



Australian Government

**Department of Agriculture,
Water and the Environment**

Non-road diesel engines

A national approach to managing emissions

Questionnaire

October 2020

Thank you for taking the time to review this questionnaire. We appreciate your efforts in supporting this work and appreciate any information or feedback that you can provide. Your input is valuable in ensuring we can undertake a robust analysis using the best available information.

Purpose of the document

This questionnaire aims to gather sufficient information to develop practical scenarios for a national approach to manage non-road diesel engine emissions in Australia. The costs and benefits of these management scenarios will be evaluated in a cost-benefit analysis.

Background

In 2018 Environment Ministers agreed to progress an *evaluation of the potential for a national approach to manage non-road diesel engine emissions* (the evaluation), as a priority emission reduction measure under the National Clean Air Agreement work plans. The evaluation is being led by the department and the NSW Department of Planning, Industry and Environment

No decision has been made to implement a national approach. Environment Ministers from all jurisdictions will review the cost-benefit analysis findings and decide whether to progress formal consideration of any potential regulatory impacts. In a regulatory impact analysis, the design and operation of the management scenarios would be comprehensively developed through public consultation.

Consultation questions

The questions presented here are the same as in a Discussion Paper (*NRDE Evaluation – Discussion paper.docx*). This document is a form, to help facilitate feedback.

Data controls

- Our contractor and sub-contractors are required by contract to keep information from this evaluation confidential and not to use it for any other purpose.
- As Australian Public Servants we cannot disclose any information provided to us except information already lawfully in the public domain by the time of disclosure. See <https://www.apsc.gov.au/sect-13-managing-official-information>
- Please contact the Department if you would like more information on how we manage the security and use of any data provided.

Providing feedback

- Please provided feedback by answering only the questions which interest you.
- Responses are welcome until **COB Friday 23 October 2020.**

Responses can be provided by email. If you would like to provide verbal feedback, please email the Air Quality Policy Section to set up a time.

To provide feedback, please contact the Air Quality Policy Section at airquality@awe.gov.au.

Your details

Type in the grey text boxes to tell us who you are. The boxes will expand as you type.

Name	John Griffiths
Who are you representing	Gas Energy Australia
Email address	jgriffiths@gasenergyaustralia.asn.au
Phone number	+61 2 6176 3100

Would you like to help us understand costs?

We are seeking interested persons to provide information on costs and benefits of the management scenarios, once the scenarios are finalised.

Please electronically check boxes for scenarios you would like to engage (i.e.)

- Scenario 1 – Industry Standards.** I would like to be contacted to provide information to model the costs for this scenario.
 - Scenario 2 – Phased introduction of standards.** I would like to be contacted to provide information to model the costs for this scenario.
 - Scenario 3 – Phased introduction of standards.** I would like to be contacted to provide information to model the costs for this scenario.
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Consultation questions

On the following pages please:

- provided feedback to the consultation questions from the discussion paper
- answer only the questions which interest you
- type in the grey text boxes to answer the questions above. The boxes will expand as you type

Other information?

Type in this box below to advise us of anything not covered by the questions below, but is important to us undertaking a robust analysis using the best available information.

Gas Energy Australia (GEA) welcomes the opportunity to respond to the *Non-road diesel engines - A national approach to managing emissions*, Discussion Paper, October 2020 (Discussion Paper).

By way of background, GEA is the national peak body which represents the bulk of the downstream alternative gaseous fuels industry, which covers Liquefied Petroleum Gas (LPG), Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG). The industry comprises major companies and small to medium businesses in the gas fuels supply chain including producers, refiners, distributors, transporters, retailers, vehicle manufacturers, equipment manufacturers and suppliers, installers, educators and consultants.

Topic - Non-road diesel engines in Australia

Consultation question 1 Can you more accurately describe the NRDE market in Australia?

GEA has no comment.

Consultation question 2 What drivers might influence the purchase of cleaner alternatives, even if they cost more? How much more?

GEA considers that drivers that might influence the purchase of cleaner alternatives to non-road diesel engines (NRDE) include:

- cost benefits such as reduced fuel costs through the use of gas fuels including LPG, LNG and CNG;

- eligibility for subsidies such as tax credits and Australian Carbon Credit Units under the Emission Reduction Fund and its successor the Climate Solutions Fund; and
- internal company policies to reduce CO2 emissions and other pollutants, and long-term strategies to reach net zero emissions.

Now more than ever, businesses are seeking to limit the environmental impacts of their operations. As noted in the Discussion Paper, diesel engine exhaust contains many different pollutants which can cause harm to human health and the environment. Harmful components include particulate matter (PM), carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NOX) and oxides of sulfur (SOX).

Clean alternatives to NRDEs such as LPG, LNG and CNG powered engines deliver a cleaner environment, with significantly reduced pollutants and emissions including improved air quality but do it in a way that minimises abatement costs.

Consultation question 3 *How does the emissions performance of non-road diesel equipment influence purchasing decisions?*

GEA has no comment.

Consultation question 4 *Have you participated in a voluntary scheme to reduce NRDE emissions? If so, was it effective and why?*

GEA has no comment.

Topic - Future market conditions in the absence of intervention

Consultation question 5 Can you suggest or provide evidence for alternative assumptions about transitioning to alternative energy for NRDE applications?

GEA considers that the transition to alternative energy for NRDE applications should be focused on improving environmental and health outcomes now and working towards the use of net-zero emissions or carbon neutral fuels in the future. This could be achieved through the increased use of gas fuels for NRDE applications. Gas fuels offer significant advantages particularly over the use of diesel fuels, with CNG and LNG producing 30 per cent less CO₂, 75 per cent less NO₂, 90 per cent fewer PMs and 99 per cent less SO₂.

These reduced emissions and harmful pollutants are able to be achieved cost effectively through the use of gas fuels. One example is the use of LNG for power generation in remote communities not connected to the power grid. LNG enabled the Carosue Dam, Daisy Milano, Dalgara, Darlot, Deflector and Mt Marion mines in Western Australia, which employ hundreds of workers, to reduce their combined diesel fuel consumption by 55 million litres, saving a total of \$7.6 million on their fuel costs and reducing CO₂ emissions by 27,000 tonnes annually. On Australia's east coast, LNG is also being used for power generation at the Hera gold, silver and zinc mine located west of Dubbo NSW. The mine's use of LNG resulted in 5000 tonnes less CO₂ emissions per annum which is equivalent to the CO₂ emissions from 2380 cars.

These cost and health benefits of using cleaner, cheaper, Australian gas fuels are not limited to power generation. Significant environmental and health benefits can also be achieved through the use of gas fuels for heavy duty mine equipment such as trucks, hauling equipment and machinery. The benefits of using gas fuels for heavy duty mine trucks have been proven by the use of High Density Compressed Natural Gas (HDCNG™) for mining trucks in Queensland. With an average diesel displacement of more than 80%, these trucks allow mine operators to reduce their fuel costs, cut carbon emissions by up to 25 per cent and significantly reduce harmful particulate pollution without compromising on vehicle performance.

The introduction of best practise standards to encourage the use of cleaner alternatives through fuel switching should be considered as an affordable way to improve Australia's air quality and reduce significant threats to human health.

Consultation question 6 Are you able to demonstrate more reasonable assumptions about future market conditions in the absence of intervention?

In the absence of national standards for non-road diesel emissions in Australia, the use of diesel for non-road engines will continue on its current trajectory. Given the harmful

environmental and health impacts associated with the use of diesel, promoting the use of cleaner alternatives along with implementing emission standards for NRDEs used in agriculture, construction, mining, industry and small-scale power generation, would reduce diesel exhaust that often occurs in close proximity to those workplaces and surrounding homes.

Topic - Management scenario overarching assumptions

Consultation question 7 Do you have any insights or concerns regarding how the management scenarios address:

- NRDE equipment introduced into Australia for the first time; or
- loose replacement engines in NRDE equipment?

GEA has no comment.

Consultation question 8 Do you have any insights or concerns regarding the overarching assumption regarding technical barriers associated with management scenarios? If so, please provide as much information as possible such as:

- Equipment type/s
- Power bands
- Use, such as geographic considerations.

GEA has no comment.

Topic - Scenario 1, Industry standards

Consultation question 9 Do you prefer Option A or Option B and why?

Consultation question 10 Do you think labelling would be an important feature for any voluntary approach? If so why?

Consultation question 11 Can you suggest a better way for industry to manage NRDE emission rather than those suggested in Option A and B? If so, please provide as much detail as possible about scope, timing and roles for Government, suppliers and consumers.

Topic - Scenario 1 Option A – Consistent targets for industry groups

Consultation question 12 We have suggested a 50% target. Is this percentage a reasonable balance between emission reductions and flexibility? If no, what percentage offers that balance and why?

Consultation question 13 Is there another way to ensure that emissions reductions are occurring in populated areas other than the industry grouping approach?

Consultation question 14 Is it practical to commence this scenario within two (2) years after any hypothetical decision to introduce this management option? If no what is an appropriate date to commence this scenario and why?

Consultation question 15 Are there other possible benefits or drawbacks?

Topic - Scenario 1 Option B – Power band targets

Consultation question 16 We have suggested a 50% target. Is this percentage a reasonable balance between emission reductions and flexibility? If no, what percentage offers that balance and why?

Consultation question 17 Is there a better power threshold to use (than 37KW) to move from Tier 3 to Tier 4f technology which ensures that emissions reductions are occurring in populated areas? If yes, please provide an alternative power threshold and why?

Consultation question 18 Is it practical to commence this scenario within two (2) years after any hypothetical decision to introduce this management option? If no what is an appropriate date to commence this scenario and why?

Consultation question 19 Are there other possible benefits or drawbacks?

Topic - Scenario 2, Phased introduction of standards

Consultation question 20 Are these appropriate dates to initiate each phase of this scenario after any hypothetical decision to introduce this management option? If no, what dates are appropriate and why?

Consultation question 21 Are there other possible benefits or drawbacks?

Topic - Scenario 3, Best practice standards as soon as practicable

Consultation question 22 What is an appropriate date to initiate each phase of this scenario?

GEA considers that the introduction of standards which are implemented in the timeliest fashion would provide significantly increased health and environmental benefits as opposed to a phased introduction of standards or industry targets.

The introduction of best practise standards will help to push industry towards cleaner lower emitting options for NRDE applications. GEA considers that even greater environmental and health benefits could be achieved by focussing on early actions to combat the release of these gases and pollutants from sources in close proximity to where people live and work, over a staged approach to managing NRDE emissions.

The availability of lower emitting alternatives to NRDEs in the market today demonstrate the current readiness for industry to make use of these cleaner alternatives and as such Australian Governments should seek to implement best practise emission standards as soon as possible and bring Australia in line with other countries in Europe, North America and North Asia.

Consultation question 23 Are there other possible benefits or drawbacks?

Through the introduction of “Best practise standards as soon as possible” Other benefits associated with the increased use of gas fuels in NRDE applications include:

- **Increased liquid fuel security**

Australia’s increasing reliance on imported oil for a substantial portion of our liquid fuel needs leaves Australia vulnerable to supply disruptions which would have significant economic impacts and is not a viable long-term strategy. Australia is heading towards being fully dependent on imported, dirtier and more expensive oil-based fuels (ie, petrol and diesel) particularly for non-road applications and off-grid power generation. Australia’s abundant supply of gaseous fuels such as LPG, LNG and CNG and the increased use of gas fuels for these applications can help mitigate these risks and improve Australia’s liquid fuel security.

- **Decarbonisation of NRDE applications**

Increasing the use of cleaner alternatives to NRDEs including through the increased use of gas fuels will make a meaningful contribution to lower emissions through the use of net zero emissions and carbon neutral fuels in the future. As gas undergoes its own decarbonisation journey, low emission fuels such as LPG and natural gas have the ability to maintain reliability of supply and reduce emissions cost effectively while renewable gases such as biogas and

hydrogen become more readily available in the future with the ability to utilise existing gas infrastructure.