

A PROMISE MADE IS NOT A PROMISE KEPT: SCALING VOLUNTARY CARBON  
MARKETS ACCOUNTABILITY WITH FEDERAL AGENCY COLLABORATION

by

Nicholas Espenan

J.D./M.A., University of Wyoming, 2023

A Plan B thesis submitted to the University of Wyoming  
in partial fulfillment of the requirements  
for the degree of

MASTER OF ARTS

in

ENVIRONMENT AND NATURAL RESOURCES

Laramie, Wyoming

May 2023

**Master's Committee:**

Professor Tara Righetti, Chair

Professor Jake Hochard, Member

Professor Benjamin Rashford, Member

**Abstract:**

Voluntary carbon markets currently face challenges in standardization, quality assurance, trust, transparency, permanence, and additionality. A lack of standardization and quality assurance can lead to confusion and difficulty in comparing different carbon credits. Trust and transparency are essential for maintaining the market's integrity and attracting investment. Lastly, permanence and additionality are critical for driving new carbon reductions. These issues hinder the voluntary carbon market and limit the potential for carbon credits to reduce greenhouse gas emissions.

This thesis suggests an effective federal regulatory policy focusing on the verification and standardization of carbon credit calculation in the voluntary carbon market in the United States. The CFTC, in cooperation with other agencies, has the authority to create a compliance measure that keeps projects and verifiers accountable. The policy should increase transparency and legitimacy of carbon credits in the voluntary market. Collaborative interagency efforts and shared enforcement among present market participants can enhance accessibility, transparency, and credibility of the voluntary carbon market while guaranteeing new carbon calculation methodologies to be legitimate.

## Table of Contents

<b>Chapter 1 Introduction to the Current Voluntary Carbon Market Infrastructure.....</b>	<b>4</b>
<b>A. History and Creation of Voluntary Carbon Markets.....</b>	<b>5</b>
<b>B. Differences Between a Compliance Market and Voluntary Market.....</b>	<b>8</b>
<b>C. The Current State of the Voluntary Market in the U.S. ....</b>	<b>11</b>
<b>1. Standards Organizations Market Participants .....</b>	<b>11</b>
<b>Chapter 2 Lack of Standardization.....</b>	<b>13</b>
<b>A. Carbon Registries Standard Fragmentation .....</b>	<b>14</b>
<b>B. Trust and Transparency.....</b>	<b>21</b>
<b>Chapter 3 Additionality &amp; Permanence Concerns.....</b>	<b>24</b>
<b>A. Lack of Additionality Criteria Resulting in Faulty Carbon Credits.....</b>	<b>25</b>
<b>B. Lacking Permanence Criteria.....</b>	<b>29</b>
<b>C. Impact of Faulty Carbon Credits .....</b>	<b>30</b>
<b>Chapter 4 Solving VCM Scaling Issues with Potential Market Regulations .....</b>	<b>33</b>
<b>A. Commodities Futures Trading Commission .....</b>	<b>35</b>
<b>B. The Securities Exchange Commission.....</b>	<b>40</b>
<b>C. The Environmental Protection Agency.....</b>	<b>44</b>
<b>D. CFTC Regulation .....</b>	<b>46</b>
<b>3. Self-Regulatory Organizations (SROs).....</b>	<b>48</b>
<b>4. Interagency Collaborative Effort Governance.....</b>	<b>52</b>
<b>5. Limitations and Unintended Consequences .....</b>	<b>55</b>
<b>Chapter 5 Conclusion .....</b>	<b>57</b>

## Chapter 1 Introduction to the Current Voluntary Carbon Market Infrastructure

Voluntary carbon markets (VCM) have emerged as a key instrument in the fight against climate change, providing a market-based approach to reducing greenhouse gas emissions. A voluntary carbon market is a platform that enables individuals, businesses, governments, and NGOs to offset their carbon emissions by purchasing carbon credits or offsets.<sup>1</sup> Each offset represents the equivalent of one ton of  $CO_2$  reduction or removal, and individuals or companies purchase these offsets to offset their own GHG emissions.<sup>2</sup> Unlike compliance markets, participation in these markets is optional and carbon credits are created, verified, and traded outside of government regulations and agencies.<sup>3</sup> The proceeds from these purchases are invested in a wide range of emissions reduction projects.<sup>4</sup>

This chapter focuses on the current state of the voluntary carbon market in the U.S. and discusses the transaction processes for credit generators and end consumers. The chapter also highlights the key issues facing the voluntary carbon market and offers insights into potential solutions to overcome these challenges.

---

<sup>1</sup> Anja Kollmuss et al., MAKING SENSE OF THE VOLUNTARY CARBON MARKET: A COMPARISON OF CARBON OFFSET STANDARDS 1–2 (2008), [https://www.globalcarbonproject.org/global/pdf/WWF\\_2008\\_A%20comparison%20of%20C%20offset%20Standards.pdf](https://www.globalcarbonproject.org/global/pdf/WWF_2008_A%20comparison%20of%20C%20offset%20Standards.pdf) [<https://perma.cc/DMC7-8X24>]; *Mandatory & Voluntary Offset Markets*, CARBON OFFSET GUIDE, SEI & GHG MANAGEMENT INSTITUTE, <https://www.offsetguide.org/understanding-carbon-offsets/carbon-offset-programs/mandatory-voluntary-offsetmarkets/> [<https://perma.cc/3M4V-G4SK>] (last visited Apr. 4, 2023).

<sup>2</sup> Sam Headon, *Offsets in The International Emissions Market: Do Buyers Get What They Pay For?*, 2 CARBON & CLIMATE LAW REVIEW 406–417 (2008).

<sup>3</sup> Nicolas Kreibich & Lukas Hermwille, *Caught in Between: Credibility and Feasibility of the Voluntary Carbon Market Post-2020*, 21 CLIMATE POL'Y 939, 941–42 (2021).

<sup>4</sup> Martin Cames et al., HOW ADDITIONAL IS THE CLEAN DEVELOPMENT MECHANISM?, STOCKHOLM ENVIRONMENT INSTITUTE (SEI), (2016).

## A. History and Creation of Voluntary Carbon Markets

The adoption of the Kyoto Protocol in 1997 played a pivotal role in the take-off of the voluntary carbon market, particularly due to the creation of the Clean Development Mechanism (CDM).<sup>5</sup> The CDM was designed to encourage mitigation action and promote sustainable development by enabling Annex I countries to invest in emission reduction projects in non-Annex I countries, allowing the former to cost-effectively meet their emission targets.<sup>6</sup> The CDM is still operational, and its Executive Board certifies the achieved emission reductions from these projects. Annex I countries can use these certified "credits" to fulfill a portion of their Kyoto Protocol targets.<sup>7</sup> The CDM was based on a market-based approach that aimed to provide flexible and cost-effective solutions to the problem of climate change.<sup>8</sup> Although the establishment of the CDM was not the sole driver behind the voluntary carbon market's development, it provided a blueprint for the development and certification of projects within this market.<sup>9</sup> The CDM inspired the creation of four major institutions that now structure the VCM.<sup>10</sup> These include voluntary standards, standard-setting organizations, third-party verification, and independent carbon credit registries.<sup>11</sup> These institutions provide the rules and established patterns of behavior necessary to ensure the credibility and marketability of carbon credits.

---

<sup>5</sup> See *Mechanisms Under the Kyoto Protocol*, U.N. CLIMATE CHANGE, [https://unfccc.int/process/the-kyoto-protocol/mechanisms#:~:text=The%20Kyoto%20mechanisms%20are%3A,Emissions%20trading%20\(ET\)\[https://perma.cc/FUQ2-595Y\]](https://unfccc.int/process/the-kyoto-protocol/mechanisms#:~:text=The%20Kyoto%20mechanisms%20are%3A,Emissions%20trading%20(ET)[https://perma.cc/FUQ2-595Y]) (last visited Apr. 4, 2023); see also HANDBOOK OF ENVIRONMENTAL AND SUSTAINABLE FINANCE 22–23 (Vikash Ramiah & Greg N. Gregoriou eds., 2016) [hereinafter HANDBOOK].

<sup>6</sup> See *What is the CDM*, CLEAN DEV. MECHANISM, <https://cdm.unfccc.int/about/index.html> [https://perma.cc/32LC-6H2H] (last visited Jan. 2, 2023).

<sup>7</sup> *Id.*

<sup>8</sup> THOMAS HICKMANN, *RETHINKING AUTHORITY IN GLOBAL CLIMATE GOVERNANCE: HOW TRANSNATIONAL CLIMATE INITIATIVES RELATE TO THE INTERNATIONAL CLIMATE REGIME* (2017).

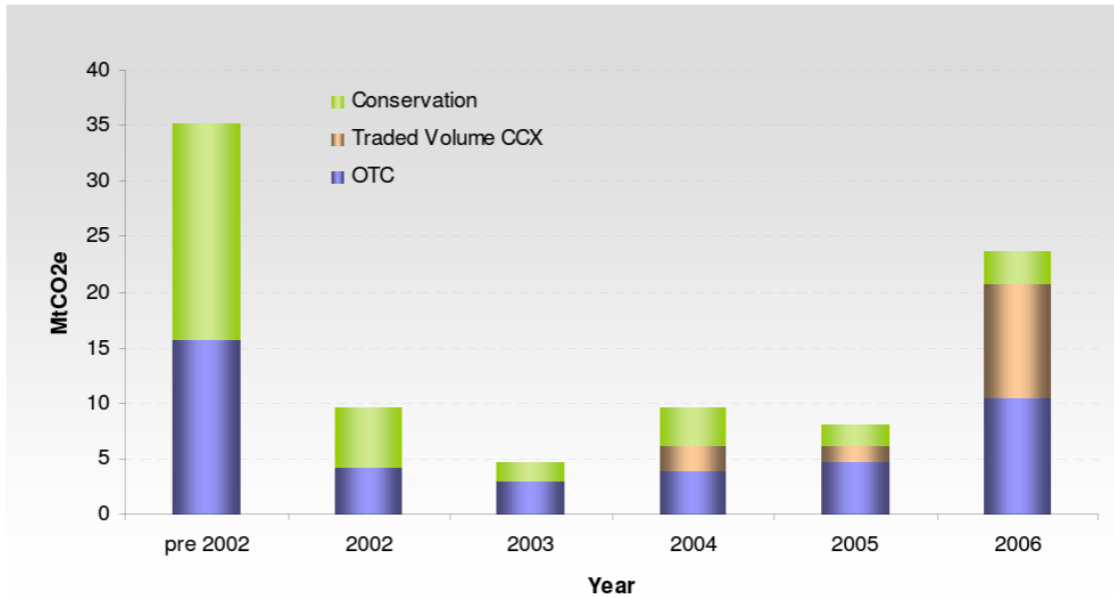
<sup>9</sup> Sebastian Lang, Mareike Blum & Sina Leipold, *What future for the Voluntary Carbon Offset Market after Paris? an explorative study based on the discursive agency approach*, 19 CLIMATE POLICY 416–417 (2018).

<sup>10</sup> *Id.*

<sup>11</sup> Kollmuss et al., *supra* note 1, at 1-2; NICOLAS KREIBICH & WOLFGANG OBERGASSEL, *CARBON MARKETS AFTER PARIS. HOW TO ACCOUNT FOR THE TRANSFER OF MITIGATION RESULTS? CARBON MECHANISMS MARKET-BASED CLIMATE POLICY INSTRUMENTS*, WUPPERTAL INSTITUTE, Jan. 2016, [https://epub.wupperinst.org/frontdoor/deliver/index/docId/6264/file/6264\\_Carbon\\_Markets.pdf](https://epub.wupperinst.org/frontdoor/deliver/index/docId/6264/file/6264_Carbon_Markets.pdf).

According to Ecosystem Marketplace, an environmental non-profit specializing in carbon markets, the VCM experienced its first significant surge in growth between 2005 and 2006, expanding by almost 200%.<sup>12</sup>

**Figure 1. Historically Traded Volumes in the Voluntary Carbon Market<sup>13</sup>**



Based on surveys conducted among buyers, the primary reasons for engaging in the market were to fulfill corporate social responsibility objectives and to demonstrate a commitment to environmental stewardship.<sup>14</sup> A few respondents from the previous survey reported that, in 2007, they had seen a doubling, tripling, or even more in voluntary offsets transacted.<sup>15</sup> Additionally, major consumer-facing organizations like Dell, Delta, AEP, Google, Pacific Gas & Electric, Yahoo, Nike, Sky, and Origin Energy had announced that they will purchase offsets from the voluntary markets.<sup>16</sup> As more companies and individuals have opted to go "carbon neutral," the VCM has shown similar signs of growth.

<sup>12</sup> KATHERINE HAMILTON ET AL., STATE OF THE VOLUNTARY CARBON MARKETS 2007: PICKING UP STEAM (2007).

<sup>13</sup> *Id.* at 5. (Comparing Chicago Climate Exchange, OTC offsets and total conservation metrics pre 2002 through 2006.)

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>16</sup> *Id.* at 54.

The implementation of the Paris Agreement in November 2016 resulted in another noteworthy surge of the VCM.<sup>17</sup> Ecosystem Marketplace claims in 2017 the issuance of carbon credits nearly doubled year over year and increased by almost 400% by 2019.<sup>18</sup> Between 2017 and 2020, hundreds of companies gained interest in climate action and made pledges to be completely carbon neutral in the future. This inherently led to the introduction of more carbon calculation standards to supply the growing demand of corporate entities. As of 2021, the VCM has issued nearly 300 million carbon credits in total and is projected to grow to 678 million issued credits by 2027.<sup>19</sup>

The emergence of the VCM holds great importance, as it offers a voluntary approach for individuals, organizations, and companies to tackle climate change and counterbalance their carbon emissions.<sup>20</sup> It offers a flexible and innovative approach to mitigating the negative impacts of carbon emissions, providing individuals and companies with a way to demonstrate their commitment to sustainability and reducing their carbon footprint.<sup>21</sup> Additionally, it promotes investment in low-carbon projects and technologies, furthering the development of clean energy and emissions-reducing initiatives.<sup>22</sup> Furthermore, the voluntary carbon market provides companies with a means of engaging with their customers and stakeholders on

---

<sup>17</sup>Jens Terhaar et al., *Adaptive emission reduction approach to reach the Paris Agreement Temperature targets*, (2022).; see Joeri Rogelj et al., *Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development*, in GLOBAL WARMING OF 1.5°C. AN IPCC SPECIAL REPORT ON THE IMPACTS OF GLOBAL WARMING OF 1.5°C ABOVE PRE-INDUSTRIAL LEVELS AND RELATED GLOBAL GREENHOUSE GAS EMISSION PATHWAYS, IN THE CONTEXT OF STRENGTHENING THE GLOBAL RESPONSE TO THE THREAT OF CLIMATE CHANGE, SUSTAINABLE DEVELOPMENT, AND EFFORTS TO ERADICATE POVERTY 152–153 (2022), 10.1017/9781009157940.004 (last visited Apr 22, 2023).

<sup>18</sup> PATRICK MAGUIRE ET AL., A GREEN GROWTH SPURT, STATE OF FOREST CARBON FINANCE 2021, Ecosystem Marketplace, (2021).

<sup>19</sup> DAEDAL RESEARCH, GLOBAL VOLUNTARY CARBON MARKET: ANALYSIS BY VALUE, BY TRADED VOLUME, BY CREDIT RETIREMENTS, BY CREDIT ISSUANCE, BY PROJECT CATEGORY, BY TYPE OF PROJECT, BY REGION SIZE AND TRENDS WITH IMPACT OF COVID-19 AND FORECAST UP TO 2027, (2022).

<sup>20</sup> Michael Gillenwater et al., *Policing the voluntary carbon market*, 1 NATURE CLIMATE CHANGE 85–87 (2007).

<sup>21</sup> *Id.*

<sup>22</sup> Dong-Ho Lee et al., *Characteristics of forest carbon credit transactions in the Voluntary Carbon Market*, 18 CLIMATE POL'Y 235–245 (2018).

environmental issues, improving their reputation, and building trust in their brand.<sup>23</sup> It also enables the development of new business models and the creation of new revenue streams for companies focused on sustainability.<sup>24</sup> The VCM presents a crucial opportunity for companies and individuals to take responsibility for their carbon footprint and contribute to mitigating the effects of climate change. Through this market, financial resources can be directed towards low-carbon projects, contributing to a more sustainable future for all.<sup>25</sup>

## **B. Differences Between a Compliance Market and Voluntary Market**

Both voluntary and compliance carbon markets can effectively reduce greenhouse gas emissions, but they achieve this in different ways and have different strengths and weaknesses.<sup>26</sup> Compliance carbon markets are more effective in achieving large-scale emissions reductions.<sup>27</sup> The caps set on emissions in compliance markets provide a clear and legally binding target for emissions reductions, and companies that exceed their emissions allowances can be penalized.<sup>28</sup> Compliance markets also have a higher level of government oversight, which helps to ensure that emissions reductions are real, additional, and permanent.<sup>29</sup>

Conversely, voluntary carbon markets are more effective in engaging a wider range of entities and encouraging early action on climate change.<sup>30</sup> Since there are no legal requirements for participation, a wider range of companies, organizations, and even individuals can participate

---

<sup>23</sup> *Id.*

<sup>24</sup> *Id.* at 237.

<sup>25</sup> *Id.* at 243.

<sup>26</sup> *See Id.*

<sup>27</sup> Jordi Teixidó, Stefano F. Verde & Francesco Nicolli, *The impact of the EU emissions trading system on low-carbon technological change: The empirical evidence*, 164 *ECOLOGICAL ECONOMICS* 106347 (2019).

<sup>28</sup> Jon Birger Skjærseth & Jørgen Wettstad, *Implementing EU emissions trading: Success or failure?*, 8 *INTERNATIONAL ENVIRONMENTAL AGREEMENTS: POLITICS, LAW AND ECONOMICS* 275–290 (2008).

<sup>29</sup> Denny A. Ellerman, *The EU Emission Trading Scheme: A Prototype Global System?*, in *POST-KYOTO INTERNATIONAL CLIMATE POLICY: IMPLEMENTING ARCHITECTURES FOR AGREEMENT* 88-118 (2009).

<sup>30</sup> *See* Kreibich, *supra* note 3 at 939, 941-42.



in voluntary markets.<sup>31</sup> Voluntary carbon markets also often provide a voluntary mechanism for companies and organizations to offset their emissions and demonstrate their commitment to reducing their carbon footprint, even if they are not yet ready or able to reduce their emissions directly.<sup>32</sup>

Both markets have their own limitations. Compliance markets may face challenges in flexibility to adapt to changing circumstances.<sup>33</sup> Another challenge faced by the compliance carbon market is the allocation of carbon allowances, which may not always be effective or equitable.<sup>34</sup> Some industries may receive a higher allocation of allowances, while others may receive a lower allocation, creating imbalances in the market and potentially leading to unintended consequences. Additionally, the Compliance Carbon Market may lack the flexibility to adapt to changing circumstances, such as fluctuations in emissions levels, new low-carbon technologies, or shifts in the economy.<sup>35</sup> The market is designed to achieve a specific reduction target and may not always be able to adapt to changing conditions.

Voluntary markets may face issues related to the quality and additionality of carbon credits and lack of regulation to ensure that all the credits sold are truly reducing emissions.<sup>36</sup> The lack of regulation in the voluntary market may lead to the sale of credits that do not represent genuine emissions reductions, undermining the credibility of the market.<sup>37</sup> Additionally, VCM research organization Ecosystem Marketplace believes the lack of regulation in the voluntary market may lead to a lack of accountability for carbon credits that are sold,

---

<sup>31</sup> *See Id.*

<sup>32</sup> *See Id.*

<sup>33</sup> Alex Barnes et al., *the Evolution of Carbon Markets And Their Role in Climate Mitigation And Sustainable Development*, OXFORD ENERGY FORUM. VOL. 132. 17-20 (2022).

<sup>34</sup> Kollmuss et al., *supra* note 1, at 1-2

<sup>35</sup> *Id.*

<sup>36</sup> *See Id.*

<sup>37</sup> *See* Ricardo Bayon et al., *Voluntary Carbon Markets: An International Business Guide to What They Are and How They Work* 56,86,97,99,100,134-135 (2d ed. 2009).

further eroding the market's credibility.<sup>38</sup> A combination of both markets may be more effective, as it allows for a range of different approaches to emissions reduction and can help to achieve large-scale emissions reductions while also encouraging early action and engagement from a wide range of entities.<sup>39</sup>

The voluntary carbon offsets market is estimated to be worth approximately \$1 billion per year in annual transactions and has significant growth potential.<sup>40</sup> Although the compliance carbon credits market currently holds a dominant position in the industry, the voluntary carbon offsets market operates on a wider scale. It supports a broader range of activities across numerous countries. The Task Force on Scaling Voluntary Carbon Markets (TSVCM), a private sector-led initiative aiming to scale voluntary carbon markets to align with the Paris Agreement goals, projects that the demand for carbon credits in the voluntary carbon offsets market could grow by a factor of 15 or more by 2030 and up to 100 by 2050.<sup>41</sup> However, the market still faces issues related to transparency, additionality, and permanence.<sup>42</sup> Additionally, the VCM has received limited information or critical analysis and is relatively less explored.<sup>43</sup> The VCM presents an opportunity for innovation and support for a variety of socially and environmentally beneficial goals, including the United Nations Sustainable Development Goals (SDGs).<sup>44</sup> It is crucial to acknowledge the market's challenges and implement necessary measures to ensure its

---

<sup>38</sup> STEPHEN DONOFRIO ET AL., ECOSYSTEM MARKETPLACE, VOLUNTARY CARBON AND THE POST-PANDEMIC RECOVERY 8 (2020), <https://wecprotects.org/wp-content/uploads/2020/11/EM-Voluntary-Carbon-and-Post-Pandemic-Recovery-2020.pdf> [<https://perma.cc/2F5P-VJUV>].

<sup>39</sup> See Heather C. Lovell, *Governing the Carbon Offset Market*, 1 WIREs CLIMATE CHANGE 353, 360–61 (2010).

<sup>40</sup> Donofrio et al., *Supra* note 38.

<sup>41</sup> Christopher Blaufelder et al., *A Blueprint for Scaling Voluntary Carbon Markets to Meet the Climate Challenge*, MCKINSEY SUSTAINABILITY (Jan. 29, 2021), <https://www.mckinsey.com/business-functions/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge#> [<https://perma.cc/4NZW-7AZ7>].; see Phase 1- Final Report, TASKFORCE ON SCALING VOLUNTARY CARBON MARKETS, <https://www.iif.com/tsvcm> (last visited Apr 18, 2023).

<sup>42</sup> *Id.*

<sup>43</sup> Elizabeth Harris, *The voluntary carbon offsets market: An analysis of market characteristics and opportunities for sustainable development*, IIED, 1-2 (2007).

<sup>44</sup> See *Id.*

growth and effectiveness in reducing GHG emissions and promoting sustainable development. Despite the potential benefits of achieving sustainable development goals, the VCM still faces challenges related to transparency and limited critical analysis, which must be addressed to ensure its effectiveness in reducing GHG emissions.<sup>45</sup>

## **C. The Current State of the Voluntary Market in the U.S.**

### **1. Standards Organizations Market Participants**

Standards organizations generate carbon credits by verifying the carbon removal represented by a project and serve as an intermediary between project owners and developers and the end users who purchase credits to offset their emissions. Standards organizations define a predetermined set of rules and criteria for voluntary carbon credits and certify proposed projects.<sup>46</sup> The organizations also maintain registries of the projects they have certified over time.<sup>47</sup> Once the offsets are issued, the registries keep track of the transactions and the parties on whose behalf they are retired.<sup>48</sup> Standard organizations are involved from the initial application of the offset project to the final issuance and retiring of the credit.<sup>49</sup> The relationship between the project owners and the standard organizations is cradle to grave for the verification and issuance of carbon credits.<sup>50</sup>

---

<sup>45</sup> *Id.*

<sup>46</sup> Gregor Spilker, Nick Nugent, *Voluntary Carbon Market Derivatives: Growth, Innovation, Usage*; BORSA ISTANBUL REVIEW 110-111 (2022).

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> Harris, *supra* note 43.

<sup>50</sup> Charlotte Streck, *How Voluntary Carbon Markets Can Drive Climate Ambition*, JOURNAL OF ENERGY & NATURAL RESOURCES LAW 367-374 (2021).

Carbon standard organizations serve as a mechanism to ascertain the credibility of mitigation projects and their associated carbon credits.<sup>51</sup> These standards signify a form of private “self-regulation”, whereby the general public and corporations collaborate to establish quality benchmarks for voluntary climate participation.<sup>52</sup> Various carbon standards adopt divergent methodologies for evaluating greenhouse gas (GHG) reductions and removals, yet prominent standards such as the VCS, the Gold Standard, the Climate Action Reserve, and the American Carbon Registry prevail.<sup>53</sup> The standards encompass several provisions. The provisions include defining project categories and eligibility, ensuring additionality or outside of business-as-usual, establishing reference levels or baselines for evaluating emission reductions and removals, monitoring emissions and displacements, managing risks by implementing discounts and buffers to counteract potential reversals, verifying and certifying, providing sustainable development co-benefits, and promoting participation and consultations.<sup>54</sup> By applying carbon standards and internal requirements, project auditors within standards organizations can assure that the majority of carbon credits are legitimate. However, despite the existence of such standards, individual projects may still be problematic regarding questionable carbon calculation methods, necessitating that carbon buyers conduct appropriate due diligence regarding the project or program from which they intend to acquire carbon credits.<sup>55</sup>

Currently, a significant portion of issues in the VCM stem from the standards established by standard organizations.<sup>56</sup> The overabundance of carbon calculation standards within the VCM

---

<sup>51</sup> *Id* at 370.

<sup>52</sup> STEPHEN DONOFRIO ET AL., STATE OF THE VOLUNTARY CARBON MARKETS 2020: THE ONLY CONSTANT IS CHANGE, ECOSYSTEM MARKETPLACE (2020).

<sup>53</sup> THIAGO CHAGAS ET AL., A CLOSE LOOK AT THE QUALITY OF REDD+ CARBON CREDITS, CLIMATE FOCUS (2020).

<sup>54</sup> Donofrio, *supra* note 52.

<sup>55</sup> *Id.*

<sup>56</sup> Rebecca Joy Howard et al., *Unraveling the notion of “Fair carbon”: Key challenges for standards development*, 70 WORLD DEVELOPMENT 343–356 (2015).

raises concern over the creation of illegitimate credits. Despite third-party attempts to assess the GHG integrity and sustainable development value of carbon credits, no consistent direction regarding carbon calculation methodology has been issued by any United States governmental entity.<sup>57</sup>

The significant increase in participation within voluntary markets, coupled with structural issues, raises concerns of faulty carbon credits.<sup>58</sup> A lack of standardization in the market drives confusion and misunderstanding with carbon offset calculation.<sup>59</sup> This lack of uniformity within the fragmented voluntary carbon market causes concerns over quality assurance for the carbon credits.<sup>60</sup> Finally, the market has no apparent answer for consideration of additionality and permanence concerns for faulty carbon offset projects.<sup>61</sup> Development of new federal regulations establishing a rigorous carbon calculation and verification standard would address many of the issues confronting the current market.<sup>62</sup>

## **Chapter 2 Lack of Standardization**

Currently, there is no universal or industry-wide standard for the establishment or accreditation of voluntary carbon credits.<sup>63</sup> There are five primary carbon registries that validate and verify carbon sequestration projects and each have their own independent carbon calculation

---

<sup>57</sup> Mark Carney et al., TASKFORCE ON SCALING VOLUNTARY CARBON MARKETS: CONSULTATION DOCUMENT (2020)

<sup>58</sup> Oliver Mittenberger et al., *The Good Is Never Perfect: Why the Current Flaws of Voluntary Carbon Markets Are Services, Not Barriers to Successful Climate Change Action*, 3 FRONTIERS IN CLIMATE 14 Oct. 2021, at 1, 2-4.

<sup>59</sup> *Id.*

<sup>60</sup> Bayon, *supra* note 37.

<sup>61</sup> Charlotte Streck, *Ensuring New Finance and Real Emission Reduction: A Critical Review of the Additionality Concept*, 5 CARBON & CLIMATE CHANGE GOVERNANCE 158, 158–168 (2011).

<sup>62</sup> Raymond Song et al., *How to Build a Trusted Voluntary Carbon Market*, RMI (Sept. 2, 2022), <https://rmi.org/how-to-build-a-trusted-voluntary-carbon-market/> [<https://perma.cc/D5L7-8KCH>].

<sup>63</sup> Giorgio Baldassarri Höger von Högersthal et al., *Carbon Pricing Paths to a Greener Future, and Potential Roadblocks to Public Companies' Creditworthiness*, J. ENERGY MKTS., June 2020, at 1, 5.

methodologies.<sup>64</sup> This fragmented market approach creates significant differences over how carbon sequestration should be calculated.<sup>65</sup> Differences on what factors should be considered when creating carbon credits create volatility in prices and undermines consumer confidence.<sup>66</sup>

### A. Carbon Registries Standard Fragmentation

The absence of uniformity in the carbon credit market poses a significant challenge to quality assurance, which is essential to bolster the credibility of the market.<sup>67</sup> A carbon registry's failure to undertake comprehensive research and testing to validate the efficacy of its carbon calculation standard in sequestering  $CO_2$  from the atmosphere may engender defective carbon credits.<sup>68</sup> To ensure quality, a registry ought to ensure that all potential carbon project type standards undergo meticulous peer review of  $CO_2$  calculation methodologies.<sup>69</sup> However, as multiple standard organizations continue to introduce new carbon calculation methods that have yet to pass the peer review process, upholding quality assurance poses a daunting task.<sup>70</sup>

The five carbon registries - Climate Action Reserve (CAR), American Carbon Registry (ACR), Verified Carbon Standard (VCS), Forest Stewardship Council (FSC), and Gold Standard

---

<sup>64</sup> Timothy R.H. Pearson, Sandra Brown & Kenneth Andrasko, *Comparison of registry methodologies for reporting carbon benefits for afforestation projects in the United States*, 11 ENVIRONMENTAL SCIENCE & POLICY 490–504 (2008).; see Ina Lehmann, *When cultural political economy meets 'charismatic carbon' marketing: A gender-sensitive view on the limitations of gold standard cookstove offset projects*, 55 ENERGY RESEARCH & SOCIAL SCIENCE 146–154 (2019); see also Gregory Valatin, *Additionality and Climate Change Mitigation by the UK Forest Sector*, 85 FORESTRY 445, 445-449 (2012).

<sup>65</sup> See *See How Shared Value is Calculated for Gold Standard Certified Projects*, GOLD STANDARD, <https://www.goldstandard.org/articles/how-shared-value-calculated-gold-standard-certified-projects> (last visited Nov. 20, 2021); see also *id.* Valatin at 447.

<sup>66</sup> See Zhen-Hua Feng et al., *Carbon Price Volatility: Evidence from EU ETS*, APPLIED ENERGY, Mar. 2011, Applied Energy 590, 592, 594, 597.

<sup>67</sup> Lovell, see *supra* note 39.; see also Kollmuss et al., *supra* note 1, at 1-2.

<sup>68</sup> *Id.*

<sup>69</sup> See Kollmuss et al., *supra* note 1, at 1-2.

<sup>70</sup> Chunyu Pan et al., *Key challenges and approaches to addressing barriers in forest carbon offset projects*, 33 J. FORESTRY RSCH. 1111–1115 (2022).

offer a variety of voluntary carbon offset projects.<sup>71</sup> All five have a rigorous and transparent third-party verification or certification process, and all cover a range of project types, including forestry, renewable energy, and agriculture.<sup>72</sup> One key similarity between the registries is their use of a third-party verification or certification process.<sup>73</sup> This ensures that projects are rigorously reviewed and evaluated by an independent organization, providing transparency and accountability for the carbon offsets being offered.<sup>74</sup> For example, the Climate Action Reserve requires project developers to use an accredited third-party verifier to assess the project's emissions reductions or removals.<sup>75</sup> Similarly, the American Carbon Registry has a rigorous third-party verification process, which includes a site visit and review of project documents to ensure that emissions reductions or removals are real, additional, and permanent.<sup>76</sup>

---

<sup>71</sup> Programs, Berkeley Carbon Trading Project | CEPP Projects | Center for Environmental Public Policy (CEPP) | Centers | Research and Impact | Goldman School of Public Policy | University of California, Berkeley, <https://www.peoplelab.berkeley.edu/research-and-impact/centers/cepp/projects/berkeley-carbon-trading-project> (last visited Feb 20, 2023).

<sup>72</sup> See Programs, Voluntary Registry Offsets Database | Berkeley Carbon Trading Project | CEPP Projects | Center for Environmental Public Policy (CEPP) | Centers | Research and Impact | Goldman School of Public Policy | University of California, Berkeley, <https://gspp.berkeley.edu/research-and-impact/centers/cepp/projects/berkeley-carbon-trading-project/offsets-database> (last visited Feb 20, 2023).

<sup>73</sup> Travis A. Brammer & Drew E. Bennett, *Arriving at a natural solution: Bundling credits to access Rangeland Carbon Markets*, 44 RANGELANDS 281–290 (2022).

<sup>74</sup> Sarah K. Mack et al., *Status and challenges of wetlands in carbon markets*, WETLAND CARBON AND ENVIRONMENTAL MANAGEMENT 411–419 (2021).

<sup>75</sup> Verification body requirements, CLIMATE ACTION RESERVE (2018), <https://www.climateactionreserve.org/how/verification/how-to-become-a-verifier/> (last visited Feb 20, 2023).

<sup>76</sup> Verification, AMERICAN CARBON REGISTRY, <https://americancarbonregistry.org/carbon-accounting/old/carbon-accounting/verification> (last visited Feb 20, 2023).

Chart 1. Differences of Carbon Registries' Methodologies<sup>77</sup>

Registry	Focus	Geographical Coverage	Project Types	Standards	Verification Process
Climate Action Reserve (CAR)	Voluntary GHG reduction and removal projects	Primarily North America (U.S., Canada, Mexico)	Forestry, livestock, renewable energy, waste management, ozone depleting substances	Climate Forward, Climate Impact Score, Climate Reserve Ton	Third-party verification
American Carbon Registry (ACR)	Carbon offset projects that reduce or remove GHG emissions	Primarily U.S., with some international (Mexico, Brazil, others)	Forestry, energy, transportation, waste management, agriculture	Improved Forest Management, Avoided Conversion, Grassland Conservation Initiative	Third-party verification
Verified Carbon Standard (VCS)	Voluntary carbon offset projects	Global	Renewable energy, forestry, agriculture, transportation, waste management	VCS Program, Jurisdictional and Nested REDD+ program	Third-party verification
Forest Stewardship Council (FSC)	Responsible forest management and sustainable forestry practices	Global	Forestry	Forest Management, Chain of Custody, Controlled Wood	Third-party certification
Gold Standard	Voluntary carbon offset projects that reduce or remove GHG emissions	Global	Renewable energy, forestry, agriculture, transportation, waste management	Gold Standard for the Global Goals, Gold Standard for the Built Environment, Gold Standard for the CDM	Third-party certification

Many of the registries include a range of project types, including forestry, renewable energy, and agriculture. For example, the Verified Carbon Standard has approved over 1,700 projects in more than 80 countries, covering a range of project types, including renewable energy, forestry, agriculture, and transportation.<sup>78</sup> The Gold Standard also covers a range of project types, including renewable energy, forestry, and agriculture, and has a particular focus on projects that promote sustainable development and poverty reduction.<sup>79</sup>

Each of the carbon registries that are involved with the VCM have their own methodology for calculating sequestered carbon and issuing carbon credits for each project type, this process is called measurement, reporting and verification (MRV).<sup>80</sup> Carbon sequestration is the process by which carbon dioxide is removed from the atmosphere and stored in a long-

<sup>77</sup> *Id.*

<sup>78</sup> Verra to undertake development of a VCS biochar methodology to unlock its potential to mitigate climate change, VERRA (2020), <https://verra.org/request-for-proposals-development-of-a-vcs-biochar-methodology/> (last visited Feb 20, 2023).

<sup>79</sup> Projects, GOLD STANDARD MARKETPLACE, <https://marketplace.goldstandard.org/collections/projects> (last visited Feb 21, 2023).

<sup>80</sup> Ivy S. So, Barbara K. Haya & Micah Elias, BERKELEY CARBON TRADING PROJECT, <https://gspp.berkeley.edu/research-and-impact/centers/cepp/projects/berkeley-carbon-trading-project/offsets-database> (last visited Apr 18, 2023).



term reservoir, such as in trees or soil. The amount of carbon sequestration that can be claimed as a carbon offset varies depending on the project type and MRV process used by each registry.<sup>81</sup> Consistent measurements are crucial to ensure that the credits accurately represent the same value. Yet, carbon registries differ in how they calculate carbon sequestration in carbon offset projects.

In a competitive voluntary market, it's expected that standard organizations have varying project scopes and eligibility requirements to attract specific end buyers. For example, the Verified Carbon Standard (VCS) considers social and environmental co-benefits such as biodiversity conservation and sustainable livelihoods when considering the eligibility of a proposed project.<sup>82</sup> Verra's reasoning for this could be to attract specific end buyers wanting to purchase credits that consider social and environmental co-benefits. The problem lies not in the scope and eligibility of registry project types but in the MRV process that generates the credits. The fact that each standard organization has a distinct approach to measuring, reporting, and verifying their credits means that there is no definitive truth regarding what constitutes one ton of CO<sub>2</sub> reduction.

Standard organizations vary in their MRV processes in terms of reporting frequency and whether reports need to be made public.<sup>83</sup> Verification procedures differ as well; some organizations do not mandate it, some are verified by public entities, and some by accredited auditors.<sup>84</sup> For example, the Climate Action Reserve requires monitoring reports for each project

---

<sup>81</sup> Chelsea Elyse et al., *Climate Action Reserve (CAR)*, in *FOREST CARBON CREDITS: A GUIDEBOOK TO SELLING YOUR CREDITS ON THE CARBON MARKET* 13–14 (2018).

<sup>82</sup> LAMBERT SCHNEIDER, *THE CARBON CREDIT QUALITY INITIATIVE AND NEW RESEARCH ON SUSTAINABLE DEVELOPMENT IMPACTS OF VCM PROJECTS* POLICY COMMONS OEKO INSTITUTE (2022).

<sup>83</sup> AXEL MICHAELOWA ET AL., *OVERVIEW AND COMPARISON OF EXISTING CARBON CREDITING SCHEMES*, NORDIC ENVIRONMENT FINANCE CORPORATION, 28–30 (2019).

<sup>84</sup> *Id* at 4.

but at no specified frequency.<sup>85</sup> Conversely, Gold Standard requires an annual report that includes GHG and sustainability metrics for the project.<sup>86</sup> The difference in MRV reporting cadence requirements demonstrates that carbon registries are calculating their volume of carbon removal differently, potentially creating faulty credits. For example, the frequency of audit reports required by different standard organizations can have a significant impact on the accuracy of carbon credits. While one standard requires an annual audit report, another standard mandates a biennial report. Projects that undergo a biennial audit face an increased risk of creating faulty credits since the health of trees can deteriorate significantly within the two-year period, resulting in the same number of offsets being produced despite the tree loss.

In contrast, a standard that requires monthly audit reports on project health is more reliable in ensuring that sequestration is happening. The difference in MRV reporting requirements between these standards creates opportunities for fraudulent credits. The time gaps between audits give room for the project's health to deteriorate, yet it continues to produce the same number of credits as if all the trees were healthy. As such, the cadence of reporting is crucial. Although both standards measure carbon the same way, the difference in the temporal reporting requirements inevitably leads to miscalculations of credits. An annual audit report is more effective in identifying a project's deterioration sooner than a biennial report.

The VCM offers a variety of approaches to calculating carbon sequestration in carbon offset projects.<sup>87</sup> While this can provide project developers and buyers with a range of options, it can also contribute to market fragmentation.<sup>88</sup> The VCM is largely unorganized and fragmented,

---

<sup>85</sup> *Id* at 30.

<sup>86</sup> Principles & Requirements, GOLD STANDARD FOR THE GLOBAL GOALS (2019), <https://globalgoals.goldstandard.org/101-par-principles-requirements/> (last visited Apr 19, 2023).

<sup>87</sup> See ERIC NOWAK, VOLUNTARY CARBON MARKETS: SIX WHITE PAPER, 14 (2022) (Nowak states that the VCM is largely “unorganized” implying potential confusion from buyers and project developers); Blaufelder, *see also supra* note 41.

<sup>88</sup> *Id.* Nowak, at 14.

and this fragmentation can create confusion for buyers and project developers, who may struggle to navigate the different standards and methodologies offered by the various registries.<sup>89</sup> This can result in a lack of transparency and consistency in the market, potentially undermining the credibility of carbon offset projects.

The fragmentation of the market can also make it difficult to scale up the market and achieve significant greenhouse gas reductions.<sup>90</sup> When carbon registries have different carbon calculation standards, it can become more challenging to consolidate and trade substantial amounts of carbon offsets.<sup>91</sup> For instance, a project owner may have a sector of their forest land conserved under Gold Standard’s methodology and another identical sector conserved under Verra’s methodology. Gold Standard and Verra’s carbon calculation and credit issuance periods for forest conservation projects are different, which means that despite both plots of land being identical, they will produce different amounts of carbon credits over time.<sup>92</sup>

**Table 1. Comparison of Carbon Crediting Mechanisms: MRV<sup>93</sup>**

MRV	Methodologies	Monitoring	Reporting	Verification
GS	CDM, CDM-based and new methodologies	For GHG uses UNFCCC standards. Sustainability defined in GS Project Passport	Monitoring report (including GHG and sustainability aspects)	DOE and GS Secretariat
VCS	CDM, CDM-based, new methodologies and CAR (except for forest protocols)	Defined in each methodology	Monitoring reports, no specified frequency	VCS approved auditor and staff

<sup>89</sup> *Id.*

<sup>90</sup> AXEL MICHAELOWA, FRAGMENTATION OF INTERNATIONAL CLIMATE POLICY: DOOM OR BOON FOR CARBON MARKETS?, UN Environmental Program, 14-16 (2011).

<sup>91</sup> *See Id.*

<sup>92</sup> Michaelowa, *see supra* note 83. (The Gold Standard offers a five-year renewable certification cycle while the VCS offers 10-year crediting periods, renewable up to two times for non-AFOLU projects).; VM0045 methodology for improved forest management using dynamic matched baselines from National Forest Inventories, v1.0, VERRA (2022), <https://verra.org/methodologies/methodology-for-improved-forest-management> (last visited Apr 23, 2023).; Standard documents: The gold standard, STANDARD DOCUMENTS | THE GOLD STANDARD, <https://www.goldstandard.org/project-developers/standard-documents> (last visited Apr 23, 2023).

<sup>93</sup> Michaelowa, *supra* note 83 at 30. (GS referring to Gold Standard & VCS referring to Verra)

The table demonstrates how each carbon credit calculation standard have different requirements for MRV processes. For example, Gold Standard (GS) requires annual reports including GHG and sustainability aspects while Verra (VCS) requires monitoring reports but no specified frequency.<sup>94</sup> This creates a dichotomy in sequestered carbon calculation. Two identical plots of land using a forest conservation methodology under VCS and GS would produce different amounts credits if the health of the trees deteriorated. Gold standard's annual report requirement would discover that the project is not operating at full capacity and adjust the number of credits issued. Verra would only discover the decreased performance based on the project's predetermined monitoring plan which has no frequency requirement established by Verra. This results in over issuance of credits due to Verra not accounting for the reduced performance of the project.

The cost of fragmentation with carbon calculation standards can be explained using the Coase theorem, which states that in the absence of transaction costs, efficient outcomes can be achieved through private bargaining, regardless of the initial allocation of property rights.<sup>95</sup> In the context of the VCM, the fragmentation of carbon calculation standards increases transaction costs, making private bargaining more difficult and leading to inefficient outcomes.<sup>96</sup> For example, if a buyer wants to purchase carbon credits from a seller, but the buyer and seller are using different standards, the transaction costs associated with reconciling the standards can be significant. This can result in the buyer paying a higher price for the credits or the seller receiving a lower price, reducing the total value of the VCM. The Coase theorem provides a

---

<sup>94</sup> Project annual report form, GOLD STANDARD FOR THE GLOBAL GOALS (2022), <https://globalgoals.goldstandard.org/t-perfcert-annual-report/> (last visited Apr 30, 2023).

<sup>95</sup> Richard A Posner, *Nobel laureate: Ronald Coase and methodology*, 7 JOURNAL OF ECONOMIC PERSPECTIVES 195–210 (1993).

<sup>96</sup> *Id.*

theoretical explanation for why private bargaining may not be sufficient to overcome these transaction costs, leading to inefficient outcomes.<sup>97</sup> Therefore, harmonizing standards or establishing a universal standard for carbon accounting could help reduce transaction costs and increase the total value of the VCM.

In order to address the challenges posed by market fragmentation, some of the carbon registries have taken steps to align their MRV standards and methodologies.<sup>98</sup> For example, Verra has collaborated with other standard organizations, such as the Climate, Community and Biodiversity Alliance, to develop a set of complementary standards and MRV processes for new methodologies.<sup>99</sup> Similarly, the Gold Standard has worked to harmonize its requirements with those of other standards, such as the Clean Development Mechanism.<sup>100</sup> Aligning the standards and methodologies employed by other registries can aid in tackling MRV fragmentation by minimizing the diversity of carbon calculation methods. Voluntary efforts are beneficial; however, they are limited in scope and impact and fall short of fully addressing the entire market's needs.

## **B. Trust and Transparency**

The second overarching issue in VCM is the lack of trust and transparency in the system.<sup>101</sup> Almost all VCM registries validate projects and calculate carbon credits through their

---

<sup>97</sup> *Id.*

<sup>98</sup> CCB Standards, THE CLIMATE, COMMUNITY & BIODIVERSITY ALLIANCE, <https://www.climate-standards.org/ccb-standards/> (last visited Feb 21, 2023).

<sup>99</sup> *Id.*

<sup>100</sup> CDM Transition, GOLD STANDARD FOR THE GLOBAL GOALS, <https://globalgoals.goldstandard.org/cdm-transition/> (last visited Feb 21, 2023).

<sup>101</sup> See Gary E. Marchant et al., *Bringing Technological Transparency to Tenebrous Markets: The Case for Using Blockchain to Validate Carbon Credit Trading Markets*, 62 NAT. RES. J. 159, 166-167 (2022).

independent MRV methodology.<sup>102</sup> Registries are not required to disclose their methodology to market participants, allowing them to sell credits without proving their legitimacy. The absence of a requirement to disclose the carbon calculation process creates considerable transparency concerns for project developers and end consumers, which can ultimately delegitimize the market.<sup>103</sup> Trust and transparency concerns can be settled by revealing internal processes from the carbon registries verification process.<sup>104</sup> Full transparency requires the public to have viewing access to all carbon credit transactions and how each credit was created.<sup>105</sup>

The current infrastructure for the VCM contains significant issues regarding the overall legitimacy of the offsets themselves.<sup>106</sup> Voluntary carbon offsetting can be seen as a way for companies to continue emitting greenhouse gases while avoiding reducing their own emissions.<sup>107</sup> Lack of regulation and oversight for the voluntary carbon market is a primary concern as most countries do not regulate the trade of voluntary carbon credits.<sup>108</sup> The lack of regulation can lead to a lack of accountability, increasing the risk of fraud, misrepresentations, and mismanagement in the current market structure, all of which can have legal implications for the end consumer.<sup>109</sup>

---

<sup>102</sup> Michaelowa, *supra* note 83.; See Our Forestry/Reforestation Projects, CARBONFUND.ORG FOUNDATION, [https://carbonfund.org/project\\_category/forestry/](https://carbonfund.org/project_category/forestry/) (last visited Oct 22, 2022).

<sup>103</sup> Junghoon Woo et al., *Applying blockchain technology for Building Energy Performance Measurement, reporting, and Verification (MRV) and the Carbon Credit Market: A review of the literature*, 205 BLDG. & ENV'T 1, 6-10 (2021).

<sup>104</sup> Marchant, *supra* note 101.

<sup>105</sup> See TASKFORCE ON SCALING VOLUNTARY CARBON MKTS., PHASE II REPORT, 9-13 (2021).

<sup>106</sup> Grayson Badgley et al., *Systematic over-crediting in California's Forest Carbon Offsets program*, 28 GLOBAL CHANGE BIOLOGY 1435–1437 (2021).; See Brian A. Needelman et al., *The science and policy of the Verified Carbon Standard methodology for tidal wetland and Seagrass Restoration*, 41 ESTUARIES AND COASTS 2168–2169 (2018) (An analysis of VCS methodology for tidal wetland and seagrass restoration found that additional data is needed to increase the confidence of estimates in these systems).

<sup>107</sup> Robert O. Mendelsohn, Robert E. Litan & John Fleming, A FRAMEWORK TO ENSURE THAT VOLUNTARY CARBON MARKETS WILL TRULY HELP COMBAT CLIMATE CHANGE, BROOKINGS, Sept. 16, 2022, <https://www.brookings.edu/research/a-framework-to-ensure-that-voluntary-carbon-markets-will-truly-help-combat-climate-change/>.

<sup>108</sup> Nowak, *supra* note 87 at 4.

<sup>109</sup> Michaelowa, *supra* note 92, at 21-23.

Lack of standardization among the MRV approaches of credit generators may make it unclear how end-users can represent the impacts of their purchases of carbon offsets. Carbon offsets frequently act as a type of currency utilized to substantiate assertions of carbon neutrality. In many jurisdictions, misrepresenting or fraudulently claiming carbon offsets for marketing purposes can be considered a violation of consumer protection laws or laws governing false advertising.<sup>110</sup> Marketers who claim carbon neutral goods or services are under scrutiny for both the extent of the product life cycle covered by the carbon neutrality assertion, as well as the use of offsets to support these claims.<sup>111</sup>

While the Federal Trade Commission’s (FTC) Guides for the Use of Environmental Marketing Claims or more commonly known as “Green Guides” provides guidance for companies that make environmental claims,<sup>112</sup> application of this guidance to carbon offsets is unclear.<sup>113</sup> The Green Guides offer general principles and specific guidance on carbon offsets that inform treatment of carbon neutrality claims.<sup>114</sup> The Guides require that any offsets used toward carbon neutrality claims must demonstrate “competent and reliable scientific evidence.”<sup>115</sup> This principle is inherently problematic, as there is no federal standard to determine what constitutes a carbon offset being backed by “competent and reliable scientific evidence.”<sup>116</sup> A new federal carbon calculation and MRV standard helps bolster the legitimacy of

---

<sup>110</sup> 15 U.S.C.S. § 45; Or. Rev. Stat. Ann. § 526.786; 16 C.F.R. § 260.5.

<sup>111</sup> *Id.*

<sup>112</sup> 16 CFR § 260.1 (Since the 2012 revision of the Green Guides by the FTC, environmental claims have expanded greatly, resulting in an increased potential for "greenwashing" (misleading advertising for an eco-friendly image) and other types of deceptive marketing practices, see, Ken Markowitz et al., MODERNIZING THE GREEN GUIDES IN THE AGE OF CARBON NEUTRALITY, WESTLAW TODAY, SEPT. 2, 2021, at 1, [https://www.akingump.com/a/net/djq25RaskWkSGPzHBM9J3s/37kFsy/wlt\\_markowitz.pdf](https://www.akingump.com/a/net/djq25RaskWkSGPzHBM9J3s/37kFsy/wlt_markowitz.pdf).)

<sup>113</sup> Eduard Merger & Till Pistorius, *Effectiveness and legitimacy of forest carbon standards in the OTC Voluntary Carbon Market*, 6 CARBON BALANCE AND MANAGEMENT (2011)

<sup>114</sup> 16 C.F.R. § 260.1(a)

<sup>115</sup> 16 C.F.R. § 260.5

<sup>116</sup> Michaelowa, *supra* note 92, at 14-16.

the credits themselves which inherently solves the issue of marketers claiming to be carbon neutral from offset purchases.

### **Chapter 3 Additionality & Permanence Concerns**

In the voluntary carbon market, demonstrating additionality and permanence is crucial to ensure that carbon credits correspond to genuine reductions in greenhouse gas emissions.<sup>117</sup> This requires projects to demonstrate its continuous production over the years and the reductions achieved would not have happened without the influx of capital generated through the sale of carbon credits.<sup>118</sup> If the project results in emissions reductions that exceed the baseline scenario, it can be deemed additional and is eligible to generate carbon credits.<sup>119</sup> This approach establishes that the generated carbon credits genuinely contribute to reducing greenhouse gas emissions.<sup>120</sup> Permanence, requires the carbon stored by a project must be maintained for a predetermined time frame set by the standard organizations, which typically range from 25 to 100 years.

Controlling for additionality and permanence provides assurance to buyers that their investments result in real, additional emissions reductions and not just emissions reductions that would have transpired as part of normal business operations.<sup>121</sup> The effectiveness of the voluntary carbon market in reducing emissions and mitigating climate change depends on

---

<sup>117</sup> Axel Michaelowa et al., *Additionality revisited: Guarding the integrity of market mechanisms under the Paris Agreement*, 19 CLIMATE POL'Y 1211,1213, 1219-1224 (2019).

<sup>118</sup> *Id.*

<sup>119</sup> Mittenberger, *supra* note 58, at 3-4.

<sup>120</sup> Todd Phillips & Alex Fredman, *The CFTC Should Raise Standards and Mitigate Fraud in the Carbon Offsets Market*, CTR. AM. PROGRESS (Oct. 7, 2022), <https://www.americanprogress.org/article/the-cftc-should-raise-standards-and-mitigate-fraud-in-the-carbon-offsets-market/>.

<sup>121</sup> Thomas Dietz & Janina Grabs, *Additionality and implementation gaps in voluntary sustainability standards*, 27 NEW POLITICAL ECONOMY 203–224 (2021).



controlling additionality.<sup>122</sup> This supports the overall objective of reducing global greenhouse gas emissions.<sup>123</sup>

### **A. Lack of Additionality Criteria Resulting in Faulty Carbon Credits**

Non-additionality is a pervasive issue in carbon offset markets.<sup>124</sup> According to a report from the International Journal for Crime, Justice, and Social Democracy, "[t]he predicament of additionality presents an inherent weakness in offset projects."<sup>125</sup> Inquiries into the two offset programs employed under the Kyoto Protocol have both uncovered complications regarding additionality.<sup>126</sup> One such investigation approximated that at minimum half of approved offsets under the Clean Development Mechanism were granted to projects that would have been constructed regardless.<sup>127</sup> Another study approximated that 85 percent of examined CDM-issued projects exhibited low likelihoods of being additional, while a third investigation approximated that three-quarters of offsets issued were improbable to be additional.<sup>128</sup> The lack of additionality control may have contributed to GHGs emissions to be about 600 million tons of carbon dioxide equivalent higher than if participating countries met their emissions domestically.<sup>129</sup>

The VCM also struggles with non-additionality. investigations into the efficacy of carbon offsetting projects have surfaced, as exemplified by a recent examination of a carbon offset

---

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> Peter Martin & Reece Walters, *Fraud risk and the visibility of carbon*, 2 INTERNATIONAL JOURNAL FOR CRIME, JUSTICE AND SOCIAL DEMOCRACY 27–42 (2013).

<sup>125</sup> *Id.*

<sup>126</sup> Cames et al., *supra* note 4.

<sup>127</sup> Raphael Calel et al., *Do carbon offsets offset carbon?*, CESIFO INTERNATIONAL RESEARCH NETWORK, Oct. 2021. <https://www.cesifo.org/en/publications/2021/working-paper/do-carbon-offsets-offset-carbon>.

<sup>128</sup> Cames et al., *supra* note 4.

<sup>129</sup> Anja Kollmuss & Lambert Schneider, HAS JOINT IMPLEMENTATION REDUCED GHG EMISSIONS? LESSONS LEARNED FOR THE DESIGN OF CARBON MARKET MECHANISMS, STOCKHOLM ENVIRONMENT INSTITUTE, Jan. 19, 2009, at 6-11, <https://www.sei.org/publications/making-sense-voluntary-carbon-market-comparison-carbon-offset-standards/>

project owned by The Nature Conservancy.<sup>130</sup> According to a recent investigation by Ben Elgin, a Bloomberg investigative journalist, claims that a carbon offset project covering nearly twenty-eight hundred acres of forest land operated by the Nature Conservancy created illegitimate carbon credits.<sup>131</sup> The offset project purports that almost eighty-nine percent of the land is at risk of imminent timber harvesting and that without the Nature Conservancy's conservation efforts, around two thousand acres of forest would have been subject to harvesting.<sup>132</sup> However, a closer examination revealed that the landowner had never intended to cut down trees.<sup>133</sup> In fact, such actions would be in direct contradiction with their mission statement to preserve the land.<sup>134</sup> The Nature Conservancy responded by stating that the project adhered to the guidelines established by the American Carbon Registry (ACR).<sup>135</sup> Although the landowner had no intention of harvesting timber, the ACR's additionality criteria was satisfied due to the project passing ACR's "Three-Prong Additionality Test."<sup>136</sup> The three prongs consist of a regulatory surplus, common

---

<sup>130</sup> *Id.*

<sup>131</sup> Ben Elgin, JPMORGAN, DISNEY, BLACKROCK BUY NATURE CONSERVANCY'S USELESS CARBON OFFSETS, BLOOMBERG.COM (2020), <https://www.bloomberg.com/features/2020-nature-conservancy-carbon-offsets-trees/> (last visited Apr 8, 2023).

<sup>132</sup> Project Map, BLUESOURCE (2021), <https://www.bluesource.com/project-map/> (last visited Apr 8, 2023).; Anew - Hawk Mountain Forestry Project, AMERICAN CARBON REGISTRY, <https://acr2.apx.com/mymodule/reg/prjView.asp?id1=375> (last visited Apr 8, 2023).

<sup>133</sup> Elgin, *see supra* note 131.; *see also* Hawk Mountain Walks the Walk, HAWK MOUNTAIN SANCTUARY, <https://www.hawkmountain.org/conservation-science/active-research/land-conservation> (last visited Apr 8, 2023) (Hawk Mountain Sanctuary stating they placed most of their acreage in a conservation easement with TNC, the land became a part of the TNC's Working Woodlands program which allowed Hawk Mountain to sell carbon credits).

<sup>134</sup> Who we are, HAWK MOUNTAIN SANCTUARY, <https://www.hawkmountain.org/about/who-we-are> (last visited Apr 8, 2023).

<sup>135</sup> *Supra* note 132.

<sup>136</sup> ACR standard V5.0 February 2018, AMERICAN CARBON REGISTRY, <https://americancarbonregistry.org/carbon-accounting/standards-methodologies/american-carbon-registry-standard/acr-standard-v5-0-february-2018.pdf/view> (last visited Apr 8, 2023).

practice and implementation barriers test.<sup>137</sup> Similarly, a significant percentage of Verra's rainforest offset credits have been criticized based on concerns related to additionality.<sup>138</sup>

These examples demonstrate how even with adhering to ACR's additionality standards, true control on additionality may not be present. In both examples, the end consumer or the offset provider asserted that the project in question satisfied the additionality criteria of Verra or ACR. The actual issue highlighted in both articles is not the procurement of flawed credits by major corporations, but rather the deficiency of additionality checks by carbon registries, resulting in the generation of defective credits. The Hawk Mountain Sanctuary project employed ACR's common practice additionality test to assess if the project could lower greenhouse gas emissions below the levels generated by commonly used technologies or practices in the industry, sector, or region.<sup>139</sup> Despite the land already being conserved, due to its status as privately held land and the size of the property, the forest type for this project closely resembles that of industrial forestland ownership.<sup>140</sup> Simply because the area around the project could be subject to lumber production, the project would be considered additional under ACRs additionality criteria.<sup>141</sup> ACR failed to realize that the land was already protected by the landowner resulting in the creation of non-additional faulty credits.

To remedy the VCM's carbon calculation shortcomings, it is imperative to enhance additionality criteria and improve project implementation and design.<sup>142</sup> Such action would help to ensure that carbon offset projects are geared towards achieving sustainable development and

---

<sup>137</sup> *Supra* note 132.

<sup>138</sup> Patrick Greenfield, REVEALED: MORE THAN 90% OF RAINFOREST CARBON OFFSETS BY BIGGEST CERTIFIER ARE WORTHLESS, ANALYSIS SHOWS THE GUARDIAN (2023), <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe> (last visited Apr 23, 2023).

<sup>139</sup> *See Id.*

<sup>140</sup> *Supra* note 132.

<sup>141</sup> *Id.*

<sup>142</sup> Phillips, *supra* note 120.

greenhouse gas emissions reductions.<sup>143</sup> Increasing the requirements of additionality considerations for carbon credit projects would help reduce emissions by ensuring that only projects that result in actual emissions reductions receive carbon credits.<sup>144</sup> This would incentivize the development of new and innovative projects that reduce greenhouse gas emissions, which in turn would contribute to the reduction of emissions and the achievement of sustainability goals.<sup>145</sup>

UNFCCC's standard known as "combined tool to identify the baseline scenario and demonstrate additionality," is the main criteria used by the CDM for project verification.<sup>146</sup> The criteria consists of four steps, with the first step being the identification of alternative scenarios, which involves identifying all possible alternative scenarios to the proposed CDM project activity that can serve as the baseline scenario.<sup>147</sup> Step two serves to identify barriers and to assess which alternatives are prevented by these barriers.<sup>148</sup> Step three determines which of the alternative scenarios in the short list remaining after step two is the most economically or financially attractive.<sup>149</sup> Finally, step four is a credibility check to demonstrate additionality which complements the barrier analysis and, where applicable, the investment analysis. By ensuring that carbon credits are only verified and given to projects that lead to actual emissions reductions, the carbon offset market can help to mitigate climate change effectively.<sup>150</sup>

---

<sup>143</sup> Michaelowa, *supra* note 117, at 1211–1224.

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

<sup>146</sup> United Nations Framework Convention on Climate Change, COMBINED TOOL TO IDENTIFY THE BASELINE SCENARIO AND DEMONSTRATE ADDITIONALITY CLEAN DEVELOPMENT MECHANISM, [https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-02-v2.2.pdf/history\\_view](https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-02-v2.2.pdf/history_view) (last visited Apr 9, 2023).

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> *See Id.*

A lack of robustness in additionality criteria results in faulty credit production.<sup>151</sup> A new federal policy requiring a standardized comprehensive additionality and carbon calculation model for registries operating in the U.S. would alleviate additionality concerns. . Eliminating variant calculation methods ensures that all registries stay consistent with their additionality criteria.

## **B. Lacking Permanence Criteria**

A carbon calculation researcher named Zeke Hausfather has observed that "the planning horizons of private companies today are fundamentally inconsistent with the timelines over which carbon removal needs to occur."<sup>152</sup> The voluntary carbon market is unable to guarantee a carbon sequestration projects' full fruition. The concept of permanence is commonly considered by carbon credit rating entities when assessing the credit's legitimacy.<sup>153</sup> In order for credits to legitimately represent carbon removal, the undertaking must be continuous and everlasting.<sup>154</sup>

Forest-based offset projects, which commonly encompass tree planting or forest preservation, are particularly susceptible to disruption, as the release of carbon back into the atmosphere can occur if the forest in question is destroyed or harvested.<sup>155</sup> It is exceedingly difficult to ensure the perpetual preservation of a forest, given the potential impact of a variety of factors such as wildfires, alterations in land ownership, political instability, and other unexpected circumstances.<sup>156</sup> Despite these challenges, many credit generators rely on forest-based offsets

---

<sup>151</sup> Elgin, *supra* note 131.

<sup>152</sup> *Id.*

<sup>153</sup> Sylvera's Approach to ARR Ratings, SYLVERA (2022), <https://www.sylvera.com/blog/arr-carbon-ratings> (last visited Apr 20, 2023).

<sup>154</sup> Kenneth R Richards & Grant Eric Huebner, *Evaluating protocols and standards for Forest Carbon-offset programs, part A: Additionality, baselines and permanence*, 3 CARBON MANAGEMENT 393–410 (2012).

<sup>155</sup> *Id.*

<sup>156</sup> Grayson Badgley et al., *California's forest carbon offsets buffer pool is severely undercapitalized*, 5 FRONTIERS IN FORESTS AND GLOBAL CHANGE (2022).

procure 40-year agreements guaranteeing forest protection, after which the forests may be harvested.<sup>157</sup> As carbon dioxide remains in the atmosphere for approximately 100 years, the preservation of a forest for a minimum of this duration is critical for a valid offset.<sup>158</sup> A major investigation conducted by ProPublica in 2019, however, revealed numerous instances in Brazil and Cambodia in which avoided-deforestation offsets experienced significant deforestation.<sup>159</sup> In one such instance, a region that had initially been 90% forested had been depleted to 0% in less than ten years.<sup>160</sup>

Despite being aware of the concerns of permanence considerations when verifying carbon credit sequestration projects, carbon registries are under no obligation to only issue credits with 100% permanence confidence. This lack of consideration creates concerns over faulty carbon credits due to registries verifying and issuing credits with the expectation that the sequestration project will remain functioning or reach full fruition.

### **C. Impact of Faulty Carbon Credits**

Quantification of the potential damage resulting from lack of additionality and permanence is challenging.<sup>161</sup> The total amount of carbon dioxide released into the atmosphere due to faulty carbon credits is impossible to calculate. The trade of fraudulent carbon credits has far-reaching ramifications for both the public and the environment.<sup>162</sup> Designed to counteract emissions by funding emissions reduction initiatives, these credits may be employed in a manner

---

<sup>157</sup> *Id.*

<sup>158</sup> Lisa Song, *An (even more) inconvenient truth: Why carbon credits for Forest Preservation may be worse than nothing*, PROPUBLICA, May. 22, 2019, <https://features.propublica.org/brazil-carbon-offsets/inconvenient-truth-carbon-credits-dont-work-deforestation-redd-acre-cambodia/>

<sup>159</sup> *Id.*

<sup>160</sup> *Id.*

<sup>161</sup> *Id.*

<sup>162</sup> Wayne D. Hettenbach & Lauren D. Steele, *The Past May Be Prologue: Energy Credit Fraud and Its Lessons for Carbon Credit Systems*, 69 DEP'T OF JUST. J. FED. L. & PRAC. 79 (2021).

that weakens their efficacy as a means of mitigating climate change. Furthermore, the utilization of such credits can erode public trust in carbon markets and other emissions reduction endeavors.<sup>163</sup>

The consumers ability to know the legitimacy of carbon credits in the VCM is shielded behind an information cost barrier which unveils a “lemons problem.” The “lemons problem” in the VCM arises when buyers are unable to differentiate between genuine high-quality carbon credits and lower-quality ones, leading to a lack of confidence in the market and a reduction in overall demand.<sup>164</sup> In order to address the lemons problem, one approach is to reduce the associated information costs, which pertain to the expenses incurred in obtaining and verifying information about the quality of carbon credits.<sup>165</sup> The greater the information costs, the more difficult it becomes for buyers to distinguish between high-quality and low-quality carbon credits, thereby increasing the likelihood of the lemons problem.<sup>166</sup> By enhancing transparency in carbon credit verification and certification processes, as well as by developing standardized methodologies for carbon credit generation and tracking, the information costs can be significantly reduced. Such measures would enable buyers to obtain more reliable and consistent information about the quality of carbon credits, and thus make more informed purchasing decisions, ultimately helping to mitigate the lemons problem in the VCM.

---

<sup>163</sup> David Dharish, Yoshino Miyana & Joseph Pablo Varun, *Developing FinTech Ecosystems for Voluntary Carbon Markets Through Nature-Based Solutions: Opportunities and Barriers in ASEAN*, in GREEN DIGITAL FINANCE AND SUSTAINABLE DEVELOPMENT GOALS 111–142 (2022).

<sup>164</sup> Winand Emons, *Warranties, moral hazard, and the lemons problem*, 46 JOURNAL OF ECONOMIC THEORY 16–33 (1988).

<sup>165</sup> Mary J. Benner & Todd Zenger, *The Lemons problem in markets for strategy*, 1 STRATEGY SCIENCE 71–89 (2016).

<sup>166</sup> *See Id.*

The production and sale of fraudulent carbon credits can compromise the credibility of carbon offset markets and hinder climate change mitigation efforts.<sup>167</sup> The VCM relies on credible carbon credits to guarantee genuine, measurable, and verifiable emissions reductions.<sup>168</sup> However, when such credits are sold and traded, the environmental benefits of these credits are likely overstated or non-existent, thereby undermining the integrity of the carbon offset market and its effectiveness in mitigating climate change.<sup>169</sup> The utilization of faulty credits can create a false sense of security among entities utilizing carbon offsetting for emissions reductions, leading them to neglect necessary reductions and divert resources from legitimate offset projects with a more substantial environmental impact.<sup>170</sup> The promotion and utilization of legitimate carbon offset projects with rigorous additionality standards should be encouraged to prevent the negative effects of fraudulent carbon credits, also known as "Hot Air."<sup>171</sup>

"Hot Air" credits, because of MRV problems in the VCM, do not represent actual emission reductions and can be generated through various mechanisms such as the use of outdated baselines or the manipulation of emissions data.<sup>172</sup> When these credits are traded in the VCM, they can have a detrimental effect on the environment and carbon reduction goals.<sup>173</sup> By artificially inflating the supply of carbon credits, "Hot Air" credits create a false sense of progress in reducing greenhouse gas emissions, and can make it more difficult for genuine

---

<sup>167</sup> Nicole Franki, *Regulation of the voluntary carbon offset market*, 48 COLUMBIA JOURNAL OF ENVIRONMENTAL LAW 198 (2022).

<sup>168</sup> *Id.* at 197.

<sup>169</sup> Lisa Song & James Temple, A NONPROFIT PROMISED TO PRESERVE WILDLIFE. THEN IT MADE MILLIONS CLAIMING IT COULD CUT DOWN TREES. PROPUBLICA (2021), <https://www.propublica.org/article/a-nonprofit-promised-to-preserve-wildlife-then-it-made-millions-claiming-it-could-cut-down-trees> (last visited Apr 20, 2023).

<sup>170</sup> Franki *supra* note 167, at 181, 190.

<sup>171</sup> Phillips, *supra* note 120.

<sup>172</sup> Katherine Watts, *Avoiding hot air in the 2015 Paris agreement*, CARBON MARKET WATCH, Nov., 2015, [https://carbonmarketwatch.org/wp/wp-content/uploads/2015/11/International-hot-air\\_final.pdf](https://carbonmarketwatch.org/wp/wp-content/uploads/2015/11/International-hot-air_final.pdf).

<sup>173</sup> Michaelowa, *supra* note 83, at 28-30.



emissions reductions projects to find buyers for their credits.<sup>174</sup> The production and sale of "Hot Air" credits ultimately undermines the environmental integrity of the carbon market and hinders progress toward meeting global carbon reduction goals.<sup>175</sup>

To effectively address the issue of "hot air credits," it is crucial to establish rigorous protocols for the assessment of additionality. Stronger transparency and accountability in the voluntary carbon market through access to information and data on project activities and results can also help to reduce the generation of "hot air credits."<sup>176</sup> Overall, a comprehensive approach that combines robust methodologies, strict regulations and independent verification, and greater transparency and accountability, is likely to be most effective in reducing the generation of "hot air credits."<sup>177</sup>

#### **Chapter 4 Solving VCM Scaling Issues with Potential Market Regulations**

No federal agency has intervened in setting parameters and regulations with the free trade of carbon credits.<sup>178</sup> The absence of federal oversight on carbon credit trading is concerning, given the exponential growth of this market. Without any regulatory measures, illegitimate practices will continue to thrive behind closed doors, ultimately affecting end consumers and the environment.<sup>179</sup> It is therefore imperative that federal entities step up and implement regulations to ensure the legitimacy of this industry.

---

<sup>174</sup> *Id.*

<sup>175</sup> Watts, *supra* note 172.

<sup>176</sup> *Id.*

<sup>177</sup> *See Id.*

<sup>178</sup> Todd Phillips & Zahir Rasheed, The CFTC should raise standards and mitigate fraud in the carbon offsets market Center for American Progress (2023), <https://www.americanprogress.org/article/the-cftc-should-raise-standards-and-mitigate-fraud-in-the-carbon-offsets-market/> (last visited Mar 3, 2023). Phillips, *supra* note 120.

<sup>179</sup> Franki, *supra* note 167, at 204-209.

The absence of a uniform standard creates uncertainty regarding the potential for civil liability. To control illegitimate practices in carbon markets. In the VCM, consumers have access to legal remedies such as state common law fraud claims and consumer protection laws at both state and federal levels.<sup>180</sup> However, the absence of standardized regulations for MRV processes to verify carbon credits poses a challenge to litigants.<sup>181</sup> The establishment of federal administrative regulations on the MRV process for carbon credits would create a legally-binding and cohesive norm governing the behavior of individuals and firms in the market.<sup>182</sup> Without such regulations, participants lack a clear and consistent standard against which to measure the registries' conduct and practices. Additionally, regulatory authority is dispersed among various federal agencies and common law rules, which can result in diluted oversight power and potential inconsistencies across different cases, courts, and jurisdictions.<sup>183</sup>

A federal agency can impose consistent and comprehensive regulations on MRV processes across all participating carbon registries.<sup>184</sup> This ensures that all market participants abide by the same set of rules, promoting transparency and reducing confusion.<sup>185</sup> Additionally, a federal agency's oversight can prevent fraudulent activities and misrepresentations in the market, safeguarding the credibility of carbon credits.<sup>186</sup> Through such regulation, investors can be

---

<sup>180</sup> Trevor Salter, Note, "Carbon Cowboys": How to Rein in Deceptive Sellers in the Carbon Offset Market, 5 GEO. WASH. J. ENERGY & ENV'T L. 59, 66 (2010).

<sup>181</sup> Perrin Cooke, Note, *Green Guide Gaps: Expanding FTC Authority Over Low-Carbon Marketing Claims*, 39 COLUM. J. ENV'T L. 105, 139 (2014).

<sup>182</sup> Barak Orbach, *What is Regulation?*, 30 YALE J. REGUL. ONLINE (2012).

<sup>183</sup> Salter, *supra* note 180 at 62.

<sup>184</sup> See Peter Newell, *The political economy of carbon markets: The CDM and other stories*, 12 CLIMATE POLICY 135–139 (2012).

<sup>185</sup> Maurice Kenny, WHAT ROLE DOES THE CFTC PLAY: 4 MAIN FUNCTIONS, MAURICEKENNYTRADING, Aug. 7, 2022, <https://mauricekennytrading.com/what-role-does-the-cftc-play-4-main-functions/>.

<sup>186</sup> Jacqueline M. Drew & Michael E. Drew, *Establishing additionality: Fraud vulnerabilities in the clean development mechanism*, 23 ACCOUNTING RESEARCH JOURNAL 243–253 (2010).

encouraged to participate in the voluntary carbon market, as the agency's intervention provides a stable and predictable market environment.<sup>187</sup>

A universal carbon calculation standard could overcome market fragmentation.<sup>188</sup> For example, the EU-ETS utilizes the Clean Development Mechanism (CDM) and Joint Implementation (JI) as the universal carbon offset creation standard. A carbon sequestration project that does not meet the criteria for either JI or CDM will not be considered for credit issuance.<sup>189</sup> The universal implementation of the CDM's carbon calculation standard significantly decreases the EU-ETS fragmentation and additionality issues.<sup>190</sup> As seen in the case of CDM, the fragmentation and additionality concerns in the VCM could be addressed by standardizing a carbon calculation process that all participants must follow.<sup>191</sup>

#### **A. Commodities Futures Trading Commission**

The Commodities Futures Trading Commission (CFTC) is the most appropriate agency to take on the task of implementing a standardized MRV and carbon calculation methodology. The CFTC's purpose is to "protect market users and the public from fraud, manipulation, and abusive practices related to the sale of commodities."<sup>192</sup> The CFTC derives its regulatory

---

<sup>187</sup> Financing to Promote Participation in Voluntary Carbon Markets, UNFCCC.INT, <https://unfccc.int/climate-action/momentum-for-change/activity-database/momentum-for-change-financing-to-promote-participation-in-voluntary-carbon-markets> (last visited Mar 23, 2023).

<sup>188</sup> See Joint Implementation, UNFCCC.INT, <https://unfccc.int/process/the-kyoto-protocol/mechanisms/joint-implementation> (last visited Apr 8, 2023) (Implying that the implementation of JI and CDM, prevents EUETS market fragmentation and ensures additionality criteria appropriately.); See Oliver J. Robinson et al., *Towards a universal carbon footprint standard: A case study of carbon management at universities*, 172 JOURNAL OF CLEANER PRODUCTION 4435–4455 (2018).

<sup>189</sup> UNFCCC.INT, <https://unfccc.int/process/the-kyoto-protocol/mechanisms/joint-implementation> (last visited Apr 8, 2023). *Id.* Joint Implementation.

<sup>190</sup> Axel Michaelowa et al., *Additionality revisited: Guarding the integrity of market mechanisms under the Paris Agreement*, 19 CLIMATE POLICY 1211–1224 (2019). Michaelowa, *supra* note 117, at 1211–1224.

<sup>191</sup> *Verified Carbon Standard Rules & Requirements*, VERRA, <https://verra.org/project/vcs-program/rules-and-requirements/> (Nov. 20, 2021) last visited Apr 23, 2023).

<sup>192</sup> CFTC Mission Statement, CFTC, <https://www.cftc.gov/About/AboutTheCommission> (last visited Apr 21, 2023).

jurisdiction from the Commodity Exchange Act (CEA), which confers upon it the authority to govern select aspects of commodity markets.<sup>193</sup> The CEA empowers the CFTC to undertake measures, such as levying fines, to forestall fraudulent practices, manipulation, and other improprieties in futures and options markets.<sup>194</sup> Furthermore, Section 6(c) of the CEA imposes a legal obligation upon the CFTC to shield consumers.<sup>195</sup> The regulatory expertise of the CFTC and its fiduciary duty to safeguard consumers render it an optimal choice for overseeing the voluntary carbon market.<sup>196</sup>

The CEA defines a commodity in Section 1 a(9) of the CEA as "interests in which contracts for future delivery are presently or in the future dealt in."<sup>197</sup> This broad definition encompasses a wide range of goods and products, including agricultural products, energy resources, metals, and financial instruments such as futures contracts and options.<sup>198</sup>

Additionally, Section 9 of the CEA states it is unlawful "to use or employ any commodity in interstate commerce in connection with a manipulative or deceptive device," thus giving the CFTC authority to prevent deceptive practices with the trade of interstate commodities.<sup>199</sup>

Case law and agency guidance can further guide the legal interpretation of interstate commerce with commodities. For example, in *West v. Kansas Natural Gas Co.* the court stated, "natural gas, when reduced to possession, is a commodity; it belongs to the owner of the land, and, when reduced to possession, is his individual property subject to sale by him, and may be a subject of intrastate commerce and interstate commerce."<sup>200</sup> By stating that natural gas is a

---

<sup>193</sup> Commodity Exchange Act, 7 U.S.C. 1 § 6c(a)(1).

<sup>194</sup> *Id.*

<sup>195</sup> *Id.*

<sup>196</sup> Robert M. Brown, *CFTC overhauls customer protection requirements*, 15 JOURNAL OF INVESTMENT COMPLIANCE 25–32 (2014).

<sup>197</sup> 7 USCS § 1a (9)

<sup>198</sup> *Id.*

<sup>199</sup> 7 U.S.C.S. § 9

<sup>200</sup> *West v. Kansas Natural Gas Co.*, 221 U.S. 229 (1911).

commodity, the court implies that a commodity is a good or article that can be bought and sold in commerce, which is consistent with the CEA's broad definition of a commodity as any "good, article, service, right, or interest in which contracts for future delivery are presently or in the future dealt in."<sup>201</sup>

The CFTC has a well-established history of overseeing financial markets and enforcing rules and regulations to maintain their stability and integrity. One example is the CFTC's role in developing and implementing new regulations under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 after the 2008 financial crash.<sup>202</sup> These regulations included the establishment of new trading requirements, transparency measures, and increased oversight for over the counter (OTC) derivatives, such as credit default swaps.<sup>203</sup> Additionally, the CFTC had limited authority over the Chicago Climate Exchange (CCX), a former voluntary carbon credit exchange.<sup>204</sup> This suggests that the CFTC has experience with the unique challenges associated with carbon offsets and may be well-suited to adapt to new regulations in the future. Overall, the CFTC's track record of overseeing financial markets and enforcing regulations inspires confidence in its ability to navigate the complex landscape of carbon markets.

The CFTC has already expressed interest possessing oversight of existing carbon markets.<sup>205</sup> The Interagency Working Group for the Study on Oversight Carbon Market is led by the CFTC and has released a report on the oversight of existing and prospective carbon markets.<sup>206</sup> The report found market participants often engage environmental commodity

---

<sup>201</sup> *Id.*

<sup>202</sup> Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376.

<sup>203</sup> *Id.*

<sup>204</sup> U.S. GEN. ACCOUNTING OFFICE, GAO-08-1048, *Carbon Offsets: The U.S. Voluntary Market Is Growing, but Quality Assurance Poses Challenges for Market Participants* (2008).

<sup>205</sup> See Interagency Working Group for the Study on Oversight of Carbon Markets, *Report on the Oversight of Existing and Prospective Carbon Markets* (Jan. 2011) [hereinafter Carbon Report], [http://www.cftc.gov/ucm/groups/public/@swaps/documents/file/dfstudy\\_carbon\\_011811.pdf](http://www.cftc.gov/ucm/groups/public/@swaps/documents/file/dfstudy_carbon_011811.pdf).

<sup>206</sup> *Id.*

transactions in order for the buyer to consume the commodity in order to be in compliance with a mandatory or voluntary program.<sup>207</sup> The two features that differentiate environmental commodity transactions from other intangible commodity transactions that cannot be delivered, such as temperatures and interest rates, are ownership transfer and consumption. As a result, The CFTC determined that "environmental commodities" are nonfinancial commodities that can be delivered through electronic settlement or contractual attestation.<sup>208</sup> Meaning that carbon credits are not physically "consumed" but traded in secondary market fashion like a stock or bond, which meets the CFTC's definition of "swap" under the CEA, thus giving them authority to regulate the trade of environmental commodities such as renewable energy credits (RECs).<sup>209</sup> Carbon credits, like RECs, are environmental commodities that incentivize and reward environmentally friendly practices and are traded in environmental markets. The CEA's broad definition of commodity suggests that carbon offsets could fall within its regulatory purview.<sup>210</sup>

In terms of agency guidance, the CFTC has issued numerous interpretive letters and guidance documents clarifying the definition of commodities and the scope of its regulatory authority.<sup>211</sup> In a 2015 interpretive letter, the CFTC relied on a court decision that classified virtual currencies as "goods" that are traded in a market for a uniform quality and value, thereby satisfying the definition of a "commodity" under both the CEA and common usage.<sup>212</sup> Similarly, in a 2019 guidance document, the CFTC believed that certain environmental commodities, such as RECs and carbon offsets, are also subject to its regulatory authority.<sup>213</sup> The CFTC has jurisdiction over commodities and any contracts, agreements, or transactions that it treats as a

---

<sup>207</sup> *Id.*

<sup>208</sup> 77 Fed. Reg. at 48,234 (Aug. 13, 2012).

<sup>209</sup> *Id.*

<sup>210</sup> 7 USCS § 1a (9).

<sup>211</sup> Release number 6064-11, CFTC, Jun. 30, 2011, <https://www.cftc.gov/PressRoom/PressReleases/6064-11>.

<sup>212</sup> Release number 7231-15, CFTC, Sept. 16, 2015, <https://www.cftc.gov/PressRoom/PressReleases/7231-15>

<sup>213</sup> *Supra* note 208.

commodity in interstate commerce.<sup>214</sup> Interstate commerce, as defined in the CEA, encompasses commerce between any location within a state, territory, or possession and a location outside of it, as well as commerce between two locations within the same state, territory, or possession that passes through a location outside of it or within any territory, possession.<sup>215</sup> Since carbon credits are considered an environmental commodity and are traded in markets across state borders, they meet the definition of a transaction in interstate commerce, and therefore fall within the jurisdiction of the CFTC.<sup>216</sup> As a result, the carbon offset markets, such as the VCM, should be subject to the CFTC's regulatory authority.

The CFTC provides an interpretation that an intangible commodity that can be physically delivered qualifies as a nonfinancial commodity if ownership of the commodity can be conveyed in some manner and the commodity can be consumed.<sup>217</sup> One example of an intangible nonfinancial commodity that qualifies under this interpretation is an “environmental commodity, such as an emission allowance, that can be physically delivered and consumed (e.g., by emitting the amount of pollutant specified in the allowance).”<sup>218</sup> A voluntary carbon credit would meet the description of an environmental commodity since it can be delivered and “consumed” or, in this case, retired.<sup>219</sup>

Given that voluntary carbon credits can be traded in the same manner as other commodities and that they meet the definition of a commodity under the CEA, they fall within the purview of the CFTC's regulatory authority. By regulating the market for voluntary carbon

---

<sup>214</sup> 7 U.S. Code § 1a.

<sup>215</sup> *Id.*

<sup>216</sup> *Supra* note 208 at 43285. (Citing a comment letter explaining that, “unlike a stock or a bond, which can be resold for its cash value, purchasers of environmental commodities intend to take delivery of RECs or carbon offsets for either compliance purposes or in order to make an environmental claim regarding their renewable energy use or carbon footprint”); *see generally*, 77 Fed. Reg. at 48,233-35 (Aug. 13, 2012).

<sup>217</sup> *See* 77 Fed. Reg. at 48,232 (Aug. 13, 2012).

<sup>218</sup> *Id.*

<sup>219</sup> *Id.*

credits, the CFTC would ensure that these credits are traded fairly and transparently and that market participants comply with regulations designed to prevent manipulation and fraud. In conclusion, the CFTC's regulatory experience, expertise in preventing market manipulation and fraud, the obligation to protect consumers, and enforcement powers make it a suitable entity to regulate the VCM.

## **B. The Securities Exchange Commission**

Although the SEC could govern issuance of securities in carbon reduction projects and regulates climate based risk disclosures by public companies, it does not have regulatory authority over credit generators in the voluntary carbon market.<sup>220</sup> Under the SEA, the SEC is vested with the authority to regulate the offer and sale of securities in the United States.<sup>221</sup> This broad grant of authority enables the SEC to regulate various forms of financial instruments, including those that may be considered securities in a secondary market.<sup>222</sup> One possible argument for the SEC's jurisdiction over the voluntary carbon market is that carbon credits may be considered securities under the SEA. Carbon credits represent a reduction in GHGs released into the atmosphere, and credits can be traded in a secondary market similar to stocks.<sup>223</sup> However, carbon credits are unlikely to meet the definition of a security as defined by the Howey Test.<sup>224</sup>

The Supreme court defines a security as a financial instrument that involves an investment of money in a common enterprise with the expectation of profits derived from the efforts of others. In the landmark case of *SEC v. W.J. Howey Co.*, the Supreme Court established

---

<sup>220</sup> Securities Exchange Act, 15 U.S.C. §§ 78a-78kk.

<sup>221</sup> *Id.*

<sup>222</sup> *See Id.*

<sup>223</sup>

<sup>224</sup> *SEC v. W.J. Howey Co.*, 328 U.S. 293, 299 (1946).



the Howey test to determine whether a financial instrument qualifies as a security.<sup>225</sup> If an investment is deemed to be a security, then it is subject to regulation by the SEC and other federal securities laws, including registration requirements and disclosure rules.<sup>226</sup>

The Howey Test has four prongs and if all are met the investment is considered a security and subject to the registration and disclosure requirements of the federal securities laws.<sup>227</sup> The four prongs of the test are (1) an investment of money, (2) in a common enterprise, (3) with an expectation of profits, (4) solely from the efforts of others.<sup>228</sup> In the *SEC v. Ripple Labs Inc.*, case, Ripple argued that their cryptocurrency was not a security because it is a currency, not an investment contract.<sup>229</sup> The SEC argued that all four prongs of the Howey Test were met due to purchasers investing in a common enterprise due to money pooling for the operations, there being an expectation of profits from the defendant, and Ripple's founders and executives played a significant role in the success of the cryptocurrency.<sup>230</sup> Though *SEC v. Ripple Labs Inc.* is still ongoing, the case provides an excellent example of how the Howey Test is applied to emerging financial markets such as cryptocurrency.

If the SEC were to try to determine that carbon credits meet the definition of a security, it must apply the Howey Test.<sup>231</sup> The first element of the Howey Test requires an investment of money.<sup>232</sup> Subsequent case law has expanded this concept to include any form of consideration with value.<sup>233</sup> When the end buyer wants to buy a carbon credit from a project owner, the buyer

---

<sup>225</sup> *Id.*

<sup>226</sup> *Supra* note 220.

<sup>227</sup> *Supra* note 224.

<sup>228</sup> *Id.*

<sup>229</sup> *SEC v. Ripple Labs, Inc.*, 2022 U.S. Dist. LEXIS 43497 (S.D.N.Y. Mar. 11, 2022)

<sup>230</sup> *Id.*

<sup>231</sup> *See supra* note 224.

<sup>232</sup> *Id.*

<sup>233</sup> Marc G. Alcer, *The Howey Test: A Common Ground for the Common Enterprise Theory*, 29 U.C. Davis L. REV. 1217 (1996).; *See International Bhd. Of Teamsters v. Daniel*, 439 U.S. 551, 560 n.12 (1979)

gives the project owner funds in exchange for the credit. This transaction would meet the first prong of the Howey Test.

The second element requires a common enterprise.<sup>234</sup> In most federal courts, a common enterprise is typically defined as having "horizontal commonality."<sup>235</sup> This means that multiple investors contribute their money or assets, and in return, they proportionally share both the profits and risks involved. In the case of voluntary carbon credits, companies and individuals can purchase credits to offset their carbon footprint. Typically, these credits are sold by companies or entities that have reduced their own carbon footprint or have invested in renewable energy projects. Although a monetary transaction takes place, the buyer of a carbon credit is not investing in the activities of the credit generator; rather, they are purchasing a product for their own use. This is like buying a toothbrush from a store, where the buyer is not investing in a common enterprise with the retailer, but rather buying a product for their own personal use. Therefore, the purchase of carbon credits does not involve a common enterprise and would fail the second prong of the Howey Test.

Even if a purchase of a carbon credit was found to create a common enterprise, carbon credits still fail the third and fourth prongs of the Howey test. The third element of the Howey Test requires that the investor expects to make a profit from their investment.<sup>236</sup> In the case of voluntary carbon credits, the expectation of profit may not be present for all investors.<sup>237</sup> Some investors may purchase carbon credits for ethical or environmental reasons, without the

---

(noting that goods and services satisfy investment of money requirement as well as cash); *see also* Hector v. Wiens, 533 F.2d 429, 432-33 (9<sup>th</sup> Cir. 1976) (finding that promissory note satisfies money requirement); Sandusky Land, Ltd. V. Uniplan Groups, Inc., 400 F. Supp. 440, 445 (N.D. Ohio 1975) (noting that services satisfy money requirement).

<sup>234</sup> *Supra* note 224.

<sup>235</sup> *Revak v. SEC Realty Corp.*, 18 F.3d 87-88 (2d Cir. 1994).

<sup>236</sup> *Id.*

<sup>237</sup> Harris, *See Supra* note 43.

expectation of a financial return.<sup>238</sup> However, for investors who purchase carbon credits as part of a carbon offset program, the expectation of reducing their carbon footprint may be a motivating factor. Therefore, this element is not certain causing the third prong to fail.

The fourth element of the Howey Test requires that the investor's fortunes are tied to the efforts of others.<sup>239</sup> In the case of voluntary carbon credits, the investor's fortunes are not tied to the success of the carbon reduction or renewable energy projects that generate the credits.<sup>240</sup> Certainly the validity of the credit is tied to the success of carbon reduction, but that does not influence the investors fortune. Investing in a carbon removal project with the intention of selling carbon credits would be considered an investment with an expectation of return, and the investor would be reliant on the efforts of others. Undoubtedly, the investor's ownership stake in the carbon project constitutes a security. The issue at hand is not the transaction itself, but rather whether the sale of the resulting offsets qualifies as a security. Given this information, it is unlikely that the element is present, causing the fourth prong not to be met. As credits are not considered a security, it is not plausible that the SEC could be the appropriate federal agency to regulate the calculation and verification of carbon credits in the VCM, and it likely lacks the necessary expertise to do so. The SEC's regulatory expertise primarily focuses on securities markets and does not include the complex aspects of commodities trading, including the unique features of carbon credits, such as additionality and permanence.<sup>241</sup> These features require specialized knowledge and expertise that the SEC may not possess. The SEC's ability to regulate securities is limited to only one aspect of the VCM, specifically securities created by investing in carbon credit generation projects with the aim of making profits. As a result, a considerable

---

<sup>238</sup> *Id.*

<sup>239</sup> *See supra* note 220.

<sup>240</sup> Harris, *supra* note 43.

<sup>241</sup> *See supra* note 220.

portion of the market would be under the supervision of an agency without adequate resources. Despite the SEC not being the appropriate federal agency to regulate the verification and calculation of credits, they could still regulate securities created by investments toward carbon credit generator projects and establish climate disclosure rules for public companies.

### **C. The Environmental Protection Agency**

Despite the EPA's general authority over air pollutants and the mandate to address GHG emissions in *Mass v. EPA*, the EPA does not have authority to regulate carbon offsets.<sup>242</sup> Firstly, the VCM revolves around the creation and trade of carbon credits, which are intended to represent a reduction in carbon emissions. The EPA's authority under the Clean Air Act strictly pertains to air pollutants like carbon dioxide in the atmosphere.

For the EPA to have authority over the VCM it must claim jurisdiction through federal law, in this instance the most likely would be the Clean Air Act (CAA).<sup>243</sup> The issue presented is whether the EPA has jurisdiction under the CAA to regulate carbon credits in the VCM. Carbon credits are a mechanism for incentivizing the reduction of greenhouse gas emissions, as entities that reduce their emissions can sell their unused emissions allowances to others in need. While carbon credits may be designed to remove carbon dioxide from the atmosphere, the question is whether the regulation of these credits falls within the scope of the CAA.<sup>244</sup>

The CAA is a federal law that gives the EPA the authority to regulate air emissions, establish air quality standards, and set emissions limits for specific pollutants.<sup>245</sup> The Act covers pollutants that may endanger public health or welfare and are emitted into the ambient air.<sup>246</sup> The

---

<sup>242</sup> *Massachusetts v. EPA*, 549 U.S. 497, 127 S. Ct. 1438 (2007)

<sup>243</sup> Clean Air Act, 42 U.S.C. §§ 7401-7671q.

<sup>244</sup> *Id.*

<sup>245</sup> *Id.*

<sup>246</sup> *Id.*

regulation of carbon credits, however, is not explicitly mentioned in the CAA. Carbon credits are a voluntary market mechanism designed to reduce greenhouse gas emissions. They represent reductions or removals of greenhouse gas emissions and are traded in the VCM. The sale of carbon credits in the VCM does not involve the emission of pollutants into the ambient air and is therefore not covered by the CAA. Additionally, the CAA is concerned with regulating air pollutants that can harm public health or welfare, and the regulation of carbon credits in the VCM does not fit within this scope. The regulation of carbon credits in the VCM would fall outside of the CAA's jurisdiction, as the Act covers only air pollutants that endanger public health or welfare and are emitted into the ambient air.<sup>247</sup> Carbon sequestration projects are focused on removing  $CO_2$  from the air, no project would be emitting more  $CO_2$  into the air than it is sequestering, or it would not be producing carbon credits. Due to the CAA not being applicable to the regulation of carbon credits in the VCM, the EPA would not have jurisdiction and not be the appropriate agency to regulate the market and the CFTC would not be overstepping the EPA's authority.

Furthermore, the EPA's expertise and experience in environmental regulation may not extend to the intricacies of the commodities market, including the trading of carbon credits. The VCM requires specialized knowledge of market-based mechanisms, financial instruments, and commodities trading, which may not be within the EPA's core competencies.<sup>248</sup> The CFTC is better suited to this task. The CFTC's primary objective is to safeguard market users and the general public against fraud, manipulation, and abusive practices in relation to the sale of

---

<sup>247</sup> *West Virginia v. EPA*, 142 S. Ct. 2587, 213 L.Ed.2d 896 (2022) (Section 111 of the Clean Air Act directs EPA to regulate stationary sources of any substance that “causes, or contributes significantly to, air pollution” and that “may reasonably be anticipated to endanger public health or welfare”)

<sup>248</sup> Blaufelder et al., *supra* note 41.

commodities and has the necessary expertise to establish and regulate commodities markets such as the VCM.

#### **D. CFTC Regulation**

Given the CFTC's regulatory authority over environmental commodities and the inclusion of voluntary carbon credits within its purview, the Commission is the most suitable federal agency to undertake the regulation of the VCM. The CFTC should draft guidance that explicitly defines methods for measuring quality and identifies activities that may constitute fraud or manipulation.<sup>249</sup> The guidance may provide a clear definition of actual permanence for forest-based offsets, which are inherently vulnerable to logging or fires.<sup>250</sup> Additionally, the guidance may outline rigorous procedures for determining additionality, possibly with a rebuttable presumption that certain forms of avoided-emissions initiatives lack additivity.<sup>251</sup> The CFTC could require projects to use robust and widely accepted accounting methodologies to quantify their emissions reductions, such as the Greenhouse Gas Protocol or other internationally recognized standards.<sup>252</sup> To minimize fragmentation between Europe and the U.S., it is advisable to ensure that the MRV requirements are aligned with those of the CDM. Finally, the new guidelines would permit the agency to retract and invalidate fraudulent carbon credits.

CFTC having regulatory authority over the creation and verification of carbon credits would solve additionality and permanence issues by requiring carbon projects and registries to follow a standardized carbon calculation method. The method would require that the project

---

<sup>249</sup> *Id.*

<sup>250</sup> Financing to Promote Participation in Voluntary Carbon Markets, UNFCCC.INT, <https://unfccc.int/climate-action/momentum-for-change/activity-database/momentum-for-change-financing-to-promote-participation-in-voluntary-carbon-markets> (last visited Mar 23, 2023).

<sup>251</sup> See Commodity Exchange Act, 7 U.S.C. §§ 1-27f

<sup>252</sup> Jessica F. Green, *Private standards in the climate regime: The Greenhouse Gas Protocol*, 12 BUSINESS AND POLITICS 1–37 (2010).

emissions reductions are additional by using a baseline scenario that represents business-as-usual emissions.<sup>253</sup> The UNFCCC's additionality standard utilized in the CDM would be the best methodology to use to combat nonadditional concerns in the VCM.<sup>254</sup>

Permanence issues are reduced by requiring projects to demonstrate viability over a specified period of time, say 30–100 years and provide some form of surety against loss.<sup>255</sup> That surety could be insurance from a third party that reserves a portion of the credits in a pool within the program.<sup>256</sup> The best strategy to guarantee permanence however would be to implement a “pay as you go” model where credits would only be issued once the sequestered carbon is validated and reported. Proper regulation would make the entire creation and transaction process transparent, allowing for stakeholders to easily access and understand the calculations behind the carbon credits. Once the new policy passes OIRA review, the CFTC would then enforce the implementation of the policies on carbon registries involved in the VCM.<sup>257</sup>

All participants in the VCM would be subject to CFTC regulatory oversight, with carbon registries being the most affected as they would need to revise their methodologies to comply with the new CFTC standard. The Verified Carbon Standard by Verra, the American Carbon Registry, the Climate Action Reserve, and Gold Standard are the four most commonly used registries in the VCM and hold a significant amount of market influence.<sup>258</sup> These standards determine the scientific criteria for verifying an offset project and keep a record of credits on their registries while monitoring them throughout their lifespan.<sup>259</sup> Given this, these standards are

---

<sup>253</sup> Richards & Huebner, *supra* note 154, at 393–410.

<sup>254</sup> *Supra* note 146.

<sup>255</sup> *Id.* at 405–410.

<sup>256</sup> *Id.*

<sup>257</sup> Bagley, *infra* note 288.

<sup>258</sup> See Programs, Voluntary Registry Offsets Database, UNIVERSITY OF CALIFORNIA, BERKELEY, <https://gspp.berkeley.edu/research-and-impact/centers/cepp/projects/berkeley-carbon-trading-project/offsets-database> (last visited Feb 20, 2023).

<sup>259</sup> *See Id.*

pivotal in carbon-offset futures markets, serving as delivery points where credit ownership is exchanged during futures contract settlements. As such, direct oversight by the CFTC is a possibility for these entities.<sup>260</sup> The CFTC can mandate that these entities employ practices to prevent manipulation, price distortion, and disruptions of the delivery or cash-settlement process via market surveillance, compliance, and enforcement measures.<sup>261</sup>

Supervision by the CFTC over these presently unregulated registries would be an essential step in maintaining the credibility of offset-based derivatives.<sup>262</sup> Without proper oversight of the entities keeping track of the derivatives' underlying offsets, investors cannot be certain that the derivatives genuinely represent the future delivery of offsets that embody avoided or removed carbon emissions. This is especially significant given the admission by Verra's CEO that an "unknown number of offsets may not be additional."<sup>263</sup> As such, CFTC oversight may be necessary to guarantee that the futures contracts are not manipulated and the underlying offsets fulfill the promise that the futures contracts are providing offsets that comply with eligibility standards, such as additionality and permanence.

### **3. Self-Regulatory Organizations (SROs)**

The proposed CFTC actions would greatly benefit the scalability of the VCM however, the CFTC would struggle with the speed of implementation and enforcement of the new regulations without assistance, due to funding and processing time for task delegation. A potential solution for the governance implementation issues for the CFTC would be self-

---

<sup>260</sup> INT'L SWAPS & DERIVATIVES ASS'N, VOLUNTARY CARBON MARKETS: ANALYSIS OF REGULATORY OVERSIGHT IN THE US 7, 12 (2022), <https://www.isda.org/a/93WgE/VoluntaryCarbon-Markets-Analysis-of-Regulatory-Oversight-in-the-US.pdf> [<https://perma.cc/VFN8-CMD4>].

<sup>261</sup> 17 CFR § 38.250 – Core Principle 4.

<sup>262</sup> *Supra* note 260.

<sup>263</sup> *Id.*



regulatory organizations (SROs).<sup>264</sup> SROs are entities that are empowered to create and enforce industry standards and regulations.<sup>265</sup> SROs were first utilized by the SEC under the Securities Exchange Act of 1934 which states “maximum scope is accorded to stock exchange self-regulation, and powers are reposed in Securities and Exchange Commission to be exercised as needed, in such manner as to allow maximum initiative and responsibility to self-regulators.”<sup>266</sup> Essentially, the SEA granted the SEC authority to establish SROs in order to help regulate and enforce specific markets.<sup>267</sup> For example, the New York Stock Exchange, an SRO under the SEC, is responsible for monitoring activities on the NYSE’s equities, options and bonds markets.<sup>268</sup> SROs are able to set rules and guidelines for their members to follow and monitor compliance with market participants.<sup>269</sup> While SROs can be privately owned, they are still subject to government oversight and must adhere to broader policies set by the government or government agencies.<sup>270</sup>

CFTC’s authority to create SROs stems from the Commodity Futures Trading Commission Act, which established the CFTC as an independent federal regulatory agency with oversight over that majority of the U.S. derivatives market.<sup>271</sup> Part of the motivation to create the CFTC was the perceived need to provide federal oversight over the self-regulation performed by the existing derivatives exchanges. Effective SROs can provide guidance and enforcement mechanisms to ensure that their members are following industry best practices and meeting legal

---

<sup>264</sup> 17 C.F.R. § 1.52

<sup>265</sup> 15 U.S.C.S. § 78a

<sup>266</sup> *Id.*

<sup>267</sup> Jennifer M. Pacella, *If the shoe of the SEC doesn't fit: Self-regulatory organizations and absolute immunity*, WAYNE LAW REVIEW, VOL. 58, ISS. 2, 2012.

<sup>268</sup> 15 U.S.C.S. § 78s

<sup>269</sup> Derek Fischer, *Dodd-Frank's Failure to Address CFTC Oversight of Self-Regulatory Organization Rulemaking*, 115 COLUM. L. REV. 69 (2015).

<sup>270</sup> See 15 U.S.C.S. § 78a (Giving SEC the authority to implement SROs which report to the SEC)

<sup>271</sup> See 119 Cong. Rec. SI8963-18966 at SI8964, SI8965 (daily ed. Oct. 10, 1973) (discussing the role of the Commodity Exchange Authority in regulating the futures markets).

requirements. Examples of SROs include financial regulatory bodies like the Financial Industry Regulatory Authority (FINRA) and the National Futures Associations (NFA).<sup>272</sup> These organizations work to ensure that financial firms adhere to regulations and standards designed to protect investors and maintain the integrity of the markets. By operating within a self-regulatory framework, these organizations can create more streamlined and effective regulation, while also maintaining the flexibility to respond to changing market conditions.<sup>273</sup>

SROs are typically industry-led organizations that have a deep understanding of the market they regulate and the challenges faced by their participants.<sup>274</sup> Most importantly, The CFTC has used SROs in the past such as the National Futures Association (NFA), that was created to regulate the U.S. futures industry and protect investors in the futures and swaps markets.<sup>275</sup> By partnering with SROs, the CFTC can leverage its expertise and experience to effectively regulate the market and ensure that participants comply with regulations designed to prevent manipulation and fraud.<sup>276</sup> In the case of the voluntary carbon market, the CFTC could work with an SRO that specializes in the carbon market to help regulate the market. The CFTC partnering with an SRO would offer a more effective means of regulating the market, as the SRO would have a deep understanding of the market and its challenges and ensure that the market operates in a fair and transparent manner with participants following regulations to promote stability and security.

---

<sup>272</sup> Emily Hammond, *Double Deference in Administrative Law*, 116 COLUM. L. REV. 1734-1741 (2016).

<sup>273</sup> *Id.* at 1713.

<sup>274</sup> *See Id.*

<sup>275</sup> About NFA, NATIONAL FUTURES ASSOCIATION, <https://www.nfa.futures.org/about/index.HTML> (last visited Mar. 28, 2023).

<sup>276</sup> Heath P. Tarbert, *Self-Regulation in the Derivatives Markets: Stability Through Collaboration*, 41 NW. J. INT'L L. & BUS. 175 (2021).

Another advantage of using SROs is that they have the necessary expertise and experience in the carbon market to effectively regulate it.<sup>277</sup> Additionally, SROs have a proven track record of effectively regulating other financial markets, such as the securities and futures markets.<sup>278</sup> The CFTC's use of SROs to regulate these markets has been successful in promoting stability and transparency, protecting market participants, and fostering competition.<sup>279</sup> The CFTC's expertise in using SROs to regulate other financial markets, combined with the expertise of SROs in the carbon market, makes this approach a viable option for regulating the voluntary carbon market.<sup>280</sup>

Furthermore, utilizing SROs can provide the CFTC with a flexible and efficient mechanism for regulation, allowing it to respond quickly to changes in the market and to emerging issues. The CFTC can also leverage its existing infrastructure and resources to effectively regulate the market using SROs.<sup>281</sup> In establishing SROs through rule making, the CFTC can assure regulatory oversight to prevent against abuses by SROs while still getting the efficiency benefits.<sup>282</sup> The CFTC's expertise in using SROs, combined with the expertise of SROs in the carbon market, make this approach a viable option for regulating the market, promoting stability and transparency, protecting market participants, and fostering competition.<sup>283</sup>

---

<sup>277</sup> Lawrence J. Trautman, *Who qualifies as an audit committee financial expert under SEC regulations and NYSE rules?*, 11 DEPAUL BUS. & COMM. L.J. 205 (2012-2013).

<sup>278</sup> Edward Stringham, *The Unseen Beauty That Underpins Markets*, in PRIVATE GOVERNANCE: CREATING ORDER IN ECONOMIC AND SOCIAL LIFE (2015).

<sup>279</sup> Tarbert, *supra* note 276.

<sup>280</sup> *See Id.*

<sup>281</sup> THE STATUS OF ENVIRONMENTAL COMMODITIES UNDER THE COMMODITY EXCHANGE ACT, HARVARD BUSINESS LAW REVIEW ONLINE, JAN. 10, 2015, <https://www.hblr.org/2015/01/the-status-of-environmental-commodities-under-the-commodity-exchange-act/> (last visited Mar 23, 2023).

<sup>282</sup> Tarbert, *supra* note 276.

<sup>283</sup> *Id.* at 179.

#### 4. Interagency Collaborative Effort Governance

To properly scale the VCM, The CFTC will work alongside other agencies and implement a new federal policy that is exclusively applicable to the CFTC. The new policy creates a standardized carbon calculation standard while using SROs to regulate the creation and verification of carbon credits. By implementing regulatory standards in the market and enforcing them on participants, SROs could help ensure effective regulation of the VCM. This collaborative approach has the potential to address several of the key challenges currently facing the VCM. For example, by utilizing SROs, the CFTC would be able to leverage the experience and expertise of key market participants in developing and enforcing regulatory standards.<sup>284</sup> This would provide a strong foundation for ensuring that the market operates in a transparent, fair, and consistent manner, which would enhance the overall integrity of the market and help to build trust among participants.

The CFTC would be able to properly facilitate the trading and legitimacy of transactions in the marketplace, it would need assistance from the EPA in regards to establishing a carbon calculation and measurement standard for the carbon sequestration projects to be in compliance with.<sup>285</sup> Additionally, the SEC would be able to provide regulatory guidance from a financial market perspective, when it comes to creating the new policies and standards of trading carbon credits on the VCM. Intergovernmental collaboration in regards to new policy creation is common in administrative law, in fact, federal agencies have used a wide array of mechanisms to help implement interagency collaborative efforts.<sup>286</sup> For example, the National Climate Task

---

<sup>284</sup> *Id.* at 187.

<sup>285</sup> *Id.* at 195.

<sup>286</sup> Managing for results: Key Considerations for Implementing Interagency Collaborative Mechanisms Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms, U.S. GOVERNMENT ACCOUNTABILITY OFFICE, <https://www.gao.gov/products/gao-12-1022> (last visited Mar 28, 2023).

Force is an interagency task force that is a government-wide effort to address climate change, co-chaired by the White House National Climate Advisor representatives from over 20 federal agencies.<sup>287</sup>

Combining different areas of expertise, the new policy proposed could provide a robust and effective regulatory framework for the voluntary carbon market. To illustrate this point, a specific example of collaboration between the CFTC, SEC, EPA, and SROs could involve the CFTC working with SROs to establish a set of regulatory standards for the carbon market, while the SEC and EPA provide guidance on proper monitoring and oversight to ensure that these standards are being adhered to. In this scenario, the CFTC would be responsible for enforcing the standards and working with the SEC and EPA to identify any potential issues, while the SEC and EPA would aid with regulation and policy creation. By leveraging the expertise of the CFTC, SEC, EPA and SROs, this model has the potential to effectively address the key challenges facing the market and provide a platform for sustained growth and success.

The ideal answer to properly scale the VCM using federal regulation input would begin with the CFTC claiming to have jurisdiction over regulating carbon credits within the VCM. Once the authority to regulate the market is established, the agency will begin a federal government agency rulemaking collaboration with the SEC and EPA. The three agencies will begin to create new regulations and standards for market participants in the VCM. SEC will assist with financial market regulation input while the EPA will focus on carbon calculation standards for sequestration projects.

---

<sup>287</sup> National Climate Task Force, THE WHITE HOUSE (2022), <https://www.whitehouse.gov/climate/> (last visited Mar 28, 2023).; Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, 86 Fed. Reg. 7619 (Jan. 27, 2021) (The taskforce oversaw the United States return to the Paris Agreement and helped develop Executive Order 14008 Tackling the Climate Crisis at Home and Abroad).

The proposed policy will align with the Biden administration's priorities and meet the requirements of the Office of Information and Regulatory Affairs (OIRA) review process.<sup>288</sup> The OIRA evaluates the potential impacts of proposed regulations on the economy, environment, and public health and safety, as well as their alignment with the president's priorities and policies.<sup>289</sup> Due to the policy's significant impact on the environment, jobs, and the economy (with an estimated annual impact of \$200 million or more), the new policy would be classified as a "significant regulatory action" under President Biden's upcoming executive order.<sup>290</sup> As a result, OIRA would evaluate the policy to determine its alignment with the administration's priorities and policies. Executive Order 14008 Tackling the Climate Crisis at Home and Abroad, would align with the proposed policy.<sup>291</sup> EO 14008 outlines a plan to address climate change and reduce greenhouse gas emissions in the United States. The order specifically calls for the development of a comprehensive plan to achieve net-zero emissions by 2050, which could align with a proposed policy to regulate the calculation and verification of carbon offsets.<sup>292</sup>

Once the new regulations are created, the CFTC will establish various SROs to help regulate the market in credit creation, credit verification, credit issuance and credit trading. Once the SROs are established, they will be required to enforce the specific guidelines created by the CFTC, SEC, and EPA. This will ensure that all carbon sequestration projects and the carbon credits they create are legitimate and the trade of carbon credits is transparent to the public.

---

<sup>288</sup> Nicholas Bagley, *The procedure fetish*, MICHIGAN LAW REVIEW 345 (2019).

<sup>289</sup> *Id.* at 362.

<sup>290</sup> Modernizing Regulatory Review, THE WHITE HOUSE (2023), <https://www.whitehouse.gov/omb/information-regulatory-affairs/modernizing-regulatory-review>; see also Laurens Swinkels, *Trading Carbon Credit tokens on the blockchain*, UNIVERSITY ERASMUS ROTTERDAM (2023). (Stating voluntary carbon credits was estimated to be USD 328 million in 2020, the estimate ranges between USD 1,9 and USD 2,3 trillion in 2022)

<sup>291</sup> *Supra* note 287.

<sup>292</sup> *Id.*

## 5. Limitations and Unintended Consequences

The new regulation regarding MRV processes on standard organizations would help alleviate many concerns surrounding the legitimacy of carbon credits within the VCM. However, the proposed solution has its own limitations and unintended consequences. A universal carbon calculation standard would not entirely eradicate permanence and additionality concerns. For example, the EU ETS currently has a uniform carbon calculation standard in which all project types must abide to, yet additionality is a concern in the market.<sup>293</sup> The same would apply for the VCM, the new regulation would significantly decrease the amount of additionality concerns with carbon registries calculation methods but there would still be more granular difficulties within the approved methodologies listed by the CFTC. Non-permanence concerns, similar to additionality, would not be completely eradicated, despite the standard requiring stronger proof from project applicants. The EU ETS is currently experiencing limited issues of non-permanence despite there being a uniform standard.<sup>294</sup>

Finally, the required standard may drive leakage outside of the VCM within the U.S. and to unregulated offshore markets. Stricter controls on how companies represent emissions reductions from credits generated in the unrelated markets could address some of this concern. The CFTC would have no control over foreign markets selling third party carbon credits. The fact that parties may leave the U.S. VCM raises concerns about market leakage. To the extent that U.S. companies are using credits; regardless of whether generated, SEC may be able to address the possibility of lower standards in other jurisdictions through its rules governing

---

<sup>293</sup> Axel Michaelowa, Igor Shishlov & Dario Brescia, *Evolution of international carbon markets: Lessons for the paris agreement*, 10 WIREs CLIMATE CHANGE (2019).

<sup>294</sup> Artur Runge-Metzfer et al., *Certifying land-use based carbon dioxide removals: outline of a strawman proposal*, STG POLICY BRIEFS, (2022).

climate related disclosures of public companies. Similarly, revisions to the green guides could require that offsets meet the CFTC standards or equally stringent equivalents.

Despite the limitations of a uniform carbon calculation standard, the implementation of the new policy would eradicate the worst offenders generating faulty carbon credits. Additionally, new technological innovation has recently surfaced to help MRV processes and solve non-permanence issues with nature-based projects.<sup>295</sup> One example is the implementation of blockchain protocols to help provide verified and automated real time MRV data on a public ledger, which demonstrates the up-to-date total sequestered carbon from a specific project.<sup>296</sup> By integrating automated remote sensing technology, the blockchain protocol would be able to automatically send live reports on the health of the project and its current operating capacity. This approach removes the requirement of on-site audits and guarantees that credits only be issued in accordance with the current sequestered carbon from the project. This would further enable implementation of the “pay as you go” permanence model that guarantees real time reductions.

Another concern of a regulated uniform carbon calculation standard would be the unintended financial consequences the new policy would bring to the VCM. First, smaller project owners who lack the capital to comply with a uniform standard may face increased barriers to entry. This could limit scalability and growth, restrict competition, and artificially inflate prices due to a limited number of participants being able to afford barrier to entry. Second, there could be an argument made that the standard would make the price of offsets rise and cause companies attempting to be carbon neutral to shift that rise in cost to their consumers.

---

<sup>295</sup> Woo et al., *supra* note 103, at 6-10.

<sup>296</sup> Grammateia Kotsialou, Karlygash Kuralbayeva & Timothy Laing, *Blockchain’s potential in forest offsets, the voluntary carbon markets and REDD+*, 49 ENVIRONMENTAL CONSERVATION 137–145 (2022).



As unintended consequences surface, the CFTC and other federal agencies can cooperate to address emergent issues within the VCM. This is already taking shape. For example, on January 31<sup>st</sup>, 2023, the FTC announced it was extending its public comment period to discuss updates to their “Green Guides” to April 24<sup>th</sup>, 2023.<sup>297</sup> It is expected the new Guides will cover more information on carbon offset related claims and issues, improving transparency related to use of voluntary carbon offsets.<sup>298</sup> Despite the consequences of the new standard from the CFTC, it would significantly reduce the amount of faulty carbon credits within the VCM and ultimately achieve a stronger approach to the fight against climate change.

## **Chapter 5 Conclusion**

The current infrastructure of the voluntary carbon market in the United States is flawed and has the potential to cause significant environmental harm. While the VCM has the potential to reduce greenhouse gas emissions, the lack of regulation and oversight creates a situation where market participants can engage in fraudulent and environmentally damaging practices. The best solution to address these issues is for a federal agency to step in and regulate the MRV credit calculation process in the voluntary carbon market. The CFTC would be the most appropriate agency to regulate the market due to their expertise in financial markets and their authority to regulate derivatives markets.

The CFTC would be able to create a comprehensive regulatory framework that addresses additionality, faulty credits and permanence concerns on the creation and verification of carbon

---

<sup>297</sup> Holly Vedova & The FTC Office of Technology, Federal Trade Commission extends public comment period on potential updates to its green guides for the use of environmental marketing claims, FEDERAL TRADE COMMISSION, Jan. 31, 2023, <https://www.ftc.gov/news-events/news/press-releases/2023/01/federal-trade-commission-extends-public-comment-period-potential-updates-its-green-guides-use>.

<sup>298</sup> FTC extends 'green guides' comment period to April 24, GREENBERG TRAURIG LLP, Feb. 6, 2023, <https://www.gtlaw.com/en/insights/2023/2/ftc-extends-green-guides-comment-period-to-april-24>.

credits in the VCM. Collaboration with other federal agencies, such as the EPA, and the SEC, would ensure that the regulations are effective in reducing carbon emissions and protecting the environment. SROs could be utilized to enforce the regulations on market participants, creating supplemental regulation enforcement that combines government oversight with industry expertise. The implementation of a comprehensive regulatory framework for the VCM is crucial for reducing environmental harm and combating climate change. By creating a regulatory framework that is effective, feasible, and practical, the CFTC could ensure that the voluntary carbon market contributes to a sustainable future for all.