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From: no-reply@mbie.govt.nz
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To: [REDACTED]; Hydrogen
Subject: Hydrogen green paper - submission

Submission on Hydrogen green paper received:

Introduction

Name

Lindsay Jeffs

Email

ljassociates@xtra.co.nz

Business name or organisation (if applicable):

Carbon Neutral New Zealand Trust

Position title (if applicable):

Trustee

Is this an individual submission or on behalf of a group or organisation?

Behalf of group or organisation

Please give the name of the group or organisation this submission is on behalf of.

Carbon Neutral New Zealand Trust

What is the role of Government in developing hydrogen for storage and distribution?

The setting of overarching policy, safety requirements, compliance regulation and taxation. However, it is vital that the government does not encourage the development of hydrogen from fossil fuels as this will not significantly reduce New Zealand's carbon emissions as required under the Paris Agreement.

The Government needs to be firm in its intention to support green hydrogen projects and not to support brown, grey or blue hydrogen production.

What are the challenges for using hydrogen for storage and distribution?

Public safety. It is vital that hydrogen storage is not simply tacked onto the existing fossil fuel supply chain.

What are the opportunities for using hydrogen for storage and distribution?

What is the role of Government in developing the complementary role of electricity and hydrogen?

Setting policy and regulation. Given that the government is no longer a major player in the production and supply of electricity it should not now enter into or subsidise the green hydrogen market except in the areas of public transport and waste reduction.

What are the challenges for achieving this complementary role of electricity and hydrogen?

The report implies the continuation of a national electricity distribution system. Such a notion is out of step with the development of distributed energy resources (including micro-grids) and demand responses which will probably become the norm within the next two decades.

What are the opportunities for this complementary role of electricity and hydrogen?

What is the role of Government in supporting hydrogen use for the transport sector?

The Government should be seizing the opportunity the climate crisis gives the country to decrease the role of private motor vehicles given that they are responsible for:

- a) waste of lives due to accidents. Whilst in the developed world the number of drivers being killed is decreasing the number of pedestrians being killed is increasing. Worldwide more than 700 pedestrians die each day. (Weapons of Mass Destruction, Guardian Weekly, 11 October 2019)
 - b) waste of time. Traffic congestion in NZ's major cities is getting worst and each year more productive time is lost.
 - c) waste of space. In North American cities, roads and parking lots account for respectively 30 and 60% of the total surface area. Highways are a waste of valuable land with motor vehicle driving using 10 to 100 times more road space than other forms of transport.
 - d) waste of energy. In urban areas up to 40% of fuel usage is wasted looking for a parking space.
 - e) waste of money. In terms of the car owner, given the rapid depreciation of the asset, motor vehicles absorb on average 25-33% of an individual's income. From society's perspective the cost of accidents alone cost government's between 1 and 3% of GNP according to the WHO.
- Given these factors it is nonsensical for New Zealand to switch its light vehicle fleet from fossil fuel to green hydrogen.

The time is now for redesigning our cities, transport modes, highway networks and fuel supplies to new configurations not just shifting from one fuel to another.

In terms of the heavy motor vehicle fleet we support the Government looking into the use of green hydrogen.

We also believe that green hydrogen has a role to play in the rail and marine transport sectors.

What are the challenges when using hydrogen for mobility and transport?

Safety concerns must be the first priority.

What are the opportunities for using hydrogen for mobility and transport?

As mentioned above green hydrogen has a potential role in the heavy vehicle, train and marine sectors within the next ten years whereas aviation usage probably has a longer lead-time.

What is the role of Government in encouraging the use of hydrogen for industrial processes including process heat supply?

The Government needs to investigate the co-generation possibilities of producing and using green hydrogen for reducing the greenhouse gas emissions from industrial uses.

What are the challenges for using hydrogen in industrial processes?

What are the opportunities for the use of hydrogen in industrial processes?

Recent research from Sierra Energy, California suggests that hydrogen could be obtained from the waste-to-energy gasification of waste. Such a process will not only reduce methane from waste management facilities but provide energy which could be used for process heat.

What is the role of Government in encouraging hydrogen uptake for decarbonisation of our natural gas uses?

We are strongly opposed to using natural gas to produce hydrogen.

The Government should ban the use of natural gas for hydrogen production.

The climate crisis does not give New Zealand, or the world, the time to play around with possible transition strategies. The need, according to the IPCC and the UN is to decarbonise the economy now not in the future.

What are the challenges for hydrogen to decarbonise the applications using natural gas?

The idea that natural gas is a bridge to a clean energy future is in reality a "Bridge to Nowhere" (Tony Seba, Clean Disruption of Energy and Transportation).

Whilst we acknowledge that natural gas produces less greenhouse gases than coal when natural gas is released unburned into the atmosphere its effect over 20 years is 72 times worst as a greenhouse gas than CO2 given that its main component is methane .

What are the opportunities for hydrogen to decarbonise our gas demand?

See above.

What is the role of Government in producing hydrogen in sufficient volume for export?

We consider that such an approach would be unethical if the hydrogen exported was not green hydrogen.

In addition, it would demonstrate that New Zealand places economic considerations above social and environmental imperatives including humanity's very existence.

What are the challenges for hydrogen if produced for export?

Sufficient green hydrogen sources.

In addition, we welcome your feedback about the opportunities of hydrogen to Māori and how this will support their aspirations for social and economic development.

What are the opportunities for hydrogen if produced for export?

If you wish to, you can attach a document to this submission.

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