

Date: 25 May 2023

Removal activities under the Article 6.4 mechanism 44.01 response to information note

About 44.01

44.01 eliminates CO₂ by turning it into rock. Our pioneering technology accelerates the natural process of CO₂ mineralisation, meaning we can remove captured CO₂ permanently in less than twelve months. We have conducted successful pilots and are currently building large-scale demonstration projects in Oman and the UAE. Our process is safe, scalable and lasts forever.

CDR removals

We are pleased to see the UNFCCC Supervisory Body concur with the IPCC that large-scale CDR will be necessary if we are to avoid +1.5 degrees of global warming. We will need a variety of CDR pathways to achieve this, including both land-based activities and so-called ‘engineered’ removals, (a potentially misleading label since nearly all CDR pathways – including 44.01’s – are a hybrid of nature and engineering).

We are concerned that the information note misrepresents the viability of so-called engineered removals, to the extent that it casts doubt on the potential of engineered removals to play a role as part of the Article 6.4 mechanism. The information note’s characterisation of engineered removals is partial, unscientific and ignores recent developments in the scale of engineered CDR projects.

Specifically:

- Engineered CDR technologies are already providing durable, proven carbon sequestration. In 44.01’s case, we have already demonstrated safe,

rapid, permanent carbon mineralisation through successful pilots, and we are now scaling our solution to mineralise multiple tonnes of CO₂ a day at sites in the UAE and Oman, with plans to scale up to millions of tonnes per year within the next decade. Direct Air Capture technologies are scaling up at similar or faster rates and, on current projections, will be well on the way to gigaton scale carbon capture by 2025. As these technologies scale, prices will inevitably come down, as we have already seen with renewable energy.

- While the environmental and social impacts of CDR technologies are still being researched, it is misleading and inflammatory to suggest they “pose unknown environmental and social risks”, especially as these technologies have to-date presented no negative social or environmental impacts. 44.01, like many CDR technology companies, takes a ‘planet-first’ approach to technology development, ensuring the environment and local communities are not adversely impacted before taking any measures to scale up our solution.
- Engineered CDR technologies are deployable in developing countries and are already making a significant contribution to sustainable development goals, beyond the obvious contribution to SDG 13: Climate Action. Many countries in the so-called ‘Global South’ are attractive destinations for CDR technologies given their capacity to provide renewable energy (e.g. solar) and the abundance of geological formations suitable for carbon sequestration. Deploying CDR technologies can help decarbonise developing countries, bring employment and skills development opportunities, and provide developing countries with a way to monetise previously overlooked natural resources, such as geological sequestration sinks.

Short term vs permanent CDR

We are concerned that the information note promotes a false equivalence between temporary storage and permanent carbon removal, especially through its endorsement of tonne-year crediting. There is scientific and political consensus that, while short-term carbon sequestration can play a role in slowing global warming and reducing peak temperatures, it should not be a substitute for permanent carbon removal, which is vital to ensuring future generations are protected from the risks of global warming and climate change.

Mineralisation vs storage

It is important that we clearly differentiate between conventional geological storage and mineralisation, which does not 'store' CO₂ but converts it into rock, removing CO₂ from the carbon cycle forever and ensuring it cannot escape back into the atmosphere. This is an important distinction as it affects safety regulations and potential monitoring and insurance requirements.

We recommend that the future interactions of the note reflect the specific attributes of mineralisation and separate the requirements appropriate for mineralisation from those relevant to conventional storage in geological reservoirs.

Thank you for the opportunity to respond to the information note. We would be very happy to provide more information or to discuss this vital issue further.