

# FedEx and sustainability

## Carbon capture and the road to 2040

The largest potential solution for removing excess carbon from the atmosphere already exists: the Earth itself. There is particular promise in carbon capture strategies inspired by Earth’s existing natural processes for removing carbon from the atmosphere — also known as **natural carbon capture**. If we can harness the power of nature and better use earth’s forests, rocks, soil, and oceans to store carbon dioxide from the atmosphere, we have one more tool to help us address climate change.

That’s why, in 2021, FedEx committed \$100 million to help establish the Yale Center for Natural Carbon Capture, a multi-disciplinary research initiative focused on advancing scalable and durable nature-based solutions to capture and store carbon for long periods of time. The Center’s research doesn’t benefit a single company, or even a single industry, country, or sector: the natural carbon capture science can be applied and used for broader good and universal impact.

### What is carbon capture?

**Carbon capture**, or carbon dioxide removal (CDR), is any activity initiated by humans that removes carbon dioxide (CO<sub>2</sub>) from the atmosphere and durably stores it in geological, terrestrial, or ocean reservoirs or in products. **Natural carbon capture** utilizes and takes inspiration from existing natural biological and geological processes — carbon cycles in forests, rocks, oceans, and other natural systems — to absorb this CO<sub>2</sub> from the atmosphere and store it.

## WHAT IS NATURAL CARBON CAPTURE?

Our planet is one of the most effective carbon capture mechanisms ever created. If we can harness the power of nature and better use Earth’s rocks, soil, forests, wetlands, and oceans to capture and store gigatons of carbon and greenhouse gases from the atmosphere, we will have one more tool to help us address climate change.

FedEx committed **\$100 million** to help establish the **Yale Center for Natural Carbon Capture**, which supports groundbreaking research for exploring new and scalable solutions for capturing and providing long-term storage of carbon.

### Geologic:

Most carbon on Earth is naturally stored as carbonate rock on Earth’s surface, capturing CO<sub>2</sub> over thousands or millions of years.

### Terrestrial:

Ecosystems like soil, wetlands, forests and grasslands act as carbon sinks with the fastest rates of CO<sub>2</sub> absorption from the atmosphere.

### Oceans:

Oceans are one of the world’s largest carbon sinks, with huge capacity to capture and store CO<sub>2</sub> long term.

#### Enhanced mineral weathering

Adding crushed rock to soils or oceans to accelerate CO<sub>2</sub> absorption

#### Biochar

Applying biomass to soil to enhance CO<sub>2</sub> absorption

#### Reforestation & afforestation

Planting trees or managing forests to remove CO<sub>2</sub>

#### Wetlands & peatlands

Restoring ecosystems enables greater uptake and storage of CO<sub>2</sub>

#### Grassland management

Improving grazing to increase CO<sub>2</sub> uptake in roots and soil

#### Regenerative agriculture

Sequestering CO<sub>2</sub> from the atmosphere into the soil

#### Ocean alkalinity enhancement

Adding minerals or using electrochemistry to enhance CO<sub>2</sub> absorption

#### Blue carbon

Restoring mangroves, seagrasses, and tidal marshes to enhance CO<sub>2</sub> storage



#### Direct ocean capture

Chemically extracting CO<sub>2</sub> from surface water



## Our sustainability goals



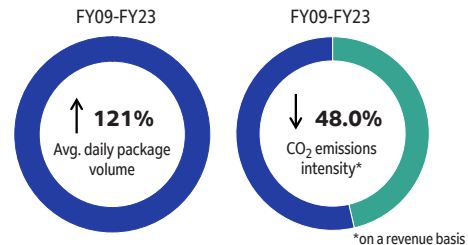
FedEx is working toward a goal of carbon neutral global operations by 2040. FedEx has a multi-faceted strategy to achieve this goal, focusing on emissions reduction first and foremost.

### Spotlight on air operations

Since 2005, FedEx has reduced its overall aircraft emissions intensity by 29%. Reducing emissions in aviation — which accounted for approximately 65% of the reported emissions footprint for FedEx in FY23 — requires an “all of the above” approach:

- Sustainable aviation fuels (SAF)
- Aircraft modernization
- Fuel conservation
- Operational efficiency improvements

FedEx reduced CO<sub>2</sub>e emissions intensity on a revenue basis by 48% between FY09 and FY23, while volume grew by 121%.



Source: 2024 FedEx ESG Report

While we work to increase efficiencies in our operations and reduce our emissions, the technologies the aviation industry needs to meet its goals are largely not available at scale. Even with maximum uptake of current and emerging aviation technologies, like Sustainable Aviation Fuels (SAF), emissions will remain and need to be neutralized in the coming decades. **Carbon capture needs to be part of the comprehensive suite of solutions for reducing greenhouse gases, particularly for the aviation industry.**

Yale’s pioneering research in natural carbon capture strategies will advance long-term carbon removal methods that companies across many industries will need to meet their decarbonization goals. Their work will help inform projects available on the market as well as help to strengthen the standards for natural carbon credits. While our donation to Yale will not result in the direct provision of carbon credits, the goal is to create a more robust pipeline of science to identify solutions for mitigating and capturing carbon, adding supply to the marketplace for credits in the future.

With Yale’s leading research, we hope that these techniques can bolster the availability and durability of high-quality natural carbon removal strategies at scale. While aggressive emissions reduction efforts take precedence, the public and private sectors also need to pursue all avenues to identify other necessary climate solutions, like natural carbon capture, that will help the world reach its climate goals.

### Structure of the voluntary carbon market

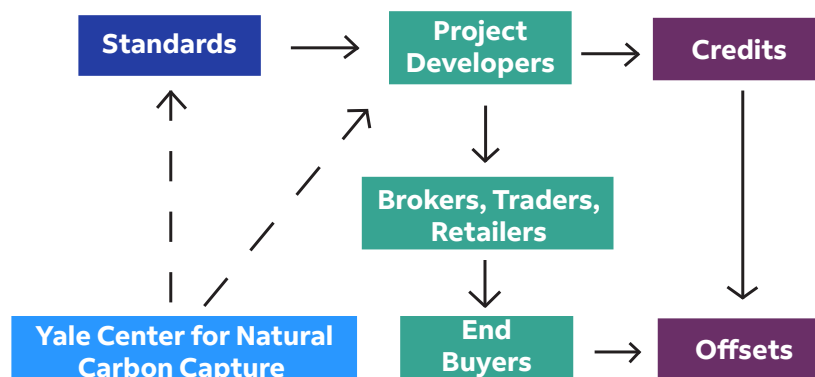


Chart adapted from S&P Global Platts.