

#12

COMPLETE

Page 4: Privacy Information

Q1

Privacy information

MBIE may publish or release your submission on MBIE's website or through an Official Information Act request. If you do not want your submission or specific parts of your submission to be released, please tick the box and provide an explanation below of which parts of your submission should be withheld from release

Page 5: Submitter information

Q2

Name

Q3

Organisation and role (if submitting on behalf of a company or organisation)

Researcher

Q4

Email Address

Q5

Yes

Are you happy for MBIE to contact you, if we have questions about your submission?

Q6

Individual

Please clearly indicate if you are making this submission as an individual, or on behalf of a company or organisation.

Page 6: Strategic context

Q7

If there are other issues we should be considering in our assessment of the strategic landscape for hydrogen in New Zealand?

Hydrogen cannot be considered in isolation. For example trying to use hydrogen to decarbonise domestic aviation should be considered alongside lower energy use alternatives such as restoring passenger rail

Page 7: Use cases for hydrogen

Q8

Do you agree with our assessment of the most viable use cases of hydrogen in New Zealand's energy transition?

No,

Please provide further explanation to your response:

A. The rational and intelligent use of valuable renewable energy should be the key focus. B. Thermodynamics should provide the fundamental basis for the analysis. C. The industry should not expect to be subsidised D. The assessment needs to provide a critical, well referenced review of the current state of the art concerning green hydrogen, and the alternatives which may well overtake it for energy efficiency, engineering, social, environmental, and economic reasons. E. A systems approach needs to be taken. For example, promoting hydrogen powered, or alternatively electric, heavy transport needs to be considered against other alternatives such as electrified rail. F. Policy makers would be well advised to follow the research and commentary of Paul Martin a Canadian chemist and energy expert.

Q9

What other factors should we be considering?

Respondent skipped this question

Page 8: The pathway to 2050

Q10

Do you agree with this assessment of the potential for hydrogen supply and demand in New Zealand?

No

Q11

Do you agree with the key factors we have set out that are likely to determine how hydrogen deployment could play out?

No

Page 9: How hydrogen could contribute to our objectives

Q12

Do you agree with our findings on the potential for hydrogen to contribute to New Zealand's emissions reduction, energy security and resilience and economic outcomes?

No

Q13

Do you have any insights we should consider on what is needed to make hydrogen commercially viable?

Yes,

Please provide further explanation to your response:

1. Renewable energy is a very valuable finite resource, as are the minerals and other materials used to harness, transmit & utilise it. 2. Hydrogen is an energy carrier which should be evaluated impartially alongside electricity, heat and fuels (liquid, gaseous, solid) 3. The physics relating to green hydrogen indicate low system efficiencies, a very low volumetric energy density and that it is an indirect greenhouse gas 4. There are significant supply chain and geo-political issues associated with large-scale renewable electricity generation some of which will apply to electrolysis, compression and liquefaction of green hydrogen. 5. There is a strong argument that hydrogen may be an economic bubble. 6. Hydrogen leakage will inevitably occur from plant, pipelines and storage. There is considerable uncertainty about the scale of leakage, but it is likely to be significant. 7. Hydrogen is dangerous to handle with real potential for life threatening accidents.

Page 10: Government position and actions

Q14

Do you agree with our policy objectives?

No

Q15

Do you agree with our positioning on hydrogen's renewable electricity impacts and export sector?

No,

Please provide further explanation to your response.:
Exporting hydrogen makes no sense

Q16

Do you agree with the proposed actions and considerations we have made under each focus area?

Don't Know

Page 11: Other Feedback

Q17

If there is anything else you'd like to tell us, please comment below.

Respondent skipped this question