Vesta

www.vesta.earth

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The climate crisis is here today. Droughts and storms are getting more severe; ocean ecosystems are approaching collapse due to acidification, and sea levels have already measurably risen. Vesta is working to reverse climate change and ocean acidification by accelerating the Earth's natural long-term process of rock weathering through Coastal Carbon Capture (CCC). In this process, a naturally-occurring carbon-removing sand made of olivine is added to the ocean. There, the sand dissolves, countering ocean acidification while permanently removing carbon dioxide from the atmosphere. With sea-level rise and erosion increasing, we're using this carbon-removing sand as an additive to coastal protection and re-nourishment projects for vulnerable coastal communities. By reducing ocean acidification, CCC may help to bolster ecosystem health in coastal areas, supporting fishery and aquaculture yields. This process has the potential to sequester a significant portion of human carbon dioxide emissions permanently, lower ocean acidity, and support vulnerable coastal communities.

Coastal Carbon Capture's ability to remove carbon and build coastal resilience will benefit the entire world, especially vulnerable ocean-dependent communities, in the face of climate change. Vesta is integrating CCC into coastal nourishment projects as a novel nature-based strategy to sequester CO2 while counteracting erosion and building coastal resilience without the high community costs for capital intensive coastal nourishment projects. Vesta is also developing ways to increase the economic benefits for frontline communities directly, including donating 1% of

carbon credit sales to support underserved coastal communities local to our deployment sites. CCC implemented at scale could help protect coastal ecosystems from the significant adverse impacts of climate change.

Vesta is working with community partners to ethically advance the field of Coastal Carbon Capture. We are using a participatory governance approach in which we integrate local perspectives into our process and across our various scientific studies, from coral experiments to ecological monitoring, we are collaborating, funding, and training local scientists and organizations, while learning from their technical and local knowledge. We host community engagement workshops and study public perception of different local and regional communities about our work. We have recently submitted a paper our team authored based on our last few years of social science and community engagement work in the Global South called "Localized governance of carbon dioxide removal in Small Island Developing States".

Vesta is now conducting the first ever CCC field trials to help create the foundations for the field of Coastal Carbon Capture. This research will benefit the entire field of CCC and Ocean Alkalinity Enhancement more broadly as our results will be published open-source in peer-reviewed journals to create a transparent and independent review process. The National Academies of Sciences 2021 *Ocean-based CDR report* calls for additional marine CDR research and development, with ocean alkalinity enhancement listed in the top 3 solutions. Vesta is honored to be addressed by name in this report as an organization working towards this solution. Our objective is to continue incrementally scaling up field trials to discover whether CCC is a safe, viable, scalable carbon removal solution. Vesta has a hybrid corporate structure, being incorporated as a Public Benefit Corporation with a sister non-profit which provides funding for foundational research. We are interested in speaking with a variety of potential partners including governments, industry partners, philanthropists, foundations, NGOs, and investors. Vesta's long-term vision is to harness the power of the oceans to remove billions of tonnes of CO2 from the

atmosphere, helping to restore balance to the biosphere and leave a planet in which all can thrive.