Carbon Removal Reference Price Indexes: Market Data

A first of its kind, the Carbon Removal Price Index family provides reference prices for engineered carbon removal based on the Puro Standard.

Overview

The indexes are based on Puro.earth's CO2 Removal Certificates (CORCs). A CORC is a tradable digital asset that represents a tonne of CO2 that has been removed from the atmosphere. The CORC indexes will help make the true cost of carbon removal transparent.

The CORC Carbon Removal Reference Price Index family consists of a composite index that tracks the price of all types of CORC transactions as well as separate reference price indexes for biochar[1] and bio-based construction materials[2]. More indexes will be added to the family as the number of CORC transactions based on other carbon removal methods increases. The reference prices indexes are in Euro per tonne.

Data Specifics

The CORC Carbon Removal Reference Price Index family consist of the following indexes:
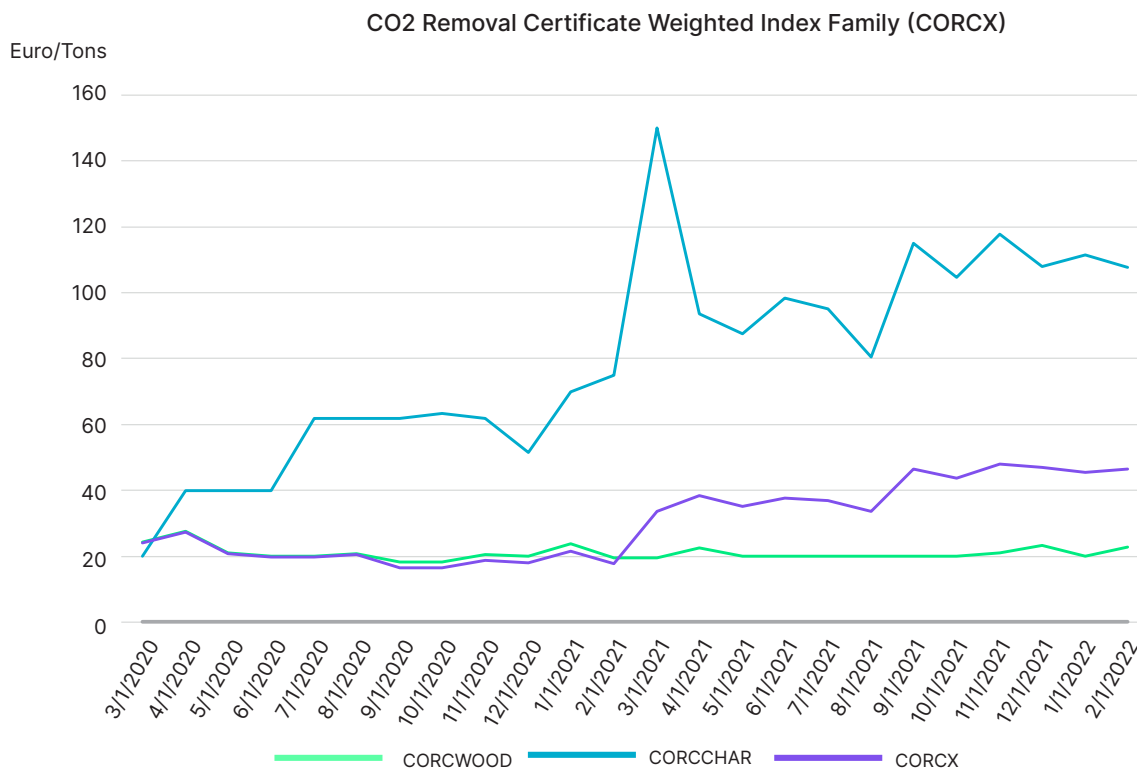
- **CORC Carbon Removal Price Index (CORCX)**
    - CORCX reflects the cost of sequestering one tonne of CO_2 based on an aggregation of CORC transactions reflecting all types of engineered carbon removal methods defined in the Puro Standard.
- **CORC Biochar Price Index (CORCCHAR)**
    - CORCCHAR reflects the price of sequestering one tonne of CO_2 in the form of biochar.
- **CORC Bio-based Construction Materials Price Index (CORCWOOD)**
    - CORCWOOD reflects the price of sequestering one tonne of CO_2 from bio-based construction materials.

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1. Biochar is a solid form of carbon created through a process called pyrolysis, which entails heating a feedstock in the absence of oxygen. The Puro Standard requires the use of sustainably produced feedstocks and that the biochar be used in specific applications, such as soil regeneration where the carbon will be sequestered for at least 100 years.

2. An example of bio-based construction materials is the use of wood from sustainable forestry as building elements in housing construction. The Puro Standard requires these structures to be durable, such as in the EU where regulation determines that the lifetime of the structure should be at least 50 years.

CO2 Removal Certificate Weighted Index Family (CORCX)

Euro/Tons

Legend: CORCWOOD, CORCCHAR, CORCX

CORC Carbon Removal Price Index Family

The indexes are updated monthly. More details about the index methodology can be found on nasdaq.com/solutions/carbon-removal-marketplace. For information on the Puro Standard for carbon removal, please visit: puro.earth/carbon-price.

Towards a Net Zero Society

Since 1850, we have added 2,500 gigatonnes (GT) of CO_2e to the atmosphere[3].   Half of these emissions were in the last 30 years, and we continue to emit an additional 50 GT each year. To achieve the goal of the Paris Agreement of limiting global heating to well below 2°C (ideally less than 1.5°C), there is a need to physically remove carbon from the atmosphere. For most 1.5°C pathways, even with drastic decarbonization such as the complete electrification of sectors, we would still need to remove 6-10 GT of CO_2 per year by 2050[4]. That is equal to stopping GHG emissions and removing ~10-20% of global emissions annually.
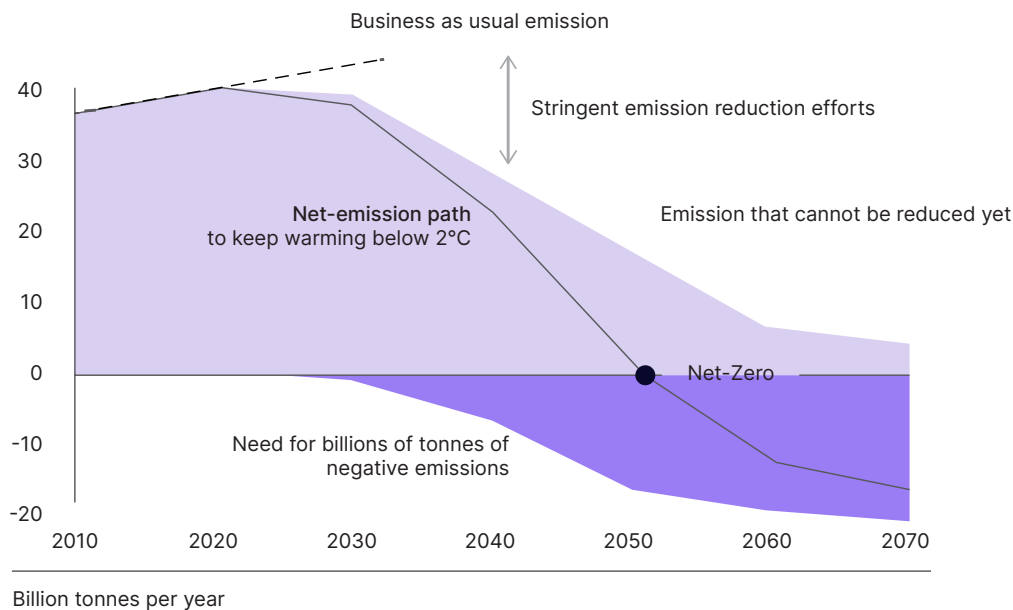
How Nasdaq and Puro.earth are Partnering to Enable Carbon Removal

Carbon removal entails the process of physically capturing CO_2 from the atmosphere, stabilizing it, and placing it in a durable storage. Founded in 2019, Puro.earth is the first B2B standard, registry and marketplace focused exclusively on carbon removal. It developed the Puro Standard for carbon removal that includes various methodologies that emphasize long-term carbon sequestration. On 1 June 2021, Nasdaq acquired a majority stake in Puro.earth.

3.One gigatonne is 1,000,000,000 tonnes and roughly equivalent to the mass of all land mammals (excluding humans) or twice the mass of all the people in the world. https://energyeducation.ca/encyclopedia/Gigatonne

4.See: www.ipcc.ch

Global CO$_2$ emissions

Business as usual emission

40

Stringent emission reduction efforts

30

Net-emission path
to keep warming below 2°C

20

Emission that cannot be reduced yet

10

0

Net-Zero

-10

Need for billions of tonnes of
negative emissions

-20

2010   2020   2030   2040   2050   2060   2070

Billion tonnes per year

Puro.earth works with companies that have net-negative emissions to create a type of carbon credit called a CO$_2$ Removal Certificate (CORC). Carbon removal companies need to conduct a lifecycle analysis to prove their net negativity, which is audited by an independent third-party. Following ambitious carbon reduction targets, climate conscious companies looking to neutralize their residual emissions can buy CORCs to support sustainability claims. When a claim is made, the company must retire the CORC in the Puro Registry where it is visible to the public.

Net Zero-aligned Carbon Offsetting

Traditional carbon offsets are based primarily on carbon reduction projects while CORCs are based on carbon sequestration projects. According to the Science Based Targets initiative (SBTi) and The Oxford Principles on Net Zero Aligned Carbon Offsetting, there is a need to a gradual shift away from traditional carbon offsetting towards carbon removal. The SBTI states explicitly: "Reaching net zero emissions requires neutralizing a company's residual GHG emissions with an equivalent of carbon removals." The CORC Carbon Removal Price Index family tracks carbon removal credits that are aligned to the guidance issued by these initiatives.

The Carbon Market: Voluntary- and Compliance Markets

The carbon market consists of voluntary- and compliance markets. Compliance markets are based on regulated emissions trading systems that cover specific sectors. Also called Cap-and-Trade programs, emissions are capped and permits or allowances, each representing one tonne of CO$_2$, are issued to companies that can trade these depending on their actual emissions. Companies are rewarded for carbon reduction efforts through the proceeds from sold allowances. Each year the number of allowances that are issued are reduced to achieve climate targets.

Other sectors that fall outside of the compliance markets schemes participate in the voluntary carbon markets. Carbon credits are issued through projects that remove or reduce GHG emissions based on various industry standards. While compliance markets are generally restricted to a specific region, voluntary markets are more flexible and can serve companies globally across all sectors of the economy. Puro.earth operates in the voluntary carbon market and the CORC index family is based on carbon removal credits traded in this market.

How to Access the Market Data

Would you like to learn more about the CORC Carbon Removal Reference Price Index family?

Please visit nasdaq.com/solutions/carbon-removal-marketplace or contact EUDataSales@nasdaq.com.