PROPOSED AUSTRALIAN AND NEW ZEALAND NOISE LABELLING SCHEME

PRELIMINARY INDUSTRY CONSULTATION – AIR CONDITIONERS

MARCH 2009

Prepared by NSW Department of Environment and Climate Change for EPHC Working Group on Noise Labelling

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Summary

This paper has been prepared to get preliminary advice from the air conditioner industry to assist us to develop proposals for a noise labelling scheme for Australia and New Zealand.

Before any firm proposals are considered by State and Territory Environment Ministers on the Environment Protection Heritage Council, we would welcome your views on:

- current usage of noise labels
- what air conditioners should be labelled
- what information should be on noise labels
- appropriate testing procedures to guarantee the information on labels is accurate
- how we should educate the community about noise labels, and
- the likely costs for industry.

More detailed information is provided in the attached paper together with some specific questions around these issues. Your feedback on any or all of the matters will be put before the Council's working group and help us to develop practical proposals for noise labelling.

1. Purpose and scope of paper

In April 2008 the Environment Protection Heritage Council (EPHC) agreed to form a working group to develop a consistent noise labelling scheme for noisy domestic articles. The Council resolved to investigate whether a number of articles, including air conditioners, should be included in the first stage of a noise labelling scheme.

This paper is primarily aimed at providing the air conditioner industry with information on a proposed Australian and New Zealand (ANZ) Noise Labelling Scheme to focus discussion on the development of a workable scheme.

A Regulatory Impact Statement, including a cost benefit analysis, will be prepared once the preliminary industry consultation is complete and industry, together with the wider community, will be provided with an opportunity to comment in detail on the proposed scheme when this is released for public consultation.

NSW DECC is conducting the preliminary industry consultation on behalf of the EPHC Noise Labelling Scheme Working Group from March to May 2009. Industry associations, local manufacturers and a selection of manufacturers that import into Australia/New Zealand, will be provided with this paper and invited to participate in preliminary consultations.

2. Background

Extent of air conditioner noise issues

Neighbourhood noise is a serious environmental issue that affects many in the community. Some of this noise comes from noisy household items such as air conditioners. Noise nuisance can escalate into serious confrontations within neighbourhoods and management of these issues can absorb significant public resources.

The extent of air conditioner noise nuisance is illustrated by the following:

- 10% of the 227 submissions received by NSW Department of Environment and Climate Change (DECC) during a recent review of the NSW *Protection of the Environment Operations (Noise Control) Regulation* sought increased controls on air conditioner noise.
- In 2007 NSW DECC received a submission from the NSW Local Government and Shires Associations seeking a maximum noise limit for air conditioners.
- The 07/08 ACT Environment Protection Authority Annual Report details a 24% increase in noise complaints from the previous reporting period with the increase mainly attributable to external reverse-cycle air conditioners, amplified music systems in residential premises and a rise in building and construction activity.
- The 2006 WA Department of Environment and Conservation Local Government Noise Complaints Survey Report identified a significant problem with managing air conditioner noise, related not only to the number of complaints but also to the complexity of resolving these complaints.
- Recent EPA Victoria research with local government and residents showed noise is not typically considered during the purchase or installation of equipment such as air-conditioners and local government surveys found reports of domestic air conditioner noise to local government are common and very challenging to resolve, particularly where noise was not considered during installation.
- EPA Victoria consultation and assessment for the Regulatory Impact Statement for its new Residential Noise Regulations indicated that, despite noise labelling for some equipment and a noise installation guide from the Australian Institute of Refrigeration Air Conditioning and Heating (AIRAH), there tends to be limited understanding of noise in the installation industry.
- Brisbane City Council (which has a population base of nearly one million) has identified a significant problem with managing air conditioner noise.

Environment Protection Heritage Council Noise Labelling Working Group

In April 2008 the EPHC agreed to form a working group to scope out a consistent noise labelling scheme for noisy domestic articles. In November 2008 the EPHC agreed to investigate the following articles for stage 1 of the proposed ANZ noise labelling scheme:
Fixed articles: domestic air conditioners and domestic heat pump water heaters.
Portable articles: lawn mowers (including ride-on mowers), leaf blowers, leaf collectors, line trimmers, brush cutters, lawn edgers, hedge trimmers and chainsaws.

The decision to include articles in stage 1 was based on whether the articles are commonly used outdoors in residential areas, are relatively noisy and whether labelling would be a relatively straight forward and effective mechanism for reducing noise nuisance from these articles.

The EPHC also agreed to further investigate the potential for setting maximum noise limits for portable articles. Limits are not considered appropriate for stationary equipment such as air conditioners and heat pump water heaters as this equipment is fixed in position and, with the assistance of noise labelling, equipment with an appropriate noise level can be purchased and installed and/or the equipment can be acoustically treated where necessary to prevent nuisance to neighbours.

Benefits of Noise Labelling

Noise labelling of articles that are common sources of neighbourhood noise would assist consumers to select quieter models and to identify equipment appropriate to particular applications. It may also encourage suppliers to manufacture or import quieter articles as some companies may promote this as a marketing advantage and competition could drive down noise levels over time. Noise labelling would reduce the noise impact of labelled articles, thereby reducing annoyance, stress and, in some cases, sleep disturbance. The Guidelines for Community Noise published by the World Health Organisation (1999) and The Health Effects of Environmental Noise – Other than Hearing Loss published by enHealth Council (2004) identify the significant health effects of noise.

As well as providing consumers with information to make informed choices, the test procedures incorporated into any labelling scheme will also provide more certainty that any noise level information provided is reliable. Providing readily accessible reliable and consistent noise level information coupled with the use of appropriate guidance material should facilitate selection of appropriate equipment and minimise complaints and the need for resource intensive compliance activities by enforcement agencies.

Support for Noise Labelling

The Health Effects of Environmental Noise – Other than Hearing Loss published by enHealth Council (2004) recommended that agencies “consider the need for a mandatory national standard for noise labelling equipment.” The Australian Consumers’ Association supports product labelling as a way of giving consumers information on which to base an informed choice. The Air Conditioning and Refrigeration Equipment Manufacturing Association of Australia (AREMA) has also indicated support for a mandatory noise labelling scheme for air conditioners. Noise labelling is common in Europe.

Advantage of an Australian/New Zealand Scheme

As the *Mutual Recognition Act 1992* limits the effectiveness of individual state approaches to noise management, a broader scheme is required to enable any labelling or noise limit requirements to be effectively enforced. A national approach would prevent any adverse effects from state-based schemes on national markets for goods and services by providing a level playing field to industry, support economic integration and increased trade between

states and territories. As the *Trans-Tasman Mutual Recognition Agreement 1997* results in similar issues, adoption of the key elements of any scheme by New Zealand would be preferable. Although the various jurisdictions have a range of regulatory approaches to neighbourhood noise issues, noise labelling would assist in protecting amenity regardless of which approach is in place.

In summary an ANZ noise labelling scheme would:

- facilitate improved environmental amenity
- assist in ensuring public health is maintained
- assist in addressing externalities not dealt with by the market (i.e. the noise impacts of substandard excessively noisy products.)

Discussion Points:

2.1 With regard to air conditioners, please indicate which of the following relate to your company/organisation:
   - manufactures (please note where)
   - imports
   - retails
   - represents manufacturers
   - represents importers
   - represents retailers.

2.2 Do you support an ANZ noise labelling scheme for domestic air conditioners? Please provide the reason(s) why or why not.

3. European Union Labelling Scheme

The European Union (EU) requires noise labelling for 57 types of equipment, ranging from heavy earth moving machinery to leaf blowers, showing the sound power level of the equipment. Twenty two of these items also have maximum permissible sound power levels. The scheme includes noise testing procedures for each item and a list of noise levels for all equipment subject to the scheme is provided on the EU website at http://ec.europa.eu/enterprise/mechan_equipment/noise/index.htm. Although air conditioners are not covered by the EU noise labelling scheme, information related to the EU energy labelling system indicates that for units under 12 kW “on every label you will find: the noise rating in dB (where applicable)”.

Discussion Points:

3.1 Does your company label, or is your organisation aware of any companies that label, in accordance with any EU requirements for air conditioners? Please provide details.

4. Existing regulatory approaches to neighbourhood noise

The various jurisdictions in Australia and New Zealand have a range of regulatory approaches to neighbourhood noise and a summary of these, as provided by the various jurisdictions, is presented in **Appendix 1**. NSW and WA have noise labelling requirements for air conditioners, however none of the other jurisdictions currently has labelling requirements for these devices. An analysis of all of the approaches indicates that any national labelling or limit requirements would not be inconsistent with any of the existing regulatory approaches in any of the jurisdictions and would assist in protecting amenity in each jurisdiction.

Note: The preferred regulatory approach to introduce ANZ labelling has not yet been determined by the EPHC and there will be further consultation on this point later.

5. Current noise labelling of air conditioners

A search of the Commonwealth Government energy rating website, www.energyrating.gov.au indicates approximately 36 different manufacturers supply air conditioners to the Australian market. As well as variations in the level of labelling and availability of noise information for different brands within jurisdictions, the level of labelling may also vary from state to state. Where noise level information is provided, there is no certainty as to how the levels were calculated or that the level stated reliably provides the sound power level of the equipment. Some manufacturers specify sound pressure levels rather than sound power levels and this may also cause confusion in the market place.

During research recently conducted at seven retail outlets in the Sydney region, 19 split system or wall mounted air conditioner brands were noted. In summary:

- Thirteen of these were major brands and NSW noise labels were consistently attached noting the outside sound power level (SWL).
- Two brands had non NSW labels noting the SWL.
- Two brands had non NSW labels with levels that were considered to be sound pressure levels (SPLs) rather than SWLs, but no distance was provided.
- Two brands had no labels at all, although the brochure for one of these provided the SWLs.

A review of eleven product brochures collected during this research indicated:

- One brand had the SPL at one metre noted.
- One brand has a SPL noted but it is unclear at what distance.
- The SWL for one brand was provided in a layout considered to be potentially confusing to the community.
- The range of SWLs for domestic air conditioners ranges from at least 53 to 77 dB(A).

Discussion Points:

5.1 Does your company currently label in accordance with the NSW or WA requirements? - If yes, does you company use the noise test required by the NSW scheme?

5.2 Does you company fix different labels to those required by the NSW or WA schemes and/or use a different noise test to that required by the NSW scheme? – If yes, please provide details.

5.3 What additional information can you provide about the current labelling of air conditioners?

6. Definition of air conditioner covered by the scheme

The definition within the NSW Protection of the Environment Operations (Noise Control) Regulation is “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

(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.”

Although evaporative systems are not included within the current NSW definition, these systems can also be noisy. Ducted systems have also emerged as a noise issue in some areas in recent times. To ensure a level playing field for industry it appears it would be appropriate to include ducted and evaporative models used in domestic situations within the scheme.

A 2005 submission to NSW DECC by AIRAH indicated units with a higher capacity than 12 kW are being installed in some large residences and suggested the upper capacity limit be

raised to, for example, 20 kW. (However current test procedures available are limited to units with an upper capacity of 12 kW – see section 9.)

AIRAH has also indicated that "input power" could be used as the measure rather than "cooling capacity", as the level of noise emitted from units is likely to correlate more closely with the input power. (For example, of two units with equal cooling capacity, the unit with the lower input power will be more efficient and is therefore likely to be quieter.)

Note that the noise labelling scheme is focussed on domestic equipment only at this stage.

Discussion Points:

6.1 What is your company/organisation position on:

(a) an appropriate upper kW limit for domestic units to be included within any scheme?

(b) the use of "input power" rather than "cooling capacity" when measuring the kW rating;

(c) including evaporative systems within the scheme; and

(d) including ducted systems within the scheme?

7. How will noise labelling be used?

Air conditioners may be installed in a variety of situations and noise levels impacting upon neighbours may be influenced by such factors as the sound level of the unit, the distance to neighbours, the nature of any barriers and the number or reflective surfaces in the area.

Domestic air conditioners have a significant range of sound power levels and guidance material can be used to inform purchasers and installers so units meet any local requirements designed to prevent neighbours from being disturbed. Existing guidance material, which relies on accurate sound power levels for units being readily available, includes:

- the AIRAH on line calculator - which can be accessed at: www.fairair.com.au/calculator.noise.aspx
- EPA Victoria publication "Cool Air – Quietly and Efficiently: a guide to buying and operating an air conditioner" which may be accessed at http://epanote2.epa.vic.gov.au/EPA/publications
- The Australian Environmental Council brochure: "Air Conditioner noise" which can be accessed at Appendix 5 of the NSW Department of Environment and Climate Change Noise Guide for Local Government at: http://www.environment.nsw.gov.au/noise/nglg.htm (Note: This Noise Guide is currently being updated and will include reference to the most appropriate updated guidance material.)

Discussion Points:

7.1 What is your company/organisation view on promoting use of the AIRAH on line calculator – and any opportunity to update the calculator?

7.2 What additional information can you provide about any alternatives to the AIRAH on line calculator?

8. Labels to specify sound pressure level (SPL) or sound power level (SWL)

A sound source radiates power, which gives rise to sound pressure waves in air. The logarithmic magnitude of these waves, referred to as the sound pressure level (SPL), may be measured at different distances from the source. For the SPL level noted on a label to be meaningful to the community, the label needs to indicate at what distance from the source

the level is occurring. For existing labelling schemes that use SPLs, these distances vary for different purposes and between different jurisdictions. For example, for portable equipment, the existing NSW environmental noise scheme uses SPLs at 7.5 metres, USA environmental noise systems seem to use 50 feet and the proposed Australian OHS system uses 2 metres. For some air conditioners the SPL at 1 metre is used. For large mobile equipment, the existing NSW environmental noise scheme uses SPLs at 15 metres. The use of SPLs at varying distances from the source has the potential to result in confusion in the market place.

A sound source radiates a certain amount of power into the surrounding air, called the sound power level (SWL). The existing NSW and WA labelling schemes use SWLs for air conditioners and the AIRAH on-line noise calculator, designed to prevent unnecessary noise issues from arising, is set up to work from SWLs. The EU environmental noise labelling scheme uses SWLs for all portable and stationary equipment within that scheme. Because SWLs cannot be measured directly, SPLs are measured at specific distances from the source and standard calculations are then used to determine the SWL at the source. The SWL is an absolute universally recognised parameter that is not dependant upon distances and can be used for ratings and to compare sound levels etc. If the SPL at a particular distance needs to be understood, this can easily be calculated from the SWL.

Using the EU scheme measurement system for the proposed ANZ noise labelling scheme would result in the scheme using SWLs and these being noted on any labels. This approach would result in clear standard information that is understood by industry and more likely to be understood by the community.

Discussion Point:

8.1 Does your company/organisation have any issue with noting the Sound Power Level (SWL) rather than Sound Pressure Level (SPL) on labels? If yes, please provide the reason.

9. Appropriate noise level test procedures

The existing NSW scheme includes a noise test procedure for air conditioners based on the Australian Environment Council (AEC) “Technical basis for the regulation of noise labelling of new air conditioners in Australia - July 1984”. It is understood that the WA labelling requirement for this equipment does not specify a test procedure and the EU noise labelling scheme does not include air conditioners.

A new international standard for the measurement of noise from air conditioners was published in July 2008. (I.S. EN 12102:2009 “Air Conditioners, Liquid Chilling packages, heat pumps and dehumidifiers with electrically driven compressors for space heating and cooling – Measurement of airborne noise – Determination of the sound power level”)

A review comparing the AEC 1984 procedure and the new I.S EN 12102:2009 standard indicates the following:

- The test methods in both standards only apply to units with a cooling capacity up to 12 kW as there is uncertain validity for the test to be applied to more powerful units.
- The new I.S. EN 12102:2009 standard refers to a number of other standards (ISO 3741 or ISO 3743 for room design and EN 3741 and 3745 for instrumentation), while the AEC 1984 procedure contains all of the relevant information to perform the necessary testing.
- The reverberation room geometry and dimensions specified in the two test methods are slightly different.
- The distances for the unit to be from walls specified in the two test methods are slightly different.

The AEC "technical basis" refers to AS1861-1981 for the purpose of determining the cooling capacity of the device, however, this standard has been superseded by AS/NZS 3823.1 parts 1 and 2 – 2001.

Discussion Points:

9.1 What is your company/organisation view on:

(a) the most appropriate test to determine the power of air conditioner units (Note: This question also relates to 6.1(b));

(b) the most appropriate noise level test to apply to air conditioners?

9.2 Is your company/organisation aware of any reliable noise level tests for units greater than 12 kW? – If yes, please provide details.

10. Options for the format of any labelling

Standard label

The existing NSW label is provided at **Appendix 2** and the EU label for portable items etc is provided at **Appendix 3.** The design of noise labels for the proposed ANZ scheme is under review and the following are preliminary ideas only.

A possible standard label for the proposed new ANZ scheme could be:

ANZ NOISE LABEL – AIR CONDITIONER

OUTSIDE SOUND POWER LEVEL: XXX dB(A)

A LOWER SOUND POWER LEVEL MEANS LESS NOISE

THE LEVEL SHOWN MAY BE USED TO ESTIMATE WHETHER THE OUTSIDE NOISE LEVEL FROM THIS UNIT WILL MEET ANY LOCAL NOISE REQUIREMENTS

CHECK ANY LOCAL NOISE REQUIRMENTS BEFORE PURCHASING OR INSTALLING

If a brochure about the scheme is developed and/or a website related to the scheme is set up (see section 11), the label could also include, for example:

FOR FURTHER INFORMATION REFER TO: www.anz noise labelling.gov.au

Educational noise labelling

Educational labelling could be used to provide the community with a more comprehensive understanding of noise levels related to their purchases. A possible scheme could use, for example, six stars like the existing energy and water efficiency ratings – with the more stars meaning the better the equipment. Alternatively bells or sound wave symbols could be used and the labels could clearly note, for example, that "the more bells the louder the equipment". However all of these options may be contrary to many people's ordinary intuitive thinking.

Two alternative educational labelling systems that utilise a colour coded system are suggested below.

Option 1- This system uses commonly used acoustic 'rules of thumb', such as items that emit 10 dB(A) less are perceived to be half as loud. The ranges used in this system would need to be refined and/or expanded and verified before being adopted.

OUTSIDE SOUND POWER LEVEL: XXX dB(A)

A LOWER SOUND POWER LEVEL MEANS LESS NOISE

THE LEVEL SHOWN MAY BE USED TO ESTIMATE WHETHER THE OUTSIDE NOISE LEVEL FROM THIS UNIT WILL MEET ANY LOCAL NOISE REQUIREMENTS

CHECK ANY LOCAL NOISE REQUIRMENTS BEFORE PURCHASING OR INSTALLING

dB(A) less than this item	Compared with this item
0 – 2 dB	Sounds as loud
3 - 4dB	Sounds slightly quieter
5 – 8 dB	Sounds moderately quieter
9 – 15 dB	Sounds about 1/2 as loud
16 – 25 dB	Sounds about 1/4 as loud

Option 2 – the source of this system is acknowledged to be a diagram used by Bruel & Kjaer Sound and Vibration Measurement A/S.

OUTSIDE SOUND POWER LEVEL: XXX dB(A)

A LOWER SOUND POWER LEVEL MEANS LESS NOISE

THE LEVEL SHOWN MAY BE USED TO ESTIMATE WHETHER THE OUTSIDE NOISE LEVEL FROM THIS UNIT WILL MEET ANY LOCAL NOISE REQUIREMENTS

CHECK ANY LOCAL NOISE REQUIRMENTS BEFORE PURCHASING OR INSTALLING

Level of difference dB(A)	Perception
6 – 10 dB	Significant
3 – 6 dB	Obvious
1- 3 dB	Noticeable
0 - 1 dB	Just noticeable

Educational labelling would require extra information to be incorporated into the label in a succinct way, which could be confusing, and it may be more appropriate to provide more comprehensive information clarifying what the noise levels noted on any labels mean into a brief educational brochure about the scheme.

Conformity symbol

The EU labelling scheme includes a conformity symbol on the labels. (See **Appendix 3**) It is understood that by including this symbol on a label, a manufacturer is making a statement that the equipment complies with the scheme. Any ANZ scheme could, for example, require a particular symbol to be included on the label and the scheme structured such that this symbol is a legally binding statement that the article, any testing, the label, and any information on it, all conform to the requirements of the scheme. If this was implemented, it could facilitate any enforcement activities that may be undertaken when, for example, the information on a label is misleading etc.

Location, size and durability of labels

Labelling could be required on the outdoor unit of equipment only or on the packaging as well as equipment, or on the packaging only.

Retail outlets often only display the indoor unit of split air conditioner systems, so labels could be required to be on the packaging and indoor units as well as the outdoor units for this equipment.

To facilitate any necessary enforcement work, the label on the outside unit will need to be durable, of a size and in a location that makes it readily accessible and easily read by enforcement officers.

The existing NSW label specification of 5 cm x 10 cm with the sound power level number displayed in figures at least 1 cm high could be used as a guide for what has worked successfully in the past.

Internet and mail order catalogue purchases

Purchases made on the internet or by mail order catalogue also need to be considered. Consideration could be given to requiring any advertising material for any item covered by the scheme to note the noise level, however this may not be practical. The proportion of sales made through avenues such as these and any trends need to be established.

Discussion Points:

10.1 What views does your company/organisation have on:
- (a) use of the standard label; and
- (b) use of an educational label?

10.2 Does your company/organisation have any alternative suggestions for the format of labels? – If yes please provide details.

10.3 What views does your company/organisation have on:
- (a) the use of a conformity symbol on labels;
- (b) requiring labels to be fixed to:
  - the packaging;
  - any equipment that may be located outdoors;
  - for split air conditioner systems, the indoor as well as outdoor unit; and
- (c) the location, durability and size of labels?

10.4 What views does your company/organisation have on providing noise level information for purchases that may be made on the internet or by mail order catalogue? Please provide any details you have regarding the numbers and proportion of sales made on the internet or by mail order catalogue.

11. Alternatives and complementary systems

No testing or labelling requirements

If limited or unreliable information continues to be available, the community will continue to be impacted unnecessarily by excessively noisy articles and enforcement agencies will continue to be confronted with resource intensive compliance issues. Any information on labels or within specifications that may be available may not be reliable as, for example, it may be established using substandard testing methodologies. It is also unlikely it would be standardised as the information may be either sound power levels or sound pressure levels measured at different distances. This would make it difficult for the community to have any confidence in any information provided.

Voluntary testing and labelling

A voluntary approach would not ensure that relevant information is always available to consumers for all brands. Those reputable companies that do research quieter technologies and or label accurately would be unfairly disadvantaged as they would bear the cost of

research, measurement, labelling processes etc while competitors who manufacture noisy products would be able to maintain lower prices that would be more attractive in the market place. The Air Conditioning and Refrigeration Equipment Manufacturing Association of Australia (AREMA) has indicated support for a mandatory noise labelling scheme for air conditioners.

Mandatory testing and noting of levels in specifications

An alternative system could be to require levels to be measured in accordance with specified test procedures but rather than provided on labels, the information could be required to be provided within specifications. However, relevant information may be difficult to find and specifications may not be provided for some equipment, as it is not mandatory to provide these.

Mandatory testing and noting of levels on websites

An alternative system could be to require levels to be measured but rather than be provided on labels, the information could be required to be provided on a website. For example, noise information for air conditioners could be required to be listed on the Commonwealth Government's existing energy rating website to facilitate consideration of noise levels as well as energy ratings during the selection of equipment.

However, not everyone has access to the web or is comfortable using it. As the labelling of equipment would make the relevant information accessible to all, both labelling and posting information on a website could be an optimum outcome.

Education on noise labelling

An education campaign on its own may only be effective for certain sectors of the community as financial or regulatory requirements may remain the principal consideration for other sectors.

If a scheme is introduced, educational brochures could be prepared which could be very effective when coupled with the scheme. For example brochures could:

- Explain in more detail what the information on the label means.
- Explain what sound power level and sound pressure level mean.
- Include a quick reference table to convert a range of common sound power levels to approximate sound pressure levels at a number of distances (e.g. 2 m, 10 m, 50 m, etc) noting that factors such as any reflective surfaces and the nature of the ground surface etc will impact on the actual levels.
- Include a scale of sound pressure levels related to common situations – eg, ranging from a normal conversation to a jet engine aircraft taking off.
- Include brief punchy information on the health impacts of excessive noise levels.
- Explain how to use, for example, the Commonwealth energy rating website for air conditioners to assist in the appropriate selection of equipment.
- Direct people to appropriate reference material – e.g. the AIRAH on line calculator.

Discussion Points:

11.1 What is your company/organisation view on:

(a) the alternatives and complementary systems noted in the paper generally;

(b) in particular

- listing of sound power levels on a website; and
- development of an educational brochure as outlined in the paper?

11.2 Is your company/organisation aware of any other alternative systems to labelling? - If yes, please provide details

12. Cost benefit analysis

A Regulatory Impact statement including a cost benefit analysis will be prepared to discuss and assess the relative merits of the different options for labelling and limits, such as those noted in this paper. Preparation of the cost benefit analysis will be dependant on access to information that illustrates the cost to industry and consumers under the current situation and the likely cost to industry and consumers if a labelling scheme as described above is implemented.

Discussion Points:

12.1 Can you please provide your company/organisations understanding of:

(a) the existing cost to your company/industry of the current NSW and WA testing and labelling provisions;

(b) the likely cost to your company/industry of any additional testing, labelling etc not currently undertaken; and

(c) the time your company or industry would need to switch to a new ANZ labelling scheme.

Appendix 1 – Regulatory approaches to neighbourhood noise issues in different jurisdictions

Enforcement of Neighbourhood Noise Issues in Jurisdictions (Portable and Fixed Equipment)	
Jurisdiction	**Summary of Provisions/Enforcement (provided by each jurisdiction)**
NSW	▪ Enforcement undertaken by local councils (and very occasionally the police). ▪ *Protection of the Environment Operations (Noise Control) Regulation 2008* provides restricted times when certain articles must not be heard in living areas of neighbouring residences - e.g. - Air conditioners and hot water heat pumps from 10 pm to 7 am weekdays and 10 pm to 8 am weekends and public holidays - lawn mowers, leaf blowers, chainsaws etc from 8pm to 7 am weekdays and 8 pm to 8 am weekends and public holidays. ▪ Offence only occurs if activity/noise continues after a warning has been given. ▪ Offensive noise provisions in *Protection of the Environment Operations Act 1997* apply during daytime periods not covered by the restricted times in the Regulation – and to articles not covered by the Regulation. ▪ The Regulation also contains noise labelling and maximum noise limit requirements for certain equipment: - equipment with labelling and limits: lawn mowers – 75/80 dB(A), ride on mowers - 80 dB(A), lawn edger - 75 dB(A), line trimmer – 80 dB(A), brush cutter – 85 dB(A) (For all of these the sound pressure level (SPL) is measured at 7.5 m) - equipment with labelling only: chainsaws (SPL at 7.5 m), mobile air compressors (SPL calculated from a set of readings taken at 1m and 7m), pavement breakers (SPL calculated from a set of readings taken at 1 m), mobile garbage compactors (SPL at 15 m) and domestic air conditioners (sound power level (SWL)). ▪ Note: The limit provisions apply at the point of sale, but are not currently subject to any specific compliance program due to complications with enforcement arising from the *Mutual Recognition Act 1994.*
ACT	▪ Enforcement undertaken by ACT Government ▪ Administered under the *Environment Protection Act 1997* and *Environment Protection Regulation 2005* and Noise Environment Protection Policy 1998. The ACT is divided into seven different noise zones in which activities are not permitted to exceed certain maximum levels ($LA10_{T\ (15min)}$) - e.g. **Residential:** 45dB(A) -7am–10pm (8am-10pm Sunday & Public Holidays) and 35dB(A) - 10pm–7am (10pm-8am Sunday & Public Holidays). **Civic centre and other major town centres**: 60 dB(A) - 7am–10pm (8am-10pm Sunday & Public Holidays) and 50dB(A) - 10pm–7am (10pm-8am Sunday & Public Holidays). Industrial: 65dB(A) - 7am–10pm (8am-10pm Sunday & Public Holidays) and 55dB(A) - 10pm–7am (10pm-8am Sunday & Public Holidays). Noise Regulations provide exemptions that permit certain noisy activities during certain periods - e.g. **Garden maintenance or improvement*(use of lawnmowers and other garden equipment**): 7am-8pm Monday to Saturday and 8am-8pm Sunday and Public Holidays **Maintenance or repair work*(use of power tools, etc**): 7 am–8 pm Monday to Saturday 8 am–8 pm Sunday and Public Holidays Noise exceeding the standard may only be emitted for up to 40 hours in any 8 week period. **Building work in residential areas - Completed in less than 2 weeks -** 7 am–8 pm Monday to Saturday and 8 am–8 pm Sunday and Public Holidays. **Completed in more than 2 weeks -** 7 am–6 pm Monday to Saturday. No noise exceeding the standard permitted on Sundays and Public Holidays Building work in industrial, city and town centre areas: 6 am–8 pm Monday to Sunday and Public Holidays ▪ Offence only occurs if activity/noise continues after a warning has been given as a result of a

	valid noise measurement that exceeded the noise zone standard **Any equipment used must be maintained and operated according to the manufacturer's specifications.*
VIC	▪ Enforcement undertaken by local councils (and very occasionally the police). The person affected has the power to prosecute breaches of the residential noise provisions. ▪ Noise Regulation provides restricted times when certain articles must not be heard in habitable rooms of neighbouring residences - e.g. - air conditioners and domestic heating equipment from 10 pm to 7 am weekdays and 10 pm to 9 am weekends and public holidays - lawn mowers, leaf blowers, chainsaws etc from 8pm to 7 am weekdays and 8 pm to 9 am weekends and public holidays ▪ Audible noise from the prescribed items during the prohibited times in the regulations proves an offence. ▪ Offence must be prosecuted in court unless a direction (which can be issued by a police or council officer) to abate the noise is breached. A Direction under the act expires after 12 hours and a breach of a direction is subject to an on-the-spot fine ▪ Unreasonable noise provisions in Environment Protection Act apply during daytime periods not covered by the prohibited times in the Regulations ▪ Victoria has no noise labelling requirements in regulation and has no maximum noise limit requirements for domestic equipment. ▪ Technical guidelines set a recommended noise criterion of background + 5 dB(A) at the boundary of the premises for "fixed domestic plant". ▪ Some Local councils have local laws that duplicate or supplement State provisions. These deal with nuisance or offensive noise tests.
SA	▪ Enforcement undertaken by local councils ▪ Day and night time limits for fixed domestic machines are specified in SA Environment Protection (Noise) Policy 2007 ▪ Noise from portable tools is covered by the "Noise from domestic activity" clause in the SA Environment Protection (Noise) Policy 2007. It recommends tools are only operated from 9 am. to 8 pm. on Sundays and 8 am. to 8 pm. on any other day. ▪ There is no product noise labelling requirement. ▪ Compliance with the noise limits is checked at the nearest noise affected premises and violation results in a notice.
TAS	▪ Enforcement undertaken by local councils, mostly using the EMPC (Misc. Noise) Regs 2004. ▪ Regulations include provisions for power lawnmowers, chainsaws and air conditioners. ▪ Regulations do not include labelling requirements. ▪ Lawnmowers - maximum sound levels of 74 dB(A) for engine < 5kW NEP & 77dB(A) for engine > 5kW NEP as measured at 7.5m; hours of use are 7am-8pm weekdays, 8am–8pm Saturday, 10am-8pm Sunday + Christmas Day + Good Friday. ▪ Air conditioners – From 7am-10pm (in domestic premises) noise must not exceed 45dB(A) in sleeping areas, 50 dB(A) in recreation/study areas & 52 dB(A) in work areas. From 10pm-7am noise must not exceed 40 dB(A) in sleeping areas, 45 dB(A) in recreation/study areas & 47 dB(A) in work areas. ▪ Chainsaws - consent or land ownership provisions apply to usage within 300m of domestic premises; maximum sound levels of 95 dB(A) for petrol and 77dB(A) for electric models at 7.5m; hours of use are 7am-6pm weekdays, 9am–6pm Saturday, 10am-6pm Sunday + Christmas Day + Good Friday. ▪ Note: The limit provisions are not enforced at the point of sale, but compliance with the limits may be assessed if noise complaints are made about the equipment when in use.
WA	▪ Enforcement undertaken by local councils, out-of-hours noise issues requiring quick response are generally dealt with by the police. ▪ Noise Regulations set Assigned Levels, which are the levels allowed to be received at a premises. There are three different types of receiving premises: noise-sensitive, commercial and industrial. Assigned levels are sets of LA10, LA1 & LAmax levels assessed over a Representative Assessment Period. Industrial & commercial Assigned Levels are fixed but the noise-sensitive levels vary and are calculated using TPS zones and the presence of roads

	with certain traffic flows. This is essentially a nominal background noise calculation system. ▪ The Assigned Levels apply to all noise sources except traffic on roads, trains, aircraft, emergency vehicles and safety warning devices. ▪ Offence occurs if Assigned Levels are exceeded, a complaint is not needed, however enforcement action is essentially complaint driven. ▪ Have exemptions that permit the operation of noisy "specified equipment" on "residential premises" for a 2 hour period between 7am (9am Sundays) and 7pm. "Specified equipment" is equipment that requires the constant presence of an operator for normal use e.g. lawnmowers, leaf blowers etc. but not airconditioners or stereos. There is no noise level limit for specified equipment. ▪ If specified equipment operated for longer than a 2 hour period the Assigned Levels would apply. Enforcement action is essentially complaint driven. ▪ WA Legislation exists that requires SWL noise labelling for airconditioners (< 12kW), mobile air compressors and pavement breakers. Does not include evaporative airconditioners. There are no maximum noise limit requirements. ▪ Construction noise is exempt from 7am to 7pm Mon to Sat but must use equipment that is the quietest reasonably available.
QLD	▪ Enforcement undertaken by local councils under the Environmental Protection Regulation 1998, Offence occurs if an abatement notice is not complied with. http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/E/EnvProtR98.pdf. ▪ Regulated Devices (power tools, lawnmowers etc) o Sunday or public holiday, before 8a.m. or after 7p.m or on a Saturday or business day, before 7a.m. or after 7p.m. -> audible noise ▪ Spa Blowers & Pool Pumps o before 7a.m. or after 10p.m.->audible noise o 7a.m. to 7p.m -> 50dB(A) o 7p.m. to 10p.m. -> Bkg+5dB(A) ▪ Aircon o 7a.m. to 10p.m.-> 50dB(A) o before 7a.m. or after 10p.m. -> 40dB(A) or Bkg+5dB(A) ▪ Refrigeration Equipment o before 7a.m. or after 10p.m.-> 40dB(A) or Bkg+5dB(A) o 7a.m. to 10p.m.-> 50dB(A) ▪ The EPR will be amended as of Jan 1st 2009. Changes include references to 40dB(A) or 50dB(A) being removed and replaced with background+3dB(A) or 5dB(A) ▪ Under the Environmental Protection (Noise) Policy 1997 http://www.legislation.qld.gov.au/LEGISLTN/SLS/1997/97SL342.pdf Labelling must be attached showing A-weighted sound pressure level, measured in the way stated in relevant Australian Standard or AEC technical paper. This applies to the following: o chainsaws o domestic air conditioners o domestic pool pumps o grass-cutting machines o mobile air compressors o mobile garbage compactors o pavement breakers. (Note: due to enforcement issues related to the Mutual Recognition Act, these labelling requirements are scheduled to be removed in early 2009.)
NT	▪ NT tends to use approach taken in NSW to neighbourhood noise. ▪ Local council involvement in environmental noise issues has seen increasing support for noise labelling. ▪ There are no specific contrary requirements to noise labelling in the NT.
NZ	▪ To be provided.

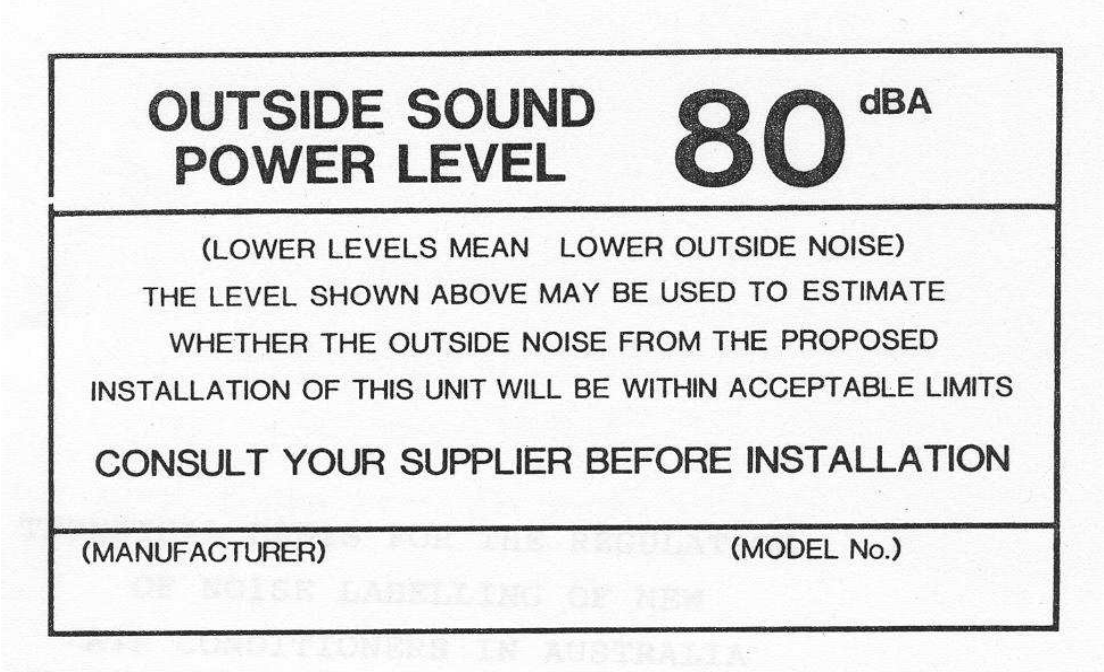
Appendix 2 – Existing NSW Label

Label format

The sound power level of a unit shall be displayed on a label with dimensions 5 cm x 10 cm. the sound power level number shall be displayed in figures at least 1 cm high.

The label shall have a permanent clearly visible black legend on a polished metal background.

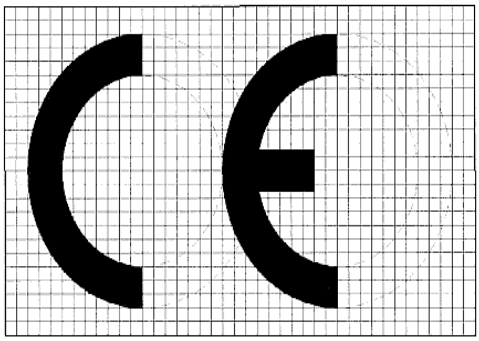
The label shall have the format indicated below.



Appendix 3 – European Union Label

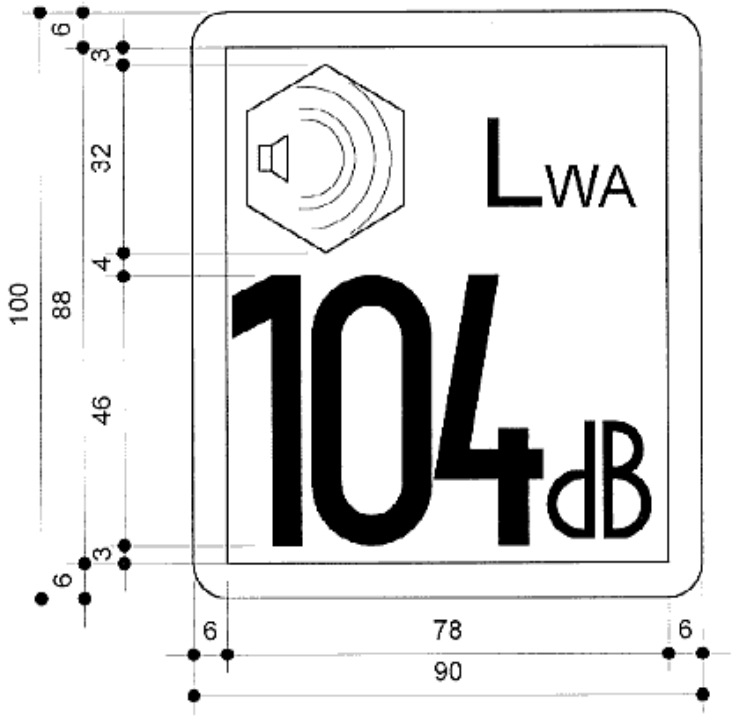
ANNEX IV MODELS OF THE CE MARKING OF CONFORMITY AND OF THE INDICATION OF THE GUARANTEED SOUND POWER LEVEL

The CE conformity marking must consist of the initials 'CE' taking the following form:



If the CE marking is reduced or enlarged according to the size of the equipment the proportions given in the above drawing must be respected. The various components of the CE marking must have substantially the same vertical dimension which may not be less than 5 mm.

The indication of the guaranteed sound power level must consist of the single-number of the guaranteed sound power in dB, the sign 'L_{WA}' and a pictogram taking the following form:



If the indication is reduced or enlarged according to the size of the equipment the proportions given in the above drawing must be respected. However, the vertical dimension of the indication should, if possible, not be less than 40 mm.

The marking may be embossed or on a label. There is no requirement for the colour of this marking. For equipment weighing less than 20 kg, the vertical dimension of the indication may be reduced to 20 mm.