



September 7, 2023

New York Department of Environmental Conservation
Division of Marine Resources
123 Kings Park Boulevard
Kings Park, NY 11754
RE: Comment on draft OATF Report
Via Email: Llwaterquality@dec.ny.gov

Dear NYS DEC Marine Resources Team:

The Carbon Business Council is a nonprofit trade association of more than 100 innovative carbon management companies with over \$16.5 billion in combined assets working across six continents, and we appreciate this opportunity to comment on the [NYS DEC Draft Ocean Acidification Task Force \(OATF\) Report](#).

The recent IPCC AR6 Synthesis Report clearly states that carbon dioxide removal (CDR) – alongside a strong global prioritization on emissions reduction of carbon dioxide (CO₂) and other greenhouse gasses – is “unavoidable,” and will be required at gigatonne (Gt) scale to reach our mid-century net-zero target and have a chance to limit warming to 1.5 or even 2°C.¹ Covering 71% of the planet’s surface and serving as (by far) the largest global sink for anthropogenic CO₂,² the world’s oceans have an outsized role to play in scaling carbon removal to this immense level.^{3 4}

As outlined in the Draft OATF report, because so much excess anthropogenic CO₂ has been absorbed by the ocean, ocean acidification has increased to unprecedented levels, endangering critical marine ecosystems, commercial fisheries, and the aquaculture industry. The Carbon Business Council applauds NYS DEC’s focus on this critical issue – the Draft OATF report’s Mitigation Pillars 1-8 and 1-9 in particular – and would like to take the opportunity of this comment to offer additional background on how marine CDR (mCDR) can contribute to reducing ocean acidification, and highlight deployment opportunities along New York’s coast.

While the ocean is too vast for anthropogenic carbon removal to meaningfully reduce ocean acidification at a global level in the near term, a number of mCDR approaches can increase alkalinity, and reduce acidification, on a sustained basis *locally* – thereby contributing to the protection and potential restoration of critical near-shore marine ecosystems and fisheries, as well as to enhanced productivity of commercial aquaculture.

¹ [IPCC AR6 Synthesis Report](#) p 50, 2023.

² Friedlingstein et al., [Global Carbon Budget 2022](#). *Earth Systems Science Data*, 2022.

³ [Research Strategy for Ocean Carbon Dioxide Removal and Sequestration](#), NASEM, 2022.

⁴ [Strategy for NOAA Carbon Dioxide Removal and Research](#), NOAA PMEL, 2023

mCDR approaches that can also reduce ocean acidification locally include:

- Cultivation of aquatic plants, including [macroalgae](#)⁵ and [microalgae](#) (for sinking to the deep ocean, or harvested for incorporation into long-lived products);
- Restoration of seagrass, mangroves, and other coastal marine ecosystems (coastal “[blue carbon](#)”)⁶;
- [Ocean alkalinity enhancement](#) via the deployment of electrochemical systems or physical application of clean alkaline minerals to coastlines, coastal watersheds, through existing and permitted ocean outfalls (e.g.wastewater treatment plants), or the open ocean; and
- [Direct ocean removal of CO₂](#) via electrochemical systems, which can reduce acidification without addition of material to the ocean.

There are several promising examples of mCDR from Carbon Business Council members underway in New York already:

- The electrochemical OAE company [Ebb Carbon](#) originated from pioneering research at Stony Brook University.⁷
- [Vesta](#), which supplements beach replenishment with carbon-removing sand, has a pilot deployment on Southampton’s North Sea Beach.⁸
- [Vycarb](#) is piloting its innovative, self-contained alkalinity enhancement systems in New York Harbor, and with aquaculture in East Hampton.⁹

Given the significant contributions mCDR can make to combating ocean acidification, the Carbon Business Council offers the following recommendations for OATF’s consideration and inclusion in the final report:

- Creation of an mCDR task force to unite relevant state agencies around an all-of-government approach to responsibly scaling mCDR;
- Increased investment in mCDR research, monitoring systems for New York’s estuarine and ocean waters, and pilot project deployment;
- Assess opportunities to incorporate mCDR into offshore wind project planning;¹⁰
- [Developing a permitting regime for mCDR](#) to facilitate field trials within New York waters.

⁵ “[SBU Study Shows Kelp Can Reduce Ocean Acidification and Protect Bivalves](#),” June 2022.

⁶ Fakhraee, M., Planavsky, N.J. & Reinhard, C.T. [Ocean alkalinity enhancement through restoration of blue carbon ecosystems](#). *Nat Sustain* (2023).

⁷ “[SEA MATE Program Reducing Acid in Oceans, CO₂ in the Atmosphere](#),” Stony Brook University News, 2021.

⁸ Molly Ingram, “[Southampton’s North Sea Beach Goes ‘Carbon Negative’](#),” WSHU, July 2022.

⁹ Lela Nargi, “[New Tech Aims to Make Ocean Healthier for Marine Life](#),” Leaps.org, July 2023.

¹⁰ Toby Bryce, “[Offshore Wind: A Platform Opportunity for Carbon Removal](#),” Illuminem, March 2022.



We would be pleased to discuss this further with you and other relevant stakeholders, and connect you with Carbon Business Council members working to advance mCDR (and reduce ocean acidification) in New York. We very much appreciate the important work that you do, and the opportunity to submit this input for your consideration.

Sincerely,

Benjamin Rubin

Ben Rubin
Executive Director, Carbon Business Council

Isabella Corpora

Isabella Corpora
Associate Director, Carbon Business Council