

Understanding the Voluntary Carbon Markets



The use of carbon credits in Voluntary Carbon Markets (VCM) is complicated and controversial. Many potential purchasers are wary due to reports in the media of the varying quality of issued credits, a perceived lack of accountability, and fears of greenwashing. But the potential for VCMs to drive capital to emissions reductions solutions is compelling.

A VCM is a decentralized market where individuals or organizations buy carbon credits issued by non-regulated, independent crediting schemes and standards to voluntarily offset their carbon footprint.

To better understand carbon credit markets and the related issues and challenges, Chartered Professional Accountants of Canada (CPA Canada) and the International Federation of Accountants (IFAC) have partnered with the Institute for Sustainable Finance (ISF) to initiate a research project. This research will examine existing carbon markets and related standards to understand best practices that can increase confidence in carbon markets and encourage investment in credible greenhouse gas emissions (GHG) reduction projects and schemes.

What are carbon credits?

Carbon credits represent one tonne of carbon dioxide or its equivalent (CO₂e) that is either removed from the atmosphere or not emitted as planned. These credits can then be bought and sold on markets. Their prevalence has risen in recent years, due to increasing regulatory pressure, investor demand, market competition, corporate climate target setting and disclosure of GHG emissions broadly.

The most common purchasers of carbon credits are organizations that have set long-term emissions reductions goals, including net-zero or carbon neutral targets, and are seeking to reduce their CO₂e emissions. IFAC's research, [Getting to Net Zero: A Global Review of Corporate Disclosures](#), examined 600 of the largest stock exchange-listed companies (by market capitalization) from the 15 most industrialized jurisdictions and found that 66 per cent disclosed emissions targets. In addition, using 2022 sustainability reports of the S&P/TSX Composite Index, [ISF found](#) that 57 per cent of organizations (134) have a GHG reduction target, an increase of 113 from the previous year.

To reduce emissions, organizations can use a range of strategies including shifting to a less polluting supplier, switching to renewable energy and modifying operational processes. Organizations can also purchase carbon credits for harder to abate emissions. These credits “offset” an organization's actual emissions. Carbon credits may also help organizations meet GHG reduction targets.

“[Organizations] will be looking to reduce emissions... but for a period of time, they will also need the ‘net’ in net zero, and they can only get that from a credible global [carbon] market that needs to be developed.” – Mark Carney, Special Envoy for Climate Action and Finance

The demand for credits is driven by many factors including when GHG reduction plans exceed an organization's capability to reduce emissions, primarily due to scale, technology and/or cost limitations. For example, airlines currently have few cost-effective options to reduce their GHG emissions from flying to meet net zero targets.

The growing voluntary carbon credit market

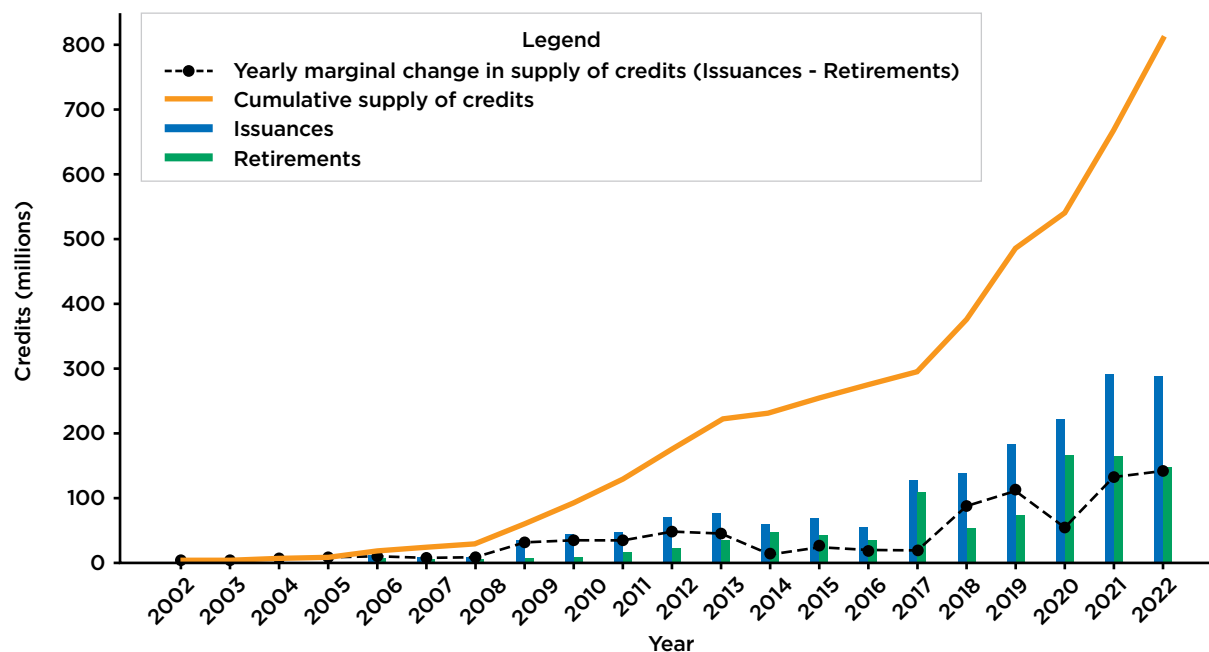
VCMs were created with the intention of mobilizing capital towards nature-based climate solutions (e.g., afforestation/reforestation, wetland restoration) and innovative low-carbon technologies (e.g., carbon capture and storage, transportation electrification). VCMs also have the potential to help bridge the [US\\$4.1 trillion nature financing gap by 2050](#), and support developing countries' pursuit of Sustainable Development Goals (SDGs).

The market size of VCMs is reported to have reached [US\\$2 billion in 2021, quadrupling the value of 2020](#). The total market size of VCMs is expected to grow to [US\\$10-\\$40 billion by 2030](#).

The supply and demand dynamics of carbon credits in the VCMs are highlighted in Figure 1. The red line shows the cumulative total number of issued minus retired credits, or simply the total supply available for trading in the top 4 voluntary registries — [Verra's Verified Carbon Standard \(VCS\)](#), [Gold Standard \(GS\)](#), [Climate Action Reserve](#) and [American Carbon Registry](#). Over the last decade, the total supply of credits has grown dramatically.

The retirement of carbon credits highlights their "consumption" or use, which usually means they were used to show a reduction of an organization's total GHG emissions for that year. Over the past 20 years annual retirement values have seen growth, however, the last three years show a plateauing of retired credits.

Figure 1: Carbon credits issued and retired by the top four voluntary standards/registries



Note: Graphic made by authors using data from Berkeley's Voluntary Registry Offsets Database. Credits are assigned a year based on issuance date. Credits given a "canceled," "rejected by administrator" or "withdrawn" status have been excluded. Issuance refers to when the registry issued the credit. Cumulative supply of credits is calculated by taking the cumulative running total of annual issued credits minus retired.

Data source: Ivy S. So, Barbara K. Haya, Micah Elias. (2023, May). Voluntary Registry Offsets Database, Berkeley Carbon Trading Project, University of California, Berkeley.

What are some of the challenges?

Despite the dramatic growth of VCMs and the opportunities it creates, the current state of VCMs is far from perfect. Exaggerated carbon reduction claims have eroded both public and market trust in these markets. Further, VCMs can lack transparency or suffer from potential conflicts of interest and poor governance. The accounting considerations of carbon credits, along with their function, creation process and overall role, is also unclear. Their prevalence, potential and limitations have caught the attention of policymakers, standard-setters and regulators.

What's on the horizon?

This collaborative research series aims to inform existing and potential market participants, including organizations, capital providers, accountants and the public on the state of VCMs and their future development:

- In early 2024, the first instalment of the research focuses on the fundamentals of VCMs, including the differences from compliance markets, the process of generating and using carbon credits, as well as a description of the market participants and their incentives for participation. It also provides an overview of the criticisms, risks and challenges for market participants.
- Future installments will dive deeper into the accounting and verification issues, particularly against the backdrop of identified risks and areas of manipulation in the market. This phase of the project will explore the roles of CPAs in enhancing the integrity of VCMs and identify key opportunities to foster trust, bolster transparency and strengthen accountability as VCMs continue to expand in Canada, and around the world.

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