



What are Carbon Credits?

Carbon credits (a.k.a. carbon allowances) act as a permit for organizations to emit one tonne of CO₂e, which has been removed or prevented from entering the atmosphere. Carbon credits can be seen as a currency backed by climate risk mitigation, which is bought and sold in carbon markets. Carbon credits can be bought directly from the company removing, avoiding, or capturing the CO₂e as the buyer sees fit for their own goals in a “voluntary” market. In a “mandatory” market companies are required to limit the number of emissions they are producing according to a sector-specific limit set by their local regulators (ex. EPA NOTE: Some public sector entities monitor, evaluate and report progress through public engagement protocols rather than third-party verification.) and use carbon credits to offset any emissions that exceed that limit.

What are not considered carbon credits?

Carbon credits are not:

1. Permission to resume business as usual;
2. The answer to solving climate change;
3. A substitute for emission reduction efforts.

Note: Net zero standard setting frameworks like the SBTi’s “Net-Zero Standard,” require companies to first reduce emissions by 90-95% before they use carbon credits to achieve net zero.

Prolific-Fund standards require projects to have significant additionality in anthropogenic emission reduction/carbon capture/carbon storage, as well as significant co-benefits to ecosystem restoration/betterment of mankind (*See Project Life Cycle, *See our Partnership Pledge).

What types of carbon credits exist?

The mechanisms for creating carbon credits fall into four primary categories:

Ecosystem Restoration	Reforestation, deforestation protections, land use changes, and natural resource conservation can all be turned into carbon credits. Farmers and landowners can sell a carbon credit for every tonne of CO ₂ e their land sequesters.
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Renewables	Companies that create wind, solar, and hydroelectric power can sell the emissions they avoid as carbon credits. Companies can also buy Renewable Energy Credits (REC), which allows companies to claim their energy comes from a renewable source, regardless of where their actual used energy is sourced from.
Carbon Capture and Storage	Carbon can be sucked directly out of the air through direct air capture or captured at the source of emissions and sequestered geologically for long-term storage. Companies that capture carbon can sell their captured carbon as credits.
Energy Efficiencies	For each tonne of CO ₂ e energy savings prevented from being emitted, the entity can sell as a carbon credit. Energy Efficiency Credits (EEC), also known as “white tags,” are another way for companies to sell a type of carbon credit. Note: EECs are sold by the energy measurement MWh, which must be converted into a CO ₂ e saving.

Carbon credits can be created and sold by any company that is reducing, capturing, or storing GHG emissions.

Carbon Credit vs. Carbon Offset

Although carbon credits and carbon offsets are terms that are often used interchangeably, they are slightly different mechanisms. The main difference is how they are traded.

Carbon credits represent an allowance for companies to emit one tonne of CO₂e. Carbon credits are bought and sold both on voluntary markets and mandatory cap-and-trade markets. Cap-and-trade markets are policy-driven mechanisms that cap the number of emissions a company from a certain sector can emit and allow companies to trade permits (carbon credits) for the emissions they save.

Carbon offsets represent emissions that have been removed from the atmosphere, which can be bought as a way to reduce emissions beyond what an organization can achieve through its own decarbonization efforts. Offsets are bought and sold voluntarily through brokers and trading platforms.

How do Carbon Credits Work?

Both mandatory and voluntary carbon credits work the same way in that they permit an entity to emit one tonne of CO₂e; the only difference is mandatory credits are sold and purchased retroactively for emissions that went under or over an emissions cap, whereas



voluntary carbon credits are sold and purchased for carbon credits that are expected to be removed and emitted.

What is the carbon market?

The carbon credit market has expanded significantly in recent years, having quadrupled since 2020, and is expected to explode to a value reaching \$2.4 trillion by 2027. Carbon credits/offsets (often in the form of certificates, permits and tax forms) are traded in the carbon market and intended to offset a given amount of Greenhouse Gas (GHG) emissions. There are two carbon credit markets: compliance (“mandatory”) and voluntary. As their names suggest, the main differences in these markets are that one is based on legislative compliance to trade emissions based on a cap-and-trade system, and the other is voluntary and based on the decarbonization ambitions of each company.

As the number of companies using these markets increase, our protocols, standards and procedures have to constantly evolve (in line with ISO and the Paris Agreement) to meet the demand of efficacy. Aviation, oil and gas, and other emissions-intense industries have seen regulators in the EU, China, California, and others mandate them to buy and sell carbon credits, while others do so voluntarily.

Carbon credits will be a key part of global decarbonization plans, especially for those industries dependent on fossil fuels.

Want to know more about: Compliance Carbon Markets?

In markets, emissions are traded through a cap-and-trade system, where emissions are capped at a certain amount for specific sectors, which typically declines annually to incentivize decarbonization. For example, if a coal company produces fewer emissions than its allotted amount, the difference is translated into carbon credits, which the company can then sell or save for future use. On the other hand, if it produces excess emissions, it must purchase new or use previously saved carbon credits.

There are now over 30 compliance carbon credit markets operating globally (CITSS, RGGI and e-GGRT in the United States) covering almost a fifth of all emissions. The EU’s Emissions Trading Scheme was the first in 2005. Now, China, Australia, and Canada all have mandatory carbon credit markets.



Want to know more about: Voluntary Carbon Markets?

A voluntary carbon credit market is where organizations can freely purchase and sell carbon credits that represent an expected emissions reduction equivalent to one tonne of CO₂e. To match increasingly ambitious corporate climate commitments to reach decarbonization goals like net zero emissions, the voluntary carbon credit market has grown substantially in recent years. Most voluntary markets are extremely difficult to validate and demonstrate that they are sequestering, reducing, or mitigating the amount of carbon they claim to be.

Our company backs the amount of tonnes of CO₂e we validate with scientific evidence that has been confirmed through peer review (DOE, USDA, Biodiversity Lab, etc.), analytical lab testing (carbon content, water, soil, etc.) and onsite data provided and dictated in a projects monitoring plan (schedules tests, flare off readings, reduction Mwh, increase weight of harvest, reduced usage of water, etc.).

How to Buy Carbon Credits?

How carbon credits are purchased depends on whether the carbon market is voluntary or compliance-based:

Voluntary Markets - Companies buy credits from brokers, project developers or a registry who work with farmers, landowners, organizations, etc. to develop carbon credit projects, or they can buy them on a carbon credit marketplace (CITSS, RGGI and e-GGRT in the United States).

Compulsory Markets - Companies buy credits from other companies that have extra allowances as they fall below the cap, or they can buy them from the local government.

How to Sell Carbon Credits?

Just like how to buy carbon credits, how carbon credits are sold also depends on whether the carbon credit market is voluntary or compliance-based:

Voluntary Markets - Any individuals who avoid, reduce, or remove carbon can have their carbon credits minted (validated and verified) by competent leadership in ISO management system standards.

Compulsory Markets - Companies that have low emissions under the emissions cap can sell or trade



Once verified, they can sell their credits to a broker or a marketplace.

emissions to other companies within the same carbon credit market.

Although the US does not have a national mandatory carbon credit market, state and regional governments have created cap-and-trade programs.

US Cap-and-trade Markets

California's Cap and Trade Program:

California's compulsory carbon credit market was launched in 2013 and is now the fourth largest globally. It sets emissions allowances across multiple sectors, including any sources that emit at least 25,000 tonnes of CO₂e/year. Companies that exceed their allowance must buy carbon credits at auction at a minimum and maximum price, which rises annually. The proceeds of the California cap-and-trade program have put \$5 billion toward California's Greenhouse Gas Reduction Fund.

Regional Greenhouse Gas Initiative (RGGI):

Twelve North East states, including Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia, have created a cap-and-trade conglomerate. The Regional Greenhouse Gas Initiative sets an annually reducing regional cap on emissions for any fossil fuel power plants that produce over 25 MW of energy. Since its implementation, the initiative has reduced emissions at power plants by more than 50%, double the national average, and has raised over \$4 billion to invest in the region's communities.

Global Carbon Credits Market

In 2021, the global carbon credit market sat at \$851 billion. The EU's ETS makes up the majority of that, at 90%. Others in the US and Asia make up the majority of the other 10%. The voluntary carbon credit market, on the other hand, made up only \$1 billion of the \$851 billion overall.

Quebec's Compliance Instrument Tracking System Service (CITSS):

CITSS is a management and tracking system for accounts and compliance instruments issued through participating Western Climate Initiative cap-and-trade programs. CITSS is administered by the Western Climate Initiative, Inc. (WCI, Inc.). CITSS tracks compliance instruments (emissions allowances and offsets) from the point of issuance by jurisdictional governments, to ownership, transfer by regulated greenhouse gas emitters and other voluntary or general market



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	<p>participants, and to final compliance retirement. CITSS is designed to simplify the participation in the cap-and-trade program for all program participants, jurisdiction staff, and any contractors involved in implementing cap-and-trade programs within participating jurisdictions.</p>
<p>EU's Emissions Trading Scheme (ETS):</p>	<p>The EU's ETS is the oldest in the world and remains the largest by market cap. It started in 2005 and has been one of the main tools for emissions reductions in the EU. Covering aviation, fossil fuel combustion plants, and emission-heavy industries, the plan used to cover 50% of the total emissions of the EU. In 2020 that number dropped to 36%, as the sectors are reducing emissions faster than others not covered by the ETS. Emissions for each sector under the trading scheme are capped, and those that need to buy credits can do so through an auction.</p>
<p>UK's Emissions Trading Scheme (ETS):</p>	<p>The UK's ETS replaced the EU's ETS on 1 January 2021. It replicates many of the aspects of the EU's ETS, covering the same sectors (aviation and fossil fuel combustion), and companies that need to buy credits purchase them at auctions.</p>
<p>Australia's Emissions Reductions Fund:</p>	<p>Australia's carbon credit market is a voluntary scheme that incentivizes businesses, farmers, and landowners to reduce their emissions and sell those abatements to the Australian government to be put into an auction. By 2020, Australia's Emissions Reduction Fund had reduced 80 million tonnes of CO₂e.</p>
<p>China's Emissions Trading System (ETS):</p>	<p>China's compulsory ETS started in 2020. Initially, the ETS set emissions allowances covering just coal- and gas-fired power plants but is expected to expand to seven other sectors. China's carbon market is already the largest in amount of emissions traded at three times the EU's ETS. When it adds additional sectors in 2024, it is set to become bigger than all other carbon markets combined. The ETS will permit coal- and gas-fired plants to emit allocations based on benchmarks for that certain fuel source and plant type. Plants that go over their allocations purchase credits, and the proceeds go to GHG reduction projects.</p>
<p>Canada's Greenhouse Gas Offset Credit System:</p>	<p>In June 2022, Canada released guidelines to support a domestic voluntary carbon market, the Greenhouse Gas Offset Credit System. The credit system aims to create economic opportunities for companies and regions that are reducing emissions. By following federal offset protocols, companies can sell credits to other Canadian companies wanting to voluntarily buy credits. The price of each tonne bought is initially C\$50, but will increase to C\$170 by 2030.</p>

FAQs

How Much is a Carbon Credit Worth?

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A carbon credit is almost always the price of a tonne of CO₂e. The cost can have huge differences depending on the jurisdiction of the mandatory carbon credit market and the type of carbon credit in voluntary markets.

- In the EU's ETS, the cost of one tonne of CO₂e in Q4 2022 was close to €90 (USD\$94)
- In China's Emissions Trading System in 2022, the price was USD\$9.29 for one tonne of CO₂e

In voluntary markets, the prices can fluctuate based on the type of carbon removal or avoidance. Prices can range from USD\$15-20 for one tonne of CO₂e for reforestation projects, whereas technological carbon credits from carbon capture and storage can range from USD\$100-1,000 for one tonne of CO₂e.

Where can you Trade Carbon Credits?

In a mandatory carbon market, the government or regulating body acts as the middleman to buy and sell carbon credits.

In a voluntary market, carbon credits can be traded by individuals who get their emissions avoidance, reductions, or removals accredited by a third party or from a carbon credit marketplace.

Are Carbon Credits Effective?

Carbon credits in compulsory emissions trading schemes have been effective in reducing GHG emissions in the jurisdictions and sectors they are regulated in. The EU's ETS, for example, reduced the emissions of the facilities it covered by 35% between 2005 and 2019.

Voluntary carbon credit markets have been less effective, but have reduced some emissions. Most importantly, they have created funds for decarbonization projects.

Our company views carbon credits the same way we view all currency: As a tool to help implement green technology, blue technology and fund more carbon reduction efforts.

Carbon Credits vs. Carbon Offsets: Which Should I Choose?

As a carbon Registry, we have a responsibility to be unbiased about which projects we accept. Some projects create one type of carbon credit or sometimes both. For use there is no choice. Although when it comes to monetization of our banked carbon credits the answer is always: It is the buyer's choice.

Are Carbon Credits Considered Greenwashing?

Critics say carbon credits allow big polluters like oil and gas companies to greenwash by continuing to produce the same level of emissions instead of cutting them through decarbonization. Unregulated voluntary carbon markets can fail on both counts of



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channeling funds to the carbon reduction efforts that produce the carbon credits and reducing emissions.

Carbon credits and the markets they are traded in are a controversial, but necessary, part of decarbonization plans. Mandatory carbon markets have shown to be effective in reducing emissions in some of the most emissions-intensive industries. Ideally, companies take the approach of using carbon credits when necessary while reducing the emissions from their operations and supply chains.

Our company doesn't focus on how many carbon credits we can create during project intake and review, but on the following principle:

1. Is it good for mankind?
2. Is it good for the environment?
3. Can we look at the project without bias and without factoring any ROI?
4. Does the project promote the Host Country's NDCs and the United Nation's SDGs?

In closing, carbon credits and the trading of them is not inherently Greenwashing. The environmental integrity, science behind them, standards and procedures of the company or individual they've originated from are what dictates

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