

Submission on the *Interim Hydrogen Roadmap*

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Release of information

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I would like to be contacted before the release or use of my submission in the summary of submissions that will be published by MBIE after the consultation.

I would like my submission (or identified parts of my submission) to be kept confidential, and **have stated below** my reasons and grounds under the Official Information Act that I believe apply, for consideration by MBIE.

Responses to questions

This is a submission on the Hydrogen Roadmap consultation document made on behalf of multi-disciplinary practitioners from across Beca's technical and advisory business lines (Beca practitioners).

This submission has been developed alongside more general comments and feedback we have also provided via general submission and a specific submission made on the Offshore Renewable energy discussion document.

Section 1: Hydrogen is emerging as an important part of the future global energy system

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

We agree with the diverse range of potential applications for hydrogen outlined in this section. We suggest that, to gain momentum in the development of a hydrogen sector in New Zealand however, certain applications should be prioritised such as heavy transport as many applications mentioned in this section such as hydrogen's use in aviation will not be implemented in the short term (less than 5 years).

1 Hydrogen is still seen as an emerging and important part of the global energy system however progress in the implementation of significant hydrogen projects from a global perspective, has not been as rapid as originally envisaged.

We suggest the role the government has taken in co-investing in New Zealand based hydrogen projects needs to continue to ensure that the development of the hydrogen sector in New Zealand is maintained and accelerated. This investment support is necessary as there is currently a cost differential between Green Hydrogen and other forms of energy including fossil fuel sourced hydrogen. If we are going to move towards the decarbonisation of the energy sector, then green hydrogen will be one of a portfolio of low carbon energy solutions. As described in the road map document, certain applications such as the heavy transport sector are well suited to the use of hydrogen as a replacement of current fossil fuels.

Section 2: The role for hydrogen in New Zealand's energy transition

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

2 We agree with the range of cases that are discussed in the roadmap document. However, some of the applications such as in the use of hard to abate applications, such as the steel making process or large-scale methanol production, do not have an immediate short-term solution and would also involve very significant investment which may be outside of the ability of individual parties to finance. Those that have been identified in the roadmap document which are underway have been in the development and design phases for a number of years and the pathway to implementation appears to be technically challenging, complicated and lengthy.

Do you support some of these uses more than others?

3

We think that there are some applications that from an implementation perspective, should be prioritised over others if momentum is going to be built in the development of a green hydrogen industry in New Zealand. Large scale Industrial hard to abate applications whilst exciting and potentially significant in their impact, will not in all probability, be implemented in the short or even midterm. If we are going to continue make some progress in the development of hydrogen as a low carbon energy solution, a focus on areas such as heavy road transport and ammonia production, which will support the development of a network of green hydrogen generation facilities that will not only support this application but will also produce a source of green hydrogen for other uses.

What other factors should we be considering when assessing the right roles for hydrogen in New Zealand's energy transition?

4

We believe that the draft hydrogen roadmap document thoroughly discusses the potential roles for hydrogen in the wider energy transition landscape.

Section 3: Government position and actions

Do you agree with our policy objectives?

5

We support the continued co-investment from government in the continued development of the hydrogen sector. At a strategic level, we recommend that the roadmap prioritises the investment opportunities in the hydrogen sector to ensure that funding is directed at opportunities that will either have the greatest impact on decarbonising energy or creating new opportunity for industrial development.

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

6

The development of hydrogen generation at scale as an export commodity does have its challenges particularly from a commercial viability perspective. We believe that the production of hydrogen and its derivatives at scale is important to the overall viability of the hydrogen sector.

The most significant factor in the commercial viability of the production of green hydrogen is the cost of electricity. The challenge facing the hydrogen sector in New Zealand is competing on a global stage with other producers of hydrogen which may be operating at a lower cost base. However, if we can generate hydrogen and its derivatives at a competitive price and lock in suitable offtake agreements, then this will give the sector the impetus it needs to grow at scale.

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

7

In the four years since the release of the Green Hydrogen Vision Paper, the implementation of Green Hydrogen generating facilities in New Zealand has been somewhat slow. If we are to

meet our 2035 goals of producing between 180,000 – 600,000 tonnes of hydrogen per annum, then the pathway to development enabled by funding, regulatory mechanisms and approval must be streamlined and more efficient.

We support the development and focus on developing a cross-agency working group tasked with reviewing and prioritising regulatory barriers and see this as an important activity in accelerating the development of the hydrogen sector. We suggest that this group needs to be comprised of a mixture of public and private sector stakeholders.

Is there any evidence we should be considering to better target actions in the final Hydrogen Roadmap?

8

General comments

Even though it has been four years since the Hydrogen vision document has been published and interest and passion for the development and implementation of a green hydrogen sector in New Zealand is strong, the progress to having widespread production of green hydrogen which would support applications such as heavy transportation, has been slow. To our knowledge there is still only one functioning green hydrogen manufacturing facility in New Zealand and the further deployment of green hydrogen as a future energy solution must be accelerated if we are going to meet our hydrogen generation goals even on a domestic demand level of 180,000 tonnes per annum by 2035.

The green hydrogen roadmap is a thorough summary of the current state and future potential of the sector in New Zealand but lacks concrete time-based detailed actions with a supporting timeline which we believe is required to give emphasis to the continued importance of the development of the hydrogen sector.

We suggest that the development of the final hydrogen roadmap will help to shape the deployment of the hydrogen sector. Development should include representatives from all stakeholders involved in the sector to both ensure all views are considered and a clear path for implementation is established. These include government, industry, and key groups such as the New Zealand Hydrogen Council.