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July 25, 2024

Honorable Simeon Brown
Minister for Energy
Ministry of Business, Innovation and Employment (MBIE)
New Zealand - Te Kāwanatanga o Aotearoa

Dear Minister Brown,

[redacted] would like to thank you for the opportunity to respond to the MBIE's *Proposals for a Regulatory Regime for Carbon Capture, Utilisation and Storage*. [redacted] is a New Zealand and US-based direct air capture (DAC) company focused on developing affordable, scalable, and water positive carbon removal technologies. We are eager to add our voice to the CCUS community's response to these proposals.

Below are [redacted] responses by number to the questions listed in the consultation document.

New Zealand Government's position on CCUS

1. Do you agree that the government should establish an enabling regime for CCUS? Please provide any further information to support your answer.

Yes, [redacted] strongly agrees that the NZ government should establish an enabling regime for CCUS. While greater clarity is needed on some key points of the proposal, CCUS–and carbon removal more generally–will play a key role in addressing current and historic carbon emissions. As currently only nature-based approaches are recognised by the ETS, expanding the scope to include technology-based approaches will give NZ more tools to reach and exceed its climate goals.

2. Do you agree with our objectives for the enabling regime for CCUS? Please provide any further information to support your answer.

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Yes, [redacted] agrees with the objectives of the enabling regime. However, these objectives might be expanded to suggest that NZ should aim to be a global leader in this space given its commitments to environmental equity and its abundance of renewable resources. Many technology companies, including climate tech companies, find they must leave NZ in order to pursue larger markets. Yet because carbon removal is geography neutral, it also has the potential to be a "virtual export" for the country – one that improves Aotearoa's energy and climate security while also growing and maintaining sustainable businesses at home.

How CCS activities are currently treated under the Emissions Trading Scheme

3. Should the ETS be modified to account for the emissions reductions achieved using CCS? If so, how do you think it should be modified?

Yes, [redacted] feels the ETS should be modified to account for emissions reductions achieved using CCS. As the consultation suggests, the inability of businesses to receive emissions units or reduce their ETS liability using non-geothermal CCS is holding back the development of this sector and placing the country behind its peers in Australia and the EU.

However, the NZ ETS should also follow the lead of the EU, which makes additional allowances for removals. The ETS should be modified to include mechanisms that recognize and reward carbon removals over emission reductions. There is increased evidence that reducing emissions alone will not be sufficient for slowing climate change — the goal must be *negative* emissions. As it stands, the ETS is a powerful tool for *reducing* emissions, but if negative emissions are the goal, then the ETS needs to reflect the fact that the value of a ton avoided is not the same as the value of a ton removed. Again, the removals allowed under the ETS should also be expanded to include technological approaches such as DAC.

Furthermore, the ETS should expand its scope to address utilisation and put it on par with alternative approaches. Currently, CCUS is expensive when compared to alternatives that are being subsidised. The ETS, for instance, could expand its scope of activities to penalise emissions that match or exceed the price of capture as otherwise there is effectively little to no incentive for CCUS, which is currently the case for airlines and the switch to SAF. As it stands, if CO_2 is captured and utilised in pursuit of something **not** covered by ETS, companies must charge more to cover production expenses. This effectively penalises those working in this space while offering no subsidies, creating a distinctly unlevel playing field.

Again, in its reevaluation of the ETS, Aotearoa has the opportunity to assert itself as a global leader in this space by demonstrating that we will not get to net zero by assuming an equivalence between reductions and removal and creating a level playing field for utilisation in the ETS.

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4. Do you agree that all CCS activities should be eligible to receive recognition for the emissions captured and stored? If not, why not?

We agree that a broad range of CCS activities should be eligible to receive recognition for emissions that can be verifiably captured and stored. However, as stated elsewhere, it is important not to equate all CCS activities. Some activities are easier to quantify and verify than others, for example. Additionally, given NZ's limited land base, CCS activities that minimise their land footprint should be favoured by the ETS. Similarly, activities that produce significant co-benefits like increased freshwater, decarbonised products, or green jobs should be favoured by the ETS. In modifying the ETS, the NZ government has the opportunity to pursue a more holistic approach to carbon reductions and removals by supporting approaches that do more for communities than generate carbon credits.

5. Do you think there should be a separate non-ETS mechanism for providing economic incentives for CCS? If so, what would this mechanism be?

New Zealand should certainly consider additional mechanisms to support CCS technology and project development. Many emerging carbon removal technologies are still nascent and have yet to come down the cost curve as they reach commercialisation and begin to scale. As stated above, CDR technologies like DAC are in many ways geography agnostic – they can remove atmospheric CO_2 pretty much anywhere on the globe. As a result, if NZ chooses not to provide additional support for these technologies to help them reach cost parity now, both removal technologies and projects will be built elsewhere.

We recommend implementing government subsidies for technologies such as Direct Air Capture (DAC), similar to the incentives provided in the USA, and/or for innovative solutions that have a major impact on NZ reaching its climate goals, such as Sustainable Aviation Fuel (SAF). These subsidies could provide the necessary financial support to advance these technologies and ensure their deployment within New Zealand, thereby reinforcing the country's leadership in carbon reduction and climate change mitigation efforts.

In rethinking the ETS and its support for CCS more broadly, MBIE also has the opportunity to help Aotearoa seize an advantage as a first mover in this space by building a significant presence in carbon removal, setting ambitious targets, and spurring job creation for industrial decarbonisation.

Monitoring regime for CCS activities

6. In your opinion, which overseas standards for monitoring, verification and reporting of CCUS-related information should New Zealand adopt?

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New Zealand should adopt standards that align with those in the EU. Some additions, based on NZ resources like geothermal, would also need to be considered.

7. Is there any other information that CCS project operators should be required to verify and report? Please reference the relevant overseas standards where applicable.

No answer provided

8. What methods should be used to quantify CO2 removal and storage in CCUS projects?

No answer provided

9.Are additional mechanisms required to ensure compliance with monitoring requirements?

No answer provided

10 What level of transparency and information sharing is required?

No answer provided

11. Do you consider there should be a minimum threshold for monitoring requirements so that small-scale pilot CCS operators would not have to comply with them? If so, what should be the threshold?

No answer provided

12. Should a monitoring regime extend to CCU activity?

No answer provided

Liability for CO2 storage sites

13. Do you agree the proposed approach on liability for CO2 storage sites aligns with other comparable countries (like Australia)? If not, why not and how should it be changed?

Yes, we agree that the proposed approach to liability aligns with other comparable countries. However, the proposal seeks to make it a criminal offence not to close or remediate a site in line with the closure plan submitted to the regulator. One consequence of such a structure will likely be that only large companies, ones that can safely assume that type of liability, will

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establish sequestration assets. This will not only stifle innovation, it may also reduce Aotearoa's sequestration capacity as firms look for other locations.

An alternative structure worth further exploration by MBIE is the development of a quasi-public agency such as the ACC that holds the risks on behalf of the issuers of carbon credits. Each project developer could be required to participate and contribute to an insurance fund established by that agency. This type of approach to centralised management and risk distribution would not only make liability less of an issue for small companies, it might also encourage a wider range of operators to develop projects in the country and support Aotearoa's leadership in this sector.

Additionally, any regulations related to storage must recognise that captured CO_2 can be stored in many different ways. Regulations should recognise and confirm inclusion of ocean storage, ocean alkalinity enhancement, and mineralisation approaches that also store emissions permanently.

14. Is the proposed allocation of liability consistent with risks and potential benefits? Are there other participants that should share liability for CCS operations?

See response 13.

15. Should liability be the same for all storage sites if projects are approved? Or should liability differ, depending on the geological features and characteristics of an individual storage formation?

It must be recognised that CO_2 can be stored in many different ways. Regulations should recognise and confirm inclusion of ocean storage, ocean alkalinity enhancement, and mineralisation approaches that also store emissions permanently. Each of these methods have distinct risk profiles and liability should recognize those differences.

16. Do you consider there should a minimum threshold for CCUS operators being held responsible for liability for CO2 storage sites so that small-scale pilot CCS operators would be exempt? If so, what should be the threshold?

See response 13.

17. Should the government indemnify the operator of a storage site once it has closed? If so, what should be the minimum time before the government chooses to indemnify the operator against liabilities for the CO2 storage sites?

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No response.

18. Are additional insurance mechanisms or financial instruments required to cover potential liabilities from CO2 leakage in CCS projects?

See response 13.

19. What measures should be implemented to monitor CCS projects for potential leakage and ensure early detection?

No response.

20. Do you agree that trailing liability provisions are needed? How do you think they should be managed?

No response.

Consenting and permitting for CCUS

21. Are inconsistencies in existing legislation for consenting and permitting impacting investment?

To accelerate and encourage investment in New Zealand, it is essential to streamline the consenting processes to avoid lengthy and complex procedures, including potential stakeholder push-back. This will support a quicker reduction in CO2 emissions. One approach could be to draft a National Environmental Standard that sets out minimum consent conditions across the entire country, covering aspects such as engineering, monitoring, location, mitigation, closure, and other key controls for the carbon capture and storage industry. Alternatively, carbon capture, utilisation, and storage (CCUS) could be included in the current Fast-Track Approvals Bill, recognizing large facilities as being of national significance to help New Zealand meet its international GHG reduction commitments.

22. Should the permit regime for CCUS operations be set out in bespoke legislation or be part of an existing regulatory regime (such as the RMA, EEZ Act, the CMA or the Climate Change Response Act 2002)? Please give reasons for your answer.

Time is of the essence to meet our climate goals. To create a streamlined approach to progress, we question the need for a bespoke piece of legislation to recognize CCUS. Instead, we recommend amending existing legislation, such as the Resource Management Act (RMA), which already provides a reasonable and workable regulatory framework for permitting CCS activities.

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23. Should CCS project proponents be required to submit evidence that proposed reinjection sites are geologically suitable for permanent storage, in order for projects to be approved? If so, what evidence should be provided to establish their suitability?

24. Should there be a separate permitting regime for CCU activity if there is no intention to store the CO2?

No

Carbon capture and utilisation

25. Are there regulatory or policy barriers to investment and adoption of CCU technologies?

Clear lines on biogenic CO2

Greater regulatory clarity is needed to define what qualifies as biogenic CO_2 and its treatment under the ETS. Currently it is unclear how point source capture (PSC) will be accounted for in utilisation scenarios. For instance, if PSC is used in conjunction with DAC, but then a portion of that captured CO_2 is used for food and beverage or SAF production - how will that be treated in the ETS? Likewise, as it stands it is currently ambiguous what does and does not qualify as a biogenic source of CO_2. These ambiguities represent a significant barrier to increased investment and adoption of CCU technologies in New Zealand.

Additionally, policies that support carbon capture and utilisation must reflect that innovation is still emerging in this space. Innovation is often very expensive in its early stages and needs the support of grant opportunities and favourable policies to develop as a viable solution. Existing financial mechanisms may not be robust enough to offset the high costs involved. As it stands, the high initial investments required to demonstrate these technologies create a significant barrier to smaller companies with novel approaches from gaining a foothold. Insufficient subsidies, tax incentives, or financial support from the government may deter investment in CCU technologies.

Furthermore, the integration of CCU technologies into the ETS and carbon pricing is essential. Without this integration, there will remain little incentive to adopt CCU technologies now and in the decades to come. As it stands, the price of an NZ carbon credit is already extremely low, so the ETS needs to be reformed to increase the price of credits.

Finally, decarbonising industry and leverage CCU technologies will also require NZ to increase its investments and policy supports for renewable energy. High energy costs will be a

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considerable barrier to new technologies, and more renewable generation and transmission capacity will be required to support industrial decarbonisation at scale.

26. What potential markets for CO2 derived products do you see as most critical in New Zealand?

Food and beverage companies need reliable high purity CO2 sources that meet quality standards and are resilient to supply chain interruptions. Yet typical CO2 production relies on fossil fuels and NZ has struggled to reach its CO_2 needs since the closing of Marsden Point. Sourced through CCU technologies like direct air capture, food and beverage CO2 can be carbon neutral, giving beverage companies a marketing advantage in addition to a reliable source produced in-country.

Likewise, SAF producers need reliable, economical, and very high purity CO2 produced with low emissions technologies to meet stringent standards and prompt industry adoption. Airlines have shown considerable interest in moving towards SAF, but more work is needed for these fuels to become cost competitive with conventional fuels.

Another important market for CO_2 utilisation is indoor agriculture, where high purity CO_2 is used to support precision plant growth. As the climate changes in decades to come, controlled agriculture will play a larger role in meeting NZ food production needs, making net zero CO_2 an important commodity for this industry.

27. Are there any specific barriers to transportation of CO2?

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