

- (1) An authorised officer who issues a defective vehicle notice for a motor vehicle may also affix a defective vehicle label to the inside or outside of the front windscreen of the motor vehicle or in a conspicuous position on some other part of the vehicle.
- (2) A defective vehicle label is to be in the approved form and must include the following particulars:
 - (a) the defect on the basis of which the defective vehicle notice was issued,
 - (b) the date (if any) after which the motor vehicle must not be used on a road or road related area if the defect has not been remedied,
 - (c) such other particulars as the EPA may require.
- (3) An authorised officer who withdraws a defective vehicle notice for a motor vehicle must also remove, or direct the removal of, the defective vehicle label from the motor vehicle.
- (4) A person must not remove, obscure or deface a defective vehicle label affixed to a motor vehicle under this clause unless the person is an

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 27

Motor vehicle and motor vehicle accessories Part 2

authorised officer or is acting under the direction of an authorised officer.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (5) A person must not cause or permit a motor vehicle to be used if the person knows, or ought reasonably to know, that a defective vehicle label affixed to the motor vehicle under this clause has been removed, obscured or defaced in contravention of subclause (4).

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (6) A person does not commit an offence under subclause (5) if the motor vehicle is being taken directly to a place where:

(a) repairs or other work required to remedy the defect are to be carried out, or

(b) an authorised officer may inspect or test the vehicle,

or is being taken directly from any such place to the place where the vehicle is usually kept.

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Clause 28 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 3 Marine vessels

Part 3 Marine vessels

Division 1 Use of marine vessels

28 Interpretation

In this Part:

approved form, in relation to a defective vessel notice or defective vessel label, means a form approved by:

- (a) the EPA, or
- (b) the authority or body whose officers or employees are authorised by this Part to issue or affix such a notice or label.

authorised officer includes not only any person who is appointed as an authorised officer for the purposes of the Act (as referred to in section 187 of the Act), but also:

- (a) any police officer, and
- (b) any officer or employee of the marine authority who is authorised by the authority for the purposes of this Part.

29 Sounding of sirens from vessels

A person must not cause or permit a vessel's siren, whistle, hooter, fog horn or bell to be sounded on navigable waters except for the purposes of navigation.

Maximum penalty: 20 penalty units in the case of a corporation, 10 penalty units in the case of an individual.

30 Vessels not to emit offensive noise

A person must not cause a vessel to be used on navigable waters in such a way as to emit offensive noise.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

31 Liability of owner of vessel

- (1) If a vessel is used contrary to clause 30, the person in charge and owner of the vessel are each taken to be guilty of an offence under that clause.
- (2) Subclause (1) does not affect the liability of the actual offender but, if a penalty has been imposed or recovered from any person in relation to the offence (whether the actual offender, the person in charge or the owner), no further penalty may be imposed on or recovered from any other person. In this subclause, *penalty* includes a penalty under a penalty notice.

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 32

Marine vessels

Part 3

- (3) Subclause (1) does not apply to the owner of a vessel if the vessel was at the time a stolen vessel or a vessel illegally taken or used.
- (4) Subclause (1) does not apply to the owner of a vessel if the owner was not in the vessel at the relevant time and:
 - (a) gives notice in accordance with subclause (5) of the name and address of the person who was in charge of the vessel at the relevant time, or
 - (b) satisfies the officer who gave the penalty notice for the offence or the court dealing with the offence (as the case requires) that the owner did not know, and could not with reasonable diligence have ascertained, that name and address.
- (5) The notice must be verified by statutory declaration and:
 - (a) if a penalty notice has been given for the offence—the notice must be given to an officer specified in the penalty notice for the purpose within 28 days after service of the penalty notice, and
 - (b) if a court is dealing with the offence—the notice must be given to the informant within 28 days after service of the summons for the offence.

Note. Sections 307B and 307C of the *Crimes Act 1900* provide a maximum penalty of imprisonment for 2 years, or a fine of \$22,000, or both for giving false or misleading information, or providing false or misleading documents, in compliance, or purported compliance, with a law of the State.

32 Noise control equipment to be properly maintained

- (1) A person must not cause or permit an engine powered vessel to be used on navigable waters if the vessel's noise control equipment is defective or is not securely in place.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (2) A person must not remove, or render less effective, a vessel's noise control equipment, otherwise than for the purpose of repairing or replacing it.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (3) For the purposes of subclause (1), defective noise control equipment includes:
 - (a) equipment that an authorised officer reasonably believes has been modified in a way that makes it less effective than it would have been if the modification had not been made, or
 - (b) equipment that allows gas to escape from a place other than the intended exhaust outlet.

Public consultation draft

Clause 33 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 3 Marine vessels

33 Use of sound systems on vessels

- (1) A person must not cause or permit any musical instrument or sound system to be used on a vessel in such a manner that it emits noise that can be heard within a habitable room in any residential premises between midnight and 8 am on any day (regardless of whether any door or window to that room is open).

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (2) A person is not guilty of an offence under this clause unless:
- (a) the person has, within 7 days after causing or permitting a sound system to be used in such a manner, been warned by any other person not to cause or permit the sound system to be used in that manner, and
 - (b) the person causes or permits the sound system to be used in that manner within 28 days after the warning has been given.

- (3) Subclauses (1) and (2) are repealed on 1 March 2008.

- (4) A person must not cause or permit any musical instrument or sound system to be used on a vessel in such a manner that it emits offensive noise.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

- (5) A person is not guilty of an offence under subclause (4) if the conduct alleged to give rise to the offence occurs before 1 March 2008.

Division 2 Defective vessel notices

34 Defective vessel notices

- (1) An authorised officer who is satisfied that a vessel has no noise control equipment, does not have appropriate noise control equipment or has defective noise control equipment may issue a defective vessel notice to the vessel's owner or master.

- (2) A defective vessel notice is to be in the approved form and must include the following particulars:

- (a) the defect on the basis of which it is issued,
- (b) where the vessel should be taken for inspection or testing for the purpose of having the notice withdrawn.

- (3) A defective vessel notice:

- (a) may indicate what needs to be done to remedy the defect, and

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 35

Marine vessels

Part 3

- (b) may indicate a date after which the vessel must not be used if the defect has not been remedied.
- (4) An authorised officer may withdraw a defective vessel notice if satisfied that the vessel in respect of which the notice has been issued no longer has the defect on the basis of which the notice was issued.
- (5) If a defective vessel notice indicates a date after which the vessel must not be used, a person must not cause or permit the vessel to be used in navigable waters after that date unless the notice has been withdrawn.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (6) A person is not guilty of an offence under this clause arising because the vessel is being taken directly to a place where:
 - (a) repairs or other work required to remedy the defect are to be carried out, or
 - (b) an authorised officer may inspect or test the vessel, or is being taken directly from any such place to the place where the vessel is usually kept.

35 Defective vessel labels

- (1) An authorised officer who issues a defective vessel notice for a vessel may also affix a defective vessel label in a conspicuous position on some part of the vessel.
- (2) A defective vessel label is to be in the approved form and must include the following particulars:
 - (a) the defect on the basis of which the defective vessel notice was issued,
 - (b) the date (if any) after which the vessel must not be used if the defect has not been remedied,
 - (c) such other particulars as the EPA may require.
- (3) An authorised officer who withdraws a defective vessel notice for a vessel must also remove, or direct the removal of, the defective vessel label from the vessel.
- (4) A person must not remove, obscure or deface a defective vessel label that is affixed to a vessel under this clause unless the person is an authorised officer or is acting under the direction of an authorised officer.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

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Clause 35 Protection of the Environment Operations (Noise Control) Regulation 2007
Part 3 Marine vessels

- (5) A person must not cause or permit a vessel to be used if the person knows, or ought reasonably to know, that a defective vessel label affixed to the vessel under this clause has been removed, obscured or defaced in contravention of subclause (4).
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (6) A person does not commit an offence under subclause (5) if the vessel is being taken directly to a place where:
- (a) repairs or other work required to remedy the defect are to be carried out, or
 - (b) an authorised officer may inspect or test the vessel,
- or is being taken directly from any such place to the place where the vessel is usually kept.

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 36

Miscellaneous articles Part 4

Part 4 Miscellaneous articles

Division 1 Sale of articles

Subdivision 1 Preliminary

36 Division applies only to retail sale of new articles

This Division applies to the sale of new articles by retail, but does not apply to the sale of articles otherwise than by retail or to the sale of second-hand articles.

37 Size, design, format and construction of noise labels

A noise label required by this Division must be a label of a size, design, format and construction approved by the EPA.

Subdivision 2 Grass-cutting machines

38 Lawn mowers with cutting width between 620 millimetres and 950 millimetres

- (1) For the purposes of section 136 of the Act:
 - (a) lawn mowers with a cutting width of more than 620 millimetres but less than 950 millimetres are a prescribed class of articles, and
 - (b) 80 dB(A) is the prescribed level for such lawn mowers.
- (2) A person must not sell a lawn mower with a cutting width of more than 620 millimetres but less than 950 millimetres unless it has a noise label, securely attached to it in a conspicuous position, displaying the lawn mower's maximum noise level as determined in accordance with Part 5.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

39 Ride-on mowers

- (1) For the purposes of section 136 of the Act:
 - (a) ride-on mowers are a prescribed class of articles, and
 - (b) 80 dB(A) is the prescribed level for ride-on mowers.
- (2) A person must not sell a ride-on mower unless it has a noise label, securely attached to it in a conspicuous position, displaying the ride-on mower's maximum noise level as determined in accordance with Part 5.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

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Clause 40 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 4 Miscellaneous articles

40 Edge-cutters

- (1) For the purposes of section 136 of the Act:
 - (a) edge-cutters are a prescribed class of articles, and
 - (b) 75 dB(A) is the prescribed level for edge-cutters.
- (2) A person must not sell an edge-cutter unless it has a noise label, securely attached to it in a conspicuous position, displaying the edge-cutter's maximum noise level as determined in accordance with Part 5.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

41 String-trimmers

- (1) For the purposes of section 136 of the Act:
 - (a) string-trimmers are a prescribed class of articles, and
 - (b) 80 dB(A) is the prescribed level for string-trimmers.
- (2) A person must not sell a string-trimmer unless it has a noise label, securely attached to it in a conspicuous position, displaying the string-trimmer's maximum noise level as determined in accordance with Part 5.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

42 Brush cutters

- (1) For the purposes of section 136 of the Act:
 - (a) brush cutters are a prescribed class of articles, and
 - (b) 85 dB(A) is the prescribed level for brush cutters.
- (2) A person must not sell a brush cutter unless it has a noise label, securely attached to it in a conspicuous position, displaying the brush cutter's maximum noise level as determined in accordance with Part 5.
Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

43 Other grass-cutting machines

- (1) For the purposes of section 136 of the Act:
 - (a) grass-cutting machines with cutting edges of 950 millimetres or less (other than grass-cutting machines referred to elsewhere in this Subdivision) are a prescribed class of articles, and
 - (b) 75 dB(A) is the prescribed level for such grass-cutting machines.

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 44

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- (2) A person must not sell a grass-cutting machine with a cutting edge of 950 millimetres or less (other than a grass-cutting machine referred to elsewhere in this Subdivision) unless it has a noise label, securely attached to it in a conspicuous position, displaying the grass-cutting machine's maximum noise level as determined in accordance with Part 5.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

Subdivision 3 Other articles

44 Labelling of chainsaws

A person must not sell a chainsaw unless the chainsaw has a noise label, securely attached to it in a conspicuous position, displaying the chainsaw's maximum noise level as determined in accordance with Part 5.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

45 Labelling of domestic air conditioners

A person must not sell a domestic air conditioner unless the air conditioner has a noise label, securely attached to it in a conspicuous position, displaying the air conditioner's sound power level as determined in accordance with Part 5.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

46 Labelling of mobile air compressors

A person must not sell a mobile air compressor unless it has a noise label, securely attached to it in a conspicuous position, displaying the mobile air compressor's mean noise level as determined in accordance with Part 5.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

47 Labelling of pavement breakers

A person must not sell a pavement breaker unless it has a noise label, securely attached to it in a conspicuous position, displaying the pavement breaker's mean noise level as determined in accordance with Part 5.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

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Clause 48 Protection of the Environment Operations (Noise Control) Regulation 2007

Part 4 Miscellaneous articles

48 Labelling of mobile garbage compactors

A person must not sell a mobile garbage compactor unless it has a noise label, securely attached to it in a conspicuous position, displaying the mobile garbage compactor's maximum noise level as determined in accordance with Part 5.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

49 Sale of building intruder alarms

(1) A person must not sell a building intruder alarm unless the alarm is so constructed and regulated that:

- (a) it automatically ceases to sound, whether continuously or intermittently, within 5 minutes after being activated by a detection device, and
- (b) it cannot be reactivated (except by a different detection device) until it has been manually reset.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

(2) A building intruder alarm that sounds intermittently is taken to sound continuously for the purpose of measuring the period of time for which it sounds.

Division 2 Use of articles

Subdivision 1 Time limits on the use of certain articles

50 Power tools and equipment

(1) A person must not cause or permit a power tool or swimming pool pump to be used on residential premises in such a manner that it emits noise that can be heard within a habitable room in any other residential premises (regardless of whether any door or window to that room is open):

- (a) before 8 am or after 8 pm on any Sunday or public holiday, or
- (b) before 7 am or after 8 pm on any other day.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

(2) A person is not guilty of an offence under this clause unless:

- (a) the person has, within 7 days after causing or permitting a power tool or swimming pool pump to be used in such a manner, been warned by an authorised officer not to cause or permit the tool or pump to be used in that manner, and

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Part 4

(b) the person causes or permits the tool or pump to be used in that manner within 28 days after the warning has been given.

(3) In this clause:

power tool means any of the following:

- (a) a powered garden tool (that is, a tool powered by a petrol engine or an electric motor), including a lawn mower, a lawn trimmer, a blower/sweeper, a garden mulcher, an edge-cutter and a chipper/shredder,
- (b) an electric power tool (including battery-operated power tools),
- (c) a pneumatic power tool,
- (d) a chainsaw,
- (e) a circular saw,
- (f) a gas or air compressor.

swimming pool pump includes a spa pump.

51 Musical instruments and sound equipment

(1) A person must not cause or permit any musical instrument or electrically amplified sound equipment to be used on residential premises in such a manner that it emits noise that can be heard within a habitable room in any other residential premises (regardless of whether any door or window to that room is open):

- (a) on or before 1 March 2008—between midnight and 8 am on any day, or
- (b) after 1 March 2008:
 - (i) before 8 am and after midnight on any Friday, Saturday or day immediately before a public holiday, or
 - (ii) before 8 am and after 10 pm on any other day.

Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.

(2) A person is not guilty of an offence under this clause unless:

- (a) the person has, within 7 days after causing or permitting a musical instrument or electrically amplified sound equipment to be used in such a manner, been warned by an authorised officer not to cause or permit the instrument or equipment to be used in that manner, and
- (b) the person causes or permits the instrument or equipment to be used in that manner within 28 days after the warning has been given.

(3) In this clause:

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Part 4	Miscellaneous articles

electrically amplified sound equipment includes any electrical or battery powered device that can be used to make or amplify sound.

52 Air conditioners and heat pump water heaters

- (1) A person must not cause or permit an air conditioner or heat pump water heater to be used on residential premises in such a manner that it emits noise that can be heard within a habitable room in any other residential premises (regardless of whether any door or window to that room is open):
 - (a) before 8 am or after 10 pm on any Saturday, Sunday or public holiday, or
 - (b) before 7 am or after 10 pm on any other day.Maximum penalty: 100 penalty units in the case of a corporation, 50 penalty units in the case of an individual.
- (2) A person is not guilty of an offence under subclause (1) in relation to a heat pump water heater if the conduct alleged to give rise to the offence occurs before 1 September 2008.
- (3) A person is not guilty of an offence under subclause (1) unless:
 - (a) the person has, within 7 days after causing or permitting an air conditioner or heat pump water heater to be used in such a manner, been warned by an authorised officer not to cause or permit the air conditioner or heat pump water heater to be used in that manner, and
 - (b) the person causes or permits an air conditioner or heat pump water heater to be used in that manner within 28 days after the warning has been given.
- (4) In this clause:

heat pump water heater means a device that heats water using the energy generated from the compression of a gas.

Subdivision 2 Building intruder alarms

53 Use of building intruder alarms

- (1) The occupier of any premises must not cause or permit a building intruder alarm installed on those premises to be used so as to emit noise that can be heard within a habitable room in any residential premises, (regardless of whether any door or window to that room is open), unless the alarm is so constructed and regulated that:
 - (a) in the case of an alarm installed before 1 December 1997:

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- (i) it automatically ceases to sound, whether continuously or intermittently, within 10 minutes after being activated by a detection device, and
- (ii) it cannot be reactivated (except by a different detection device) until it has been manually or automatically reset, or
- (b) in the case of an alarm installed on or after 1 December 1997:
 - (i) it automatically ceases to sound, whether continuously or intermittently, within 5 minutes after being activated by a detection device, and
 - (ii) it cannot be reactivated (except by a different detection device) until it has been manually reset.

Maximum penalty:

- (a) if the alarm is sounded, whether continuously or intermittently, for a period that does not exceed 4 hours—100 penalty units in the case of a corporation, 50 penalty units in the case of an individual, or
 - (b) if the alarm is sounded, whether continuously or intermittently, for a period that exceeds 4 hours but does not exceed 8 hours—200 penalty units in the case of a corporation, 100 penalty units in the case of an individual, or
 - (c) if the alarm is sounded, whether continuously or intermittently, for a period that exceeds 8 hours—300 penalty units in the case of a corporation, 150 penalty units in the case of an individual.
- (2) A building intruder alarm that sounds intermittently is taken to sound continuously for the purpose of measuring the period of time for which it sounds.

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Clause 54	Protection of the Environment Operations (Noise Control) Regulation 2007
Part 5	Inspection and testing of certain articles

Part 5 Inspection and testing of certain articles

54 Determining the noise level of an article

- (1) The maximum noise level of a motor vehicle horn or a motor vehicle intruder alarm, and the noise emission characteristics of a motor vehicle intruder alarm are to be determined in accordance with Part 1 of Schedule 2.
- (2) The maximum noise level of a grass-cutting machine is to be determined in accordance with Part 2 of Schedule 2.
- (3) The maximum noise level of a chainsaw is to be determined in accordance with Part 3 of Schedule 2.
- (4) The maximum noise level of a mobile garbage compactor is to be determined in accordance with Part 4 of Schedule 2.
- (5) The maximum noise level of a motor bus, motor car, motor cycle or motor lorry is to be determined in accordance with the National Stationary Exhaust Noise Test Procedures, and in determining the maximum noise level, any reference in that document to an omnibus or a goods vehicle is taken to be a reference to a motor bus or a motor lorry respectively.

Note. A copy of the National Stationary Exhaust Noise Test Procedures is available for inspection at the offices of the EPA.

- (6) The sound power level of a domestic air conditioner is to be determined in accordance with the document published by the Australian Environment Council entitled *Technical Basis for the Regulation of Noise Labelling of New Air Conditioners in Australia* dated July 1984 as in force on 1 September 2007.

Note. A copy of *Technical Basis for the Regulation of Noise Labelling of New Air Conditioners in Australia* is available for inspection at the offices of the EPA.

- (7) The mean sound level of a mobile air compressor or pavement breaker is to be determined in accordance with the document published by the Australian Environment Council entitled *Technical Basis for the Regulation of Noise Labelling of New Pavement Breakers and Mobile Air Compressors in Australia* dated July 1984 as in force on 1 September 2007.

Note. A copy of *Technical Basis for the Regulation of Noise Labelling of New Pavement Breakers and Mobile Air Compressors in Australia* is available for inspection at the offices of the EPA.

- (8) In this clause:

National Stationary Exhaust Noise Test Procedures means the document published by the National Road Transport Commission entitled *National Stationary Exhaust Noise Test Procedures for*

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 55

Inspection and testing of certain articles Part 5

In-service Motor Vehicles dated April 2000 or any document that replaces that document.

55 Measuring instruments—motor vehicle accessory, grass-cutting machine, chainsaw or mobile garbage compactor

- (1) This clause applies to a sound level meter that is being used to measure and determine the noise level of a motor vehicle accessory, grass-cutting machine, chainsaw or mobile garbage compactor.
- (2) A class 1 or 2 sound level meter complying with AS IEC 61672 and associated equipment, including a microphone windshield must be used.
- (3) The sound level meter must be set to measure A-weighted noise levels and must have its meter dynamic characteristic set:
 - (a) to “fast”, when measuring the noise level of a motor vehicle accessory or chainsaw, or
 - (b) to “slow”, when measuring the noise level of a grass-cutting machine or mobile garbage compactor.
- (4) The calibration of a sound level meter must be checked, and any necessary adjustments made, immediately before the sound level meter is used to make the noise level measurements required by this Regulation (*the pre-test check*) and must be checked again immediately after making those measurements (*the post-test check*).
- (5) The calibration is to be checked by performing a field calibration, using a reference sound source, when the article whose noise level is being measured is not operating.
- (6) If the noise level recorded during the post-test check (after any necessary adjustments have been made) differs by more than 1 dB(A) from the noise level recorded during the pre-test check, then all measurements made in the intervening period must be disregarded.
- (7) In this clause:

AS IEC 61672 means AS IEC 61672—2004, *Electroacoustics—Sound level meters*, as in force on 1 September 2007.

Note. A copy of AS IEC 61672 is available for inspection at the offices of the EPA.

56 Measurements may be disregarded on account of extraneous noise

- (1) The person making the noise level measurements is to take all reasonable precautions to ensure that extraneous noise does not interfere with the making of measurements required by this Part.
- (2) If the noise levels recorded during the pre-test and post-test checks (when the article whose noise level is being measured is not operating)

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Part 5 Inspection and testing of certain articles

are not each 10 dB(A) or more below the lowest maximum noise level reading observed when making those noise level measurements, then all measurements made in the intervening period may be disregarded.

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Protection of the Environment Operations (Noise Control) Regulation 2007 Clause 57

Miscellaneous Part 6

Part 6 Miscellaneous

57 Savings provision

Any act, matter or thing that, immediately before the repeal of the *Protection of the Environment Operations (Noise Control) Regulation 2000*, had effect under that Regulation is taken to have effect under this Regulation.

58 Amendment of Protection of the Environment Operations (Penalty Notices) Regulation 2004

The *Protection of the Environment Operations (Penalty Notices) Regulation 2004* is amended as set out in Schedule 3.

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Protection of the Environment Operations (Noise Control) Regulation 2007

Schedule 1 Prescribed noise levels for types of motor vehicles (excluding those certified to ADR 83/00)

Schedule 1 Prescribed noise levels for types of motor vehicles (excluding those certified to ADR 83/00)

(Clause 4)

Description	Column 1			Column 2	
	Engine	Type of Motor Vehicle		Period during which manufacture completed	Noise level dB(A)
		Manufacturer's gross vehicle mass (kg)	Height above ground of exhaust pipe (mm)		
Motor car	Any engine	Any mass	Any height	Before 1 January 1983	96
				On or after 1 January 1983	90
Motor cycle designed or manufactured for use on a road	Any engine	Any mass	Any height	On or after 1 March 1984	94
Any other motor cycle	Any engine	Any mass	Any height	Any period	100
Motor lorry or motor bus	Any engine other than a diesel engine	3,500 or less	1,500 or more	Before 1 July 1983	88
				On or after 1 July 1983	85
				Less than 1,500	Before 1 July 1983
		More than 3,500	1,500 or more	On or after 1 July 1983	89
				Before 1 July 1983	94
				On or after 1 July 1983	91
Less than 1,500	Before 1 July 1983	98			

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Protection of the Environment Operations (Noise Control) Regulation 2007

Prescribed noise levels for types of motor vehicles (excluding those certified to ADR 83/00) Schedule 1

Description	Column 1 Type of Motor Vehicle			Column 2	
	Engine	Manufacturer's gross vehicle mass (kg)	Height above ground of exhaust pipe (mm)	Period during which manufacture completed	Noise level dB(A)
				On or after 1 July 1983	95
	Diesel	3,500 or less	1,500 or more	Before 1 July 1980	101
				On or after 1 July 1980 and before 1 July 1983	98
				On or after 1 July 1983	95
			Less than 1,500	Before 1 July 1980	105
				On or after 1 July 1980 and before 1 July 1983	102
				On or after 1 July 1983	99
		More than 3,500, but not more than 12,000	1,500 or more	Before 1 July 1980	103
				On or after 1 July 1980 and before 1 July 1983	100
				On or after 1 July 1983	97
			Less than 1,500	Before 1 July 1980	107
				On or after 1 July 1980 and before 1 July 1983	104

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Protection of the Environment Operations (Noise Control) Regulation 2007

Schedule 1 Prescribed noise levels for types of motor vehicles (excluding those certified to ADR 83/00)

Description	Engine	Column 1			Column 2
		Type of Motor Vehicle			Noise level dB(A)
		Manufacturer's gross vehicle mass (kg)	Height above ground of exhaust pipe (mm)	Period during which manufacture completed	
				On or after 1 July 1983	101
		More than 12,000	1,500 or more	Before 1 July 1980	105
				On or after 1 July 1980 and before 1 July 1983	102
				On or after 1 July 1983	99
			Less than 1,500	Before 1 July 1980	109
				On or after 1 July 1980 and before 1 July 1983	106
				On or after 1 July 1983	103

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Protection of the Environment Operations (Noise Control) Regulation 2007

Testing procedures

Schedule 2

Schedule 2 Testing procedures

(Clause 54)

Part 1 Motor vehicle horns and intruder alarms

Division 1 General

1 Definitions

In this Part:

alarm means motor vehicle intruder alarm.

horn means motor vehicle horn.

test site means the site at which the noise level of a horn or an alarm is measured, or the noise emission characteristics of an alarm is recorded.

2 Determination of noise level

- (1) The person making the measurements of the noise level of a horn or an alarm is to make as many noise level measurements as are reasonably appropriate.
- (2) The noise level of a horn or an alarm is the greatest noise level reading obtained from the noise level measurements made on the horn or alarm. If that reading is not a whole number of decibels, it must be rounded down to the next lower whole number of decibels.

3 Instruments for recording noise

- (1) A tape recorder and associated leads may be used in conjunction with the sound level meter to record the noise from an alarm.
- (2) For tape recording purposes, the sound level meter is to be set to "linear" and appropriate recording level adjustments made together with the recording of a field calibration tone.

4 Determination of character of noise emitted

The frequency characteristics and the repeat rate of emitted sound may be determined by:

- (a) laboratory analysis of a tape recording of noise emitted by an alarm under test, or
- (b) readings from a Type 1 sound level meter capable of measuring sound level variations over time.

5 Operation of horn or alarm

A horn or an alarm under test:

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Schedule 2 Testing procedures

- (a) must, as far as practicable, be directed towards the microphone, and
- (b) must be operated by means of a power supply that complies, as far as practicable, with the power supply by means of which the manufacturer of the horn or alarm recommends it to be operated, and
- (c) must be operated:
 - (i) in the case of a horn, for periods of not less than 5 seconds each in duration, and
 - (ii) in the case of an alarm, for periods of not less than 15 seconds each in duration.

Division 2 Horns and alarms that are not attached to a motor vehicle

6 Site requirements

- (1) This clause applies to a horn or alarm that is not attached to a motor vehicle.
- (2) The test site:
 - (a) must consist of an area having its perimeter at least 3 metres from any part of the horn or alarm under test, and
 - (b) must be in the open air, and
 - (c) must be covered with grass no more than 80 millimetres high or with concrete, asphalt or any other approved material.
- (3) While the noise level of the horn or alarm is measured, or the noise emission characteristics of the alarm is recorded:
 - (a) the following people only may be within the test site:
 - (i) the person operating the horn or alarm,
 - (ii) the person making the measurements or recordings,
 - (iii) one observer, standing in a position specified by that person, and
 - (b) the following articles only may be within the test site:
 - (i) the horn or alarm,
 - (ii) a stand for the horn or alarm,
 - (iii) any instruments and other objects used in connection with the measurement of the noise level or the recording of the noise,

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- (iv) any other article that, in the opinion of the person making the measurements or recordings, will not substantially affect the measurements or recordings.

7 Position of horn or alarm and microphone

- (1) This clause applies to a horn or alarm that is not attached to a motor vehicle.
- (2) That part of the horn or alarm under test that emits noise:
 - (a) must be mounted firmly on a stand, placed in the centre of the test site, that has a mass of not less than 30 kg, or 10 times the mass of the horn or alarm, whichever is the greater, and
 - (b) must, as far as practicable, be attached to the stand by means of the fittings recommended by the manufacturer, and
 - (c) must be placed at a height of not less than 1.2 metres above the ground, and
 - (d) must be placed, as far as practicable, vertically beneath the microphone, and
 - (e) must be directed towards that microphone.
- (3) The microphone must be placed in such position as the person making the measurements or recordings considers appropriate, but must not be placed:
 - (a) at a height of less than 3.2 metres above the ground, or
 - (b) at a distance of less than 2.0 metres from the horn or alarm under test.
- (4) The microphone must face towards and have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the part of the horn or alarm under test that emits noise.

Division 3 Motor vehicle horns and intruder alarms that are attached to a motor vehicle

8 Site requirements

- (1) This clause applies to a horn or alarm that is attached to a motor vehicle.
- (2) The test site:
 - (a) must be in the open air, or
 - (b) must be beneath:
 - (i) an open-sided canopy, or

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- (ii) a canopy supported by one wall (where that wall does not extend for more than 25% of the perimeter of the canopy), if no part of the canopy or its supports is within 3 metres of the horn or alarm under test or of the microphone used in conjunction with the measurement.
- (3) While the noise level of the horn or alarm is measured, or the noise emission characteristics of the alarm is recorded:
 - (a) the following people only may be within the test site:
 - (i) the person operating the horn or alarm,
 - (ii) the person making the measurements or recordings,
 - (iii) one observer, standing in a position specified by that person, and
 - (b) the following articles only may be within the test site:
 - (i) the motor vehicle to which the horn or alarm under test is attached,
 - (ii) the contents of the motor vehicle,
 - (iii) any instruments and other objects used in connection with the measurement of the noise level or the recording of the noise,
 - (iv) any other article that, in the opinion of the person making the measurements or recordings, will not substantially affect the measurements or recordings.

9 Position of microphone

- (1) This clause applies to a horn or alarm that is not attached to a motor vehicle.
- (2) The microphone must be placed in such position as the person making the measurements or recordings considers appropriate, but must not be placed:
 - (a) at a distance of less than 1.2 metres from the front of the vehicle, or
 - (b) at a distance of less than 200 millimetres from the ground.
- (3) The microphone must face towards, and have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the part of the horn or alarm under test that emits noise.

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Part 2 Grass-cutting machines

10 Definition

In this Part:

test site means the site at which the noise level of a grass-cutting machine is measured.

11 Site requirements

- (1) The test site:
 - (a) must have its perimeter at least 30 metres from any part of the grass-cutting machine under test, and
 - (b) must be in the open air, and
 - (c) must be covered with grass not more than 80 millimetres high.
- (2) While the noise level of a grass-cutting machine is being measured:
 - (a) the following people only may be within the test site:
 - (i) the person operating the grass-cutting machine,
 - (ii) the person making the measurements,
 - (iii) one observer, standing in a position specified by that person, and
 - (b) the following articles only may be within the test site:
 - (i) the grass-cutting machine,
 - (ii) a test pad (where applicable),
 - (iii) the instrumentation and other objects necessary for the measurement of the noise level of the grass-cutting machine,
 - (iv) any other article that, in the opinion of the person making the measurements, will not substantially affect the measurements.
- (3) The measurements must be made at each of the positions marked A, B, C and D in Figure 1 at the end of this Schedule.

12 Position of microphone

- (1) The microphone:
 - (a) must be placed at a height of 1.5 metres (± 0.1 metres) above the ground, and
 - (b) must be placed at a distance of 7.5 metres (± 0.2 metres) from the centre of the test site, and

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- (c) must face towards and have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the centre of the test site.
- (2) Figure 2 at the end of this Schedule shows the position of the microphone relative to the noise source.

13 Condition of grass-cutting machine

- (1) A lawn mower or ride-on mower must be fitted with an empty grass-catcher if such a catcher is normally supplied with the mower.
- (2) Where a catcher is not normally supplied, or is supplied as an optional accessory, the mower must be fitted with a safety discharge chute if such a chute is supplied.
- (3) Where blades having varying degrees of grass lift are available, those providing the greatest amount of lift must be fitted.
- (4) A reel lawnmower must have the cutting cylinder and stationary blade correctly sharpened and set. For that purpose, the ability of the lawnmower to cut Kraft paper of not less than 80 gm/m² weight over the full cutting width, and at any position, of the cylinder when the cylinder is turned by hand is an acceptable indication that the cylinder and blade are correctly sharpened and set.
- (5) The grass-cutting machine under test must not have been previously run for more than 2 hours at the manufacturer's recommended operating speed.
- (6) Immediately before each series of measurements the correctly adjusted grass-cutting machine must be operated for a period of not less than 5 minutes at its maximum governed or ungoverned speed.
- (7) The height adjustment position of a rotary mower must be determined by the person making the measurements as being the position approximately midway between the maximum and minimum adjustable height positions (where fitted).
- (8) For edge-cutters, the lower edge cutting tip of the blade or cord must be more than 30 millimetres but not more than 200 millimetres above the test pad.
- (9) A lawn mower or ride-on mower, and in particular the underside of the base plate and the cutting disc and blades assembly of a rotary mower, must be generally clean and free of all grass and dirt.
- (10) Where applicable, the engine oil level must be within the manufacturer's allowable tolerances.
- (11) Blades of reel mowers must be lubricated before and during operation.

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- (12) For string-trimmers and brush-cutters, the lower edge of the cutting system must be not more than 200 millimetres above the test site.
- (13) When a harness is fitted, the attachment point, when the machine is balanced for the operator, must be not more than 785 millimetres and not less than 765 millimetres above the test site.
- (14) When a string-trimmer or brush-cutter is to be tested, only a nylon line head must be used.

14 Engine operating conditions

- (1) The grass-cutting machine must be stationary during testing.
- (2) Where the grass-cutting machine is propelled by the engine, the controls must be set so that the propulsion drive is activated and the driving wheels are raised above the test pad and, in all instances, the cutting mechanism is operating.
- (3) Where the grass-cutting machine is a ride-on mower, rollers may be placed under the driving wheels and the operator seated to operate the controls.
- (4) If a speed control governor (and throttle control) is fitted to the grass-cutting machine (not being a string-trimmer or brush-cutter), the engine must be operated with the speed control set on the maximum throttle setting or, if a governor is not fitted, the engine must be operated at the maximum speed attainable.
- (5) Grass-cutting machines powered by electric motors must be operated at the maximum pre-set motor speed set by the manufacturer.
- (6) For string-trimmers and brush-cutters, the engine speed that corresponds to the manufacturer's stated maximum power rating must be the speed (± 100 rpm) at which the noise level measurements are taken.

15 Test pad

The test pad (where applicable) must conform:

- (a) to the design specified in the document entitled *Technical Basis for the Regulation of Noise Labelling of New Grass-Cutting Machines* published in 1988 by the Australian Environment Council, as in force on 1 September 2007, or

Note. A copy of *Technical Basis for the Regulation of Noise Labelling of New Grass-Cutting Machines* is available for inspection at the offices of the EPA.

- (b) to such other design as may be approved.

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16 Test procedure

- (1) For a rotary mower, cylinder mower or edge-cutter, the test pad must be positioned generally at the centre of the test site, and the rotary mower, cylinder mower or edge-cutter must be located on the test pad so that:
 - (a) for a rotary mower, the vertical axis passing through the geometric centre of the cutting blades coincides generally with the vertical axis passing through the geometric centre of the test pad, and
 - (b) for a cylinder mower, the mid-point of the rectangular area formed by projecting the outer planes of the front and rear rollers or wheels coincides generally with the vertical axis passing through the geometric centre of the test pad, and
 - (c) for an edge-cutter, the cutting mechanism must be placed so that it generally coincides with the vertical axis passing through the geometric centre of the test pad.
- (2) For a ride-on mower, string-trimmer or brush-cutter, the ride-on mower, string-trimmer or brush-cutter must be located so that:
 - (a) where a ride-on mower is driven through the front wheels, the vertical axis passing through the geometric centre of the machine coincides generally with the vertical axis passing through the geometric centre of the test site, or
 - (b) where a ride-on mower is driven otherwise than through the front wheels, the vertical axis passing through the geometric centre of the cutting disk coincides generally with the vertical axis passing through the geometric centre of the test site, or
 - (c) for a string-trimmer or brush-cutter, the operator is positioned approximately on the vertical axis passing through the geometric centre of the test site as shown in Figure 2 at the end of this Schedule.

17 Determination of noise level

- (1) The person making the measurements is to make as many noise level measurements of the grass-cutting machine as are reasonably appropriate.
- (2) The maximum noise level (LpA) of a grass-cutting machine is to be the average of the greatest noise level readings obtained at the positions A, B, C and D (shown in Figure 1 at the end of this Schedule), as calculated in accordance with this clause, taken, if the average reading is not a whole number of decibels, to the next lower whole number of decibels.

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- (3) An A-weighted sound pressure level must be calculated from the measured values of the A-weighted sound pressure levels (L_{pAi}) from the following equation:

$$L_{pA} = \frac{10 \log_{10} \sum_{i=1}^N 10^{0.1L_{pAi}}}{N}$$

Where:

L_{pA} = A-weighted sound pressure level.

L_{pAi} = A-weighted sound pressure level at the i 'th measured position, in decibels.

N = Total number of measured points.

- (4) If the range of values of L_{pAi} does not exceed 5 dB(A), the A-weighted sound pressure level is to be the arithmetical mean of those values.

Part 3 Chainsaws

18 Site requirements

- (1) The site at which the noise level of a chainsaw is measured:
- must have its perimeter at least 30 metres from any part of the chainsaw under test, and
 - must be in the open air, and
 - must be covered with grass not more than 80 millimetres high or with concrete, asphalt or any other approved material or with a mixture of those coverings.
- (2) While the noise level of a chainsaw is being measured, the following people only may be within the test site:
- the person operating the chainsaw,
 - the person making the measurements,
 - one observer, standing in the position specified by that person.
- (3) While the noise level of the chainsaw is being measured, the following articles only may be within the test site:
- the chainsaw,
 - the timber to be cut,
 - the timber stands,
 - the instrumentation and other objects necessary for the measurement of the noise level of the chainsaw,

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- (e) any other article that, in the opinion of the person making the measurements, will not substantially affect the measurements.
- (4) The measurements must be made at each of the positions marked A, B, C and D in Figure 3 at the end of this Schedule.

19 Position of microphone

- (1) The microphone used to measure the noise level of a chainsaw:
 - (a) must be placed at a height of 1.5 metres (± 0.1 metres) above the ground, and
 - (b) must be placed at a distance of 7.5 metres (± 0.2 metres) from the nearest point of the motor of the chainsaw under test to the microphone, and
 - (c) must face towards the motor of the chainsaw, and
 - (d) must have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the motor of the chainsaw.
- (2) Figure 4 at the end of this Schedule shows the position of the microphone relative to the noise source.

20 Operation of chainsaw during measurement

- (1) Noise measurements must be taken while the chainsaw is cutting a log.
- (2) The noise level measurement must be taken at the engine speed that corresponds to the manufacturer's stated maximum power rating.
- (3) Immediately before the noise level of a chainsaw is measured, the motor of the chainsaw must be operated for not less than 5 minutes.
- (4) The position of the log and chainsaw during cutting must be as shown in Figure 4 at the end of this Schedule.
- (5) When the noise level of a chainsaw is being measured:
 - (a) the chainsaw must be held in a horizontal position by the operator and operated in a manner appropriate to normal cross-cutting, and
 - (b) the guide bar must be fed into the log and the load applied so that the engine speed is the same as, or within 300 rpm of, the speed at which maximum power is developed according to the manufacturer's specification, and
 - (c) the slices of timber cut must not be more than 25 millimetres thick, and
 - (d) full throttle must be maintained during the cutting operation.

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21 Determination of noise level

- (1) The person making the measurements is to make as many noise level measurements of the chainsaw as are reasonably appropriate.
- (2) The maximum noise level (LpA) of a chainsaw is to be the average of the greatest noise level readings obtained from the positions A, B, C and D (shown in Figure 3 at the end of this Schedule), as calculated in accordance with this clause. If the average reading is not a whole number of decibels, it must be rounded down to the next lower whole number of decibels.
- (3) An A-weighted sound pressure level must be calculated from the measured values of the A-weighted sound pressure levels ($LpAi$) from the following equation:

$$LpA = \frac{10 \log_{10} \sum_{i=1}^N 10^{0.1LpAi}}{N}$$

Where:

LpA = A-weighted sound pressure level.

$LpAi$ = A-weighted sound pressure level at the i 'th measured position, in decibels.

N = Total number of measured points.

- (4) If the range of values of $LpAi$ does not exceed 5 dB(A), the A-weighted sound pressure level is to be the arithmetical mean of those values.

Part 4 Mobile garbage compactors

22 Site requirements

- (1) The test site at which the noise level of a mobile garage compactor is measured must:
 - (a) be in the open air, and
 - (b) be free from obstructions, and
 - (c) have a perimeter at least 20 metres from the mobile garbage compactor under test, and
 - (d) be covered with concrete, asphalt or other approved material, or a mixture of those coverings.
- (2) While the noise level of a mobile garbage compactor is being measured, the following people only may be within the test site:
 - (a) the driver or operator of the compactor,

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- (b) the person making the measurements,
 - (c) one observer, standing in a position specified by that person.
- (3) While the noise level measurements are being made, only the following articles may be within the test site:
- (a) the mobile garbage compactor,
 - (b) the instruments necessary for the measurement of noise emitted by the compactor,
 - (c) any other article that, in the opinion of the person making the measurements, will not substantially affect the measurements.
- (4) Noise measurements must not be made when wind speed exceeds 5 metres per second.

23 Position of mobile garbage compactor

The mobile garbage compactor must be positioned in the approximate centre of the test site.

24 Position of microphone

The microphone:

- (a) must be placed at a height of 1.5 metres (± 0.1 metres) above the ground, and
- (b) must (in any sequence) be placed at a distance of 15 metres (± 0.2 metres) from the approximate geometric centre of the vehicle at each of the 4 points on the principal axes of the vehicle, and
- (c) must have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the mobile garbage compactor under test.

25 Operation of mobile garbage compactor

- (1) The controls of the mobile garbage compactor being tested must be operated in such manner as to cause the compactor to operate over full compaction cycles.
- (2) The bin lifters must not be operated during the tests unless this is necessary for operation of the compactor.
- (3) The tests must be conducted without any garbage present in the compactor body or loading chute.
- (4) The compactor must be operated over as many cycles as the person making the measurements considers necessary to obtain representative results.

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- (5) The compactor must be operated over full compaction cycles for a minimum period of 15 minutes prior to conducting the noise tests.
- (6) Relief valves must be set to operate at the pressures or flows, or pressures and flows, specified by the manufacturer of the compactor.

26 Engine rotation speed

- (1) The object of this clause is to provide the rotation speed at which the engine driving the hydraulic pump must be operated.
- (2) For a mobile garbage compactor with a hydraulic pump the rotation speed of which cannot be increased by operation of the accelerator pedal while the compactor is engaged, the engine speed during the test must be set to the governed engine speed as specified by the manufacturer of the compactor unit.
- (3) If the speed of the hydraulic pump can be altered by use of the accelerator pedal while the compactor is engaged, the speed of the engine driving the hydraulic pump must be:
 - (a) the greater of the engine speed that is automatically obtained when the compactor is engaged and an engine speed that provides between 80% and 85% of the speed of the pump at which the compactor operation is disengaged or its performance is reduced or limited:
 - (i) by the use of a dump circuit, a pump unloader system or a clutch on the drive to the pump, or
 - (ii) by other appropriate means built into the compactor unit to limit the flow of hydraulic fluid or to limit the engine rotation speed, or
 - (b) a rotation speed between 95% and 100% of the maximum speed of the engine where the compactor has no facility for limiting the flow or pressure, or flow and pressure, applied to the compaction system, or
 - (c) where a variable displacement pump is used, the design speed for normal operation of the compaction system as stated by the compactor manufacturer.

27 Instruments to test rotation speed

A suitable engine or pump rotation speed measurement device capable of measuring the maximum rotation speed to within (\pm) 50 rpm of the actual speed of the engine or hydraulic pump during a compaction cycle must be used to measure the engine or pump rotation speed during the test.

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28 Determination of mean noise level

- (1) The person making the measurements is to make as many noise level measurements of the mobile garbage compactor as are reasonably appropriate.
- (2) The compactor must be operated with the engine powering the hydraulic pump operating at a speed determined in accordance with this Schedule and the maximum sound pressure level must be observed and recorded with an accuracy to the first decimal place at each of the 4 microphone positions on the principal axes of the vehicle.
- (3) The mean noise level of a mobile garbage compactor is the logarithmic average of the maximum noise level readings at those 4 positions but, if the range of levels is 5 dB(A) or less, the arithmetic average may be used instead.
- (4) If the average so determined is not a whole number of decibels, it must be rounded down to the next lower whole number of decibels.

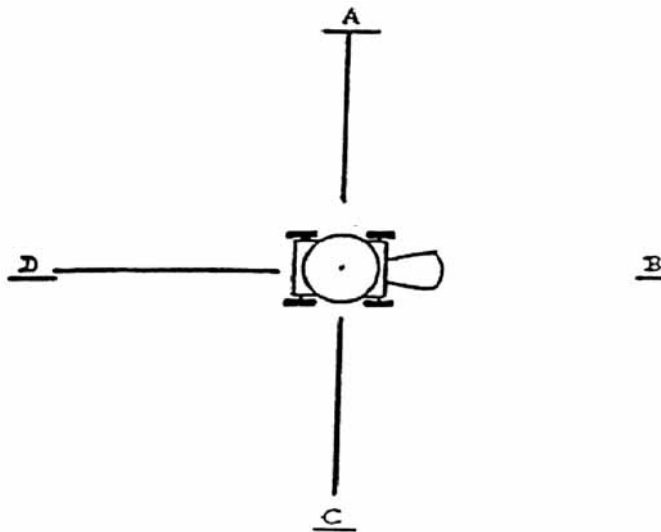
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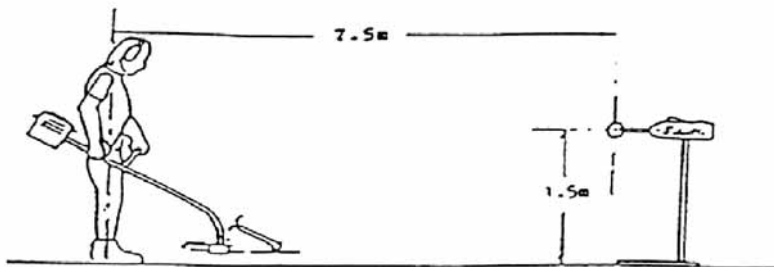
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**Figure 1 Typical test site layout and microphone positions:
grass-cutting machines (plan view)**



**Figure 2 Typical test site layout and microphone positions:
grass-cutting machines (side view)**



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Figure 3 Typical test site layout and microphone positions: chainsaws (plan view)

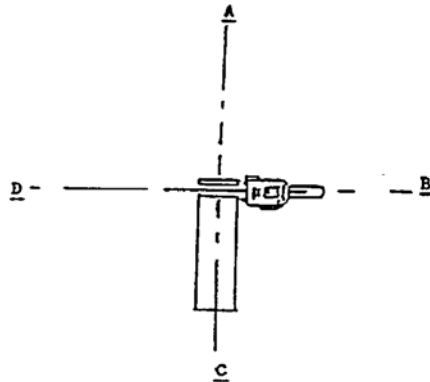
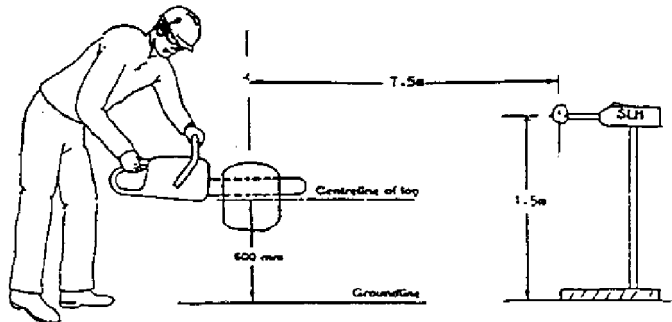


Figure 4 Typical test site layout and microphone positions: chainsaws (side view)



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Amendment of Protection of the Environment Operations (Penalty Notices) Regulation 2004 Schedule 3

Schedule 3 Amendment of Protection of the Environment Operations (Penalty Notices) Regulation 2004

(Section 58)

Schedule 1 Penalty notice offences

Omit the matter relating to the *Protection of the Environment Operations (Noise Control) Regulation 2000*.

Insert instead:

Protection of the Environment Operations (Noise Control) Regulation 2007

Column 1	Column 2	Column 3	Column 4
Provision of Regulation	Officer	Penalty (individuals)	Penalty (corporations)
Clause 5 (1)	2A	\$300	\$600
Clause 10	2A	\$300	\$600
Clause 11 (1)	2A	\$300	\$600
Clause 12 (1): Cause or permit use of vehicle capable of emitting noise exceeding maximum level by up to 5 dB(A).	2A	\$150	\$300
Clause 12 (1): Cause or permit use of vehicle capable of emitting noise exceeding maximum level by between 5 and 15 dB(A).	2A	\$250	\$500
Clause 12 (1): Cause or permit use of vehicle capable of emitting noise exceeding maximum level by more than 15 dB(A).	2A	\$500	\$1,000
Clause 13	1, 2, 4	\$200	\$400
Clause 14 (1)	1, 2, 4	\$200	\$400
Clause 15 (1)	1, 2, 4	\$200	\$400
Clause 16	1, 2, 4	\$150	\$300
Clause 17 (1)	2, 4	\$150	
Clause 18 (1)	2, 4	\$200	\$400
Clause 18 (2)	2, 4	\$200	\$400

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Schedule 3 Amendment of Protection of the Environment Operations (Penalty Notices) Regulation 2004

Column 1	Column 2	Column 3	Column 4
Provision of Regulation	Officer	Penalty (individuals)	Penalty (corporations)
Clause 19 (1)	2A	\$200	\$400
Clause 21 (1)	2A	\$200	\$400
Clause 21 (2)	2A	\$200	\$400
Clause 23	1, 2, 4	\$200	\$400
Clause 24 (1): Cause or permit use of noisy alarm (for up to 4 hours).	1, 2, 4, 7	\$200	\$400
Clause 24 (1): Cause or permit use of noisy alarm (for more than 4 hours and up to 8 hours).	1, 2, 4, 7	\$400	\$800
Clause 24 (1): Cause or permit use of noisy alarm (for more than 8 hours).	1, 2, 4, 7	\$600	\$1,200
Clause 25 (1)	2A	\$200	\$400
Clause 26 (5)	2, 4	\$300	\$600
Clause 27 (4)	2, 4	\$300	\$600
Clause 27 (5)	2, 4	\$300	\$600
Clause 29	1, 3, 4, 13	\$200	\$400
Clause 30	1, 3, 4, 13	\$300	\$600
Clause 32 (1)	3, 4, 13	\$200	\$400
Clause 32 (2)	3, 4, 13	\$200	\$400
Clause 33 (1)	1, 3, 4, 13	\$300	\$600
Clause 34 (5)	3, 4, 13	\$300	\$600
Clause 35 (4)	3, 4, 13	\$300	\$600
Clause 35 (5)	3, 4, 13	\$300	\$600
Clause 50 (1)	1, 4	\$200	\$400
Clause 51 (1)	1, 4	\$200	\$400
Clause 52 (1)	1, 4	\$200	\$400
Clause 53 (1): Cause or permit use of noisy intruder alarm (for up to 4 hours).	1, 2, 4	\$200	\$400

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Amendment of Protection of the Environment Operations (Penalty Notices) Regulation 2004 Schedule 3

Column 1	Column 2	Column 3	Column 4
Provision of Regulation	Officer	Penalty (individuals)	Penalty (corporations)
Clause 53 (1): Cause or permit use of noisy intruder alarm (for more than 4 hours and up to 8 hours).	1, 2, 4	\$400	\$800
Clause 53 (1): Cause or permit use of noisy intruder alarm (for more than 8 hours).	1, 2, 4	\$600	\$1,200