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# EMERGING SPACE BRIEF

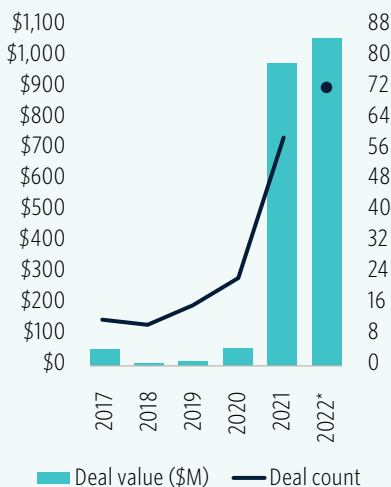
## Carbon Offset Trading Platforms

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### Trending companies



### Carbon offset trading platforms deal activity



Source: PitchBook | Geography: Global  
\*As of December 22, 2022

### Overview

Carbon offset trading platforms provide a marketplace for participants to purchase and sell carbon offsets in the voluntary carbon market. These platforms are expected to become an integral component of climate change mitigation and environmental, social, and governance (ESG) metrics, as organizations that may not be capable of reducing their emissions beyond the legally mandated level can still fund projects that do.

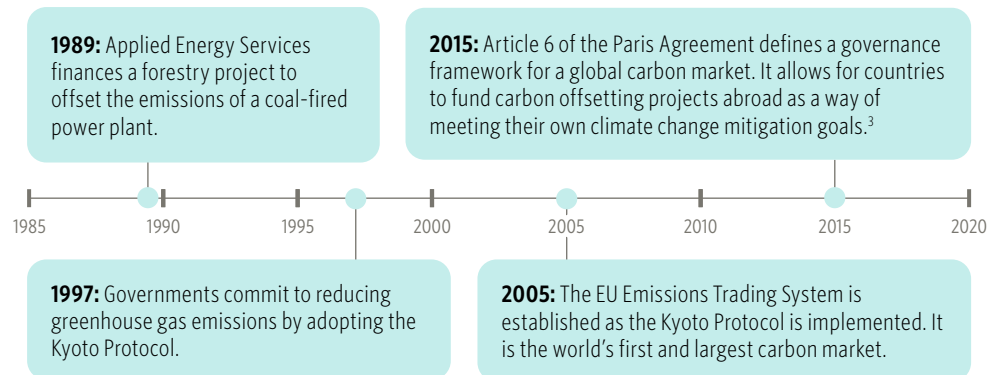
### Background

Carbon offset credits are generated through the avoidance, reduction, or removal of 1 metric ton of CO<sub>2</sub> or other greenhouse gases.<sup>1</sup> These credits can either be bought by companies to offset their own emissions and meet ESG goals or be sold by project implementers to finance their carbon mitigation efforts. Implementers can be governments, nongovernmental organizations, companies, or individuals that execute carbon mitigation projects.

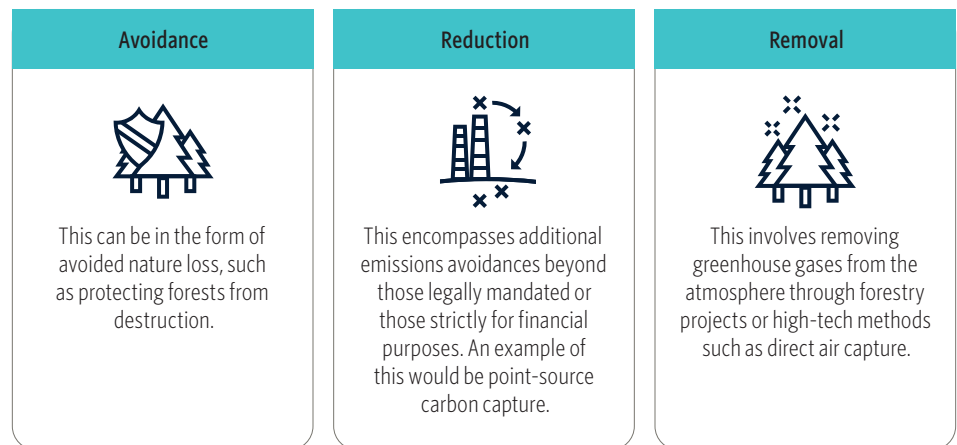
Carbon offset credits are traded in what is known as the voluntary carbon market: the market for entities that seek to offset emissions levels beyond those mandated by regulation. Typical motivations for this include corporate social responsibility considerations and ESG score improvement.

<sup>1</sup>: In this brief, carbon credits will strictly refer to credits generated from carbon offsets. Typically, carbon credits refer to allowances for a company to emit a certain amount of carbon according to regulation. Credits are allocated to companies with the aim of capping the amount of carbon emitted. These credits are traded in government-monitored compliance markets, which are separate from the voluntary carbon markets on which carbon offset credits are traded. More information can be found [here](#).

## The history of the voluntary carbon market<sup>2</sup>



Carbon credits are issued through three offsetting methods: avoidance, reduction, and removal.<sup>4</sup>



## Technologies and processes

The actual trading platforms on which these credits are bought and sold serve four primary functions:

- **Aggregation:** Compiling different projects onto a single platform to allow for easy discovery.
- **Interfacing:** Providing the infrastructure that connects buyers and sellers.
- **Support:** Assisting those seeking to convert physical assets into offsets to be sold. This involves consulting with a project implementer on how to validate and quantify their carbon mitigation efforts so that they can redeem and sell offset credits.

2: "The History of Carbon Offsetting: The Big Picture," *Impactful Ninja*, Grace Smoot, n.d., accessed December 16, 2022.

3: "DevExplains: What's Next for Global Carbon Credit Markets," *Devex*, Rumbi Chakamba, October 25, 2022.

4: "Taskforce on Scaling Voluntary Carbon Markets," *Institute of International Finance*, January 25, 2021.

- **Validation:** Ensuring that projects are qualified for credits according to carbon offset criteria. This is a critical component of the credit issuance process, as the following criteria are required for a project to qualify as a true offset:
  - **Additionality:** The offsetting would not have occurred without the project, nor would the project have occurred without the potential for carbon credits.
  - **Leakage:** The project does not result in second-order emissions that are greater than the emissions reduced.
  - **Permanence:** The project must lock away carbon indefinitely.
  - **Exclusivity:** Only one entity can carry out the offsetting project, and each ton of carbon offset by the project can be sold to only one entity.

Carbon offset trading platforms actualize the carbon offset market and allow it to function beyond individual, isolated transactions. The platforms with seamless user experience, robust validation measures, and access to numerous and various projects will be the ones that scale quickly. Of course, user demands for projects will differ, and platforms will likely need to account for this. Some users may prefer a specific type of project, such as direct air capture or forestation, while others will simply favor the cheapest one.

## Applications

One potential nascent technology that could underpin carbon offset trading platforms is blockchain-based tokens. While certain regulatory and environmental barriers to blockchain technologies remain, it is possible that the verification and peer-to-peer attributes inherent to these technologies will introduce more efficient models of carbon trading.

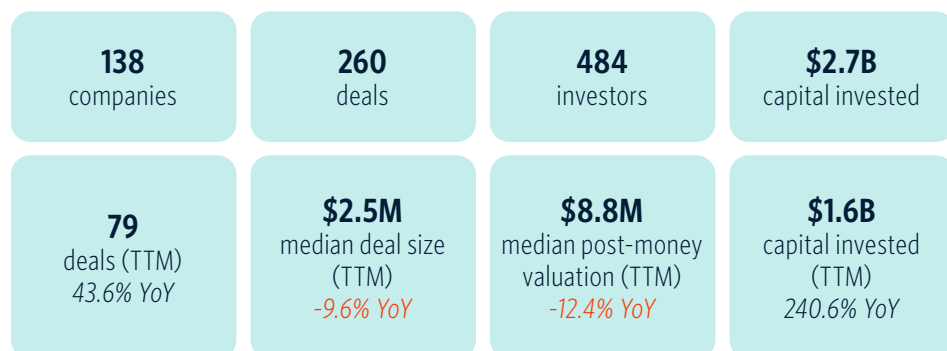
## Limitations

The voluntary carbon market, and therefore the carbon offset trading platform market, is exposed to regulatory risk. Compliance and voluntary markets are deeply intertwined, as government-mandated emissions levels determine what is considered voluntary. Furthermore, validation standards can change, which could result in fewer projects qualifying for credit issuance. This could substantially affect the demand for trading platforms, and the market could consolidate around larger platforms with more resources and functionality to validate projects.

## Outlook

The voluntary carbon market is estimated to reach \$50 to \$60 billion by 2030.<sup>5</sup> Historically, as international regulation evolved, markets for carbon trading developed in tandem. We expect the same pattern to follow, with the demand for sophisticated platforms that allow for easy carbon trading to increase. Moreover, as the supply of carbon credits grows with the amount of offsetting projects completed, platforms that can assist in the validation of such projects will stand out as comprehensive tools in the voluntary carbon market ecosystem.

## Quantitative perspective



\*As of December 22, 2022

## Recommended reading

[“Q3 2022 Carbon & Emissions Tech Report,” PitchBook, John MacDonagh, November 10, 2022.](#)

[“Q3 2022 PitchBook Analyst Note: Postcombustion Carbon Removal,” PitchBook, John MacDonagh, September 16, 2022.](#)

[“Voluntary Carbon Market,” CFI, October 13, 2022.](#)

[“A Blueprint for Scaling Voluntary Carbon Markets to Meet the Climate Challenge,” McKinsey & Company, Christopher Blaufelder, et al., January 29, 2021.](#)

[“How the Voluntary Carbon Market Can Help Address Climate Change,” McKinsey & Company, Christopher Blaufelder, et al., December 17, 2020.](#)

<sup>5</sup>“Voluntary Carbon Markets: How They Work, How They’re Priced and Who’s Involved,” S&P Global, Silvia Favasuli and Vandana Sebastian, June 10, 2021.