

Balancing Act: Integrity and Innovation in Voluntary Carbon Markets

Author: Vera Cherepanova, Ethics Adviser, Compliance Author, Founding Partner at Studio Etica in Milan, Italy

Wordcount: 4650

Introduction: The Evolution of Voluntary Carbon Markets

In 1987, as concerns about fossil fuels' impact on climate change began to gain traction, Dennis Bakke, then CEO of Applied Energy Services, faced a dilemma. His company was on the brink of constructing a coal-fired plant in Connecticut, a move that would undoubtedly contribute to carbon dioxide emissions and worsen the global warming crisis. In this pivotal moment, a new idea came up from the executive team.

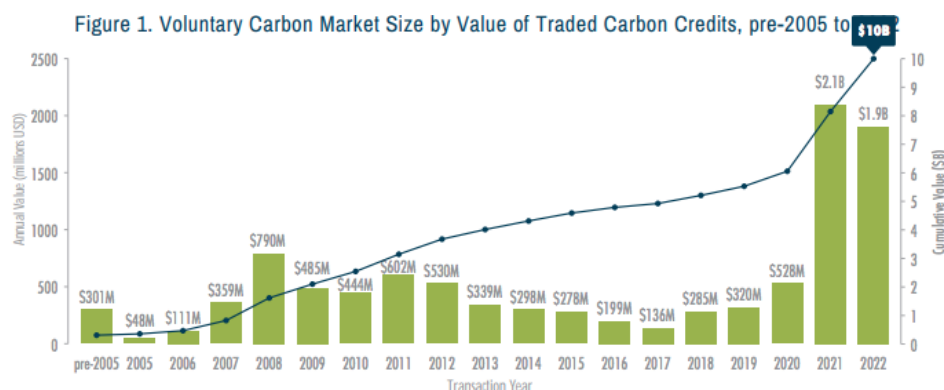
Sheryl Sturges suggested offsetting the plant's carbon emissions by investing in reforestation efforts in a developing country. Bakke saw the idea's potential, recognizing its ability to mitigate the environmental damage caused by their operations. With the backing of the World Resources Institute, AES developed a plan to plant 52 million trees in Guatemala, a project estimated to sequester 19 million tonnes of carbon over four decades through reforestation and forest protection measures.

The project is estimated to have cost just pennies per tonne to offset the AES plant's emissions and Sturges is credited with inventing carbon offsets.

Fast-forward to 2024, and the landscape of the voluntary carbon market (or "VCM") has evolved dramatically. Carbon offsets, also known as credits, once a novel idea, have become integral to efforts aimed at mitigating and reversing the effects of climate change. They're seen as a crucial funding source for efforts to avoid or reduce emissions or to remove carbon dioxide from the atmosphere. And they have become tradeable assets in a rapidly growing market.

According to the US non-profit Ecosystem Marketplace, VCMs have seen transaction values rise sharply from \$520mn in 2020 to \$2bn in 2021. Although overall trade volumes dropped from a 2021 peak in 2022, the VCM is now more diverse and global than ever before: Ecosystem Marketplace transaction data for 2021-2023 alone covers 1,530 projects from 98 countries.¹

Exhibit 1: Voluntary carbon market growth has slowed in 2022²



¹ Forest Trends' Ecosystem Marketplace (2023). State of the Voluntary Carbon Markets 2023. Available at: <https://www.ecosystemmarketplace.com/publications/state-of-the-voluntary-carbon-market-report-2023/>. (Accessed: 30 March 2024).

² Image credit: Ibid.

However, growth has not been without challenges. The marketplace is mired in complexity, marked by vague standards, lack of regulation, and insufficient transparency.

The recent decline in trade volumes, coupled with concerns over greenwashing and the integrity of carbon credits, has raised doubts about the effectiveness of VCMs in achieving their goals. Controversies surrounding issues such as permanence, additionality, over-issuance, double-counting, and leakage have called into question the credibility of carbon offsets as tools for reducing global emissions.

Yet scientists, policymakers, and climate activists highlight the positive rationale behind having carbon markets. They agree, however, that implementing them effectively, in a manner that actually reduces emissions, is incredibly challenging.

This essay delves into the complexities and controversies surrounding carbon offsetting, including concerns about integrity, effectiveness, and greenwashing. It highlights the necessity of VCMs in complementing direct emission reduction efforts, especially for industries facing technological limitations. Additionally, the essay underscores the importance of maintaining transparency, accountability, and ethical standards within the carbon market ecosystem. Through examining case studies and proposed regulatory changes, this essay aims to provide a comprehensive understanding of the current state and future prospects of VCMs in the global fight against climate change.

Challenges Facing Voluntary Carbon Markets

As VCMs continue to evolve, they encounter significant operational hurdles. These challenges not only raise questions about their efficacy but also highlight broader issues concerning their integrity and impact. Three primary obstacles are particularly salient: the lack of common standards, overestimation issues, and the additionality challenge.

1. Lack of Common Standards

Establishing standardized rules is imperative for the VCMs to function effectively. It is essential to avoid double-counting and ensure the principle of "additionality," meaning that only projects that wouldn't have happened otherwise should receive funding. However, reaching a consensus on the specifics of these rules is challenging, and the existence of various independent criteria undermines trust in the market's integrity.

The concept of "Permanence" is a central challenge. Future fossil fuel CO₂ emissions remain airborne for tens of thousands, possibly even 100,000 years, in a 1.5C scenario. Biological systems, such as trees, cannot adequately offset carbon emissions due to the vast mismatch in atmospheric life between fossil fuel CO₂ and carbon stored in trees. Any offset project must endure for at least a century or two to address the problem effectively. Additionally, initiatives like forest management face uncertainties regarding their long-term permanence, as there is a risk of deforestation or destruction by wildfires, undermining their carbon-absorbing impact.

Furthermore, the VCM operates outside the framework of the Paris Agreement. While the Clean Development Mechanism (CDM) under the Kyoto Protocol aimed to offset emissions by funding green projects, they faced significant challenges, such as plummeting credit prices and exclusion from emissions trading systems like the EU ETS.

Article 6 of the 2015 Paris Agreement allows countries to trade carbon credits to achieve emission reduction targets set out in their Nationally Determined Contributions³. The system rightly aims

³ Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, TIAS No. 16-1104, article 6.

to avoid double-counting, where both nations count a bilateral project as an offset against their target. However, even initiatives under the UN system still need to guarantee quality.

Some experts point out that VCMs prove inadequate for Carbon Dioxide Removal (CDR) funding. Mixing emission reductions with removals, differing in permanence, risks using removals to offset emissions, contrary to their distinct nature. The supply of removals on these markets could be inflated by the lack of quality criteria, delaying emissions cuts, and enabling emissions increase.⁴ Quality standards, particularly on permanence, are vital to prevent market distortion and ensure effective emissions reduction.

Standard-setting organizations' independence and the risks of undue influence from the founders is another notable issue. In a very recent case The Science-Based Targets initiative (SBTi), renowned for setting global corporate climate targets since its establishment in 2015, faced a credibility crisis following a controversial announcement by its board of trustees. The statement, permitting the use of voluntary carbon markets and other environmental attribute certificates (EACs) to offset "scope 3" emissions, triggered internal dissent and calls for resignations. Critics argue this decision compromises SBTi's scientific integrity and transparent process, specifically due to the alleged involvement of funders like the Bezos Earth Fund, which advocated for the use of offsets, into SBTi's decision-making process.⁵

In addition to governance issues, there are technical complexities. Consistent accounting standards are crucial for effectively measuring and monitoring the impact of initiatives over time. Gaming the system and greenwashing further complicates matters, highlighting the need for transparent and accountable practices.

2. Overestimates

Various organizations, from offset developers like the South Pole to conservation groups like The Nature Conservancy, have been accused of exaggerating their claims about the climate impact of offset projects. These allegations, highlighted in media reports and advocacy groups, raise significant concerns about the accuracy and credibility of offset claims.

Furthermore, doubts have arisen regarding the effectiveness of nature-based projects claimed as offsets. Questions linger about whether these projects deliver the promised climate benefits, casting doubt on their contribution to emissions reduction efforts.

Independent certification bodies have not been immune to criticism, with accusations of overestimating the climate gains of offset projects. A notable example is a recent investigation by The Guardian, which concluded that more than 90 percent of rainforest offset credits issued by Verra, a prominent carbon offset accreditation provider, did not genuinely represent carbon reductions.⁶

A concerning trend has emerged with the rapid growth of offsetting initiatives focusing on distributing efficient cookstoves in developing countries. Despite their popularity and purported benefits in reducing greenhouse gas emissions, a recent comprehensive study conducted by researchers from the University of California, Berkeley, revealed significant discrepancies in the carbon savings claimed by these projects.⁷

⁴ Christie-Miller, T. and Harvey, V. (2022) Carbon Dioxide Removal in the VCM. Available at: <https://bezerocarbon.com/insights/removals-in-the-vcm#references> (Accessed: 10 April 2024)

⁵ Financial Times (2024, April 12). 'The whole institution is boiling': Revolt inside a key climate target group. Available at: <https://www.ft.com/content/841a7eef-3400-4b5a-ac2d-b24251b8eba3#myft:my-news:page>. (Accessed: 15 April 2024).

⁶ The Guardian. (2023, January 18). "Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows." Available at: <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe> (Accessed: 3 April 2024).

⁷ Science Daily. (2024, January 23). "As a carbon offset, cookstove emission credits are greatly overestimated. Study finds that global carbon markets overcredit cookstove GHG reductions by a factor of 10." Available at:

The study, to be published in the journal *Nature Sustainability*, found that cookstove offset credits were over-credited by a factor of 9.2 times based on a sample covering 40 percent of cookstove credits. Extrapolating this finding to all cookstove offset credits studied, the over-crediting was estimated to be approximately 10.6 times. This overestimation primarily stems from exaggerated estimates of stove adoption and use, underestimates of the continued use of the original stove, and high estimates of the impact of fuel collection on forest biomass.

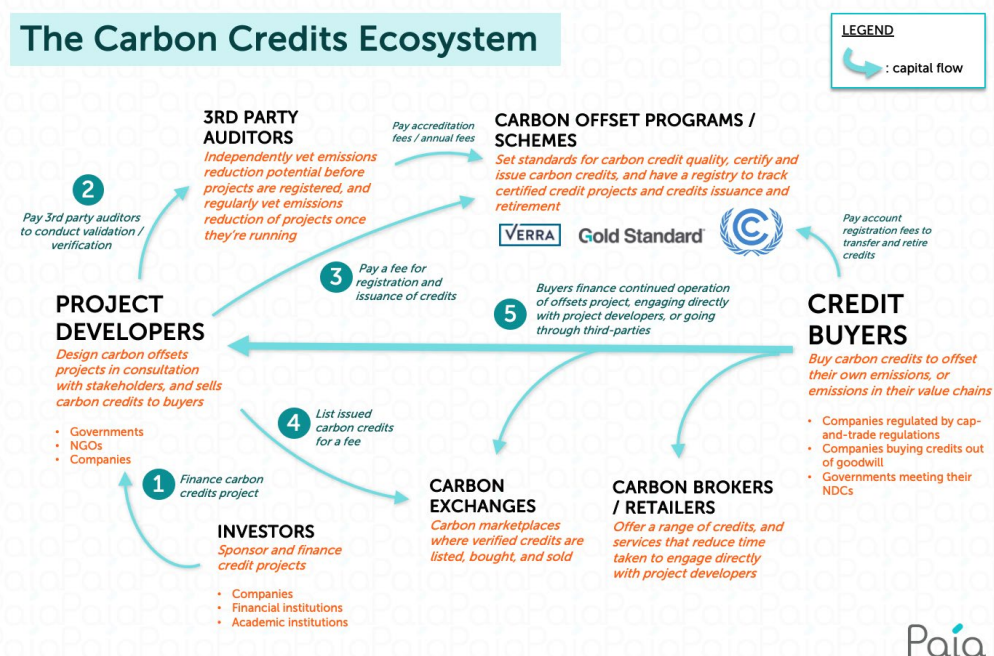
3. *Additionality*

Demonstrating "additionality" poses a significant challenge for projects seeking carbon offsets. Additionality refers to proof that the emissions reductions or removals promised by these projects would not have occurred without the sale of offsets. This principle is crucial to ensure that purchasing carbon credits translates into real emissions reductions rather than simply granting the buyer the right to continue polluting.

However, confirming additionality is inherently tricky. As a Columbia University professor, Bruce Usher, aptly puts it, "If someone buys a carbon credit, that gives them the right to pollute, so we'd better make sure it actually makes a reduction in emissions that wasn't going to happen anyway."⁸ Despite efforts to establish additionality criteria, its verification remains elusive, contributing to uncertainties surrounding the effectiveness of voluntary offsetting in reducing global emissions.

Raising the effectiveness of projects funded by carbon credits is paramount. While some initiatives may genuinely contribute to emissions reductions, others are questionable. For instance, projects aimed at protecting forests from hypothetical future deforestation or prematurely shutting down coal-fired power plants may lack genuine additionality. Addressing these conceptual flaws is essential to ensure that projects funded by credits deliver tangible emissions reductions and contribute meaningfully to combating climate change.

Exhibit 2: The Carbon Credits Ecosystem⁹



<https://www.sciencedaily.com/releases/2024/01/240123122345.htm#:~:text=The%20fastest%20growing%20type%20of%20offset%20on%20the%20global%20carbon,by%20a%20factor%20of%2010> (Accessed: 3 April 2024).

81 Financial Times (2023, June 15). Can carbon markets accelerate progress towards net zero? Available at: <https://www.ft.com/content/5349c9b46-4c33-4a2e-840a-b8fc94de7254> (Accessed: 2 April 2024).

⁹ Image credit: Paia Consulting (2021, July 29). Carbon Offsets and Credits, Explained. Available at: <https://paiaconsulting.com.sg/carbon-offsets-and-credits-explained/> (Accessed: 2 April 2024).

To add to the three challenges discussed above, the very existence of carbon markets raises concerns about their potential to divert attention from actual emissions reductions. As some critics argue, carbon markets can provide companies with an excuse to forego genuine efforts to cut emissions, akin to buying indulgences for sins in the Catholic church centuries ago. This perspective underscores broader concerns regarding the end-use of carbon credits within corporate value chains.

Stakeholders have voiced concerns about companies relying on carbon credits as substitutes for direct greenhouse gas reductions. Such reliance undermines the integrity of carbon markets and exposes companies to legal and reputational risks, including allegations of greenwashing. More on that below.

Greenwashing Risks in VCMs

The issue of greenwashing poses a significant concern for companies, particularly when it comes to the purchase of carbon credits. A survey among the Financial Times Moral Money newsletter readers revealed that the majority expressed dissatisfaction with the current supply of credible and verifiable carbon offsets in VCMs.¹⁰

Companies using offsets to claim carbon neutrality — for their products or even their entire business — risk being accused of "greenwashing," as has already happened in several notable cases.

The world's first global carbon-neutral airline, Delta, faces a class-action lawsuit challenging its carbon-neutrality claim, which relies on carbon offsets. Introduced in February 2020, Delta pledged \$1 billion over a decade to mitigate its greenhouse gas emissions.¹¹ However, the lawsuit alleges that Delta's claim amounts to greenwashing, questioning the efficacy of its offsetting practices.

Concerns surrounding the credibility of carbon offsets used by Delta have been raised in various investigations. Delta's 2021 ESG report reveals it spent \$137 million on offsets to balance around 30 million tons of emissions, including flights. Projects funded by Delta's offset portfolio include renewable energy, landfill gas, and deforestation prevention. "Delta's representations of carbon neutrality are provably false and misleading," reads the lawsuit filed in 2023 on behalf of any California resident who has flown on Delta since March 2020.¹²

Exhibit 3: Delta's in-flight napkin put into circulation in 2021¹³



¹⁰ Financial Times (2023, June 15). Can carbon markets accelerate progress towards net zero? Available at: <https://www.ft.com/content/5349cb46-4c33-4a2e-840a-b8fc94de7254> (Accessed: 2 April 2024).

¹¹ Bloomberg. (2023, June 13). A Greenwashing Lawsuit Against Delta Aims to Set a Precedent. Available at: <https://www.bloomberg.com/news/articles/2023-06-13/a-greenwashing-lawsuit-against-delta-aims-to-set-a-precedent> (8 April 2024).

¹² Ibid.

¹³ Image credit: Berrin vs. Delta Air Lines Inc. (2023, May 30). Case 2:23-cv-04150, p. 15. Available at: <https://www.classaction.org/media/berrin-v-delta-air-lines-inc.pdf> (Accessed: 9 April 2024).

In another case, once hailed as a flagship endeavor by the South Pole, leading climate consultant and carbon credits trader, the Kariba forest protection project exposes the darker side of offset miscalculations. Major corporations including Gucci, Volkswagen, McKinsey, and Greenchoice invested in carbon credits from this project, only to discover that the South Pole had sold 27 million tons of carbon credits more than the project actually produced. This overestimation resulted in substantial extra revenue for the South Pole and undermined the companies' environmental claims. The Kariba project, intended to conserve carbon, ended up emitting more CO₂ than it sequestered, exacerbating rather than mitigating the climate crisis.

The controversies extend beyond this point, and when we broaden our perspective to include environmental, social, and governance (ESG) factors in assessing the quality of carbon credits, they become even more prevalent.

The South Pole also generated carbon credits in Xinjiang, China, by incinerating cotton residue at a biomass plant in Bachu district, which they deemed more sustainable than fossil fuels. However, concerns arise due to allegations of forced labor in nearby cotton farms. German researcher Adrian Zenz highlights the riskiness of initiating a climate project in Bachu: "There is no way you will find a more risky spot in Xinjiang. There is probably no place with a higher risk for state-enforced forced labor in the world," he says¹⁴. In response to client concerns, South Pole ceased selling Bachu credits in 2021, conducting an investigation that found "no material issues." BP and Spotify were among the buyers of carbon credits from cotton residue.

In another case, companies including McKinsey, Air France, and Bayer have purchased carbon credits from Southern Cardamom, one of Cambodia's most extensive nature restoration initiatives. This project has been asserted to have averted approximately 3.9 million tonnes of carbon dioxide emissions annually by safeguarding rainforests, grasslands, lakes, and coastal mangroves since 2016. However, in June 2023, its authorization to issue carbon credits was halted following allegations of human rights violations at the project site by Human Rights Watch, prompting action from Verra, the primary accreditation body for carbon credits. Verra is still investigating the allegations.¹⁵

Unsurprisingly, these and other instances of ethical lapses have prompted regulatory bodies, including the Commodity Futures Trading Commission, to issue an alert targeting VCMs by asking whistleblowers to come forward with information about fraudulent or manipulative trading of carbon credits.¹⁶

The Role of Voluntary Carbon Markets in Climate Action

Yet, scientists, policymakers, and stakeholders agree that while companies must prioritize reducing their emissions, complete elimination remains an elusive goal for many, at least in the short term. This reality underscores the critical role of carbon markets. While VCMs are not the primary solution for emissions reduction, they are valuable complementary tools for achieving net-zero objectives.

It's crucial to recognize that VCMs are not a cure-all; they should not detract governments and corporations from direct emission reduction efforts—nevertheless, their significant financing potential warrants their continuation and enhancement rather than abandonment. Carbon

¹⁴ Follow the Money (2022, October 19). CO₂ emissions by Spotify and BP offset with cotton residues from Xinjiang. Available at: https://www.ftm.eu/articles/south-pole-sold-carbon-credits-generated-in-xinjiang?utm_source=newsbrief&utm_medium=email&utm_campaign=ENGkatoenXinjiang&share=DQgZYWLVShBEX7MmF3ftexjyynQb6wYNDQ%2BfnB2zJsamGly7Cb8JTKuyvsWpxM8%3D (Accessed 9 April 2024).

¹⁵ Financial Times (2023, September 25). The death of carbon neutrality? Available at: <https://www.ft.com/content/c6493e00-5b13-43d6-a44a-a00f6b746185> (Accessed: 30 March 2024).

¹⁶ Commodity Futures Trading Commission (2023, June 20). CFTC Whistleblower Office Issues Alert Seeking Tips Relating to Carbon Markets Misconduct. Release No 8723-23.

markets offer a vital avenue, particularly for industries that lack effective decarbonization technologies, such as cement production.

Scaling VCMs, especially through nature-based solutions, will empower more businesses to offset any residual, unavoidable emissions. Additionally, voluntary markets offer alternatives to companies with ambitious carbon reduction targets operating in sectors or regions not covered by compliance carbon markets.

Furthermore, market-based solutions offer crucial financial support for highly indebted developing nations striving to address climate transition and adaptation needs. With demand for offsets originating from developed countries, particularly in the Global North, and supply abundant in biodiverse regions of the Global South, carbon markets facilitate a flow of resources toward vulnerable communities. It's imperative that locals benefit from these transactions, reinvesting revenues in sustainability initiatives and community projects with co-benefits.

However, businesses must recognize the importance of prioritizing internal emission reduction strategies before considering offset purchases. In essence, while VCMs offer valuable opportunities for emissions mitigation and financial support, they must complement, not substitute, direct emission reduction efforts.

Solutions and Integrity Measures

The growing acknowledgment of the need for integrity in VCMs is driving a surge in initiatives. Policymakers are refining regulatory frameworks, while new standards bodies aim to instill trust in unregulated voluntary markets. Innovators are leveraging technology to streamline trading processes and monitor tree-planting efforts.

Enhancing Standards and Oversight

Multi-sector coalitions are working to enhance transparency and integrity in offsetting practices. For instance, the Voluntary Carbon Markets Integrity Initiative, backed by Rockefeller Philanthropy Advisors, has developed a code of practice for companies to utilize offsets in emission reduction claims ethically.

On the supply side, the Integrity Council for the Voluntary Carbon Market (ICVCM) has introduced the Core Carbon Principles, setting benchmarks for carbon crediting programs' governance, emission impact, and sustainable development support.

Annette Nazareth, chair of the ICVCM and former Commissioner of the Securities and Exchange Commission, compares these principles to listing standards in financial markets, emphasizing the importance of transparency and oversight¹⁷. These principles aim to streamline the due diligence process for carbon credits, promoting standardized and transparent practices.

Other verification schemes, such as the Verified Carbon Standard managed by Verra, the Gold Standard certification, and the Redd+ framework developed by the UN Framework Convention on Climate Change, have existed for at least a decade. They all promise to assess the quality of carbon offsets, although skepticism persists regarding their rigorouslyness and a tendency to overestimate the climate gains. As mentioned earlier, a recent investigation by The Guardian, for example, concluded that over 90 percent of the rainforest offset credits issued by Verra lacked genuine carbon reductions.¹⁸

¹⁷ Integrity Council for the Voluntary Carbon Market (n.d.). In Conversation with Annette Nazareth on the Core Carbon Principles. Available at: <https://icvcm.org/in-conversation-with-annette-nazareth-on-the-core-carbon-principles/>. (Accessed: 1 April 2024).

¹⁸ The Guardian. (2023, January 18). "Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows." Available at: <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe>. (Accessed: 1 April 2024).

Additionally, technological advancements, such as satellite imaging and remote sensing, are enhancing market transparency by facilitating the verification of carbon sequestration claims in ecosystems like wetlands and forests.

Another innovative approach to increasing the availability of high-quality offsets comes from Climate Vault, a climate-focused startup. Their initiative involves purchasing and securely storing regulated pollution permits for companies, universities, and other entities striving to achieve their net zero objectives. By disrupting the market's supply side with a scalable model, Climate Vault aims to meet the growing demand for offsets. Despite the promising concept, replicas of Climate Vault have yet to materialize, highlighting an ongoing scarcity of available offsets and the existing imbalance in the market.

Implementing Regulatory Initiatives and Policy Changes

VCMs remain largely unregulated, yet efforts are underway to address this. What needs to change in terms of how corporations approach carbon credits? The regulators on both sides of the Atlantic unanimously responded to this question with a crackdown on misleading environmental claims.

In the US, California's Senate Bill 1036, introduced on February 6, 2024, aims to subject certain activities related to voluntary carbon offsets to the state's False Advertising Law.

The bill reintroduces last year's Senate Bill 390, which California Governor Gavin vetoed due to concerns over the bill "inadvertently capturing well-intentioned sellers and verifiers of voluntary offsets" and "creating significant turmoil in the market for carbon offsets."¹⁹

SB 1036 proposes prohibiting voluntary carbon offsets' sale, marketing, or certification if their greenhouse gas (GHG) reductions or removal enhancements are not "quantifiable, real, and additional."²⁰

GHG reductions and removal enhancements are "quantifiable" if all GHG emission sources, sinks, or reservoirs within an offset project boundary can be accurately measured relative to a project baseline while accounting for uncertainty and leakage. "Real" means that GHG reductions or enhancements result from a demonstrable action (or set of actions); are quantified using methodologies that account for all emission sources, sinks, and reservoirs within the offset project boundary; and account for uncertainty and the potential for leakage. GHG reductions and removal enhancements are "additional" if they exceed any GHG reduction or removals otherwise required by law and exceed what would otherwise occur in a conservative business-as-usual scenario.

Additionally, the bill restricts the marketing or sale of offsets with shorter atmospheric lifetimes than carbon dioxide emissions unless explicitly disclosed. The potential impact extends beyond California, affecting players engaged with Californian companies and possibly disrupting the global carbon offset market. It's yet to be seen whether SB 1036 will navigate the challenges that led to the demise of its predecessor, S.B. 390, as stakeholders monitor its progress through the legislative process.

In the European Union, a decisive move has been made to tackle misleading environmental claims by banning terms such as "climate neutral" or "climate positive" that rely on offsetting by 2026. Members of the European Parliament (MEPs) have voted to outlaw the use of various terms like "environmentally friendly," "natural," "biodegradable," "climate neutral," or "eco" unless substantiated by evidence. Moreover, carbon offsetting schemes will no longer be accepted to support these claims. Instead, the new directive mandates that only sustainability labels backed by approved certification schemes will be permitted within the bloc. This significant step aims to ensure transparency and accuracy in environmental messaging.

¹⁹ Schwabe, Williamson & Wyatt. (2024, February 21). A reintroduced California bill would subject voluntary carbon offsets to the state's False Advertising Law. Available at: <https://www.schwabe.com/publication/reintroduced-california-bill-would-subject-voluntary-carbon-offsets-to-the-states-false-advertising-law/> (Accessed: 25 March 2024).

²⁰ Ibid.

Anna Cavazzini, the Green MEP and chair of the Committee of the Internal Market and Consumer Protection, expressed satisfaction with the ban on terms like "climate-neutral" or "climate-positive" based on CO2 offsetting: "It should no longer appear that planting trees in the rainforest makes the industrial production of a car, the organization of a soccer World Cup or the production of cosmetics climate neutral. This deception is now a thing of the past. This is a great success for the environment, the climate, and consumers," she said.²¹

The directive still needs final approval from the European Council, after which member states will have 24 months to transpose it into national law.

Operationalizing the climate contribution approach

Given the regulatory developments and the level of public scrutiny, carbon neutrality claims may be on their way out. According to the Corporate Climate Responsibility Monitor 2024 Report, in 2023, there was a notable trend among business consultancies and carbon credit sellers transitioning away from carbon neutrality labels.²² Climate contributions is emerging as an alternative model to scale up voluntary climate finance. A climate contribution refers to finance provided by a company to support climate change action beyond the company's own value chain, without claiming to neutralize its own emissions. A company can claim to contribute to climate change mitigation activities when it does so without claiming ownership of the emission reduction outcomes and without subtracting associated reductions from their own GHG inventory or net zero target. In contrast to offsetting claims, which are more prone to greenwashing accusations, the climate contributions approach preserves transparency and helps address some of the most challenging "double counting" issues associated with the accounting of emission reductions by both "buyer" companies and "seller" countries.²³

Companies' lack of knowledge and awareness may hinder the adoption of the climate contribution approach. However, the mounting pressure from consumers, investors, and governments to enhance the environmental integrity of neutralization claims and regulate offsetting is likely to help with overcoming this barrier.

Adopting Financial Market Mechanisms

Improving standards within the VCM is widely recognized as essential by market participants. However, standards alone cannot ensure carbon market integrity. To achieve this, the VCM may need to adopt mechanisms akin to those in financial markets, such as bond markets, to effectively assess investment risk and project quality. While carbon itself cannot be directly observed or delivered, evaluating the likelihood of carbon credits fulfilling their claims is feasible. Rating frameworks, similar to those used in bond markets, could enable market participants to assess environmental investment quality comprehensively. Project-level ratings, complementing overarching standards like those from the Integrity Council for the Voluntary Carbon Market, can drive investment towards the highest-quality credits, fostering stronger correlations between price and quality and unlocking the VCM's full potential.

Establishing national carbon registries, trading platforms, and settlement systems is crucial for the VCM's infrastructure. Classical financial instruments can facilitate asset movement and

²¹ The Guardian. (2024, January 17). EU bans 'misleading' environmental claims that rely on offsetting. Available at: <https://www.theguardian.com/environment/2024/jan/17/eu-bans-misleading-environmental-claims-that-rely-on-offsetting#:~:text=Terms%20such%20as%20%E2%80%9Cclimate%20neutral,crackdown%20on%20misleading%20environmental%20claims>. (Accessed: 2 April 2024).

²² New Climate Institute (2024). Corporate Climate Responsibility Monitor 2024. Available at: <https://newclimate.org/resources/publications/corporate-climate-responsibility-monitor-2024> (Accessed 10 April 2024).

²³ Fearnough, H., Skribbe, R., Grandpré, J. de, et al. (2023) A guide to climate contributions: taking responsibility for emissions without offsetting. Cologne and Berlin, Germany: NewClimate Institute. Available at: <https://newclimate.org/resources/publications/a-guide-to-climate-contributions-taking-responsibility-for-emissions> (Accessed: 15 March 2024)

enable tracking, verification, and sale of carbon credits. Multilateral development banks could support the VCM by collaborating with UN experts to develop common frameworks and enhance institutional and financial infrastructure transparency.

Addressing Economic and Social Impacts

Concerns have been raised about the impact of carbon offsetting on economic development in poorer nations, with accusations of "carbon colonialism" and distorted incentives for nations to increase carbon footprints. Ensuring locals receive adequate revenue shares and reinvest them in sustainability efforts is crucial. Legislative measures like Singapore's carbon tax, offset with carbon credits, could provide a stable funding mechanism for projects addressing co-benefits like community development and biodiversity. Some companies, including GSK, collaborate closely with suppliers to purchase high-quality carbon credits while contributing to broader goals such as improving global health. They engage in early-stage investments in projects, allowing input into design and progress monitoring, especially in community-driven initiatives²⁴. It would be great to see more investors and businesses following this approach.

Conclusion: The Future of Carbon Neutrality

In conclusion, the discourse surrounding VCMs reflects a spectrum of viewpoints, from skepticism about their effectiveness to optimism about their potential. While some advocate for increased regulation, others acknowledge the need for more oversight in the VCM space. An alignment with regulated market models, as suggested by Annette Nazareth, could pave the way for future regulation of carbon credits. However, the effectiveness of policy focus on carbon markets in achieving environmental goals remains uncertain.

Green investing, in essence, constitutes an alternative financial ecosystem designed to mobilize money to maximize a function of "returns plus climate" rather than simple returns. Yet, much like constructing any new financial framework, there are bound to be "bugs", cheating, and outliers along the way. Traditional finance experts may seek to capitalize on weaknesses in green investing models.

Despite these challenges, proponents remain bullish about the future of voluntary markets, viewing concerns about offset quality as indicative of market maturation rather than systemic failure. By embracing standards and drawing insights from traditional financial markets, there is an opportunity to pull the VCMs out of adolescence into maturity and elevate them to an impactful financing mechanism for environmental projects worldwide.

As we continue to navigate the complexities of green investing, the question arises: if not improved, will this be the end of carbon neutrality? The answer lies in our collective efforts to address challenges, refine mechanisms, and uphold integrity in carbon markets, ensuring they fulfill their promise as an important tool in the fight against climate change.

²⁴ Financial Times (2023, June 15). Can carbon markets accelerate progress towards net zero? Available at: <https://www.ft.com/content/5349cb46-4c33-4a2e-840a-b8fc94de7254>. (Accessed: 2 April 2024).