

Carbon Innovation

IN Depth

The Voluntary Carbon Market: International Market of Mystery (Excerpt)



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For disclosure statements, including the Analyst Certification, please refer to page(s) 4 to 8. This is an excerpt of a report originally published on September 29, 2022.

Carbon Markets; a Brief Overview

Market-based mechanisms (creation of fungible carbon credits and the markets they transact in) are emerging as a useful way to drive beneficial emissions outcomes with increased flexibility relative to direct taxation on greenhouse gas emissions. In addition, market-based carbon finance creates potential for profit on projects that would be sub-economic otherwise. There are currently two separate carbon market categories, compliance carbon markets and the voluntary carbon market (VCM). Compliance markets cover emitters within a regulator’s purview who are required to participate by law. Government regulators largely run these markets and the emitters are often large and stationary (refineries, chemical plants, etc.). Voluntary carbon markets are for emitters who voluntarily wish to purchase credits to offset their own emissions, including corporations, foundations, and even individuals.

Exhibit 1: Compliance and Voluntary Markets

	Compliance Markets (also referred to as regulated or allowance)	Voluntary Carbon Market
Participants	large emitters who are regulated (supply and demand), financial intermediaries (help facilitate transactions for emitter), speculators (limited, a few markets allow financial speculation from qualified investment firms in a secondary market)	emitters of all kinds (demand) , intermediaries (traders, brokers, etc.), speculators (no limit), project developers (supply), registries
Accessibility	Handful of market players based on what each individual regulator allows	no limitation
Purpose	drive emissions reductions for regulated emitters to help meet jurisdictional climate goals	facilitate offsetting for all types of emitters to help accelerate global transition
Origination	from arbitrary emissions allowance set by regulator	from activities that actively reduce or remove greenhouse gases from the atmosphere
Size	>US\$100 billion	~US\$2 billion
Regulated	yes	no
Credit Quality	no discernable difference between credits	critical component of market, credit pricing a result of quality
Examples	EU ETS, WCI (California & Quebec), RGGI (NE US), Alberta TIER, etc.	Global

 credits not interchangeable 

Source: BMO Capital Markets

Why are these markets relevant for investors?

- 1) These markets are becoming increasingly relevant for corporations. Companies may be forced to participate in compliance markets given their asset portfolio, with financial implications becoming increasingly impactful. Corporations may also be participating in the voluntary carbon market to help offset their net emissions. Some corporations may participate in both (Shell).
- 2) Given the commoditization of carbon through these market-based mechanisms, carbon is increasingly being viewed as an emerging asset class.

We focus on the voluntary carbon market in this report for two main reasons — growth potential and market complexity. We feel there is an immense opportunity for growth within the VCM, which we discuss below. While the VCM’s small relative size largely drives differences in potential growth rates between markets, we think the ability to invest directly within compliance markets will continue to be constrained. Market regulators have become increasingly concerned with pricing volatility within compliance markets, with excessive speculation identified as a culprit in the case of the EU ETS. While we think compliance markets will continue to grow, both in coverage and number, growth for those that wish to directly invest may be limited. While compliance markets have clearly defined rules, voluntary markets are self-regulated, opaque, and complex. We see immense opportunity for investors that can position themselves in what we feel are high-quality areas of the market. That said, substantial risks exist. As a result, we found it both intriguing and necessary to provide an in-depth overview of the voluntary carbon market.

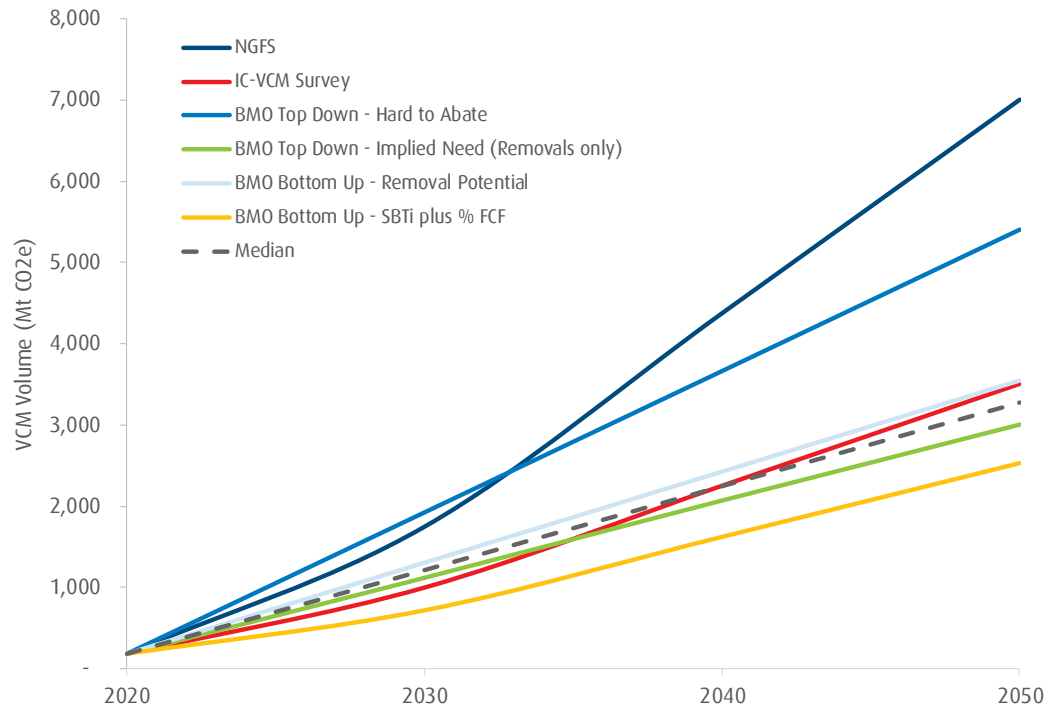
Introduction: The Voluntary Carbon Market

There has been a lot of buzz around the voluntary carbon market (VCM) over the past few years given increased interest in corporate carbon offsetting to help facilitate the explosion in net-zero and emissions reduction targets. We believe this market is currently in its “carpe diem” moment and that it has arrived at an important crossroad, with a need to meet increasing demand for offsets while still maintaining market integrity through products that reflect actual impact. In this report, we examine key attributes of the voluntary market and look at several risk factors. While we believe this market is slated for impressive growth, it will be predicated on its ability to deliver high integrity products. Key takeaways include:

- **Market based solutions, especially those that promote removals, are becoming increasingly necessary.** Governments have been slow to enact meaningful policy that results in change. Total emissions continue to increase, and current projections indicate they will surpass the budget required to limit warming to 2°C. Market based solutions such as carbon offsetting are efficient and worth pursuing, even for projects that reflect reductions near-term. Removals will be entirely necessary to meet global climate goals based on current emissions projections.
- **Compliance and voluntary carbon markets could become intertwined through Article 6 of the Paris Agreement, but full integration is likely a long way off.** Article 6 of the Paris agreement sets a framework for an internationally traded emissions market to help countries meet their nationally determined contributions (NDCs). It also indicates that host countries must authorize international transfer of mitigation outcomes, giving governments the power to restrict the trade of voluntary credits. While this has caused some turmoil within the VCM, with certain countries restricting activities, we do not feel that this represents a near-term risk for the market as a whole. A functioning Article 6 market is likely several years away.
- **Pricing and credit quality should be directly correlated.** The VCM is currently opaque with most credits trading OTC. As a result, price discovery is challenging. We believe credit quality and price should be directly correlated and that this should become increasingly apparent as the market matures and transparency improves. We recommend that investors interested in gaining long-term exposure to this market prioritize high-quality projects/credits.
- **Credits not listed on a top registry are challenged from a quality perspective.** In our view, credits that are not listed on one of the top registries (Verra, Gold Standard, American Carbon Registry, Climate Action Reserve, puro.Earth, Plan Vivo) are likely challenged from a quality perspective. Most investors likely do not have the level of information or sophistication to evaluate a project absent from a top registry. In addition, registries reduce the chance that double counting occurs. That said, inclusion in a registry does not automatically make a credit high quality.
- **Corporate offsetting guidelines could shape the market.** Despite recent growth in corporate emissions reduction goals and increased popularity in offsets, we believe that proper corporate offsetting protocols are poorly understood. We examined current offsetting strategies among the world’s largest public companies, along with the BMO coverage universe, and found little consistency. While there are few official offsetting guidelines, we believe there is a growing consensus on methods of best practice which will ultimately influence demand and shape the market. Corporations may be at risk of reputational damage if they are offsetting in a manner that is deemed inappropriate.
- **In our view, the highest quality credits come from removals, specifically direct air carbon capture and storage (DACCS).** Based on our evaluation of additionality, permanence, net negativity, and tradeoffs, DACCS (also referred to as direct air capture or DAC) and BECCS (bioenergy with carbon capture and storage) score best relative to the other project types we examined.
- **We see potential growth for the VCM reaching 6.5x by 2030 and 17.4x by 2050, relative to 2020 VCM total traded volumes.** In other words, the market could reach an annual volume of ~1.2 Gt

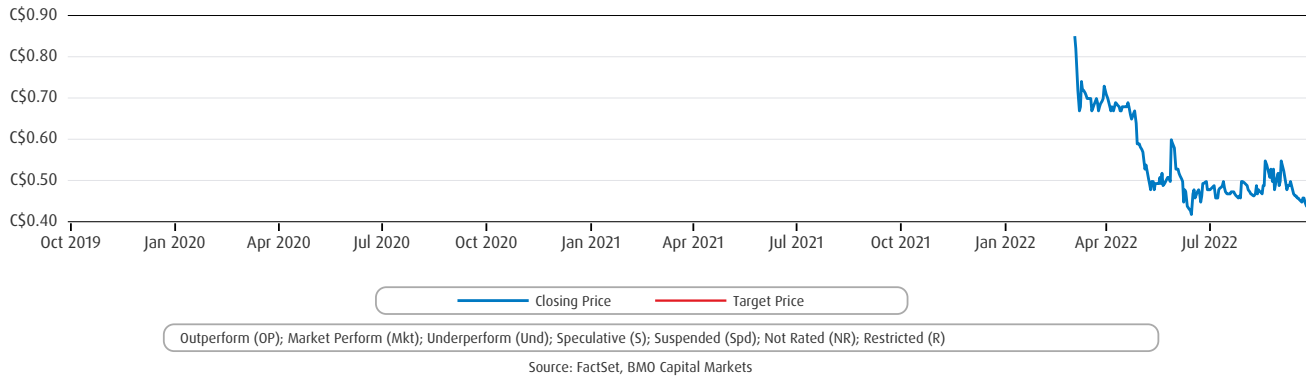
CO₂e by 2030 and 3.3 Gt CO₂e by 2050. Our forecasts are based on the median from a combination of our own top-down and bottom-up analyses. We think pricing and traded volumes could be negatively affected by market volatility in the near term, however.

Exhibit 2: VCM Growth Projections

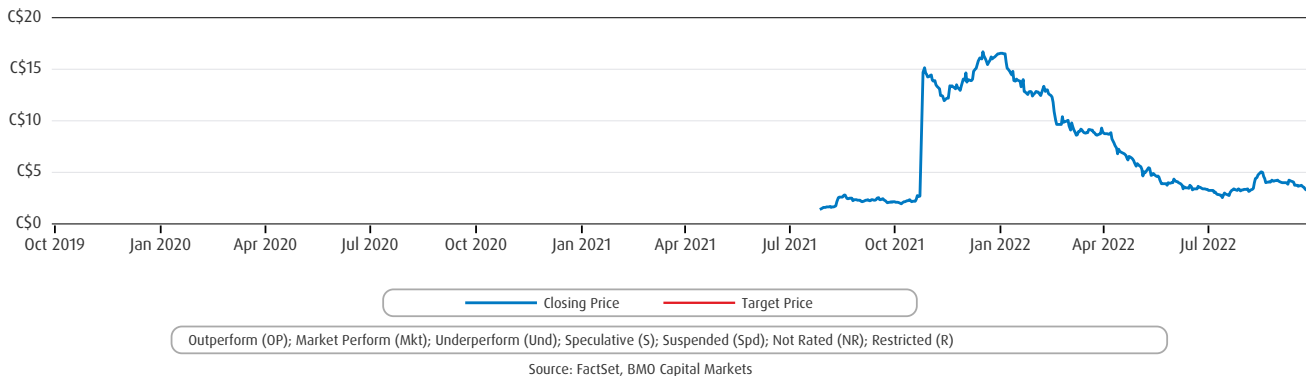


Source: IC-VCM, NGFS, FactSet, MSCI, Adapted from IPCC, BMO Capital Markets

Base Carbon Rating History as of 09/28/2022



Carbon Streaming Rating History as of 09/28/2022



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Methodology: Given the early-stage nature of the company, we base our target price methodology entirely on net asset value.

Risks: Current risks include delivery risk, both in timing and total volume, and marketing risk of carbon credits.

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Methodology: Given the early-stage nature of the company, we base our target price completely on NAV. Risks to our target largely arise from credit delivery (both timing and volume) and marketing risk.

Risks: Risks for Carbon Streaming include credit delivery risk, which may be challenged on both timing and volume, and marketing risk.

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Hold	Market Perform	44.4 %	18.4 %	43.2 %	42.1 %	39.4 %	37.5%
Sell	Underperform	1.6 %	50.0 %	4.2 %	1.1 %	2.5 %	4.8%

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