Australian Government
Department of the Environment and Energy

Working towards Australian emission standards for non-road spark ignition engines and equipment

UPDATE PAPER

December 2016

Foreword

By world standards, Australia's air quality is very good. The Government is committed to ensuring that Australians continue to enjoy clean air in the future. As Australia's population grows and our energy demands rise, this means we must protect against any deterioration in air quality.

I am pleased to initiate an important reform that will work towards this end. In December 2015, my predecessor as Minister for the Environment, the Hon Greg Hunt MP, established the National Clean Air Agreement with state and territory counterparts. The Agreement strengthens our cooperative approach to addressing air quality challenges. It will see various levels of government, business and communities working together.

A key priority is to reduce air pollution from non-road spark ignition engines and equipment or 'NRSIEE'. These include petrol-powered gardening equipment, generators, pumps and marine engines. NRSIEE are used routinely throughout Australia. They are high polluters relative to their size and contribute significantly to outdoor air pollution. Operated in close proximity, users are also subjected to high levels of pollutants.

The Government is working to introduce Commonwealth legislation to adopt international best practice emission standards for NRSIEE. High-emitting NRSIEE are already banned in overseas markets such as the United States, Canada, Europe and China. New legislation in Australia would ensure we enjoy the same high-quality, low-emitting NRSIEE products and make it an offence to bring uncertified high-emitting NRSIEE to Australia or to supply those products within Australia. Those products that Australians already own would not be affected.

I appreciate the advice I have received from experts in this area and am pleased the NRSIEE industry is strongly supportive of moving in this direction. These new emission standards are great news for our community, environment and future generations. I encourage all interested parties to read this Update Paper 'Working towards Australian emission standards for non-road spark ignition engines and equipment' and engage in this process as Australia considers this important reform in our clean air future.

Josh Frydenberg
Minister for the Environment and Energy

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1 Purpose of this Update Paper

The Australian Government is working to introduce national emission standards for non-road spark ignition engines and equipment (NRSIEE), such as garden equipment, generators, pumps and marine engines. By regulating high-emitting NRSIEE in Australia, air pollution from these products will be reduced and significant health benefits will be realised.

This update paper provides an update on how the new emission standards will be implemented, including their linkage to international standards, when they are likely to come into force, which NRSIEE products they will apply to and what requirements will be placed on importers and suppliers of these products to the Australian market.

The paper also aims to raise awareness of the incoming emission standards so that businesses and individuals can be prepared when they come into effect. This includes suppliers (for example, distributors, wholesalers and retailers) who will need to ensure they are sourcing compliant models.

You can get further information about the new emission standards by writing to the Department of the Environment and Energy. Contact details are provided at the end of this paper.

2 Why regulate emissions from NRSIEE?

In Australia, air pollution is an important public health issue. Significant health costs are associated with the general population's exposure to air pollutants, including costs of hospital admission and lost work productivity. For some pollutants there is no known level of exposure below which adverse health effects do not occur, meaning any exposure can be harmful. Well known health effects include respiratory and cardiovascular disease. More recently, the International Agency for Research on Cancer concluded that there is sufficient scientific evidence that exposure to outdoor pollution causes cancer in humans.[1]

By world standards, Australia's air quality is very good. Our governments have, over the years, used a range of successful measures to reduce air pollution and improve our overall air quality. However, there are some important sources of air pollution that are not currently directly managed and which significantly contribute to air pollution.

One source of concern is emissions from non-road spark ignition engines and equipment (NRSIEE) (Figure 1).[2, 3] These products cover a wide range of petrol and gas-powered equipment, such as garden equipment, pumps, generators, and marine engines.[4] NRSIEE generally lack the advanced emission controls found in motor vehicles, so they can be high polluters relative to their engine size and usage. For example, a two-stroke leaf blower used for one hour can emit the same emissions of oxides of nitrogen (NOx) as a car, and as much hydrocarbons as 150 cars, when operated over the same period.[3]

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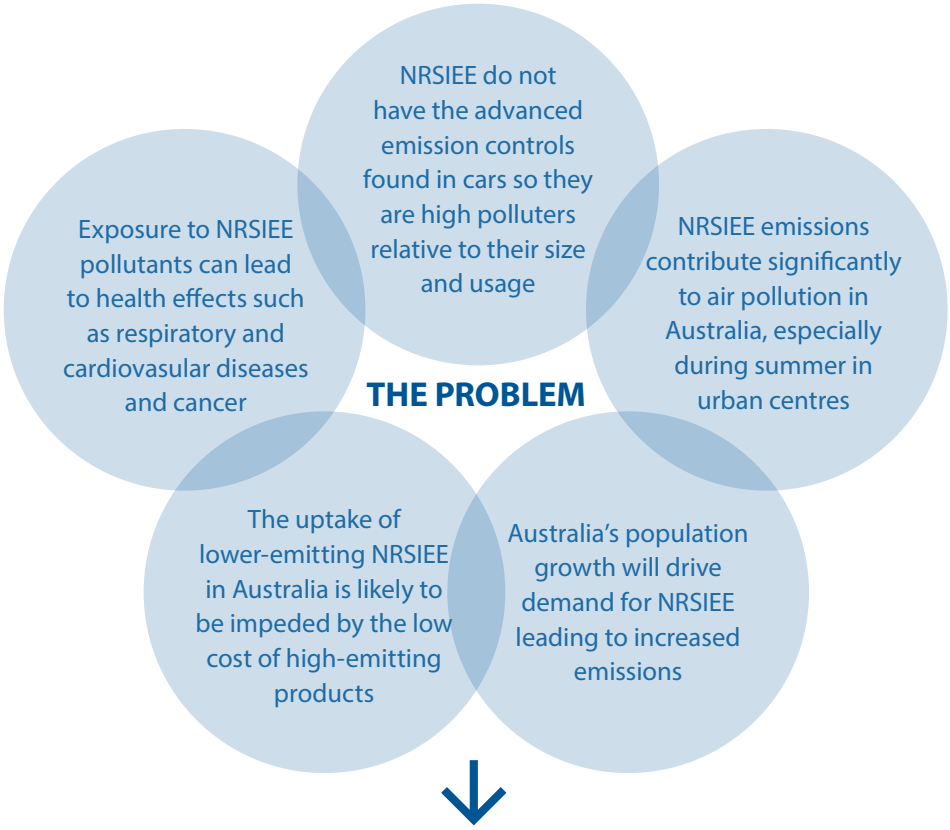
[1] For more information see http://www.iarc.fr/en/media-centre/iarcnews/pdf/pr221_E.pdf.

[2] Key emissions from NRSIEE include particulate matter (mostly fine PM2.5), ozone (a secondary pollutant formed from post-engine exhaust), carbon monoxide, nitrogen oxides and volatile organic compounds (non-methane hydrocarbons).

[3] Reducing emissions from Non-Road Spark Ignition Engines and Equipment – Decision Regulation Impact Statement (2015). Available at: http://ris.pmc.gov.au/2016/05/12/reducing-emissions-small-engines.

[4] Spark Ignition (SI) includes petrol, Liquid Petroleum Gas, Compressed Natural Gas and Liquefied Natural Gas engines. It excludes manual powered equipment, diesel (compression ignition) engines, battery and electric powered equipment.

Figure 1: Concerns with NRSIEE emissions



Many NRSIEE are powered by conventional two-stroke engines due to their power characteristics, lightness and mechanical simplicity. Carburetted two-stroke spark ignition engines are very high pollution emitters compared to direct injection two- or four-stroke engines, or carburetted four-stroke engines. Currently, a significant proportion of NRSIEE imported and sold in Australia is two-stroke technology and, more specifically, higher-emitting two-stroke carburetted technology. As a result, the NRSIEE sector is a significant contributor to the overall pollution load in Australian airsheds, especially during the summer months and in urban areas when their use is high.[3]

As our population grows, it is likely that our demand for NRSIEE will increase, along with a continuing demand for the lowest priced equipment, which tends not to be compliant with emission standards required in overseas markets such as the United States (US) and European Union (EU). This could impede the future uptake of lower-emitting (less polluting) NRSIEE in Australia.[3]

Without some form of intervention, NRSIEE emissions are expected to increase by 40 to 80 per cent over the period 2015 to 2035, with associated health impacts.[3]

2.1 A national approach to reduce NRSIEE emissions

In December 2015, Australia's Environment Ministers established the National Clean Air Agreement to address the impacts of air pollution on human and environmental health and to ensure that the community continues to enjoy clean air.[5] A key initial action under the agreement is to introduce national emission standards for NRSIEE in Australia.[6] This is considered the best way to reduce air pollution from NRSIEE, and is supported by Australia's peak NRSIEE industry organisations.[3]

The new emission standards will:

- bring Australia into line with international standards to ensure that we have the same high quality, low-emitting NRSIEE as those accepted overseas
- help improve Australia's overall air quality with associated health benefits
- complement other Australian Government policies aimed at improving our urban environments, such as the Cities Agenda [7]
- contribute to meeting Australia's emission reductions obligations under the United Nations Framework Convention on Climate Change.

For instance, the standards are estimated to result in a reduction in combusted fuel in Australia of over 40 megalitres per year, resulting in a reduction of greenhouse gases by around 95 000 $CO2^e$ tonnes per year over the period 2016 to 2035.[9]

2.2 How will the new NRSIEE emission standards be introduced?

To be able to introduce emission standards for NRSIEE, new Commonwealth legislation (an Act) needs to be introduced. This legislation, to be administered by the Australian Government Department of the Environment and Energy (the Department), will provide the overall powers for the Minister responsible for the Environment to set emission standards for NRSIEE, and potentially for other product emission sources in line with future government priorities for action on air pollutants.

The emission standards and their requirements would be detailed in a suite of Rules (subordinate legislation) made by the Minister under the Act.

The NRSIEE emission standards will largely be based on those applied in the US by the United States Environmental Protection Agency (US EPA), which are widely considered to be international best practice. The Australian emission standards will not be retrospective and will only apply to new NRSIEE products brought to Australia or supplied within Australia, not to those that people already own. They will be implemented in such a way as to minimise disruption to industry while maximising the benefits for improved air quality. The new emission standards are not expected to limit consumer choice as there is generally a full range of NRSIEE products available that would meet the standards.

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[5] For further information: www.environment.gov.au/national-clean-air-agreement.

[6] Fourth Meeting of Environment Ministers Meeting 4 Agreed Statement: www.environment.gov.au/about-us/mem.

[7] For information, see https://cities.dpmc.gov.au/.

[8] For further information: www.environment.gov.au/climate-change/publications/australias-second-biennial-report.

[9] $CO2^e$ refers to carbon dioxide equivalent. This is the sum of carbon dioxide, methane and nitrous oxide that would cause the same radiative forcing as an emitted amount of carbon dioxide as calculated using their respective Global Warming Potentials.

The proposed Commonwealth legislation package (Figure 2) will:

1. make it an offence to have brought new NRSIEE to Australia, or supply that product within Australia, if it does not meet the emission standards
2. accept NRSIEE certified to specified standards by overseas jurisdictions with equivalent standards, such as the US EPA and the EU, as being compliant with the Australian emission standards
3. provide a certification process for NRSIEE that are not certified to equivalent standards (such as US EPA and the EU)
4. set out cost recovery options to support government administration of the emission standards
5. provide mechanisms for exemptions from the emission standards to be considered
6. provide phase-in time frames for when the standards will commence to ensure an orderly transition for business and the community.

Figure 2: Overview of the Commonwealth legislation package

Commonwealth Act – sets overall framework

- Gives Minister powers to make Rules for:
  - Standards
  - Certification
  - Exemptions
  - Cost recovery
  - Compliance activities
- Identifies offences and penalties
- Establishes compliance and enforcement provisions

Rules

- Provide the details on:
  - Engines and equipment covered
  - Technical information on emission limits and product categories
  - Processes for certification, marking, exemptions, cost recovery and compliance

3 What are the new NRSIEE emission standards?

Australian emission standards for NRSIEE will be based on those applied in the US and administered by the US EPA.[10] The US EPA has both exhaust and evaporative emission standards. However, evaporative emission standards will not be adopted in Australia at this stage (see Section 3.2).

Table 1 gives an outline of the exhaust emission standards applied by the US EPA. The detailed Australian emission standards (emission limits) for NRSIEE and their requirements will be set out in a Rule.[11,12] Information on the commencement dates for the exhaust emission standards for NRSIEE is provided in Section 6 of this paper.

Table 1: Outline of NRSIEE exhaust emission standards applied by the US EPA [13]

	ENGINE SIZE/POWER	STANDARD g/kW-hr[14]	
OUTDOOR EQUIPMENT 19 kW AND BELOW - EXAMPLES	**Cubic centimetres (cc)**	**HC + NO_x[15]**	**CO[15]**
Push lawnmowers, small generators/pumps	< 225 cc	10	610
Ride-on lawnmowers, tillers, large generators	≥ 225 cc	8	610
Handheld: pruners, blowers, line trimmers	< 50 cc	50	805
Handheld: chainsaws, wood splitters, concrete saws	≥ 50 cc	72	603
MARINE EQUIPMENT	**Kilowatts (kW)**	**HC + NO_x**	**CO**
Outboards, Personal Water Craft (PWC commonly called jet skis) and jet boats < 4 m long)			
- small	≤ 4.3 kW	30	500-478[16]
- medium	> 4.3 kW ≤ 40 kW	30-17.5[16]	478-300[16]
- large	> 40 kW	17.5-16[16]	300
Sterndrive, inboard engines (including jet boats ≥ 4 m long)			
- conventional	≤ 373 kW	5	75
- high performance	≤ 485 kW	16	350
- high performance - large	> 485 kW	22	350

[10] US EPA NRSIEE emission standards available at: https://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles. Canada and California follow the US EPA model. The EU harmonised its exhaust emission standards with the US EPA standards for marine engines, and harmonised exhaust standards for most outdoor power equipment will take full effect in the EU by 1 January 2019.

[11] For convenience, the Australian emission standards will be referred to as the Rule or Rules in the rest of this Update Paper.

[12] It is anticipated that there will be separate Rules for outdoor power engines/equipment and marine engines/equipment.

[13] Table 1 has some approximations and some omissions. Omissions include generators (large and small) used in boats, which will have a specialised CO limit of 5 g/kW-hr.

[14] g/kW-hr means grams of pollutant produced per kilowatt hour of operation.

[15] HC = hydrocarbons; NO_x = oxides of nitrogen; CO = carbon monoxide.

[16] Where a range is shown as the standard, a US EPA formula applies that gradually increases the stringency of the standard with the power of the engine.

The emission standards are performance rather than technology-based and many manufacturers are already meeting the standards through improvements in engine combustion and fuel delivery systems, electronic controls and in some cases, the use of exhaust aftertreatment, such as catalytic converters. In general, four-stroke and direct-injection two-stroke engines are being used to meet the new emission standards for both marine and non-handheld applications, while more conventional two-stroke engines are still widely used in handheld equipment. Outboards and non-handheld equipment currently using conventional two-stroke engines are unlikely to meet the requirements of the new emission standards.

3.1 Will certifications by countries with equivalent standards be recognised?

Engines and equipment certified as meeting the relevant equivalent standards applied by the US EPA, the California Air Resources Board (CARB), the EU and Canada will be accepted as compliant with the Rules.[17] This includes NRSIEE certified in the US through Averaging, Banking and Trading (see Section 5.5). Certifications by other jurisdictions could be recognised in the future.

The details of the emission standards that will be recognised in the Rules are set out in Appendix 1.

3.2 Why are we not mandating US EPA evaporative emission standards now?

There will be no evaporative emission requirements in the Rules. The Decision Regulation Impact Statement (DRIS) which examined options to manage NRSIEE emissions concluded there was a significant net benefit from the introduction of the standards and this was based on the calculation of benefits from the exhaust emission standards only.[3] The DRIS did not evaluate the contribution of evaporative emission standards.

While a precise estimate of the relative contribution of reductions in exhaust and evaporative emissions is not available, the introduction of the exhaust emission standards only is expected to deliver around 90 per cent of the potential emissions benefit from regulating NRSIEE.

In addition, while the EU standards offer equivalent exhaust emission controls to the US EPA standards, they do not set limits on evaporative emissions. Therefore, inclusion of evaporative standards would mean EU certified equipment would still need Australian certification – an additional regulatory and administrative burden.

While it is recognised that some manufacturers already comply with the full US EPA emission standards requirements, a key aim of the Rules is to provide the opportunity for industry as a whole to become compliant. Providing more than one compliance route which delivers the vast majority of the air quality benefit would appear appropriate for a market which is currently unregulated.

On balance, it is considered beneficial to accept NRSIEE certified to either US EPA, CARB, Canadian or EU emission standards as it will enhance competition and Australian consumers will have access to a wider range of NRSIEE with minimal compromise on the expected air quality benefits.

The introduction of evaporative emission standards would also place a significant regulatory burden on local manufacturers of fuel system components, such as tanks, and assemblers of equipment who fit fuel systems to engines, including most boat dealers.

It is also worth noting that NRSIEE which demonstrates compliance with the Rules via a certificate of conformity from the US EPA will have complied with the evaporative emissions requirements of the US EPA standard.

This position is proposed to be reviewed from 2019. Should a decision then be made to work towards the introduction of evaporative emission standards, it is envisaged that a timeframe of around two years would be required before the evaporative standards could commence. This means that industry will not be required to start working towards evaporative emission standards for at least two years, if at all.

[17] For outdoor power equipment, the current EU standard implements the "Euro II" emission standards. A new EU Regulation has been published and will be phased-in throughout the EU during 2018. The new Regulation implements the "Euro V" standards.

4 Which products will the standards apply to?

The Rules will set out which products the emission standards for NRSIEE will apply to. They will only apply to new NRSIEE that has been imported, manufactured or supplied in Australia. They will not apply to NRSIEE that Australians already own.

The categories of NRSIEE products to be covered by the Rules are:

- spark ignition engines rated 19 kilowatts and below used in household and commercial operations, including: lawn mowers, ride-on mowers, mulchers, brush/line cutters, generators (includes onboard marine), pumps, chainsaws, and other small handheld or pushed/pulled engines
- spark ignition engines used in marine vessels, including: outboard engines, personal watercraft, and sterndrive/inboard engines.

A number of equipment categories are excluded (by definition) to ensure consistency with the exclusions in the US EPA emission standards as follows:

- stationary engines[18]
- automotive engines
- aircraft engines
- All Terrain Vehicles (ATVs)
- engines for use in reduced scale models of vehicles that are not capable of transporting a person
- engines imported for re-export which will not be used in Australia or supplied to the Australian market.

Some other NRSIEE normally within the scope of the Rules may be eligible for exemptions under certain conditions (see Section 5.7).

Table 2 provides a more detailed list of the categories of NRSIEE products to be covered by the Rules.

[18] Stationary engine means an internal combustion engine that is not portable or transportable by itself or in a piece of equipment and lacks the features enabling it to be self-propelled or carried or moved by a person from one location to another (such as carrying handles, wheels or skids). Stationary engines exclude engines used to propel vehicles, vessels or aircraft.

Table 2: NRSIEE categories to be covered by the Rules

HANDHELD	NON-HANDHELD[19]
Blower/vacuum–leaf	Blowers–snow
Borer/auger–post hole	Cherry picker/mobile hydraulic platform/scissor lifts
Brooms–powered	Cleaner–pressure
Chainsaw–wood/concrete	Compactors–plate
Cutter–brush	Compressor–air
Drill–hammer	Concrete grinder
Edger–garden	Concrete mixer
Engines for NRSIEE	Corer/aerator–lawn
Jackhammer/rammer	Elevator–brick
Saw–demolition/brick/concrete	Engines for NRSIEE
Trimmer–line/whippersnipper	Generator–producing electricity
Trimmer–hedge	Generator–onboard marine–producing electricity
Trowelling machine–concrete	Go karts
Vibrator/de-aerator–concrete	Grinder–stump
	Mini loader/bobcat
	Mower–push
	Mower–push–cylinder
	Mower–ride on–front/rear engine
	Mulcher/chipper/shredder
	Pump–firefighting/trash/diaphragm
	Roller–pitch-push
	Saw-trolley–demolition/brick/concrete
	Slasher–push/ride on
	Splitter–wood/logs
	Tillers/hoes–push
	Utility vehicle/small tractor–not primarily for transport of people
	Vacuum–push–leaf/garden
OUTBOARD AND PERSONAL WATER CRAFT (PWC)	**INBOARD/STERNDRIVE**
Outboard engines	Inboard
Yachts with auxiliary outboards	Sterndrive
PWC (also known as jet skis)	Jet boats ≥4 m long
Jet boats < 4 m long	Engines for NRSIEE
Water scooters	
Engines for NRSIEE	

[19] Table 2 identifies products that are spark ignition engine powered and meet the proposed criteria for inclusion in the Rules. Dashes separate descriptors; slashes separate alternatives. This list is not exhaustive – there may be other machines or equipment that may be regulated under the Rules. Precise definitions of some equipment are yet to be determined.

5 What are the new requirements?

The Australian Government is aiming to introduce a streamlined and low-burden approach to regulating NRSIEE emissions. This will minimise unnecessary impacts on trade and commerce and limit the cost of the regulation, while enabling Australia to adopt international standards.

The new requirements are described below and in Figure 3. Requirements for those wishing to import or supply NRSIEE in Australia will vary depending on the type of engine or equipment.

There will be a requirement to demonstrate that new NRSIEE imported and supplied in Australia conform (have been certified) to the new emission standards.

Figure 3: Simplified overview of requirements for NRSIEE

Australian Government

- Sets standards
- Monitors import data
- Maintains database
  - certified products
- Processes applications
  - certification
  - exemptions
- Issues notification
  - approved
  - not approved
- Receives levy payments (if applicable)
- Undertakes educational and risk-based compliance activities
  - offences/penalties

Importer and Supplier

- Ensures product is certified to the Australian standards
  - arranges testing, if required
  - imports, manufactures or supplies product
- Applies for
  - certification
  - exemption
- Pays levy (if applicable)
- Keeps records

5.1 Importation and supply of NRSIEE

To ease the compliance burden, it is proposed that engines certified to the US EPA, CARB, Canadian and EU standards will meet the Australian standards, provided importers and suppliers keep evidence of certification from the relevant jurisdiction. The basic piece of evidence to demonstrate compliance will be a certificate of conformity, type approval certificate or equivalent official document issued in accordance with the applicable emission standards by the US EPA, CARB, Canada, a member state of the EU or the Department.

Importers would be responsible for ensuring that the products they are importing are appropriately certified and marked, and that they keep records of their imports.

5.2 Manufacture of NRSIEE

All NRSIEE engines supplied in Australia are imported, with Australian manufacturing currently limited to incorporating engines manufactured overseas into equipment assembled in Australia. Such assembly operations are not considered manufacturing under the proposed legislation so assemblers only need to ensure they are sourcing compliant engines certified according to the Rules and that they do not modify the engines in a manner which compromises their emissions performance (for example, replacement of spark plugs to address radio frequency interference requirements will not compromise emissions performance). Manufacturing or assembly of fuel system components and the fitting of fuel systems to engines will also not be considered manufacturing and will not be regulated.

5.3 Certification of NRSIEE

Engines and equipment certified as meeting the relevant standards by the US EPA, CARB, Canada or a member state of the EU will be accepted as compliant with the Rules. NRSIEE that is not already certified by these jurisdictions will need to be certified under an Australian process managed by the Department.

The Rules will provide a capacity for manufacturers to obtain an Australian certificate of conformity for NRSIEE. The Australian certification process will adopt the exhaust emission standards and most of the testing provisions of the US EPA standards. Testing for Australian certification will need to be carried out through accredited test facilities, either in Australia or overseas, and arranged and paid for by the manufacturer, supplier or importer.

There is an international standard (ISO/IEC 17025 - General requirements for the competence of testing and calibration laboratories) governing the competence of testing and calibration laboratories and members of the International Laboratory Accreditation Cooperation (ILAC) organisation accredit and certify laboratories to this standard. In Australia, the National Association of Testing Authorities (NATA) is the signatory body to the ILAC Mutual Recognition Arrangement. It is proposed that the Rules require that the engine test facility be accredited in accordance with the requirements of ISO/IEC 17025 and that the facility be assessed and approved by a signatory to the ILAC Mutual Recognition Arrangement as being competent to undertake the testing specified in the Rule.

To obtain Australian certification, manufacturers will be required to provide the test results to the Department using a standardised application form. The Minister may refuse certification if the engine or equipment does not meet the standard and/or if the evidence provided is not acceptable.

5.4 Marking

Once a manufacturer has obtained a certificate of conformity (or equivalent), the Rules will require the manufacturer to permanently mark every production engine (this is usually done via affixing a durable label). The label provides a level of assurance to importers and suppliers that the engines are compliant with the standards and are a key piece of evidence of conformity in the context of compliance and enforcement in the field. Such markings are a useful first point for field officers assessing compliance.

Similar to the overseas standards, it is proposed that the label applied under the Australian certification process would include identifying information for the engine and manufacturer, the certification number, and would state that the engine complies with the Australian Product Emission Standards. It is also proposed that minimum size and location requirements will apply to the information in labels to ensure accessibility and legibility. Labels required by equivalent standards will be recognised.

5.5 Averaging, Banking and Trading

A process of Averaging Banking and Trading (ABT) of emission credits applies in the US, but not in the EU. This process allows manufacturers to average emissions across a range of products in meeting the standards. This system is complex. For instance, it involves calculating the actual emissions across all of the engines being imported by an individual over a period of time and allowing some engines that produce emissions which are higher than the standard to be offset against the cleaner engines they import. Importers and the Department would need to track and report on credits and manage post-reporting period reconciliations and adjustments.

There will be no ABT system under the Australian Rules. This approach will simplify administration and reduce costs for both Government and industry. It is not expected that this approach will change the availability of products in Australia.

Manufacturers will have a choice in where they seek certification as the Rules will allow NRSIEE that is certified as meeting the US EPA, CARB, Canadian, or EU emission standards to be imported or supplied in Australia without undergoing an additional testing and certification process, regardless of whether ABT has been used (for example, in a US certification).

5.6 Record keeping, reporting and data sharing

Importers and suppliers will not be required to routinely provide the certificate of conformity as a pre-requisite to compliance. So, under normal circumstances, a person is able to import or supply NRSIEE covered by a valid and current certificate of conformity without prior approval or any documentation being sighted by the Department.

In such circumstances, the Rule would require manufacturers, importers and suppliers to keep appropriate records (or have the capacity to access them readily) demonstrating that the products are certified and to make those records available on request by the Department. As a minimum, manufacturers, importers and suppliers would be required to keep a copy of the applicable certificate of conformity for every engine type they import, supply or manufacture. This will support the integrity of the scheme and assist compliance and enforcement officers to monitor compliance and undertake any necessary enforcement activities.

Record keeping and reporting arrangements in the Rules will specify the types of records to be kept and produced if requested by a compliance officer and specify minimum reporting requirements. The legislation (Act) will also enable the sharing of data between appropriate Government agencies to support compliance activities.

5.7 Exemptions

The Australian Government recognises that it is important that the Rules minimise unintended impacts, including for special applications of NRSIEE.

As noted in Section 4 of this paper, some categories of equipment are to be excluded from the definition of NRSIEE to ensure consistency with the US EPA standards. In addition, the Rules will include mechanisms to allow the Minister to exempt engines and equipment from having to meet the standards. Such exemptions would only be available in limited circumstances where there is no compliant alternative and will usually have conditions attached to them. Conditions may include constraints on sale and use of exempt engines and equipment.

It is proposed that requests for exemptions could be considered for the following uses:

- exhibition, demonstration, evaluation and testing
- replacement engines
- national security
- emergency rescue operations
- competition.

Information that will need to be included in a request to the Department for an exemption will be specified under the Rules. This may include the make and model of engine and/or type of equipment, the number of engines affected, when they would be imported or supplied and to whom.

A written declaration by the person or organisation seeking the exemption may also be required to:

- justify why compliant engines are unsuitable for the particular purpose
- warrant that the engines/equipment would only be used for the specified purpose
- agree to meet any conditions associated with the exemption.

When assessing applications for exemptions, consideration will be given to:

- whether fit for purpose and compliant NRSIEE are available
- how many NRSIEE a given exemption would apply to
- whether an application for exemption aligns with the policy intent for exemptions
- whether there is support from relevant organisations.

It is proposed that any requests for exemptions for engines used in competition will need to be supported by an established Australian or international competition association.

5.8 Cost recovery

The Australian Government is considering a fully cost-recovered approach, in accordance with the Australian Cost Recovery Guidelines and Australian Government Charging Framework, and how it may be applied, to fund the ongoing administration of the Rules.[20]

There will be opportunities to provide input into this process. This will include a formal Cost Recovery Implementation Statement (CRIS) process should considerations advance to this stage. All Australian Government cost recovered activities, regardless of financial value, must be documented in a CRIS before charges commence.

The CRIS is an explanatory document that provides key information on how cost recovery is implemented. It reports how the activity would perform on an ongoing basis. The CRIS is prepared after the Australian Government makes a decision to cost recover the specific activity and it provides the basis for engagement with stakeholders on various aspects of the activity. Details will be made available on the Department's website if this process commences.

[20] See: http://www.finance.gov.au/resource-management/charging-framework/charging-for-regulatory-activities/.

One possible approach is applying a levy to all imported and manufactured NRSIEE to pay for the arrangements. Levies could be based on the number or value of units imported/manufactured using a tiered pricing scale. Levy payments would be required at specified intervals. For importers of NRSIEE the levy would accrue when NRSIEE is imported. If domestic manufacturing were to occur in the future, the levy would accrue when the manufactured engine or equipment is first supplied. No levy would be payable for the manufacture, import or supply of fuel systems or components on their own.

An alternative approach would also include fees for services provided by the Department, such as for processing certification or exemption applications.

5.9 Compliance and enforcement

NRSIEE engines are imported into Australia. The Australian Government is examining existing mechanisms to enable the identification of compliant and non-compliant imports of NRSIEE. It is proposed that certification data be collected at the point of import and be used to target compliance activities. Such activities will use a risk-based, intelligence-led approach and may include verifying importers' certification data, intelligence guided searches, targeted market place checks and information provided by industry and the public.

Under the proposed regulatory arrangements, it will be an offence to have brought new NRSIEE to Australia or supply that product in Australia if it does not meet the emission standards, as will contravening any conditions placed on exemptions.

The Act will include a suite of compliance and enforcement powers and will specify penalties for non-compliance.

6 When will the standards come into force?

The Australian Government aims to have the Commonwealth legislation (the Act) introduced as soon as possible. This will maximise the ability to reduce NRSIEE emissions while implementing the emission standards in a way that supports an orderly and achievable transition for business and is simple to administer. Once the Act is passed by Parliament, subordinate legislation (the Rules), detailing the emission standards and their requirements, will be made by the Minister soon after. The actual timing for the legislation and the Rules is subject to parliamentary scheduling, but it is anticipated that passage of the Act will occur around mid-2017, with the Rules to be made a month or two later.

While it is not possible to be definitive regarding the exact timing for the passage of the Act and the making of the Rules, the Government recognises that industry will benefit from knowing well in advance the dates that the Rules will take effect. These dates and their rationale are set out below.

Choosing a start date for a new standard, particularly where no standard existed before, needs to balance the desire to implement the standard as early as possible (to start delivering the air quality benefits) against the capacity of industry to provide engines and equipment meeting the new standard by the start date. It is also recognised that a reasonable timeframe is required to enable suppliers to sell non-compliant stock which was imported prior to the Rules taking effect.

To address these requirements, the Rules need to identify both a date which applies to the import of NRSIEE and another (later) date which applies to the supply of NRSIEE to the Australian market.

Following an analysis of the Australian market and consultations with industry representatives in both the outdoor power equipment and marine sectors, the following commencement dates will apply under the Rules[21]:

1 JULY 2018

All new NRSIEE brought into Australia (or locally manufactured) from this date must be compliant with the Rules.

1 JULY 2019

Any new NRSIEE supplied to the Australian market from this date must be compliant with the Rules.

[21] As noted earlier in this paper, for engines used in outdoor power equipment, a new EU Regulation ("Euro V"), which repeals the current EU standard ("Euro II") and largely harmonises with the US EPA standards, has now been published and will be phased-in throughout the EU during 2018.

Where an importer/supplier chooses to demonstrate compliance with the Rules using EU certification, the commencement dates specified in Section 6 apply to the current Euro II standard (although any NRISEE compliant with the more stringent Euro V will clearly be accepted as an alternative). However, as the US EPA is the principal standard, it is appropriate for Euro V to replace Euro II as the minimum standard for EU certification at an appropriate time. Given the Euro II and the EU timeframes, importers who wish to demonstrate compliance for outdoor power equipment via an EU certificate will need to source Euro V engines from 1 July 2020 when importing products and, from 1 July 2021 all EU certified products supplied to the market will need to comply with Euro V.

7 What should you do to prepare for the new emission standards?

Manufacturers, importers, and suppliers of NRSIEE products should start planning now to bring their product lines into compliance with the new exhaust emission standards. The lead times in Section 6 mean there is approximately 18 months from now until non-compliant NRSIEE can no longer be brought into Australia.

As part of this process, you should secure (or have access to) the certificate of conformity issued by the relevant authority and associated documentation to ensure that you only import compliant products from 1 July 2018 and to ensure you have the capacity to provide the necessary evidence of compliance if requested by the Department.

Similarly, suppliers should be planning to ensure that they do not have any unsold non-compliant stock in their possession by 1 July 2019.

8 Next steps and further information

Before the NRSIEE emission standards and their requirements (Rules) can be made, the Commonwealth legislation must be enacted by Parliament. There will be opportunities for interested parties to provide comment on the more detailed design and requirements of the emission standards during the first half of 2017. Consultation opportunities will also be provided on the proposed cost recovery arrangements for the emission standards.

Comprehensive updates on the Department's website will help interested parties prepare for the implementation of the new emission standards and provide further information about opportunities to provide input to the process: www.environment.gov.au/protection/air-quality/non-road-spark-ignition-engines-and-equipment

If you wish to provide any feedback on the proposals in this paper please send an email to airquality@environment.gov.au. Alternatively, you may write to:

Air Quality Section
Environment Standards Division
Department of the Environment and Energy

GPO Box 787
Canberra ACT 2601
AUSTRALIA

APPENDIX 1 Acceptable overseas standards

As noted in this paper, the Rules will recognise certification to the relevant standards from the USA, European Union, Canada and the US State of California. The specific standards which will be accepted are set out on the following page in Tables 1 and 2. These are the only overseas standards that will be recognised under the Rules.

Table 1 Acceptable Overseas Standards for Engines (≤19kW) used in Outdoor Power Equipment (OPE)

USA	EUROPEAN UNION *	CANADA	CALIFORNIA
US Code of Federal Regulations Title 40, Chapter I, Subchapter U, Part 1054 – Control of Emissions from New, Small Nonroad Spark-Ignition Engines and Equipment (Model Year 2017 or later) Link	Directive 97/68/EC on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery, incorporating all amendments up to and including Directive 2012/46/EU Link	Off-Road Small Spark Ignition Engine Emission Regulations SOR/2003-355 as last amended on 4 May 2012 Link	California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines, Engine-Testing Procedures (Part 1054) as adopted on October 25, 2012 Link

* For OPE certified to EU standards, Directive 97/68/EC listed in Table 1 above implements the Euro II emission standards. A new EU Regulation (Regulation 2016/1628) updating and repealing Directive 97/68/EC, has now been published and will be phased in throughout the EU during 2018. This new Regulation 2016/1628 implements the Euro V standards. Where importers wish to demonstrate compliance with the Australian non-road rule via an EU certificate, Regulation 2016/1628 will replace Directive 97/68/EC as the acceptable EU standard from 1 July 2020 for importing products (and apply to supply from 1 July 2021).

Table 2 Acceptable Overseas Standards for Engines used in Marine Equipment

USA	EUROPEAN UNION	CANADA	CALIFORNIA
US Code of Federal Regulations Title 40, Chapter I, Subchapter U, Part 1045 – Control of Emissions from Spark-Ignition Propulsion Marine Engines and Vessels (Model Year 2017 or later) Link	Directive 2013/53/EU of the European Parliament and of the Council of 20 November 2013 on recreational craft and personal watercraft and repealing Directive 94/25/EC Link	Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations SOR/2011-10 as last amended on 5 April 2011 Link	California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines as adopted on October 25, 2012 Link

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