



Ministry for the Environment consultation document, “Phasing out fossil fuels in process heat.”

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**Ministry for the Environment
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Submitted via website.

GasNZ and the LPG Association welcome the opportunity to respond to the Ministry for the Environment consultation document, “Phasing out fossil fuels in process heat.”

We urge the Ministry to engage directly with us beyond this submission.

This submission focuses on a few key areas of the consultation document and does not address every question in it.

About Us

Together, GasNZ and LPG Association represent the natural gas and LPG industry in New Zealand.

We supply 395,000 residential, commercial and industrial consumers.

Our customers use 53 petajoules of energy a year, on top of use by petrochemical use and electricity generation.

Summary of submission

- We support decarbonisation of the New Zealand energy system and the emissions budgets outlined in the pathway to carbon zero by the Climate Change Commission.
- We agree that decarbonisation of process heat is a necessary step in decarbonising the energy sector.

- We support the use of national direction to reduce uncertainty and inconsistency in applying amendments to the Resource Management Act.
- GasNZ and LPG Association have recommended emissions targets to the Climate Change Commission as the policy instrument to decarbonise and achieve the Net Zero Carbon policy. National direction should be aligned to emission budgets.
- Both natural gas and LPG can move to renewables sources, hydrogen, renewable LPG and gas alternatives, and could be introduced sufficiently quickly to meet emissions budgets proposed by the Climate Change Commission’s Draft Advice.
- National direction related to emissions from industrial use of natural gas should permit use of natural gas and LPG in industrial processes.
- The ‘no feasible economic or technical alternative’ standard is unworkable.
- If national directions are applied to consents for the use of natural gas in industrial processes, we support a threshold of 2MW.

We support climate action.

- Yes to emissions reductions
- Yes to decarbonising industrial processing
- Yes to national direction on emissions

Our sectors accept the science of climate change, and support action to reduce emissions. We recognise that industrial processing will need to decarbonise to ensure that New Zealand’s emissions budgets are met.

We agree with the Ministry’s analysis of the role that national direction can play. We support national direction to introduce consistent and clear standards for regional council administration of emissions under new Resource Management Act procedures.

Consistency and clarity are important for business investment, including investment in decarbonising technologies. National direction will help to avoid distortions, in which councils are incentivised to attract investment through local variation and businesses are incentivised to ‘jurisdiction shop’ for favourable rules. Economic efficiency is maximised when investment is made on the merits of specific business cases. Investment preferred because of regulatory arbitrage reduces efficient allocation of resources and, ultimately, welfare. Therefore, we support initiatives that promote consistency. (Please see section below about ‘feasible’, ‘technical’ and ‘economic’ alternatives.)

National direction should be aligned to emissions budgets.

- Bespoke emissions budgets for the industrial sector are unclear and unnecessary.

The consultation document states that its modelling “suggests that accelerated electrification in process heat could result in emissions savings of about 2.6 Mt CO₂-e by 2035. The Climate Change Commission’s recommended path and scenarios show the potential for 2 Mt CO₂-e by 2035.”

Although the modelling and the emissions pathway assumed in the consultation document are not

set out in detail, we conclude this statement means that a faster emissions pathway is proposed than that proposed by the Climate Change Commission.

The Commission's national emissions budgets chart a pathway to zero carbon in 2050 across the entire economy. We encourage the Ministry to adopt the same national emissions budgets as the Climate Commission.

Standardising emissions budgets gives greater clarity and predictability to policy. It reduces focus on a contest of models and instead re-directs attention to choices of substantive action to achieve the budgets.

A steeper emissions pathway sought for industrial processing can't have a cumulative effect on emissions because budgets are national; the effect of faster reductions from industry would be reallocation of emissions to other parts of the economy. Reallocation is helpful if it results in emissions being allocated to their highest value uses, but that is unlikely to occur if emissions are reallocated because of inconsistent emissions budgets across sectors.

We note this point is referenced in the document at page 25: "...the options have the potential to substitute for the emissions price, and this could suppress the price elsewhere in the economy or other sectors, likely reducing abatement in other areas." We urge the ministry to give this point greater focus. The logic leads inexorably to policy supporting the national emissions budgets, rather than attempting to construct frameworks that supplement emissions budgets. This is why work by gas and LPG sectors has focused on how our sectors can transition along the commission's emissions budget pathway. In attempting to construct a 'backstop' policy, policy makers should reflect that the national statement can only shuffle emissions around the economy.

National direction on emissions from LPG and gas at individual sites risks inhibiting the introduction of renewable alternatives.

It's important to recognise the usefulness of gas and LPG.

Gas and LPG are energy-rich, highly efficient fuel sources. Flames that can burn hotter and be controlled are ideal for applications such as space and water heating, uses where instant heat control is required, and for remote, energy-intensive businesses. These advantages can be difficult to replicate with electricity and biomass in many applications. Therefore, instead of transitioning use cases from gas to other ways to providing industrial heat, it is preferable to transition the gas to renewable sources so that the use case remains, but the emissions are removed.

The alternatives we propose are technically feasible.

Technology exists today to introduce a low carbon gas mix through the current natural gas network, and it is already in use in Europe. An industry feasibility study indicates the natural gas network could be fully converted to hydrogen by 2050, beginning with blending of hydrogen into gas networks from 2030. The LPG industry has concluded a major study to demonstrate that it can

transition to 100% renewable LPG along the same pathway as the climate change commission emissions budgets recommend. A copy of this is attached.

Two documents will help to understand the role that hydrogen, biogas and renewable LPG can play:

1. A report by Firstgas about bringing zero carbon gas to Aotearoa maps the pathway to introducing hydrogen. It is available here: https://firstgas.co.nz/wp-content/uploads/Firstgas-Group_Hydrogen-Feasibility-Study-Summary_A4_web.pdf
2. A report by Worley for the LPG Association demonstrates that renewable LPG can be introduced before 2030 and be carbon neutral by 2040, meeting the emissions budgets outlined in the Climate Change Commission's Draft Advice. The report was prepared to support a submission to the Climate Commission, and both the report and submission are available here: <http://www.gasnz.org.nz/uploads/images/LPGA/2021-0328%20LPG%20CCC%20Submission%20fc.pdf>

Gas and LPG industries have put forward credible plans for transitioning gas and LPG to renewable alternatives. The commercial viability of low carbon emissions gases requires supportive policy settings. We strongly encourage the Ministry to align national directions with efforts being made at the national level to decarbonise gas and LPG.

The proposed national direction to use site-level consenting to abate emissions would seriously risk undermining the introduction of low emission alternatives because it would disincentivise investment in equipment that new gas alternatives require.

The consultation paper states that electrification is generally the preferred alternative source of low and medium temperature process heat. However, this view overlooks the reasons that gas and LPG are often selected. As outlined in our submission on the Climate Change Commission Draft Advice, LPG and gas are primarily used where precise burn temperature or mobility value is needed and where providing this service with electricity is very expensive and often impractical. Substitution with biomass pellets and biofuels is possible, but will likely be limited by availability of supply, cost of transition, and concerns around poorer burn properties. The hurdles associated with indirect substitution suggest that the alternative of retaining the existing LPG and gas infrastructure, and sourcing substantial volumes of renewable gases, is the most effective decarbonisation route.

Technologies exist that will facilitate the supply of renewable and carbon-zero energy sources such as biogas, hydrogen and renewable LPG. These technologies require existing infrastructure, including industrial demand, to support existing appliances and infrastructure such as pipelines, tanks, cylinders and trucks.

The risk from regulating site-specific use of gas and LPG is that, at some point, the industry will lose the scale required to incentivise the transition to renewable gas or LPG. The people, skills, knowledge and investment currently in conventional LPG are needed to transition the LPG industry into renewable energy. By way of example, the loss of critical mass from the LPG-powered vehicle industry led to the loss of critical skills, to the point that the industry could not service even reduced demand.

Gas and LPG are national industries, in which supply, distribution and demand are closely linked. Substantial changes in demand in one place, for example through rapid removal of plant, affects the economics and willingness to supply in other areas.

If the policy led investment away from gas infrastructure, then the uptake of renewables would be inhibited. The technology and opportunity to transition LPG to renewables is here today. It is far less likely to be available in the future if the existing industry has become sub-scale.

The relevant technologies are wider than industrial processes. Renewable jet fuel and diesel are examples of adjacent fuel technologies, and the existence of an industrial biofuel sector helps to make a transition in those sectors. Renewable LPG is a valuable by-product or coproduct in producing these biofuels and may significantly enhance their economics. However, this will require the gas and LPG industries to maintain investment and scale to sustain their commercial viability.

National direction should permit use of natural gas in industrial processes.

Initiatives designed to support the changes to the Resource Management Act that will take effect from 31 December 2021 will be complex and require considerable adaption by industry and local authorities. Minimising the scope of change that occurs this year will improve prospects for success. Therefore, we submit that proposals relating to space and water heating should not be considered further for adoption this year, as they are directly related to wider work streams.

National direction related to emissions from industrial use of natural gas should permit use of natural gas in industrial processes. National direction can be reviewed periodically after 2025 to determine whether emissions targets are being met.

In our proposal, national direction would set an obligation for a proportion of gas used in industrial process heating to come from renewable (non-fossil fuel) sources from 2025-30. This obligation would facilitate the transition out of fossil fuels of the entire gas and LPG networks (not only those parts that are seeking new consents), while also continuing to meet the end use needs to industry.

National direction along the lines proposed in the consultation document would continue to be a regulatory option at any time if progress was assessed to be too slow, and the potential for that outcome would send the investment signals that policy desires.

The introduction of biogas, renewable LPG and hydrogen at national scale will be complex. We submit that abatement of emissions from natural gas will be best achieved through a national energy strategy.

Our proposed plan for natural gas and LPG would meet Climate Change Commission planned emissions budgets. However, policy settings need to support adoption of new gases. Without supportive policy the introduction of gas from renewable sources may not occur. As presently constructed, the particular national direction proposed may hamper national efforts to decarbonise our sector. In that case conventional fuels would remain for longer —with consequent emissions impacts. Therefore, we urge the ministry to align its policies more closely with policy initiatives across the whole of government, including the climate commission's pathway to net carbon zero and the emissions trading scheme.

'Feasible alternatives' standard is not feasible

At options 1.2 and 2.2, the consultation paper raises the prospect of restricting emissions from natural gas to cases where applicants for consents can demonstrate there are no feasible alternatives (for new assets in low and medium temperature cases), and where there are “no other technically and economically viable alternative fuel options with less emissions” (for re-consenting existing sites).

We strongly suggest this standard is not workable.

The separation of 'technical' and 'economic' misunderstands the nature of engineering decisions in which technically possible and economically possible usually involve the same judgements about the efficiency of an asset, and effects on business processes and outputs. To illustrate with analogy: A Ferrari might be technically possible for every household – it might even be economically possible for many, if other consumption choices were foregone. Would it therefore be a technically and economically feasible alternative for most households? What is economically feasible is impossible to assess. It would require judgements about price differentials, fundamental business judgments about asset valuations and uses, cost allocations, and much more – *for every industrial process in the country*.

If businesses need to demonstrate the technical and economic feasibility of investment decisions in consenting processes, then the complexity and inconsistency that national directions seek to avoid will be inevitable. We suggest that judicial decisions about the definition of these terms would be inevitable, but it is more appropriate for the regulatory stage to define the scope of policy.

The Climate Change Commission Draft Advice recommended leaving as many technology options on the table as possible to get to emissions targets. The proposed restrictions would minimise options available to businesses and reduce the number of workable options available for development in the future.

Thresholds

The use of consenting thresholds, intended to provide a minimum viable scale for consenting, may lead to distortions. Industrial activity may in some cases be divided over several sites, depending on economics. Goods could end up being transported between sites at various stages of production, creating a net production increased in emissions.

If national directions are applied to consents for the use of natural gas in industrial processes, we support a threshold of 2MW. At this level, new consenting would apply only to relatively significant sites that are more likely to have the capability to make site-specific emissions reductions plans. A lower threshold would be likely to apply to commercial businesses and impose considerable new compliance costs.

Green gas certification

Finally, we note that regulatory work to certify green gases and hydrogen is already advanced. Regulatory initiatives through the RMA affect this work and should be aligned with it.

A discussion paper on certification is undergoing industry consultation today. It can be found here: <https://www.certifiedenergy.co.nz/renewable-gas>

Permitting the use of natural gas and LPG through national direction would allow the required space for a new gas certification framework to be developed and introduced.

If you have any questions regarding this submission, please contact me on 021 857 469 or via email at peter@lpga.org.nz

A handwritten signature in blue ink, appearing to read 'Peter Gilbert', written in a cursive style.

Peter Gilbert

GasNZ