

ICELAND CREATES PLANT THAT SUCKS CARBON DIOXIDE FROM AIR AND TURNS IT INTO ROCK

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

A company in Iceland has built the world's largest plant that sucks carbon dioxide directly from the air and deposits it underground.

The giant Orca plant, constructed by Switzerland's start-up Climeworks and Iceland's Carbfix, comprises four units, each made up of two metal boxes, similar in appearance to the containers used for maritime transport.

Orca is named after the Icelandic word "Orka" meaning "energy".

The company has claimed that the [Orca plant](#) can draw 4,000 tonnes of carbon dioxide (CO₂) out of the air every year.

According to the US Environmental Protection Agency (EPA), that is the equivalent of the annual emissions from about 870 cars.

Last year, global CO₂ emissions totalled 31.5 billion tonnes, according to the International Energy Agency.

Direct air capture is one of the few technologies extracting carbon dioxide from the atmosphere and is viewed by scientists as vital to limit [global warming](#), blamed for causing more heatwaves, wildfires, floods and rising sea levels.

There are currently 15 direct air capture plants operating worldwide, capturing more than 9,000 tonnes of CO₂ per year, according to the IEA.

How does Iceland's Orca plant suck CO₂ from the air?

To collect the carbon dioxide, the plant uses fans to draw air into a collector, which has a filter material inside.

Once the filter material is filled with CO₂, the collector is closed and the temperature is raised to release the CO₂ from the material after which the highly concentrated gas can be collected.

The CO₂ is then mixed with the water before being injected at a depth of 1,000 metres into the nearby basalt rock where it is petrified.

Orca is the only one that permanently disposes of the CO₂ rather than recycling it.

US oil firm Occidental is currently developing the largest direct-air-capture facility, to pull 1 million tonnes per year of carbon dioxide from the open-air near some of its Texas oilfields.

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