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From: no-reply@mbie.govt.nz
Sent: Wednesday, 23 October 2019 6:01 p.m.
To: [redacted]; Hydrogen
Subject: Hydrogen green paper - submission

Submission on Hydrogen green paper recevied:

Introduction
Name

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Business name or organisation (if applicable):
Position title (if applicable):
Is this an individual submission or on behalf of a group or organisation?

Individual

Please give the name of the group or organisation this submission is on behalf of.
What is the role of Government in developing hydrogen for storage and distribution?

In my view none. There are far cheaper proven (UK) technologies for energy storage, for example "liquid air" storage technology: https://www.greentechmedia.com/articles/read/highview-power-completes-uk-liquid-air-storage-plant and https://www.telegraph.co.uk/business/2019/08/26/british-start-up-beats-world-holy-grail-cheap-energy-storage/

Also Thermal Energy storage in mines (or abandoned oil/gas wells) https://www.geoenergymarketing.com/energy-blog/thermal-energy-storage-in-mines-mtes/ and Gravity energy storage in abandoned mines (or oil/gas) wells https://www.researchgate.net/publication/330997953_Gravity_energy_storage_with_suspended_weights_for_abandoned_mine_shafts

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

It's an extremely expensive technology with no market at present. Given the urgency for real climate action, development of brown, grey and blue hydrogen cannot be a genuine or effective transition pathway, because of its reliance on fossil fuels and unproven carbon capture, use and storage. It prolongs fossil fuel exploration, mining and reliance.

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

None, given the wide availability of cheaper, proven technologies.

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

None. Given the urgency of addressing the climate emergency, it makes more sense to stick with cheaper, proven technologies.

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

It's far more expensive than other alternatives and it relies on unproven technologies. Green hydrogen is extremely energy intensive to produce. Consideration of its development and application must first be thoroughly assessed and compared with all other energy options. The goal of any development needs to be resource conservation, security and resilience, and social wellbeing, not

economic profits. Making green hydrogen for export does not make environmental, social or economic sense. Moreover new brown, grey and blue hydrogen develop isn't appropriate even as a transition technology because it relies on further fossil fuel mining and unproven carbon capture technology.

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

None.

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

None, especially where hydrogen production relies on mining fossil fuels. We ask that MBIE put forward a clear position and instigate legislation to prohibit any new brown, grey and blue hydrogen development.

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

It's way more expensive than lithium batteries and there is presently no market for it in NZ.

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

None.

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

They need to ban brown, grey and blue hydrogen and foster the development of cheaper proven technologies that are not so energy intensive to produce as green hydrogen.

What are the challenges for using hydrogen in industrial processes?

Much more expensive than other energy storage technologies, no market, very energy intensive to produce.

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

None.

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

None. Government needs to move quickly to phase out natural gas mining. According to IPCC scientists, to keep global warming under 1.5 degrees centigrade, we need to leave unmined fossil fuels in the ground.

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

The carbon capture technologies proposed for this process are totally unproven.

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

Gas demand needs to be reduced by providing Kiwi communities with cheap environmentally friendly renewable energy and low cost storage technologies like liquid air storage, thermal energy storage and gravity storage that have a good track record overseas.

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

None. Producing hydrogen for export makes absolutely no sense environmentally or economically when there are existing storage technologies that are cheap, proven and environmentally friendly.

What are the challenges for hydrogen if produced for export?

Existing technologies are cheaper, proven and more environmentally friendly.

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?

None

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