

SUBMISSION ON DISCUSSION DOCUMENT: OPTIONS FOR AMENDING THE GAS ACT 1992– MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT – MAY 2019

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Introduction

1. This submission is made on behalf of Ports of Auckland Limited (**POAL**) in response to the discussion document “Options for amending the Gas Act 1992” issued by MBIE in May 2019 (**Discussion Document**).
2. POAL is the port for New Zealand’s largest city and has played a vital role in the Auckland economy for 178 years. As part of its programme to reduce carbon emissions and with a vision to be a leader in the port industry’s transition to a low emissions future, POAL wishes to build, as a demonstration project, a hydrogen plant and refuelling facility on its site in Auckland, New Zealand (**Hydrogen Demonstration Project**). POAL will use the facility to trial hydrogen fuel cell vehicles for port operations including cars, trucks and container handling equipment. POAL has also partnered with other local bodies including Auckland Transport, who will use the facility to trial hydrogen fuel cell buses.
3. Hydrogen offers a flexible and clean approach to energy for Auckland and New Zealand. POAL is an industry leader in reducing greenhouse gas emissions, and has committed to having zero greenhouse gas emissions by 2040.¹ POAL will have an important role to play in achieving the Government’s target of net zero emissions by 2050 under the Climate Change Response (Zero Carbon) Amendment Bill.² Targets such as this, together with New Zealand’s potential for the generation and use of green hydrogen,³ make the exploration of hydrogen technology an important step for New Zealand.
4. The Hydrogen Demonstration Project is the first of its kind in New Zealand in that it involves the production of hydrogen by electrolysis for use in hydrogen fuel cell vehicles. Safety is at the forefront of POAL’s considerations, and in undertaking this project, POAL is looking to best practice used in other jurisdictions. POAL’s other goals for the project include building confidence in hydrogen technology with the community, business, government, planners and regulators, as well as POAL’s internal stakeholders through using a system that includes fuel production,

¹ See <http://www.poal.co.nz/media/ports-of-auckland-gets-serious-about-cutting-emissions>.

² Climate Change Response (Zero Carbon) Amendment Bill at proposed section 50.

³ Hydrogen generated from renewable sources.

dispensing and use of hydrogen in vehicles. This submission focuses on those aspects of the Discussion Document that are most relevant to the Hydrogen Demonstration Project.

5. POAL has undertaken preliminary research into the compatibility of the current gas regulatory regime and the needs of the Hydrogen Demonstration Project. This research indicates that there are barriers within the Gas Act 1992 and associated regulations that will prevent the project from proceeding in the absence of regulatory and/or legislative change. For this reason, POAL supports the need for change to the Gas Act as proposed in the Discussion Document. However, it is submitted that an intermediate solution is needed in the short term to allow projects such as the Hydrogen Demonstration Project to proceed and to facilitate the use of such projects in providing valuable information for regulatory reform.
6. Although hydrogen fuel cell technology is new to New Zealand, POAL considers there is a strong future for its mainstream adoption. POAL is grateful for the opportunity to make submissions on the Discussion Document. Due to its unique position through its involvement in the Hydrogen Demonstration Project, POAL sees real merit in discussing its submission with MBIE, and seeks to engage further on this matter. POAL also requests the opportunity to make further submissions on any initial submissions made on the Discussion Document.

POAL's Submissions in response to questions raised in the Discussion Document

1. What emerging technologies or alternative fuel sources are likely to be covered by the Act's definition of "Gas"?

7. The Gas Act 1992 currently contains a broad definition of "gas" which is not expressly limited to the gases listed, or a class of gases (such as those that consist largely of hydrocarbons).⁴ The provision provides for the extension of the definition to other gases by Order in Council but does not provide for exclusion of a particular gas (or use of a gas in specific circumstances) from the definition. As acknowledged in the Discussion Document, the Gas Act is primarily designed for the regulation and control of natural gas and LPG. However, the breadth of the definition of "gas" used in the Act means that more gases will be subject to the Act than was likely intended. Consequently, the Gas Act may apply to several components of the proposed Hydrogen Demonstration Project.
8. The Gas Act does not apply to any gas in circumstances where the Land Transport Act 1998 (**LTA**) applies.⁵ For projects like the Hydrogen Demonstration Project, this results in partial application of the Gas Act. Where hydrogen fuel cell technology is included in a vehicle, the LTA and associated rules provide for the safety of fuel systems, including those using gases such as LPG and CNG.
9. However, a fundamental part of the Hydrogen Demonstration Project and testing and progressing hydrogen technology is the ability to generate, store and dispense fuel for use in vehicles. Plant for the generation of hydrogen fuel may include components such as an electrolyser unit, compressors, storage tanks, a dispenser to supply fuel to vehicles, and associated pipework. These aspects of the generation of hydrogen for use as a fuel do not fall within the ambit of the LTA and are therefore subject to the requirements of the Gas Act as a result of the current definition of "gas".
10. In addition, there are several unique features of the Hydrogen Demonstration Project which distinguish it from the way fuel gases are used in New Zealand:
 - the production and use of hydrogen for the Hydrogen Demonstration Project will be at a small scale;
 - hydrogen will not be provided to the public and supply will be limited to a small group of consumers, each with their own agreement for supply of hydrogen; and
 - the processes of generating hydrogen using an electrolyser and its use in fuel cells to drive hydrogen electric vehicles does not involve combustion.

⁴ Gas Act 1992, s 2(1).

⁵ Gas Act 1992, s 3(2)(a)(iii).

For demonstration projects with characteristics such as these, it is appropriate to consider whether, for regulatory purposes, the gas should be treated as being akin to an industrial gas rather than a fuel gas.

2. What aspect(s) of the Act could be a barrier to the uptake of emerging technologies or alternative fuels?

11. The current form of the Gas Act gives rise to several barriers in relation to the Hydrogen Demonstration Project:
 - 11.1 The Gas Act, via the Gas (Safety and Measurement Regulations) 2010 (**GSMR**) requires compliance with standards that are incompatible with the use of hydrogen for the purposes of the Project.
 - 11.2 A feature of the regulatory framework under the Gas Act is the direct reference to specific standards in secondary legislation.⁶ While some provisions provide alternative means of compliance, others require compliance with specific standards or provide alternatives which are not feasible in the context of the Hydrogen Demonstration Project. The Project is currently working to determine the level of incompatibility between the needs of the Hydrogen Demonstration Project and the standards currently referenced in the GSMR. However, given the specialised equipment needed for hydrogen, it is expected that there could be significant incompatibility between the needs of the Hydrogen Demonstration Project and the requirements of the GSMR.
 - 11.3 An example of incompatibility is the odourisation requirement in regulation 16 of the GSMR. Odourisation of an otherwise odourless gas is generally achieved by adding small quantities of odourised gas. However, for use in hydrogen fuel cell vehicles, hydrogen must achieve very high standards of purity, thus preventing odourisation through the addition of other gases. While there is provision for the grant of an exemption to this requirement by WorkSafe under regulation 85 of the GSMR, an alternative method to ensure that leaks may be detected will be needed to ensure that the plant is not deemed to be “unsafe” under regulation 11.⁷
12. In some cases, it may be possible to amend regulations such as the GSMR to adopt standards that are specific to hydrogen. However, POAL’s view is that even if a complete regime of hydrogen standards could be adopted in this way, it would not be desirable to do so for a project in its demonstration phase. It is expected that through the undertaking of the Hydrogen Demonstration Project, the suitability of any standards adopted and the requirements of future regulation of the technology are tested and assessed.
13. For the Hydrogen Demonstration Project, full compliance (if achievable) with the regulatory framework under the Gas Act will require compliance with requirements that may not be appropriate for a demonstration project (for example provisions relating to the governance of the gas industry and access to the dispute resolution scheme). While there currently exists some provision for exemptions from these requirements, the additional applications and approval processes required unnecessarily increases the complexity of regulatory compliance for the Project.
14. Because the use of hydrogen in this way is a new technology for New Zealand, it is expected that in addition to incompatibility with some standards referenced in the framework, there may be other areas where there is technically no gap in the framework, but where to ensure safety, compliance with a hydrogen-specific standard should be required. The current structure of the gas regulatory framework (which distributes requirements across a number of different statutes and instruments) makes it difficult to assess the adequacy of the framework as a whole. For this reason, POAL submits that the application of the Gas Act to the Hydrogen Demonstration Project acts as a barrier to the efficient assessment of the standards needed to ensure safety in New Zealand.

⁶ For example, the Gas (Safety and Measurement) Regulations 2010.

⁷ Gas Safety and Measurement Regulations 2010, reg 11(1)(a).

3. What aspects should be amended or changed to facilitate the emergence of new technologies?

15. As discussed above, aspects of the Gas Act and associated regulations create barriers for emerging technology projects including the Hydrogen Demonstration Project. A solution to these barriers is needed to enable the Hydrogen Demonstration Project to proceed. From POAL's perspective, the best way to achieve this would be through an interim solution ahead of the substantive review of the Gas Act, in order to capitalise on the interest and momentum of current projects.
16. To be effective, an interim solution should provide for:
- regulators to work closely with POAL to ensure that appropriate international standards are applied to the project;
 - the development of an instrument in which required standards could be specified as needed;
 - a degree of flexibility in making the instrument to allow for additional standards to be referenced or substituted;
 - the oversight of the making or approval of such instrument by the appropriate bodies (which may include Worksafe, the Environmental Protection Authority and/or the Gas Industry Company Limited); and
 - a solution that operates alongside and complements regulation of non-fuel gases.
17. POAL would like to raise the possibility of an amendment to the definition of "gas" in the Gas Act to allow for a narrow power of exemption by Order in Council. Such an order could be subject to conditions (including compliance with specified standards) and limited in application to a specific use of a gas and for a specific time, and would provide an instrument in which to specify standards in addition to those that would apply to non-fuel gases under the existing framework.⁸

4. How will your business be impacted if changes to the Act are not made in the short-term (e.g. two or three years)?

18. Changes to the current gas framework ahead of the proposed timeline would facilitate the progress of the Hydrogen Demonstration Project.

5. Does the Act cause any issues with complying with other legislation?

19. POAL has not yet considered this issue and would like to provide a response to this question at a later time.

6. Are you or your organisation involved in the development or deployment of emerging technologies or alternative fuels?

20. As discussed above, POAL is currently undertaking the Hydrogen Demonstration Project.

7. Are you interested in being contacted as MBIE develops a longer-term programme of regulatory work around the development of emerging technologies and alternative fuels relating to the Act?

21. As a leader in the adoption of the use and generation of hydrogen as a fuel, POAL wishes to be involved in the programme of regulatory development in relation to this area.

Dated this day 21 June 2019

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⁸ For example, requirements and regulations under the Health and Safety at Work Act 2015 and the Hazardous Substances and New Organisms Act 1996.