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Low emissions economy inquiry  
New Zealand Productivity Commission

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## PEPANZ Submission: Low Emissions Economy draft report

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### Introduction

This document constitutes the Petroleum Exploration and Production Association of New Zealand's (PEPANZ) submission in respect of the Productivity Commissions' draft report on the Low emissions economy inquiry, which was released for public comment on 27 April 2018.

PEPANZ represents private sector companies holding petroleum exploration and mining permits, service companies and individuals working in the industry.

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### Executive Summary

- We do not support the binary concept of the 'old and new economy.' We consider that oil and gas will continue to be important in the future, even in a net-zero future, and note the significant technological innovation in the industry.
- We support stability of policy settings because of its importance for investment certainty.
- We consider it is worth exploring whether New Zealand natural gas could be exported to displace coal internationally, under Article 6 of the Paris Agreement.
- International competitiveness and risks of carbon leakage should be key considerations when setting domestic policies, especially given the trade-exposed nature of the New Zealand economy.
- Continued exploration and production of natural gas is important to ensure process-heat users and industrial users have continued access to affordable energy, with emissions lower than the counterfactual choice of coal.
- Natural gas plays an important part in the electricity system, by providing affordable and reliable baseload supply (to cover shortfalls in generation from hydro, wind, and solar) to enable the country's renewable generation.

On specific Findings and Recommendations:

- We do not consider that inefficient fossil fuel subsidies are present in New Zealand, and therefore consider that **Recommendation 5.1** is misplaced. We note support for our view from APEC (2015) and the New Zealand Government, as articulated in the annex to the APEC report.
- We support **Recommendations 13.3 and 13.4**, which relate to the development of legislation to enable and regulate carbon capture and storage and to recognise CCS as 'removal' under the Emissions Trading Scheme.

- We support **Finding 12.3**, that “Under current technology and technology costs, reducing emissions from electricity generation will likely entail an increase in wholesale electricity prices. Rising electricity prices, if substantial, could dissuade adoption of emissions-reducing technology in process heat and in transport, as well as increasing costs throughout the economy”.
- We support **Recommendation 12.1**, that “Given rapid changes in electricity-generation technology and potential effects of rising electricity prices on adoption of low-emissions technology in other parts of the economy, the Government should not use subsidies or regulation to favour particular technologies that generate low-emissions electricity”.
- We support **Recommendation 12.2**, that “The Government should be cautious in specifying targets for emissions within the electricity sector, and make sure that technology is available to meet them without significantly increasing wholesale electricity prices”.

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## The role of oil and gas in a low-emissions future

On page 16, the Commission considers that a:

*...shift from the old economy to a new, low-emissions economy will be profound and widespread...*

We challenge the idea that an “old economy” and “new economy” exist. If anything, activities may be considered on a loose continuum of old to new, but to binarily classify sections of the economy is neither realistic nor helpful.

It is a mischaracterisation to consider oil and gas as part of the “old economy”, as it fails to recognise the cutting edge and transformational activities of the sector and the ongoing role that oil and gas is likely to have. In terms of innovation in the sector, consider Horizontal Drilling and Hydraulic Fracturing (fracking), which have delivered major growth in affordable global energy supply. Access to cheap gas has helped to displace coal and led to carbon emissions from energy consumption in the United States falling to a 25 year low in 2017.

The technical and engineering discipline in the petroleum industry is highly advanced and constantly evolving. Hydrogen developed from methane has the potential to allow the economy to continue on a new “business as usual” path.

The so-called “new economy” is highly dependent on the alleged “old” one, because the extractive sector provides the raw material (extracted with diesel powered machinery) needed to create wind farms, batteries, and the necessary steel etc.

In terms of a low emissions future, we strongly consider that New Zealand oil and gas has a crucial role in helping the country achieve that. That is because:

- natural gas plays a role as a low emissions fuel, either by displacing coal or for conversion to hydrogen;
- New Zealand hydrocarbons ensure affordable electricity;
- production and sale of oil provides revenue and royalties to maintain the Crown’s finances and could be directed to fund green technologies; and
- exports of New Zealand gas in a manner that secures international carbon mitigation credits, in the spirit of Article 6 of the Paris Agreement, could offer NZ the opportunity to secure emission credits from South Asia. That could lead to abatement in a more affordable manner than the high cost, \$250/t of CO<sub>2</sub>e option available in NZ’s largely renewable economy.

Even in a low-emissions future, we still consider oil and gas will have an important role. Oil and gas are still expected to supply half of the world’s energy needs by 2040 – around the same proportion as now.<sup>1</sup> Oil demand is expected to grow till 2040, albeit at a steadily decreasing rate, while natural gas usage is expected to grow by 45% - this is the International Energy Agency’s base case New Policies Scenario<sup>2</sup>. Demand for oil and gas is likely to continue to grow beyond 2040 as well.

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<sup>1</sup> International Energy Agency World Energy Outlook: <https://www.iea.org/weo/>

<sup>2</sup> iBid.

Oil and gas may be used in certain different or reduced ways, but many essential goods and services require hydrocarbons either as feedstock or fuel for which there are not economic replacements. To simply imagine or hope for alternatives that may or not eventuate is not reasonable or robust.

The challenge is not to fully phase out oil and gas (although some phase-down is expected with the growth of renewables). Instead, the task and challenge is to reduce their impact on the environment by lowering net emissions through: improved management of fugitive emissions, offsets, and bio and geo sequestration.

It is crucial to keep in mind that hydrocarbons in themselves are not the problem when it comes to greenhouse gas emissions – the issue is the carbon emissions resulting from burning them, and not all petroleum is burned. If the emissions can be captured or offset, the issue is addressed – so it makes sense to pursue such options to allow the continued enjoyment of oil and gas.

In this section, we finally note the Commission’s view that “It would be foolhardy to try to pin down the best route for this 32-year journey to 2050 in advance.” We agree with that assessment, but also consider it foolhardy to try to pin down the future itself.

## Stable policy settings

The Commission frequently notes the importance of stable settings to enable investment and commercial decision-making. We support the Commission when it states:

*Long-term political commitment and durability is essential to the success of climate change laws and institutions. Substantial cross-party support for the core elements of statutory and institutional arrangements will help provide policy permanence regardless of the make-up of the Government. (Finding 7.2), and*

*If the stability of policy settings is uncertain, or confidence in them is lacking, then potential investors will hold back from committing to lowering their emissions. (p87)*

We consider that oil and gas policy fits within the category of “climate change laws and institutions”. Oil and gas exploration, with its long lead times and significant capital and operating costs, requires stable settings for investments to be made, especially in frontier basins with modest geological prospectivity such as New Zealand. Unexpected, arbitrary and unilateral decisions such as the decision by the Government on 12 April 2018 to cease issuing new offshore exploration acreage is extremely damaging to investor confidence in both the energy sector and also the wider economy.

The uncertainty from arbitrary policy such as ceasing new exploration is damaging to emission reduction aims. For example, the Government’s exploration decision reduces the likelihood of gas displacing higher-emitting coal, because it means current users of industrial coal for thermal heat have much less certainty of gas supply going forward. That uncertainty reduces their likelihood of investing the capital costs to switch to gas-fired plant.

Incidentally, although apparently aimed at emission reductions, an arbitrary policy can in fact increase emissions. The decision on offshore exploration could increase emissions as:

- importing more fuel from overseas, to replace former proximate domestic production, involves greater transport distances and raises shipping emissions;
- petrochemical firms (such as those involved methanol production) relocate from New Zealand and use higher emission sources e.g. coal instead of gas; and
- coal as a domestic replacement doubles the emissions per unit of energy generated.

## International carbon markets

The Commission states that:

*Lack of access to a sound and trustworthy system of multilateral trading is a feature of the current post-Paris Agreement environment that is unlikely to change for a long time. This feature is strikingly at odds with a key assumption behind the original design of the NZ ETS that such access would exist. (p96)*

We are pleased that the Commission notes the possibility of bilateral or multilateral agreements between agreeable states:

*... governments of New Zealand and Columbia. New Zealand would "invest in" emission reductions in Columbia that are over and above Colombia's NDC. The payments would flow in direct proportion to verified reductions within an agreed price range and maximum budget. (p97)*

It would be interesting to consider whether a natural gas export from New Zealand that can be demonstrated to directly displace coal use<sup>3</sup> could be counted as an emission reduction in net terms, which New Zealand could claim reduction credits for. This could be explored under Article 6.2 *Direct Bilateral Co-operation* in the Paris Agreement, which we understand is to be discussed at COP24 in Poland in December this year.

## International competitiveness

The oil and gas sector is a global industry and is trade-exposed, which means costs (especially for exported crude oil, and for exported natural gas as methanol) cannot be simply passed on to consumers.

We support the Commission when it said in its Issues Paper of August 2017<sup>4</sup>:

*A controversial effect of emissions pricing is raising the costs of domestic firms exposed to international competition from firms in other countries that face either a zero or lower price on their emissions. Possible negative impacts are:*

- *domestic firms may not be able to compete or even be forced to close;*
- *over time, production may re-locate and grow in countries without emissions prices; and*
- *global emissions may stay the same or even increase if production in other countries is more emissions-intensive than the lost New Zealand production. Further, such production shifts could be hard to reverse even after emissions price parity is reached in the other countries. (p85)*

New Zealand oil and gas production is susceptible to carbon leakage to jurisdictions that lack comprehensive emission taxes or trading schemes. Carbon leakage may shift production to nations with poorer standards, or that involve more emissions when produced and refined. For example, New Zealand oil is less emissions-intensive than Venezuelan bitumen oil, Canadian tar sands, or heavy crudes from Saudi Arabia.

Noting that the terms of reference appear to call for the Commission to focus on emission reductions *in New Zealand*, we submit that policy makers should be very cautious of driving industry closures in New Zealand that lead to either no global emissions reduction or indeed global emission increases. The experience of the United Kingdom is instructive – although UK emissions have dropped some 42% between 1990 and 2016, this appears largely due to the closure of manufacturing industries which have simply relocated elsewhere.

Accordingly, we support the Commission when it says:

*...higher carbon prices raise viability and fairness issues for trade-exposed firms whose competitors are not subject to equivalent pricing. The closure of domestic firms, and the shift of production to less emissions-efficient producers offshore, would be a loss for New Zealand and globally. (p357)*

## Fossil fuel subsidies

The Commission covers the topic of fossil fuels subsidies, and states in Finding 5.2 that:

*Fossil fuel subsidies act in direct opposition to New Zealand's transition to a lower emissions economy. New Zealand provides approximately \$78-88 million per year worth of government support to fossil fuel production and consumption.*

The Commission advises in Recommendation 5.1 that:

*The Government should phase out all subsidies that support the ongoing production and use of fossil fuels.*

PEPANZ does *not* support inefficient fossil fuel subsidies, and supports the New Zealand Government's position of opposing such subsidies globally and domestically. Contrary to the view of the OECD and Dr Loomis, we do not consider that any fossil fuel *subsidies* are present in New Zealand, and consider that the OECD and Dr Loomis do not use an appropriate definition of 'subsidy', and instead cover a range of other support measures.

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<sup>3</sup> For example, the Chinese proponents of the *Belt and Road* initiative are planning to construct ~700 new coal-fired power stations.

<sup>4</sup> [https://www.productivity.govt.nz/sites/default/files/Productivity%20Commission\\_Low-emissions%20economy\\_Draft%20report.pdf](https://www.productivity.govt.nz/sites/default/files/Productivity%20Commission_Low-emissions%20economy_Draft%20report.pdf)

The World Trade Organisation uses what we understand to be the most accepted definition of subsidies<sup>5</sup>, and under this definition New Zealand has no subsidies. The APEC report *Peer Review on Fossil Fuel Subsidy Reforms in New Zealand*<sup>6</sup> affirms this view, and includes reported comments from the New Zealand Government which support our position. We strongly commend pages 38-45 of the APEC *Peer Review* to the Commission.

We note that the OECD uses a broader definition, including support measures, which include tax policies that are seen to benefit oil and gas relative to other sectors.

Before commenting on some alleged subsidies, it is crucial to focus on the actual *problem* that actual subsidies (as properly defined) lead to – the inefficient production or consumption of fossil fuels. That is, policies should only be considered a subsidy if it leads to greater levels of production or consumption than would otherwise be the case, i.e. if an actual inefficiency of allocation arises.

Of the “approximately \$78-88 million per year worth of government support to fossil fuel production and consumption” contemplated by the Commission, the vast majority<sup>7</sup> is a simple rebate for fuel-excise taxes, which address what would otherwise be an inequity. Simply put, excises taxes are a user-pays fee on transport fuels to fund public roading. Because not all transport fuel is actually consumed on public roads, certain off-road users<sup>8</sup> qualify for a rebate of the tax. This is covered in pages 63-66 of the APEC 2015 *Peer Review*.

We do not consider any of the other measures identified by the OECD or Loomis to be inefficient, except potentially the ‘seven year straight line depreciation’ policy. Rather than repeating the case for why other policies identified by the OECD and Loomis are not subsidies (such as the non-resident offshore drilling rig and seismic ship operator tax exemption), we again refer the Commission to the APEC *Peer Review*, especially pages 38-45.

## Heat and Industrial Processes and Carbon capture and storage

We agree with Recommendations 13.3 and 13.4 which recommend developing legislation to enable and regulate carbon capture and storage and to recognise CCS as ‘removal’ under the Emissions Trading Scheme. With sound Carbon Capture and Storage, emissions do not enter the atmosphere which negates concerns about climate change.

We consider that continued exploration and production of natural gas should be maintained to ensure process-heat users and industrial users have continued access to affordable energy, with emissions lower than the counterfactual choice of coal. We note, in support of our point, that Finding 13.4 states that:

*Significant technological and logistical improvements will be needed before biomass becomes a cost-competitive and emissions-neutral alternative to fossil fuels for large industrial heat plant.*

Finding 13.4 states:

*There are more opportunities for switching to lower-emissions fuel sources for low and intermediate process heat needs for firms in the North Island, reflecting better access to gas and geothermal energy. In the South Island, switching to electricity may be feasible for firms whose heat needs are negatively correlated with electricity prices.*

In relation to that point, the lack of reticulated gas in the South Island prevents gas displacing coal. Any gas discovery off the South Island that was brought to shore could potentially displace coal, although scale limitations and pipeline development costs would need to be addressed.

## The role of gas in the electricity sector

Natural gas plays an important part in the electricity system, by providing affordable and reliable baseload supply (to cover shortfalls in generation from hydro, wind, and solar). Indeed, the baseload offered from New Zealand fossil fuels is a direct enabler of the high level of renewable electricity the country generates. The role of gas should be recognised and provided for going forward, through enabling new exploration and production.

We note that in April 2018, Transpower released a report *Te Mauri Hiko - Energy Futures* promoting renewable electricity to help decarbonise the economy. The report also explained that dry-year risk increases three-fold if renewables are

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<sup>5</sup> “Under the WTO Agreement on Subsidies and Countervailing Measures, for instance, a subsidy is considered to exist if it is one of four transfer mechanisms (the direct transfer of funds or liabilities; revenue foregone or not collected; the provision of below-cost goods or services; and the provision of income or price support) and if it confers a benefit that is deemed specific enough.” Page 10, *Peer Review on Fossil Fuel Subsidy Reforms in New Zealand* (2015).

<sup>6</sup> <http://www.mbie.govt.nz/info-services/sectors-industries/energy/international-relationships/pdf-document-library/peer-review-fossil-fuel-subsidy-reforms-nz.pdf>

<sup>7</sup> Dr Loomis states the rebate was \$56.2 million in 2016.

<sup>8</sup> E.g. off-road agricultural and commercial vehicles and marine transport.

increasingly relied on. To manage that risk, and effectively to enable further marginal increases in renewable generation, Transpower recommended that gas-fired peaking capacity is maintained until an imagined alternative may be developed.

We also note that high electricity prices compromise the competitiveness of the entire trade sector, so reiterate the importance to New Zealand's economic fundamentals of keeping gas in the system.

To understand the importance of gas, and to inform consideration of the value of keeping gas in the electricity generation system, we recommend the Commission model the effects of a gas-constrained market on the electricity sector. We understand that recent modelling from another party has shown that replacing fossil fuels in process heat, general heating, and transport would double annual electricity demand.

We support the Commission's finding 12.3 and recommendations 12.1 and 12.2 in the electricity section. In particular, we support the point from recommendation 12.2 that:

*The Government should be cautious in specifying targets for emissions within the electricity sector, and make sure that technology is available to meet them without significantly increasing wholesale electricity prices.*

That theme should be applied to all considerations about decarbonisation – that targets should not be set in the absence of confidence that technically and economically sound means to achieve them will exist.

Finding 12.3 identifies the need to be mindful of perverse outcomes and unintended consequences:

*Under current technology and technology costs, reducing emissions from electricity generation will likely entail an increase in wholesale electricity prices. Rising electricity prices, if substantial, could dissuade adoption of emissions-reducing technology in process heat and in transport, as well as increasing costs throughout the economy.*

It is pleasing that the Commission has drawn attention to this, and we encourage the Commission to, throughout its report, consider identifying other examples of unintended consequences.