

**From:** Matt Adams <Matt.Adams@mfe.govt.nz>  
**Sent:** Friday, 20 February 2026 1:42 pm  
**To:** Stephen.Goodman@mfe.govt.nz; Katie.Mattera@mfe.govt.nz; Rachel.Corran@mfe.govt.nz; Hannah.Malloch@mfe.govt.nz; Bonnie.Hartfield@mfe.govt.nz  
**Cc:** Dale.Warburton1@mfe.govt.nz; Charlotte.Harris-Miller@mfe.govt.nz; Meredith.Davis@mfe.govt.nz; Matthew.Barbati-Ross@mfe.govt.nz; Jo.Gascoigne@mfe.govt.nz; Aaron.Napier@mfe.govt.nz  
**Subject:** RE: **CLASSIFICATION** 25-BRF-00199 Marine Carbon Dioxide Removal

Hi Stephen,

Yes, happy to have a chat on this whenever suits you. The briefing that started this was intended as a conversation starter for Ministers, with the hopes that we would be invited to provide further advice on opportunities to develop our position on mCDR. So glad to share where our thinking currently is and how it has been shaped.

Cheers,

Matt

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**From:** Stephen Goodman <Stephen.Goodman@mfe.govt.nz>  
**Sent:** Friday, 20 February 2026 12:46 pm  
**To:** Matt Adams <Matt.Adams@mfe.govt.nz>; Katie Mattera <Katie.Mattera@mfe.govt.nz>; Rachel Corran <Rachel.Corran@mfe.govt.nz>; Hannah Malloch <Hannah.Malloch@mfe.govt.nz>; Bonnie Hartfield <Bonnie.Hartfield@mfe.govt.nz>  
**Cc:** Dale Warburton <Dale.Warburton1@mfe.govt.nz>; Charlotte Harris-Miller <Charlotte.Harris-Miller@mfe.govt.nz>; Meredith Davis <Meredith.Davis@mfe.govt.nz>; Matthew Barbati-Ross <Matthew.Barbati-Ross@mfe.govt.nz>; Jo Gascoigne <Jo.Gascoigne@mfe.govt.nz>; Aaron Napier <Aaron.Napier@mfe.govt.nz>  
**Subject:** Re: **CLASSIFICATION** 25-BRF-00199 Marine Carbon Dioxide Removal

This is all brilliant, Matt. Thanks.

Is it worth having a 20min chat to zero in on this, and get the real juice from you?

- Where are his opportunities to make progress?
  - Greater participation at international fora (such as the London Protocol) to progress science and regulation of marine geoengineering activities. This could also cover ratifying an amendment to the Protocol that enables research on particular methods and embedding research assessment frameworks in our domestic regime
  - Amend domestic regulations to better enable research in line with our international obligations
  - Develop or fund a national assessment of mCDR techniques in New Zealand (the Aotearoa Marine Carbon Forum has proposed undertaking this). This could inform future regulation and help develop a strategy/framework for responsible research and use

Steve.

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**From:** Matt Adams <[Matt.Adams@mfe.govt.nz](mailto:Matt.Adams@mfe.govt.nz)>

**Sent:** Friday, February 20, 2026 12:34 PM

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**Subject:** RE: CLASSIFICATION 25-BRF-00199 Marine Carbon Dioxide Removal

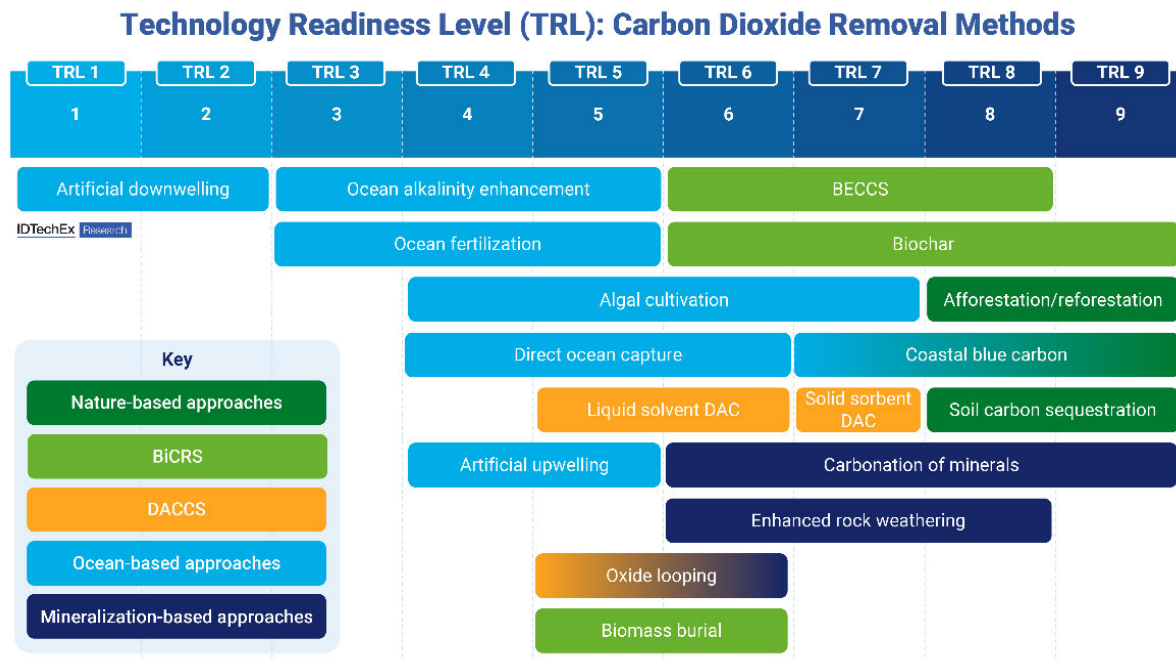
Kia ora Stephen,

Matthew asked me to respond directly to you on this matter as I am the marine policy lead on this and am well placed to answer any follow up questions you may have. I have responded to your questions below.

At a high level, we consider that there is a need for a joined-up approach on mCDR to achieve climate benefits where they are possible, and where they are consistent with international obligations and environmental legislation. Marine geoengineering techniques are considered to have high potential to remove carbon from the atmosphere, however they are largely unproven in terms of effectiveness and other environmental effects. There are currently international and domestic barriers preventing their commercial application to deliver carbon removals. We believe there are opportunities to better support research activities and co-operate internationally. This can support key international agreements to move as our scientific knowledge improves.

- (Nice to have) What's the size of the prize for NZ?
  - Carbon prize: If effective, marine carbon dioxide removals could sequester significant amounts of carbon dioxide from the atmosphere. Blue carbon activities have co-benefits, as they also restore coastal environments that could mitigate some effects of climate change (e.g. mangroves protecting against storm surge). Gigablue aim to remove a gigaton of carbon dioxide by 2035, and already has contracts in place to remove 200,000 tons of CO<sub>2</sub> over the next four years.
  - Economic prize: Gigablue have been asked to provide some economic analysis to assess their impact in New Zealand, but has not been forthcoming. Gigablue is focussing on the accessing the voluntary carbon market, but we do not know whether their operations will be solely focussed in New Zealand waters (they have companies in a number of countries where they are making enquiries).
- (Desirable) How proven/ready are some categories (eg mangroves vs ocean fertilisation?) See diagram below
  - Blue carbon activities are more proven than marine geoengineering activities. Methods are available to confirm additionality and measure the amount of carbon stored for blue carbon activities. Coastal blue carbon has been proven through successful operations.
  - Ocean fertilisation, like many of the marine geoengineering techniques, currently lack evidence of effectiveness (very difficult to show a carbon drawdown from the atmosphere and to monitor, report, and verify sequestration) and their environmental impacts.

- The following diagram shows the readiness of a range of technologies (a score of 3-5 indicates the technology is still in development, whereas a score of 8-9 indicates systems are tested and ready to launch at commercial scale):



(source: IDTechEX: Carbon Dioxide Removal (CDR) 2025-2035: Technologies, Players, Carbon Credit Markets, and Forecasts)

- (Nice to have) What are different stakeholders' positions on this matter?
  - Scientists/eNGOs: Marine geoengineering technology is not yet proven to be effective or safe. Concerns about environmental effects include nutrient robbing, shading the water column, algal blooms, ingestion effects, smothering the seabed, water chemistry changes. There is potential for regional or global effects from marine geoengineering activities. Scientists are interested in the ability to research how these activities could work and their effectiveness.
  - Iwi/Māori: Gigablue have contracted a consultant who has Ngai Tahu affiliations to provide a cultural assessment (which has not been shared with MfE). We do not know the position of Te Rūnanga o Ngāi Tahu or ngā Papatipu Rūnanga, 9(2)(ba)(i) [redacted] We have not engaged with wider iwi groups, but understand there is a strong desire to avoid pollution of the marine environment.
  - Pacific Island neighbours: vocal opposition to marine geoengineering in the Pacific
- (Critical) What is the pathway for these kinds of removals?
  - Is it really the VCM - which Ministers Hoggard and Watts are doing something about VCM appears to be the most viable pathway (apart from those activities occurring close to shore, such as coastal blue carbon). There is no international framework to support marine carbon dioxide removal activities being included in the national GHG inventory. Andrea Brandon has been providing advice to Aaron on how this works.
  - How does this interact with the removals framework about to go live? 9(2)(g)(i) [redacted] Marine policy team have been working with the team developing guidance for removals framework. We are making it clear that removal activities need to be consistent with international law and our domestic legislation in order to be in scope. 9(2)(h) [redacted]
- (Critical) What does this mean for the Minister? Eg stimulating economic activity/markets?
  - 9(2)(h) [redacted]
  - Eg there are still some categories that are for the next 10-20 years? They are x y z?
  - Where are his opportunities to make progress?

- Greater participation at international fora (such as the London Protocol) to progress science and regulation of marine geoengineering activities. This could also cover ratifying an amendment to the Protocol that enables research on particular methods and embedding research assessment frameworks in our domestic regime
- Amend domestic regulations to better enable research in line with our international obligations
- Develop or fund a national assessment of mCDR techniques in New Zealand (the Aotearoa Marine Carbon Forum has proposed undertaking this). This could inform future regulation and help develop a strategy/framework for responsible research and use

Cheers,

Matt

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**From:** Stephen Goodman <[Stephen.Goodman@mfe.govt.nz](mailto:Stephen.Goodman@mfe.govt.nz)>  
**Sent:** Friday, 20 February 2026 12:25 pm  
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**Subject:** Re: CLASSIFICATION 25-BRF-00199 Marine Carbon Dioxide Removal

Awesome. This is very good. Thanks for pulling together 😊

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**From:** Katie Mattera <[Katie.Mattera@mfe.govt.nz](mailto:Katie.Mattera@mfe.govt.nz)>  
**Sent:** Friday, February 20, 2026 12:23 PM  
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**Subject:** RE: CLASSIFICATION 25-BRF-00199 Marine Carbon Dioxide Removal

Kia ora Steve – I think there are a few emails passing each other in the ether on this topic; just bringing us all together here for everyone's visibility/keeping info in one chain.

On your original series of questions at the bottom of this thread – the marine team (Matt and Bonnie) are responding to those and should get that to you imminently. Included will be a flash diagram showing activity readiness – in the interim though, and at a really high level –

- Coastal blue carbon activities (eg mangrove and coastal wetland restoration, coastal blue carbon management) are more ready/permitted than marine geoengineering activities (eg ocean fertilisation, ocean alkalinity enhancement).

And just pulling across Rachel's bullets that she shared this morning about what categories are going to come through faster –

- Coastal blue carbon, including coastal wetlands, have potential to be considered through the framework and there could be interest
- For activities to be progressed through the framework they should be permitted under domestic and international law, and consistent with international obligations
- This therefore restricts many marine activities from being considered through the framework as their commercial application is prohibited - for example ocean fertilisation and ocean alkalinity enhancement are prohibited under the London Convention/Protocol as they are considered marine geoengineering
- Securing the ability to include marine CDR activities when accounting for our NDC will not be a trivial undertaking. This is for a number of reasons, including emissions and removals occurring in the marine environment not being covered by current Paris Agreement's reporting requirements which have been agreed out to 2030, no method guidelines for estimating emissions/removals from marine activities, and lack of evidence for marine removal activities.
- There is currently no clear pathway for the inclusion of marine CDR activities in GHG inventories. This is evidenced by the current development of IPCC guidance specifically for CDR activities which likely will avoid marine CDR activities.
- We have heard from the marine team that there could be interest from the minister for the environment in considering what role MfE could play in supporting evidence development in this space.

Cheers team,

Katie

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**From:** Stephen Goodman <[Stephen.Goodman@mfe.govt.nz](mailto:Stephen.Goodman@mfe.govt.nz)>

**Sent:** Friday, 20 February 2026 11:39 am

**To:** Rachel Corran <[Rachel.Corran@mfe.govt.nz](mailto:Rachel.Corran@mfe.govt.nz)>; Hannah Malloch <[Hannah.Malloch@mfe.govt.nz](mailto:Hannah.Malloch@mfe.govt.nz)>

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**Subject:** Re: **CLASSIFICATION** 25-BRF-00199 Marine Carbon Dioxide Removal

Does the team know roughly what categories are closer to readiness and what are further away? If we did a rough ordering? I understand not many would be anywhere near ready, but that would be handy to know - even roughly - before MCC meeting on Monday arvo.

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**From:** Rachel Corran <[Rachel.Corran@mfe.govt.nz](mailto:Rachel.Corran@mfe.govt.nz)>  
**Sent:** Thursday, February 19, 2026 4:36 PM  
**To:** Stephen Goodman <[Stephen.Goodman@mfe.govt.nz](mailto:Stephen.Goodman@mfe.govt.nz)>; Hannah Malloch <[Hannah.Malloch@mfe.govt.nz](mailto:Hannah.Malloch@mfe.govt.nz)>  
**Cc:** Dale Warburton <[Dale.Warburton1@mfe.govt.nz](mailto:Dale.Warburton1@mfe.govt.nz)>; Charlotte Harris-Miller <[Charlotte.Harris-Miller@mfe.govt.nz](mailto:Charlotte.Harris-Miller@mfe.govt.nz)>; Meredith Davis <[Meredith.Davis@mfe.govt.nz](mailto:Meredith.Davis@mfe.govt.nz)>; Katie Mattera <[Katie.Mattera@mfe.govt.nz](mailto:Katie.Mattera@mfe.govt.nz)>  
**Subject:** RE: **CLASSIFICATION** 25-BRF-00199 Marine Carbon Dioxide Removal

Thanks for this – we are keeping in touch with people in that space (including the author of that) around the removals work. They’ve had an initial look at some of our bits and we met with them this afternoon – will be continuing the conversations as the work progresses 😊

**Rachel Corran** ([she/her](#))

*Senior Analyst | Kaitātari Matua*

*Climate Priorities & Forecasting | Ngā Whakaarotau Āhurangi me te Matape*

*Mitigation Policy | Kaupapahere Whakamauru*

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**Environment**  
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**A flourishing environment  
for every generation.**  
He taiao tōnui mō ngā  
reanga katoa.



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**From:** Stephen Goodman <[Stephen.Goodman@mfe.govt.nz](mailto:Stephen.Goodman@mfe.govt.nz)>  
**Sent:** Thursday, 19 February 2026 4:22 pm  
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**Cc:** Dale Warburton <[Dale.Warburton1@mfe.govt.nz](mailto:Dale.Warburton1@mfe.govt.nz)>; Charlotte Harris-Miller <[Charlotte.Harris-Miller@mfe.govt.nz](mailto:Charlotte.Harris-Miller@mfe.govt.nz)>;  
Meredith Davis <[Meredith.Davis@mfe.govt.nz](mailto:Meredith.Davis@mfe.govt.nz)>  
**Subject:** Fw: **CLASSIFICATION** 25-BRF-00199 Marine Carbon Dioxide Removal

FYI interesting brief through from our science folk.

I want to get ahead of any reactions from MCC.

He may be wanting to know - what categories are going to come through faster etc?

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**From:** Stephen Goodman <[Stephen.Goodman@mfe.govt.nz](mailto:Stephen.Goodman@mfe.govt.nz)>  
**Sent:** Thursday, February 19, 2026 4:20 PM  
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**Subject:** Fw: **CLASSIFICATION** 25-BRF-00199 Marine Carbon Dioxide Removal

Hi there,

Checking we are fully joined up on this advice. I like that it is scientifically based and has the international context. That's great. I just want to get ahead of MCC questions on this if he reads it over the weekend.

Is there some correspondence I could read or is it worth a discussion tomorrow afternoon/Monday morning?

## My questions

- (Nice to have) What's the size of the prize for NZ?
- (Desirable) How proven/ready are some categories (eg mangroves vs ocean fertilisation?)
- (Nice to have) What are different stakeholders' positions on this matter?
- (Critical) What is the pathway for these kinds of removals?
  - Is it really the VCM - which Ministers Hoggard and Watts are doing something about
  - How does this interact with the removals framework about to go live? 9(2)(g)(i)
- (Critical) What does this mean for the Minister? Eg stimulating economic activity/markets?
  - Eg Large scale ocean categories are not for now. But further science/pilots are the go?
  - Eg there are still some categories that are for the next 10-20 years? They are x y z?
  - Where are his opportunities to make progress?

Happy to discuss,

Steve.