

[For Immediate Release]

NET
RAPIDO



MÄLARDALEN UNIVERSITY
SWEDEN



Contact: Olivia Crowe
Climate Strategies
olivia.crowe@climatestrategies.org

Public funding and strict monitoring needed for CO₂ removal technologies to have an impact.

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Public funding could scale up Carbon Dioxide Removal (CDR)¹ technologies, a new report by Perspectives Climate Research of the NET-RAPIDO project finds. While CDR does not replace the need to drastically cut back greenhouse gas emissions (GHG), an ensemble of CDR approaches could contribute to limiting global warming. The report, 'Sewage Treatment for the Skies: Mobilising carbon dioxide removal through public policies and private financing', comes amid growing public interest in CDR technologies as Elon Musk unveiled a \$100 million prize to stimulate innovation in the field.

Land-based activities like planting trees and restoring wetlands, as well as new technologies that capture carbon directly from the air or industrial processes, can potentially remove CO₂. Today, the technological options only exist as concepts or in very small installations. The required infrastructure needs large investments to be further researched, developed, and scaled up. While nature-based options continue to play an important role, they are limited by how much land is available and they do not necessarily lock carbon away permanently.

The report finds both governments and private actors can and should support and scale up CDR technologies through coordinated action. Importantly, the authors stress dedicated public funding is a precondition for delivering CDR as part of countries' mitigation efforts.

Matthias Honegger, one of the report authors, notes that *"while initial voluntary efforts from companies like Microsoft, Shopify, Stripe, and Swiss Re are encouraging first steps, it is all too easy to overlook that cleaning up the atmosphere is a public good. If CO₂ was an eyesore or stank like the waste in medieval city streets, we would probably long have understood this and demanded action. It is the responsibility of the state to deal with public goods such as waste treatment – including removing CO₂ from the atmosphere."*

The authors compare different forms of CDR, noting that options whereby CO₂ remains in the biosphere are often cheap and readily available but face problems around how long they will last. In contrast, options essentially turning CO₂ into rock tend to be very expensive but might offer a better long-term perspective. In exceptional cases some approaches may generate income from wider benefits they bring to society – through tourism, reducing flood risk or as

novel construction materials. Most CDR potentials, however, cannot access such revenue sources. According to the report, CDR, should thus be addressed as a necessary public service – like the treatment of sewage or solid wastes.

As CDR approaches vary in their maturity, policymakers will need to mobilise different funding for research and development, upfront capital costs to scale up installations as well as for long-term operation. The key challenge is to bring down the costs of technologies and allocate public funding transparently, competitively, and with continual assessment to ensure efficiency, effectiveness, and alignment with the long-term perspective of the Paris Agreement.

The report provides a series of policy recommendations to achieve this, including:

- Developing increasingly specific government targets and roadmaps for CDR in Nationally Determined Contributions (NDC's) to the Paris Agreement,
- addressing regulatory barriers,
- ensuring proper monitoring, reporting and verification (MRV) and accounting of CDR in national GHG inventories, and
- enabling CDR to access international public climate finance, short-term GHG mitigation subsidy schemes, long-term carbon pricing systems (like emissions trading (ETS)) and baseline and credit mechanisms.

The authors also highlight the need for different actors to work together: Development cooperation agencies and private sector climate finance could support the development of MRV methodology for CDR that strives for high environmental integrity, while actors in voluntary carbon markets could pursue CDR credits with strict MRV approaches and clear guidelines.

Importantly, the authors emphasise the need for transparent planning and consultation processes: The overarching role of CDR within mitigation strategies as well as the specific CDR policies and activities ought to be designed through robust political mandates that are developed transparently and address public concerns from the beginning.

ENDS.

NOTES TO THE EDITOR

¹Carbon Dioxide Removal (CDR) seeks to pull carbon dioxide out of the atmosphere and stop the worst impacts of climate change by balancing out greenhouse gas (GHG) emissions. CDR compliments the vital efforts to reduce greenhouse gas emissions from industry, travel and personal consumption, and has been compared by sci-fi author Kim Stanley Robinson to sewage-treatment for the skies. However, instead of clearing away smelly waste, CDR tackles an odourless and invisible pollutant that only hurts human health in large quantities.

About NET-RAPIDO

NET-RAPIDO is a project implemented between 2018 and 2021 by Mälardalen University, Perspectives Climate Research and Climate Strategies, aiming to research on readiness, policy instrument designs, options for governance and dialogue aims to create a clear understanding of the opportunities, challenges and risks of negative emission technologies (NETs). The project is funded by the Swedish Energy Agency. Find out more at: <http://negative-emissions.info/>