Equatic

EESI Briefing: Demystifying Ocean Carbon Dioxide Removal

April 16, 2024

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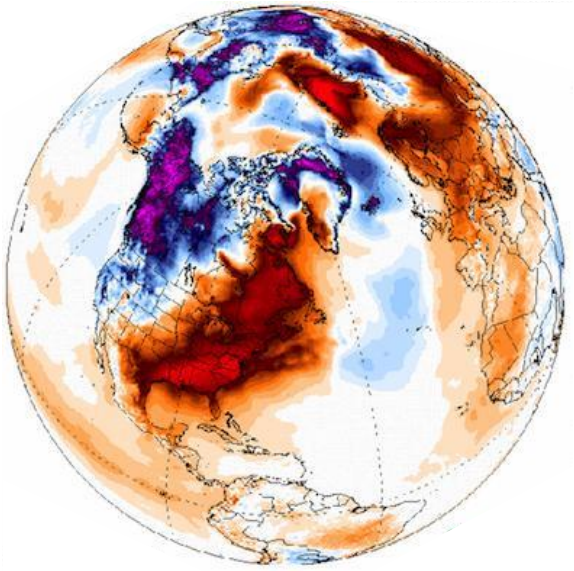
Two global challenges: Ending fossil fuel reliance and removing legacy carbon emissions



Reduction: 90% lower GHG emissions vs. today

… at a manageable economic cost

… while peak oil or peak coal have not happened yet

… and all societies need to use energy to raise living standards

Removal: All IPCC scenarios require removals

… at manageable economic cost

… with measurability, irreversibility and additionality

… while avoiding negative impact on ecosystems and arable land

Equatic uses the ocean to:

Produce green hydrogen

and

Remove carbon dioxide

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Why Equatic uses the ocean

>85% of the world's carbon is in the ocean

Carbon is currently stored in:

We use electrolysis and air contact to accelerate removal

- Equatic's technology captures and stores carbon dioxide in two forms that are prevalent and stable in the ocean:

- **$CaCO_3$ solids**
- **HCO_3^- ions** (dissolved)

~40,000Gt of carbon is stored in the ocean in these two forms today

Efficient, permanent carbon storage on a planetary scale

- Energy advantaged
- Widely available siting not in competition with arable land
- 10,000-1,000,000,000 year carbon storage
- No CO_2 transportation or CO_2 storage costs
- No risk of leakage

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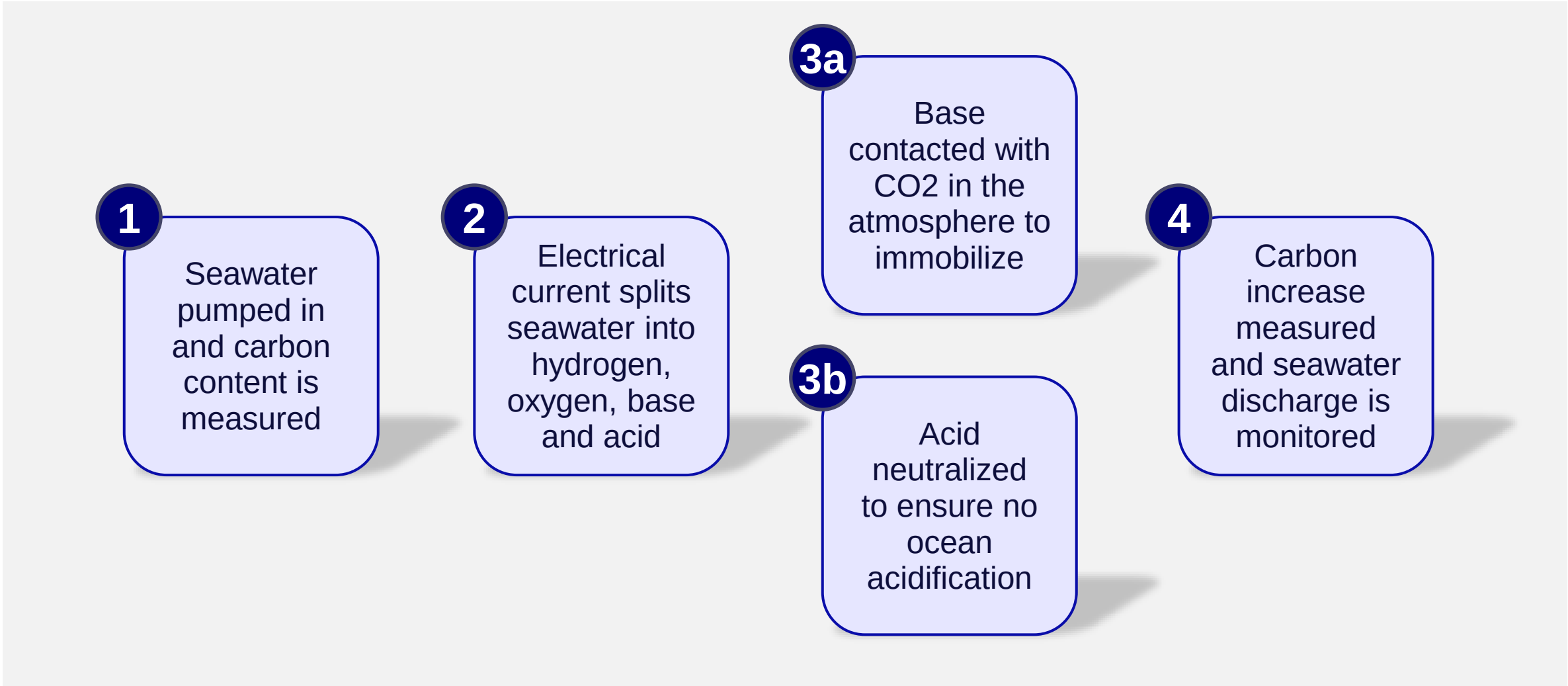
The process for CDR and green H2 production



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Accelerating a natural process

Equatic's approach mimics natural CO2 storage pathways:

- Ocean (slightly alkaline at pH 8.2) absorbs ~25% of CO2 emissions
- Rain (slightly acidic at pH 5.5) gets neutralized by dissolving rock on its path to the ocean

What's different is that the Equatic process operates inside of a purpose-build coastal plant, which means that we can:

- Dramatically accelerate the rate of CO2 removal
- Precisely measure the amount of CO2 permanently immobilized

Equatic's 30MW plant can remove **1 tonne of CO2 every 5 minutes**, whereas an equivalent area of open ocean would take 12 months to remove the same amount of CO2

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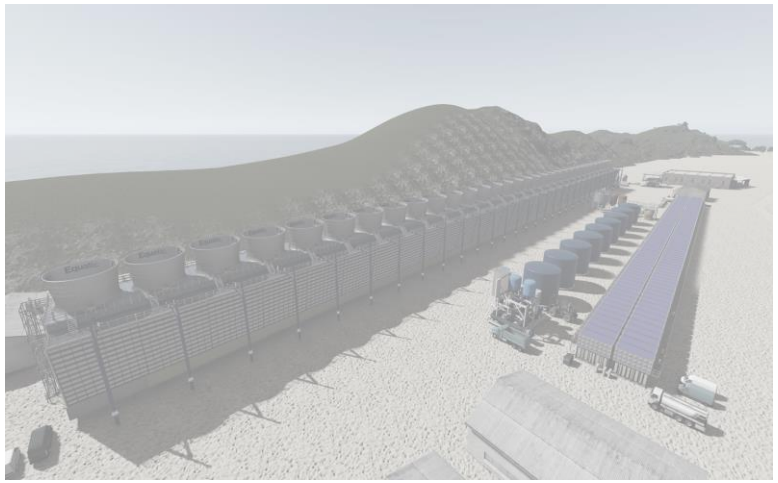
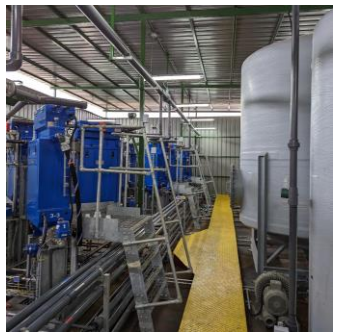
Equatic: What we mean by high-quality CDR

Measurable	The Equatic process is intentionally designed and engineered to measure CDR within a closed system. This means we have continuous, unambiguous data about operational performance and exact monitoring of CO_2 removed is possible at any point in time.
Verifiable	Third-party ISO 14064-2:2019 methodology that provides rules for eligibility, means of quantification, monitoring instructions, reporting requirements and verification parameters. This ensures net negative CO_2 and provides an auditable record of the whole process.
Permanent	Equatic securely stores CO_2 as mineralized (bi)carbonates. Aqueous bicarbonates immobilizes CO_2 for more than 10,000 years, and solid carbonates immobilizes CO_2 for up to billions of years. There is no risk of reversal from these immobilization pathways.
Additional	Seawater-mediated electrolysis has been developed to remove carbon dioxide from the atmosphere. Plant commissioning and operations depends on the sale of CDR to customers. Every tonne removed is additional.
Energy Efficient	Flow electrolysis is engineered to ensure rapid reactions. The Equatic process operates at low current densities and Ohmic losses, at high Faradaic efficiencies, and produces green hydrogen. Taken together this means the energy footprint per tonne of CDR is best-in-class.
Credible	The carbon market is growing rapidly. As in any new industry, transparency and credibility are necessary to build trust with buyers, governments and communities. Put plainly, Equatic uses data and not speculative estimates to generate carbon credits.

CDR project deployment

Pilot	Demonstration	Commercial
2023	2024-2025	2026+
 Pilot #1 Los Angeles March 2023		
 Pilot #2 Singapore April 2023	“Equatic-1” Singapore	Future Equatic plant
100 kg CDR per day 3 kg of hydrogen per day	10 tonnes of CDR per day 300 kg of hydrogen per day	300 tonnes of CDR per day 9 tonnes of hydrogen per day

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Policy and Regulation

- Community
- Permitting
- Employment
- Demand signals