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SABIN CENTER FOR CLIMATE CHANGE LAW

Model Federal Legislation for Safe and Responsible Ocean Carbon Dioxide Removal Research

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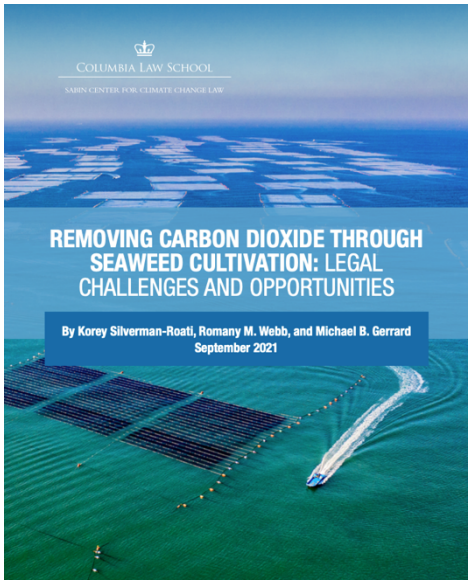
The Sabin Center for Climate Change Law at Columbia Law School has developed model federal legislation to advance safe and responsible ocean carbon dioxide removal (CDR) research in U.S. waters. Controlled field trials and other in-ocean research is critical to improve scientific and societal understanding of CDR techniques that could, in turn, help the U.S. reach its climate goals and deliver other benefits. However, existing legal frameworks were not designed to regulate ocean CDR and, in some cases, unnecessarily restrict needed research. The purpose of the proposed model legislation is to establish a clear and efficient permitting regime for in-ocean CDR research. At the same time, the model legislation builds in consultation, monitoring, and other safeguards to ensure research occurs in a scientifically-sound manner that minimizes potential risks to, and maximizes benefits for, the environment and communities.

Research is Urgently Needed to Evaluate Ocean Carbon Dioxide Removal Techniques

There is growing interest in CDR, both in the United States and overseas, as a possible means of mitigating climate change. The Intergovernmental Panel on Climate Change has concluded that deployment of CDR is "unavoidable" if we are to achieve global climate change goals. Some CDR techniques could also have important non-climate benefits. This is especially true of ocean-based CDR techniques, which could help to grow the blue economy, create new jobs, enhance coastal resilience, and restore ecosystems (among other things). However, ocean-based CDR might also present risks, including to ecosystems.

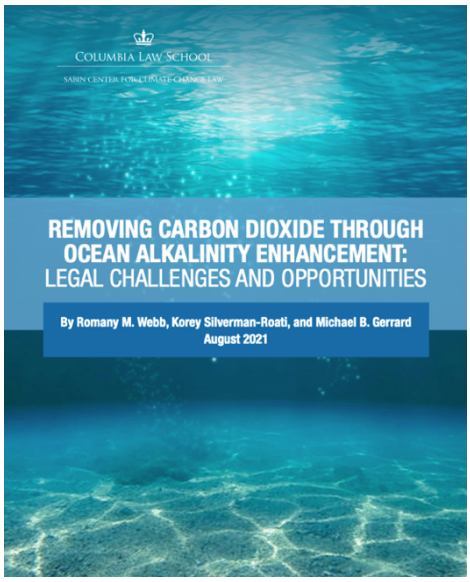
Scientists have proposed several different ocean CDR techniques that aim to extract carbon dioxide from the atmosphere and durably store it. Further research, including controlled field trials, is urgently needed to fully evaluate each ocean CDR technique. Important scientific questions remain about the techniques' effectiveness in removing carbon dioxide and the durability of any associated carbon storage, the scalability of the techniques, the environmental and social risks they might present, and their potential co-benefits. Many of the remaining scientific questions can only be answered through in-ocean research and, in some cases, relatively large-scale or long-duration field trials may be necessary.

Legal Barriers Could Prevent Needed Ocean Carbon Dioxide Removal Research



Currently, in the U.S., there is no comprehensive legal framework specific to ocean CDR. There are, however, a number of general environmental and other laws that could apply to ocean CDR projects. Those laws were developed with other activities in mind and thus may not be well suited to facilitating and regulating ocean CDR. Under existing law, some ocean CDR projects may be subject to multiple overlapping or duplicative permit and other requirements.

For example, previous analysis by the Sabin Center found that many seaweed cultivation projects are subject to overlapping legal requirements at the federal, state, and local levels. At the



federal level alone, projects may be regulated under a diverse array of statutes, including (but not limited to) the Outer Continental Shelf Lands Act, Clean Water Act, Marine Protection, Research, and Sanctuaries Act, National Environmental Policy Act, Endangered Species Act, and Coastal Zone Management Act. As a result, multiple federal bodies—the Army Corps of Engineers, Department of the Interior, Environmental Protection Agency, and others—are involved in overseeing projects, and their activities may not be well coordinated. This can create significant challenges for projects developers.

Other ocean-based CDR techniques—e.g., ocean alkalinity enhancement—face similarly complex legal frameworks. The time, cost, and complexity associated with navigating the various legal requirements could hinder or, in some cases, entirely prevent needed research.

Conversely, some ocean CDR research may not be adequately regulated, presenting environmental and community risks. For example, Sabin Center research identified an important gap in existing federal law, which means that some ocean alkalinity enhancement projects undertaken in U.S. waters may not be regulated under the Marine Protection, Research, and Sanctuaries Act—the key federal statute that regulates the discharge of materials into ocean waters.

New Legislation Would Help to Facilitate Safe and Responsible Research

The Sabin Center's model legislation would, if enacted by Congress, create a new legal framework specifically for ocean CDR research. This new framework is designed to achieve two goals: (1) facilitating needed ocean CDR research and (2) ensuring that research occurs in a safe and responsible way. To that end, the model legislation calls for a number of reforms, including:

(1) designating a single federal agency with responsibility to permit and otherwise regulate ocean CDR research,
(2) establishing an interagency working group to develop a national plan for ocean CDR research to guide agency permit and other decisions,
(3) encouraging regional planning for ocean CDR research,
(4) designating preferred zones for ocean CDR research with streamlined permitting,
(5) providing for meaningful input by tribal, state, and local governments and communities, and
(6) calling for a balance between climate goals and environmental risks.

Importantly, the model legislation only applies to ocean CDR research projects, which are distinguished from deployment. The streamlining benefits of the model legislation would not apply to larger-scale projects that are not undertaken for the primary purpose of advancing scientific understanding of ocean CDR.

CROSS-CUTTING ISSUES / NEGATIVE EMISSIONS

Developing Model Federal Legislation to Advance Safe and Responsible Ocean Carbon Dioxide Removal Research in the United States

The Sabin Center today published model federal legislation to advance safe and responsible ocean carbon dioxide removal (CDR) research in U.S. waters. Controlled field trials and other in-ocean research is critical to improve scientific and societal understanding of CDR techniques that could help the U.S. reach its climate goals. However, […]

model legislation | Ocean CDR