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42 Connett Road West
Bell Block
New Plymouth 4312
New Zealand
clarus.co.nz

Ministry of Business, Innovation and Employment
PO Box 1473, Wellington 6140

Sent by email: resourcepolicy@mbie.govt.nz

Regulatory proposals for natural and orange hydrogen development

Thank you for the opportunity to submit on the Ministry of Business, Innovation and Employment's (MBIE) discussion document titled *Regulatory proposals for natural and orange hydrogen development*. There is no confidential information in this submission.

Clarus is a group of energy infrastructure businesses. MBIE's discussion document is of most relevance to our Firstgas, Flexgas and First Renewables businesses. Flexgas manages the Ahuroa underground natural gas storage facility and has related responsibilities under the Crown Minerals Act 1991 (the CMA).

In the discussion document, MBIE identified two high-level options:

> Option one: Include hydrogen in the definition of a mineral to regulate it as a mineral under the CMA.
>
> Option two: Exclude hydrogen in the definition of a mineral under the CMA and regulate it as a non-mineral natural resource.

We support the development of a regulatory framework for natural and orange hydrogen and favour customising the CMA to achieve this

Overall, we are supportive of the need to develop a regulatory framework for natural and orange hydrogen and that the CMA is a superior option for achieving this. We agree with the benefits as stated by MBIE. In addition, we see benefits of the regulatory framework being better able to adapt to possible future integration of conventional oil and gas resources undertaking new storage functions such as:

- Carbon capture and storage (CCS)
- Underground hydrogen storage (UHS)
- Injection of hydrogen into geological structures for microbial methanogenesis and subsequent extraction as methane.

Accordingly, we recommend customising the CMA to regulate natural and orange hydrogen and to future-proof the legislation by designing for integration with other situations involving underground injection of hydrogen, and the Government's planned changes for CCS.

Our response to the consultation questions is set out in the following appendix.

Clarus response to MBIE's discussion document questions

MBIE question	Clarus response
Q1: Do you agree that objectives outlined in the discussion document are the most important objectives for a hydrogen regulatory regime? Are there other objectives that we should explore?	**Agree.** Climate outcomes could have been given more prominence with an explicit mention, though this is covered by 'environmental outcomes'.
Q2: Do you support regulating natural and orange hydrogen as a mineral?	**Support.**
Q3: What do you consider to be the advantages and disadvantages of this approach?	The key advantages are: - Regulatory consistency and efficiency - CMA-permitted facilities like Ahuroa would have a common regulatory framework - Easier to align new CCS legislation with hydrogen and oil and gas frameworks.
Q4: Do you see any unintended consequence or risks with the "rule of capture" and how it may work in practice? Please explain your answer and how these risks could be mitigated.	**Support 'rule of capture'.** Having an explicit 'rule of capture' gives a developer confidence that they are entitled to any hydrogen they capture at their facilities. Developers are left with an incentive to assess and manage risks relating to how the hydrogen gets to their facilities. In time, as the science of natural and orange hydrogen improves, there may be a case for a more nuanced approach to sharing of hydrogen resources. However, there is presently far too much uncertainty for policymakers to design such an approach.
Q5: What CMA requirements should apply (e.g. non-petroleum mineral requirements, petroleum requirements, or something bespoke)?	**Bespoke.** We comment further on phasing and bespoke arrangements in question six.

Q6: What are your views on phasing the regulatory requirements for hydrogen under the CMA (e.g. focusing on prospecting/exploration permitting first)?	**Support.** We support a phased approach. More complex resource sharing arrangements (production caps, well spacing, unitisation and pooling) cannot be sensibly designed for at this time. All of those arrangements were made possible by decades of oil and gas developments enhancing the geological science of petroleum. Hydrogen has radically different properties to petroleum deposits and the science of natural hydrogen geology is nascent. It may be possible to design the *principles* for decommissioning at this time without designing any detailed obligations. It would be reasonable for developers of white/orange hydrogen to expect they will need to safely decommission their facilities. Our experience with the Ahuroa gas storage facility is that the decommissioning obligations imposed on oil and gas production are excessive for a gas storage facility. Some reporting obligations will be needed from initiation. However, the full petroleum reporting obligations would be inappropriate and onerous for natural hydrogen developers.
Q7: Do you support regulating natural and orange hydrogen as a non-mineral natural resource outside of the CMA?	**Do not support.** There is nothing fundamentally unworkable about this approach. However, we believe it would be less effective and efficient than regulating it as a mineral under the CMA.
Q8: What do you consider to be the advantages and disadvantages of this approach?	Relative to the CMA approach, we see no advantages to the RMA approach.
Q9: Do you consider the RMA is an appropriate tool to allocate and manage natural and orange hydrogen resources? If not, why not?	**Agree.** It would be workable but less effective and efficient than the CMA-based approach.
Q10: Do you prefer a bespoke regime over the RMA to allocate and manage natural and orange	**Unclear.** If MBIE is asking whether we prefer an RMA-based approach *without* customisation or an

hydrogen resources? Please explain.	RMA-based approach *with* customisation, we support a bespoke/customised version. However, we prefer a CMA-based approach over an RMA-based approach.
Q11: Do you consider either approach a barrier to natural or orange hydrogen development in New Zealand?	**No.** Done reasonably, regulation will create more value from certainty and social licence than the costs and barriers it will create.
Q12: Are there any other alternative regulatory approaches to develop natural or orange hydrogen in New Zealand?	**Yes.** Full integration into proposed CCS legislation. The potential advantage of this approach would occur if orange hydrogen production (which is hydrogen production with CCS) is viable. In that case, the two regulatory frameworks would be better integrated.
Q13: Do you have views on how Māori rights and interests should be reflected in the regime?	**No.**